SOCIAL IMPACT OF RESEARCH IN PSYCHOLOGY

EDITED BY: Marta Soler-Gallart, Erica Rosenfeld Halverson and Sara Cadavid

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SOCIAL IMPACT OF RESEARCH IN PSYCHOLOGY

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Editorial: Social Impact of Research in Psychology

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Editorial on the Research Topic

Social Impact of Research in Psychology

Currently, one key European priority is to make scientific evidence with social impact available to the public. The Directorate-General for Research and Innovation (European Commission) published the Expert Report "Monitoring the impact of EU Framework Programmes" (Besseelaar et al., 2018) clarifying the impact requirements for research proposals submitted to Horizon Europe. By prioritizing social impact and making scientific evidence available to society, Article 27 of the Universal Declaration of Human Rights, which states that everyone has the right to share in scientific advancement and its benefits, becomes effective.

Hence, this is an ideal moment to clarify the effective and potential social impact (Pulido et al., 2018; Aiello et al., 2020) that research in psychology has had until now and will have in the future. The aim of this Research Topic is to collect those studies that demonstrate, with evidence, how psychological research in diverse areas of the discipline can address crucial needs in society and solve most of the pressing social problems, thus achieving social impact. The articles composing this Research Topic represent a great variety of methodologies and fields within psychological research, such as education, gender, violence, or well-being. It also includes methodological contributions on how to gather the social impact (Gómez et al., 2019; Sordé Martí et al., 2020) of psychological research using different tools and data sources.

Some studies in this Research Topic have focused on education, showing that educational psychology is providing the citizenry with increasing evidence that contributes to achieving social impact worldwide. Educational psychology is placing great endeavors in advancing knowledge and evidence fostering all children's learning, academic success, prosocial behavior, well-being, and, ultimately, providing them with opportunities to have a flourishing life (García-Carrión et al., 2019). One of the areas of study in educational psychology is the impact of dialogue and communicative interactions with diverse others on learning and development. By reviewing different schools of thought on dialogic teaching and learning, García-Carrión et al. explored the social improvements of dialogic education with a focus on aspects such as academic success and social cohesion. The article discussed some of the hindrances to its further social impact, as well as the affordances of communicative mixed methods in this field to achieve social impact. Along the lines of dialogic education, Duque et al. explored the social impact of research focused on analyzing the benefits of successful educational actions for students with special needs. Through 10 case studies and in-depth interviews, their analysis showed the identification of the benefits of interactive learning environments in mainstream schools, the spread of these successful actions to more mainstream schools, and their transfer to special schools, improving educational opportunities for students with special needs. Research in educational psychology has

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also explored the impact of dialogue and interactions in informal learning contexts. An example from this Research Topic is Meng et al.'s study on mothers' and grandmothers' influence when co-viewing cartoons with children, where 89 Chinese parents and grandparents participated. Results showed that mothers think cartoons have a very high influence on children's health and put more restrictions on the content of the cartoons than grandmothers and that children's interactions with mothers are more based on experience proofs than with grandmothers. The current Research Topic includes a critical, longitudinal, and participatory ethnography on the narrative of a female American youth developing a culture of criticality. In this study, Calabrese Barton et al. showed how the space between person and institution worked as an incubator for the youth's engagement in a pathway toward becoming *somebody* in STEM.

In addition, educational psychology has served as the basis for educational interventions that are achieving social impact. Alongside the dialogic education approach explored in the aforementioned studies, Rodriguez et al. analyzed a successful dialogue-based teacher training program in which teachers read and critically discuss educational theory and evidence. Through a questionnaire aimed at 69 teachers in Spain, they observed the seminar's impact in promoting teachers' self-efficacy and argumentative skills and in transferring this new knowledge to their profession, transforming their everyday practice. Furthermore, the impact of research on dialogic teaching and learning interventions has been transferred to different fields, such as organizations and leadership. One of the studies presented in this Research Topic, conducted by Campos et al., analyzed the impact of an excellence EMBA program regarding its organizational components, particularly its goals and composition. Through an open-ended questionnaire addressed to 28 alumni and seven current students in the program, findings revealed that participants improved their leadership skills and aptitudes and placed great importance on dialogue and communication as key abilities among leaders. Along the line of educational programs based on evidence from psychology, Trigos-Carrillo et al. presented findings from a service-learning program in Colombia in which 27 psychology students and two faculty co-existed and shared daily life activities with a community of former guerrilla members. They resorted to Participatory Action Research to explore the program's impact as a potential avenue for bringing rural and urban communities closer and toward peacebuilding by developing students' cultural humility. Shedding light on educational psychology's contributions to gaming programs, Chau et al. showed the impact of the Wise IT-use program developed by them in order to tackle Internet gaming disorders and risky online behaviors. Validated questionnaires were administered to 248 primary students in Hong Kong before and after participating in the program. Results showed the program successfully mitigated the symptoms of Internet gaming disorder and increased emotional well-being among participants.

On the other hand, research in psychology has attained social impact in the field of violence-related issues, as other articles within this Research Topic evidence. Some have focused on sexual-affective and gender-based violence. Flecha et al.

brought to light the contributions of psychology to the existing theoretical, scientific, and social debate on sexual consent, addressing the new challenges that have arisen and presenting a new research line that takes on some of these challenges, further propelling the impact of psychology on this issue. Placing the responsibility for the problem and solution of consent on communicative acts rather than on speech acts solely, this new approach to consent found the need to consider communicative actions and egalitarian dialogue for consenting to sexual-affective engagement. Further, Torras-Gómez et al. advanced evidence on the influence of the coercive dominant discourse on young women's pleasure in sexual-affective relationships. After interviewing 13 Spanish women, they found that those who were once influenced by such discourse but later on rejected it felt more pleasure in egalitarian relationships than in power ones, opening up the possibility to find pleasure in falling in love.

Similar to the field of education, psychology has also informed effective interventional programs. Many of those are in the field of gender-based violence. Racionero-Plaza et al. reported the potential social impact of a program consisting of seven interventions addressed to adolescents, and this was grounded in research evidence about the preventive socialization of gender violence. Qualitative and quantitative data from 126 Spanish adolescents revealed the interventions' impact in raising critical consciousness about the influence of the coercive dominant discourse in the adolescents' own life, in better understanding their own sexual-affective relationships, and in transforming their sexual preferences in the direction of rejecting men with violent attitudes and behaviors. In addition, Garzón Segura and Carcedo González designed, implemented, and assessed a gender-based violence prevention program based on evidence from previous successful preventive programs. This quasi-experimental study with 344 primary students in Colombia showed the program succeeded in increasing affective empathy and decreasing gender stereotypes and acceptance of violence.

Beyond sexual-affective violence, psychology has also made important contributions to studies on vulnerable groups and victims of other kinds of violence, for instance, the homeless. Within this line of research, Matulič-Domadzič et al. conducted research into 20 life stories of homeless people in Spain. The authors aimed to identify evidence on solidarity as a key factor in the process of overcoming homelessness and substance abuse situations associated with it. This study showed that a strong solidarity network is essential in overcoming homelessness and impacts participants' well-being and the development of more solidarity attitudes. On the other hand, Wang et al. explored the characteristics and factors influencing violence exposure in real life among 375 Chinese university students who completed three questionnaires. Their analyses showed correlations between deviant behaviors of peers, gender, and single-child status and exposure to violence as well as higher scores in violence exposure in the community than in the family.

Last, two of the studies under this Research Topic showed how and why the methodology used in research in psychology could strengthen its possibilities for achieving social impact. Redondo-Sama et al. focused on social impact assessment methods of psychological research and presented the

Communicative Methodology (CM) as a useful methodology for the communicative evaluation of social impact. Their study showed how the CM is increasing the possibility of research in psychology to achieve social impact through a bottom-up approach that includes citizens' voices throughout the entire research. Similarly, Pulido et al. showed the potential of the Social Impact in Social Media (SISM) methodology to evaluate and further promote the visibility of the social impact of psychological research. Through analyzing 10 studies on well-being, their findings confirmed the contributions of the SISM methodology to identify and extract evidence of the social impact of those studies shared on social media, shedding light on how this methodology enables researchers to become aware of whether and how citizens are applying their evidence and establishing improvements.

The findings from these articles establish evidence on how psychological research improves the lives of citizens in a variety of ways, dismantling false information (Pulido et al., 2020; Pulido Rodríguez et al., 2020) about the lack of utility of psychological science and moving toward society's partaking in advancements and benefits of research in psychology.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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Gamification for Internet Gaming Disorder Prevention: Evaluation of a Wise IT-Use (WIT) Program for Hong Kong Primary Students

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Internet gaming disorder and risky online behavior (e.g., cyberbullying, exposure to online violent content) have emerged as serious problems in the digital age. Prevalence rates range from 4% to 40% across the globe, with Asia being one of the hardest-hit regions. To address these pressing problems, our team designed the Wise IT-use (WIT) program, a universal prevention program that (a) enhances students' awareness of Internet gaming disorder and an array of common risky online behaviors, and (b) equips them with sufficient knowledge to handle such problems. The WIT program design was based on gamification principles and flow theory to enhance users' motivation and learning experience. A program evaluation study was conducted to assess the social impact of this program in mitigating symptoms of Internet gaming disorder and risky online behavior, and in bolstering emotional well-being. The participants were 248 students aged 7 to 13 from four primary schools in various regions of Hong Kong. They completed validated questionnaires 1 month before and 2 months after participating in the program to evaluate changes in their symptoms of Internet gaming disorder, the frequency with which they displayed risky online behaviors, and their ratings of emotional well-being across the period. The results revealed that both the symptoms of Internet gaming disorder and the proportion of students at risk of the disorder were reduced after the program. The changes observed in students were related to higher levels of positive affect and lower levels of negative affect. Evidence from this study indicates that Internet gaming disorder and risky online behavior are detrimental to the emotional well-being of Hong Kong primary school students. More importantly, the findings demonstrate that our newly developed WIT program can have a social impact in successfully mitigating the symptoms of Internet gaming disorder and enhancing emotional well-being over time. The implications of these findings for the program's broader impact on society and culture are discussed.

Keywords: internet gaming disorder, gaming addiction, problematic internet use, prevention program evaluation, universal strategy, social impact, risky online behavior

INTRODUCTION

In the digital age, the use of information technology (IT) has brought efficiency and convenience to myriad aspects of daily life (e.g., C. Chaudhry et al., 2006; Chang et al., 2012). For instance, people can easily communicate with friends anywhere in the world at any time using instant messaging applications. Despite these benefits, IT use has also ushered in adverse behaviors and outcomes, such as cyberbullying victimization and password hacking (e.g., Furnell et al., 2015). In addition to risky online behavior, an extreme form of problematic IT use is addiction, of which Internet gaming disorder is the most common type (e.g., Müller et al., 2015; Sigerson et al., 2017a). The issues pertaining to problematic IT use have raised widespread concern among the general public, mass media, and governments worldwide.

Problematic IT Use: A Prevalent, Emergent Societal Problem

Alongside the global concern over the array of problems related to IT use, these problems have also attracted considerable research interest. Investigations into the prevalence of IT addiction and risky online behavior have found that the prevalence rates of Internet gaming disorder and Internet addiction range from 8% to 17% across nations (e.g., Cheng and Li, 2014; Mak et al., 2014; Müller et al., 2015). Of the various countries included in such reviews, mainland China has the highest prevalence rate of IT addiction.

Higher prevalence rates have been identified for various types of risky online behavior. For example, a recent meta-analysis revealed cyberbullying victimization to have an overall prevalence rate of 20–40% across age groups (Kowalski et al., 2014). The prevalence of meeting strangers online has been reported to range between 4 and 14% among adolescent samples (Valcke et al., 2007, 2011; Dowdell, 2011). Furthermore, in a study of early adolescents in the United States, 66% of male participants and 39% of female participants reported exposure to online pornography (Brown and L'engle, 2009). In another United States sample, 38% of 10- to 15-year-olds were found to have been exposed to violent content online (Ybarra et al., 2008). Finally, 37% of a sample of Chinese adolescents reported having shared their passwords with others (Mak et al., 2014).

Psychosocial Problems Related to Problematic IT Use

The high incidence rates of IT addiction and risky online behaviors have broader societal implications, prompting researchers to investigate the impacts of these emergent problems on users' emotional well-being and on society as a whole. With regard to personal problems, a recent meta-analytic review of studies conducted in multiple nations worldwide revealed an inverse association between Internet gaming disorder and emotional well-being (Cheng et al., 2018). Individuals at risk of such disorder tend to experience more episodes of loneliness, insomnia, and concentration problems (Kim et al., 2016), and are five times more likely to exhibit aggression, impulsive behaviors, and suicide attempts than healthy individuals. Moreover, those

with Internet gaming disorder tend to manifest more psychiatric symptoms, such as obsession-compulsion and psychosis, than healthy individuals (Kim et al., 2016). Furthermore, people with IGD have reported higher levels of depression, stress, and anxiety, as well as lower life satisfaction (e.g., Bargeron and Hormes, 2017; Sigerson et al., 2017b).

With regard to interpersonal problems, the aforementioned meta-analytic review also indicated that individuals with Internet gaming disorder encounter more difficulties in their interpersonal relations (Cheng et al., 2018). Owing to their overindulgence in online gaming and neglect of significant others, these individuals are susceptible to a range of interpersonal stressors, including social isolation and interpersonal conflict (e.g., Demetrovics et al., 2012; Wartberg et al., 2017). They also tend to frequently lie about their excessive gaming (Lemmens et al., 2015), inevitably leading to arguments and a further deterioration of interpersonal relations. In addition, these individuals tend to be less socially competent than others, and therefore possess insufficient social skills to handle the interpersonal conflicts elicited by their excessive gaming. Taken together, these issues diminish the quality of interpersonal relations for individuals with Internet gaming disorder, further estranging them from their significant others (e.g., Liau et al., 2015; Cheng et al., 2018).

Similar to Internet gaming disorder, risky online behaviors also elicit a range of personal problems. For instance, cyberbullying victimization is positively associated with depression, substance abuse, and suicidal ideation (Hinduja and Patchin, 2010; Gámez-Guadix et al., 2013). More broadly, risky online behaviors, such as sharing online data (e.g., passwords) and hacking, can lead to significant financial losses for individuals and societies. For example, according to a recent multinational survey conducted across 20 countries (Symantec Corporation, 2018), 978 million consumers suffered an aggregate financial loss of US$172 billion from cybercrimes in 2017, with an average loss of US$142 per victim. This survey further revealed a decline in work productivity as a result of the time taken to deal with cybervictimization, with an average of two working days of productivity lost owing to victims' preoccupation with the incident.

Current Approaches to Mitigating Problematic IT Use

The deleterious psychosocial and societal impacts brought about by problematic IT use have led a number of mental health professionals to develop and implement dedicated interventions. A multinational systematic review revealed cognitive behavioral therapy to be the most frequently adopted treatment for Internet gaming disorder (King et al., 2017). A more recent meta-analytic review further demonstrated the efficacy of cognitive behavioral therapy for alleviating the symptoms of such disorder and its associated depression and anxiety (Stevens et al., 2019). Another recent study expanded the scope of cognitive behavioral therapy by incorporating the techniques of humanistic therapy, such as empathy and acceptance (Torres-Rodríguez et al., 2019), with the results revealing such an expanded course of therapy to be

effective in (a) ameliorating the symptoms of Internet gaming disorder, (b) reducing the amount of time spent gaming, and (c) mitigating comorbid disorders such as depression and anxiety.

In addition to cognitive behavioral therapy, mindfulness meditation and reality therapy have also been found to attenuate the symptoms of Internet gaming disorder and reduce decisional impulsivity, which refers to the tendency to make risky decisions by favoring smaller immediate rewards over larger but postponed rewards (Yao et al., 2017). Instead of treating the problem of Internet gaming disorder holistically, another study focused on treating the specific symptom of cravings through psychoeducation and mindfulness training (Zhang et al., 2016). The findings showed that reducing clients' cravings for Internet use mitigated their symptoms of Internet gaming disorder.

Compared to Internet gaming disorder, interventions for risky online behavior have received less scholarly attention. Most intervention programs for risky online behavior have specifically targeted the mitigation of cyberbullying, probably due to the high prevalence of this type of risky online behavior (Gaffney et al., 2019). A recent meta-analysis revealed that school-based anti-cyberbullying interventions are generally effective, with notable decreases in cyberbullying perpetration and victimization observed after such strategies were implemented (Gaffney et al., 2019). Another review found that the most effective preventive interventions for cyberbullying are generally those that target not just a single but several social systems, including the peer group, family, school, and community (Ang, 2015).

Psychoeducation is a common intervention program for mitigating cyberbullying. For instance, one psychoeducation program for middle-school students was designed with reference to the theory of planned behavior (Wölfer et al., 2013). This program focused on strengthening students' social skills (e.g., perspective-taking), improving their online safety awareness (e.g., for online security options), introducing the legal risks and repercussions of cyberbullying, enhancing behavioral control, and providing protective strategies in the event of cyberbullying. This program was found to be effective in mitigating cyberbullying in schools.

Another psychoeducation program was developed and implemented for primary school students (Toshack and Colmar, 2012). In this program, children acquired knowledge about cyberbullying and its deleterious impacts, along with safety and management strategies for Internet use. Enhancing this kind of knowledge was found to reduce children's susceptibility to cyberbullying. Although these studies have indicated that cyberbullying interventions can reduce this particular type of risky online behavior, the number of studies is limited. Hence, additional research is needed to further inform future school and public policies (Wölfer et al., 2013; Gaffney et al., 2019). Furthermore, no intervention programs have been developed to date for other risky online behavior, such as exposure to online violent content and exposure to online pornography.

All of the aforementioned programs for Internet gaming disorder are indicated interventions, meaning that they target individuals who manifest early signs of, or have already developed symptoms of, a given psychological problem (see e.g., Haggerty and Mrazek, 1994). An indicated intervention is a major type of impact strategy that works to directly tackle the social problems associated with Internet gaming disorder. It differs from a universal intervention, which is applied to the general population rather than to a specific risky or risk-prone group. The latter strategy seeks to deter or delay the occurrence of symptoms, with the ultimate aim of preventing the initial development of Internet gaming disorder.

Proposal for a New Universal Approach to Prevent Problematic IT Use

Although practitioners generally believe that prevention is better than cure, our literature review indicates that the impact strategy of a universal intervention for preventing Internet gaming disorder has seldom been adopted. Prevention is especially important for this particular social problem because once excessive gaming has become addictive, a substantial amount of time and effort is necessary to overcome the addiction. Empirical evidence shows Internet gaming disorder to be characterized by long-term issues of withdrawal symptoms and relapse (Torres-Rodríguez et al., 2018). Hence, prevention measures should be introduced as early as possible to maximize their effectiveness. Food and Health Bureau (2017) strongly advocates for early intervention for mental health problems, as "the early stage of life presents an important opportunity to promote mental health and prevent mental disorders as up to half of mental disorders in adults surface before the age of 14" (p. 4). Hence, primary school students constitute the ideal intervention point for preventing Internet gaming disorder.

In response to this call for early intervention, our team designed a universal prevention program called Wise IT-use (WIT), which aimed at mitigating the symptoms of Internet gaming disorder and risky online behaviors in the general population of children. For our program, there were no screening of participants prior to program implementation; instead, we adopted a universal impact strategy targeting children without any symptoms of Internet gaming disorder, those at risk of such a disorder, and those who had already developed symptoms. A universal strategy was preferred for children because the incidence of Internet gaming disorder in children is much lower than it is for adolescents and adults (Paulus et al., 2018). Early intervention may be able to reduce the incidence rate or maintain it at a low level into adolescence and adulthood.

In our program design, we adopted the novel training approach of gamification, which has been proven to be effective in enhancing children's motivation and learning engagement (e.g., Dicheva et al., 2015). More specifically, our psychoeducation program encouraged the engagement of child participants with a series of play-based activities that convey messages about the undesirable consequences of Internet gaming disorder and risky online behavior. These activities also included practical methods for tackling such problems, including online safety measures and engagement in (offline) physical activities during leisure time. In addition, we incorporated flow theory (Nakamura and Csikszentmihályi, 2001) into our program design. Flow theory posits that the learning experience is maximized when learners' joyfulness is heightened and they are completely absorbed

by the learning activity, which also heightens their intrinsic motivation and active engagement in learning (e.g., Gauntlett, 2007). Immersion in a playful environment facilitates learning (e.g., Geithner and Menzel, 2016).

Adopting these theoretical learning approaches, our team constructed a gamified learning system—AIR (Assimilation, Interaction, Reflection)—to make learning playful, fun, and sustainable for child participants. The WIT program was designed on the basis of the three fundamental components of this system. For the assimilation component, learning principles and materials on safe and healthy online behaviors were designed to be "injected" or assimilated into games such that learners acquire knowledge while being immersed in the games. For the interaction component, students were encouraged to interact with and learn from one another through the play-based activities built in to the learning sessions. For the reflection component, the program ensured that students would be guided by facilitators through various activities that called on them to reflect on their previous online experiences. Such engagement and reflection facilitate deep learning and the long-term retention of knowledge (e.g., Geithner and Menzel, 2016).

Social Impact of Our Proposed Universal Approach to Prevent Problematic IT Use

The high prevalence of Internet gaming disorder makes it a particularly appropriate target for a universal preventive intervention intended to benefit a whole population, rather than just those subgroups or individuals identified to be at risk (Haggerty and Mrazek, 1994). Our proposed universal preventive intervention confers some advantages over indicated interventions. The social impact of our WIT program reflects its (a) low cost per beneficiary, (b) low risks arising from the intervention, (c) applicability to the entire population of the beneficiary group, and (d) effectiveness demonstrated by empirical evidence (Haggerty and Mrazek, 1994).

By adopting a universal preventive approach, the WIT program aimed to meet the needs of Hong Kong society. Food and Health Bureau (2017) urges that "universal prevention needs to be expanded, as nothing works better than reducing the incidence of disorders by preventing new cases from developing" (p. 99). The current demand for mental health services is elevated not only by the substantially increased number of mental health cases, but also by the heightened public awareness of mental health issues. Consequently, more individuals in need are seeking support from mental health professionals, accompanied by higher expectations for timely and effective mental health services (Food and Health Bureau, 2017). All of these factors exert huge pressure on public health service providers in Hong Kong.

To tackle the current surge in demand for mental health services, Food and Health Bureau (2017) acknowledges the impracticality of relying solely on specialist services to cope with the ongoing increase in mental health cases. Such an approach would impose an even heavier workload on specialists, reducing the time that could be dedicated to supporting each individual and thus inevitably decreasing the overall quality of mental health services. As a remedy, the bureau underscores the importance

of universal prevention for mental health, and has proposed further developments in this domain (Food and Health Bureau, 2017; Chan, 2019a). Indeed, universal prevention is fundamental to the "Three-Tier Stepped Care Model," constituting part of the "Tier-1 services," which "refer to universal prevention, early detection and intervention as well as mental health maintenance that are accessible by children, adolescents and their families in their everyday life through public education, parenting programs, promotional activities in the community or at schools" (Food and Health Bureau, 2017).

In response to the government's call, we developed the WIT program to achieve social impact by addressing the emergent needs of society and provide timely solutions to pressing societal issues deriving from problematic IT use and Internet gaming disorder. Our psychoeducation program was the first to incorporate both the gamification approach and flow theory into its design. Adopting these innovative approaches in the program design aimed to enhance the engagement of our beneficiaries, students at upper-primary school levels, in the intervention. The beneficiaries who took part in this program learned and practiced skills that fostered self-regulation, online safety, digital citizenship, and interpersonal communication. Through acquiring and applying such skills in their daily life, the goal was for these students to be able to maintain a healthy balance of Internet use and to bolster their mental well-being accordingly.

The effectiveness of our new program was evaluated by a social impact assessment through the use of quantitative methods. Specifically, the social benefits of our new program were measured in three ways: (a) prevention of the development of Internet gaming disorder through a decrease in the risk levels after program participation, (b) reduction of risky online behaviors, and (c) promotion of mental well-being. This study was thus conducted to empirically test these hypothesized effects of the WIT program. Specifically, we predicted that after students had taken part in our program, they would report fewer symptoms of Internet gaming disorder and less risky online behavior. We also expected them to experience better mental health, as indicated by higher levels of positive affect and lower levels of negative affect, social anxiety, and loneliness. If the program evaluation study yielded these desirable findings, we could conclude with confidence that the WIT program could be implemented in a larger number of schools to reach out to more beneficiaries, thus further broadening the program's impact on society as a whole.

MATERIALS AND METHODS

Participants and Design

Before the study began, we carried out an *a priori* statistical power test to estimate the number of participants required to detect a statistically significant effect. We used the commonly adopted power analysis software G*Power (version 3.1.9.2; Faul et al., 2009). The power analysis revealed that a sample size of 200 would have sufficient power to detect a medium effect size, with a Type I error probability (α) of 0.05 and a statistical power (β) of 95%. As our study included two time points, we

anticipated program attrition of around 20%, and thus recruited a larger sample to make sure the final sample size yielded adequate statistical power for hypothesis testing.

We recruited 248 students from four primary schools, each located in one of the major metro regions of Hong Kong (i.e., Hong Kong Island, Kowloon, New Territories East, and New Territories West). Letters containing details of the study were distributed to the parents of all students in these schools. Those parents who allowed their children to take part were asked to sign and return the consent forms before a specified time, normally 4 weeks before the first session of the program started.

Eligible students were those who returned parental consent forms and gave their own consent. More than half of the participants were boys (56%). The average age of the sample was 10.16 years ($SD = 0.97$), with a range of 7–13 years.

To evaluate the potential changes in Internet gaming disorder, risky online behavior, and psychological outcomes over time, we adopted a two-phase longitudinal design that allowed for within-participant comparisons to be made. The data collection sessions took place 1 month before (Time 1) and 2 months after (Time 2) the implementation of the WIT program. As some of the participating students were absent on one or both of the data collection days, 241 (58% boys) and 226 (55% boys) students completed the questionnaires at Time 1 and Time 2, respectively. As the WIT program had a duration of 3 months, the time span between these two data collection sessions was 6 months.

Measures of Social Impact

Symptoms of Internet Gaming Disorder

To assess the symptoms of Internet gaming disorder, we adopted the self-report version of the Korean Internet Addiction Proneness Scale (National Information Society Agency, 2011) because it is the only scale that has been specifically developed and validated for Asian children and adolescents to assess various types of IT addiction (e.g., Kim et al., 2014; Mak et al., 2017). For all 15 of the scale's items, we replaced the term "Internet use" with "video game playing." Sample questions included "After I am done playing video games, I want to play video games again" and "I failed to fulfill things I planned to do because of video game playing." The participants rated each item on a 4-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (4). The scale demonstrated adequate reliability at both time points in the current study (Cronbach's α = 0.75 and 0.82 for Time 1 and Time 2, respectively).

The participants were classified into three groups based on the coding scheme used by Mak et al. (2017): the "average gamers" group included participants with a score of 40 or below, the "at-risk gamers" group included those with a score from 41 to 43 inclusive, and the "high-risk gamers" group included those with a score of 44 or above. The coding procedures were conducted automatically using an SPSS macro program written by our team.

Risky Online Behavior

As no comprehensive measure of risky online behavior was available, we compiled a questionnaire to assess the six most common types of risky online behavior: cyberbullying perpetration, cyberbullying victimization, exposure to online pornography, exposure to online violent content, meeting strangers online, and sharing online data. Of the 31 items, 28 were extracted from the Risky Online Behavior Inventory developed by Chang et al. (2016), with the remaining three, which measure meeting strangers online, extracted from the survey protocol designed by Livingstone et al. (2011). Sample questions included "I share pictures of myself with a stranger I met online" and "I posted or texted a hurtful comment about an online photo or video of somebody else (for example, made fun of how they look)." For all 31 items, the participants were asked to rate the frequency with which they had engaged in the behavior on a 5-point Likert scale consisting of *never*, *rarely*, *sometimes*, *very often*, and *always*. The scale had a high degree of reliability at both time points (Cronbach's α = 0.90 and 0.94 for Time 1 and Time 2, respectively).

Positive and Negative Affect

The Positive and Negative Affect Schedule for Children – Short Form (Ebesutani et al., 2012) was used to measure both positive and negative affect. This scale was chosen because it is widely regarded as a short and strongly validated tool for assessing emotional well-being among children. It is composed of positive affect and negative affect subscales, both of which contain five items. Sample questions on the positive affect subscale include "happy" and "lively," sample questions on the negative affect subscale include "sad" and "afraid." The participants were instructed to describe the extent to which they have experienced each type of emotion during the past month along a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The Chinese version for children has been found to have the relevant psychometric properties (Pan et al., 2015). Both subscales were reliable across the two time points (Cronbach's α = 0.78 and 0.90 for Time 1 and Time 2, respectively).

Social Anxiety

Social anxiety was assessed using the revised version of the Social Anxiety Scale for Children (La Greca and Stone, 1993). We selected this scale because it is a popular validated Chinese measure of social anxiety developed for child participants. Sample questions included: "I'm quiet when I'm with a group of kids" and "I worry about what other children say about me." The measure comprised 10 items, which the participants rated on a 3-point Likert scale reflecting how true the given statement was for them. The reliability and validity of the Chinese version of the scale have been demonstrated previously (Li et al., 2006), and the scale also displayed good reliability at both time points (Cronbach's α = 0.89 and 0.94 for Time 1 and Time 2, respectively).

Loneliness

The Children's Loneliness Questionnaire (Asher et al., 1984) was adopted to measure the participants' feelings of loneliness and sense of social inadequacy, because it is the most frequently adopted validated tool for use with children. Sample questions included "I don't have anyone to play with" and "There's nobody I can go to when I need help." This questionnaire contained 16 items, and the participants indicated the extent to which they considered each statement to be true for them on a 5-point

Likert scale (from 1 = *not at all true* to 5 = *always true*). The Chinese version has been validated (Yue et al., 2014). In this study, the questionnaire's reliability was high at both time points (Cronbach's α = 0.90 and 0.90 for Time 1 and Time 2, respectively).

Demographic Information

At the end of the questionnaire, participants reported their sex, age, class, and class number. The class and class number were used to match the data collected at the two time points.

Universal Prevention Program

The WIT program lasted for 3 months. It consisted of online training and an onsite workshop. During the online training, the student participants were asked to complete a series of online modules on topics such as cybersecurity and digital citizenship. The training program contained three parts. In the first part, the prevalent problems of Internet gaming disorder and risky online behavior were introduced. Participants were then shown the unfavorable consequences of Internet gaming disorder and risky online behavior in the second part. In the final part, participants learned effective ways of combating these problems. All of the online training modules featured multimedia presentations, educational games and inter-class tournaments, animations, pop quizzes, and video discussions.

To consolidate the knowledge acquired in the online training modules and foster real-life knowledge application, a number of interactive learning games and activities were designed and delivered in an offline workshop. We considered it essential for student participants to actively apply what they had acquired in the online training modules in the games and activities conducted in the onsite workshop. Most of the participants applied their knowledge by engaging in gameplay and reported immense enjoyment during the learning process.

Procedures

The onsite training and data collection sessions were conducted in the schools from which the participants were recruited. Prior to training and data collection, the parents of all participants were provided with complete and detailed information on the study, and the participants and their parents provided consent prior to study commencement. The study protocol received prior approval from the Human Research Ethics Committee of the research team's university.

In the first data collection session (Time 1), a research assistant oriented the participants, encouraged them to be open about expressing themselves, and provided them with instructions on how to answer the questions using the rating scales. Special guidance was given to participants who had difficulties in reading, understanding the questions, or both. The participants were reassured that their data would be used strictly for research purposes and would not be shown to their family members or to any school personnel. All participants filled in a set of baseline questionnaires. Three to four weeks later, the participants attended a 3-month training program.

Two months after the training program (Time 2), participants were invited to attend a second data collection session during which they filled in the same set of questionnaires. The participants were debriefed at the end of the entire study and thanked for their participation.

Procedure for Preliminary Analyses and Social Impact Assessment

Before conducting a social impact assessment of the new WIT program, we performed preliminary analyses to explore the potential demographic differences. An independent-samples *t*-test was used to detect possible sex differences, and Pearson product-moment correlation analysis was performed to detect possible age differences. If demographic differences were found, separate analyses would be conducted for each demographic group. In addition, Pearson product-moment correlation analysis was used to indicate the magnitude of the inter-relationships among the study variables.

For the social impact assessment, we adopted the following statistical methods to evaluate the social impact of the WIT program. We first evaluated whether our new program could prevent Internet gaming disorder by detecting the presence of changes in levels of risk before and after the program. Using the scores derived from the measure of Internet gaming disorder, participants were classified into "average gamers," "at-risk gamers," or "high-risk gamers" according to a scoring scheme for Asian youngsters (Mak et al., 2017). Their scores at Time 1 and Time 2 were compared to identify any changes in group membership, and the significance of such changes was determined via Pearson's chi-square tests. These tests were used due to their appropriateness for analyzing group membership, given that it was a quantitative nominal variable (Everitt and Wykes, 1999). In these tests, our program's social impact would be reflected by a significant increase in the proportion of participants in the "average gamers" group.

We then evaluated whether our new program could reduce the symptoms of Internet gaming disorder and risky online behavior while enhancing mental well-being. To attain this goal, a paired-samples *t*-test was used to assess any significant changes in the scores of the study variables from Time 1 to Time 2. We performed this type of *t*-test because it was the most powerful method for detecting hypothesized within-participant variations between two assessments of quantitative continuous variables measured at different time points (Zimmerman, 1997). The social impact of this program would be indicated by significant reductions in levels of symptoms of Internet gaming disorder, risky online behavior, negative affect, social anxiety, and loneliness, as well as an increase in levels of positive affect over time.

Finally, Pearson product-moment correlation analysis was also used to examine the association between the baseline (Time 1) and follow-up (Time 2) scores for all of the study variables. This analysis was chosen because it was deemed the most stable measure of interdependence among the set of quantitative continuous variables (Gay et al., 2011), offering a direct assessment of the extent to which the variables were associated with each other. The program's social impact would be shown by significant longitudinal changes in the

expected directions. All of these analyses were performed using SPSS Version 23.0.

RESULTS

Preliminary Analyses

Independent-samples t-tests revealed no significant differences in responses to the study variables according to respondents' sex and none were significantly correlated with age ($ps > 0.05$). Hence, the major analyses were performed on the pooled sample. **Table 1** presents the descriptive statistics of the study variables assessed at both time points.

Table 2 summarizes the results of the zero-order Pearson correlations for the pooled sample. As shown in **Table 2**, symptoms of Internet gaming disorder and risky online behavior were both positively associated with negative affect and social anxiety at Time 1 ($rs > 0.20$, $ps < 0.002$). At Time 2, they were both positively related to negative affect, social anxiety, and loneliness ($rs > 0.20$, $ps < 0.004$), and inversely related to positive affect ($rs = -0.29$ and -0.18, $ps < 0.009$).

These findings, which were replicated at both time points, are in line with our hypothesis that symptoms of Internet gaming disorder and risky online behavior would tend to compromise the mental health of primary school students.

Social Impact Assessment of the WIT Program

We first assessed the social impact of our new WIT program by examining the changes in the risk of Internet gaming disorder from before (Time 1) to after (Time 2) program participation. We first examined its risk rate before the participants attended the training program (Time 1). According to the aforementioned scoring scheme, 91, 6and 3% of the participants were categorized as "average gamers," "at-risk gamers," and "high-risk gamers," respectively. Then we examined its risk rate after attending the training program (Time 2) to make a comparison of the risk rate between the two time points. A noteworthy result is

that 6 months later, the proportion of participants categorized as "average gamers" increased from 91% to 95%, whereas the proportion of those in the "at-risk gamers" group declined from 6% to 2%. However, the proportion of participants classified as "high-risk gamers" remained the same (3%) across the two time points. These changes in group membership are depicted in **Figure 1**. The chi-square test results revealed these changes to be significant, $\chi^2(4) = 42.89$, $p < 0.0001$.

A more refined crosstabs analysis further revealed that of the 14 participants classified as being at risk of Internet gaming disorder prior to program participation, 12 were categorized as "average gamers" after participation, with only 2 remaining at risk. Taken together, these results provide some empirical support for the efficacy of our newly developed prevention program in shrinking the group at risk for Internet gaming disorder across the period.

We further assessed the social impact of our program by detecting changes in the trajectory of levels of symptoms and mental well-being from before (Time 1) to after (Time 2) program participation. The paired-samples t-test results similarly indicated that the levels of Internet gaming disorder symptoms significantly decreased from Time 1 to Time 2, $t(203) = 5.16$, $p < 0.0001$. However, the reduction in the levels of risky online behavior was only marginally significant across the period, $t(205) = 1.72$, $p = 0.09$.

Finally, to assess the WIT program's social impact in relieving the symptoms of Internet gaming disorder and boosting mental well-being, the Pearson correlation analyses further showed that having fewer symptoms of Internet gaming disorder at Time 1 predicted lower levels of negative affect and social anxiety at Time 2 ($rs = 0.21$ and 0.25, respectively, $ps < 0.002$) and a higher level of positive affect at Time 2 ($r = -0.15$, $p = 0.03$), and vice versa. Moreover, the exhibition of less risky online behavior at Time 1 was found to predict lower levels of negative affect and higher levels of positive affect at Time 2 ($rs = 0.20$ and -0.19, respectively, $ps < 0.005$), and vice versa.

In summary, these results indicate the social impact of our newly developed WIT program in mitigating symptoms in students at risk of Internet gaming disorder, albeit not for those at high risk. The lack of significant changes in symptom reduction for the high-risk group may be ascribed to the program's nature, as our program was designed with a preventive focus rather than as an intervention for the treatment of Internet gaming disorder. Our program evaluation study thus provides some empirical evidence for the effectiveness of the WIT program in reducing the risks of Internet gaming disorder for the majority of Chinese primary school students. The results show that the WIT program is conducive to eliciting positive changes in the mitigation of symptoms of Internet gaming disorder, and provide empirical evidence for the social impact of the program in promoting mental and interpersonal well-being.

DISCUSSION

The results of the social impact assessment demonstrate that our newly developed WIT program is beneficial for the

TABLE 1 | Descriptive statistics of all the study variables at the two time points.

Study variable	Mean	SD
T1 IGD symptoms	31.69	6.42
T1 risky online behavior	7.82	2.07
T1 positive affect	17.19	4.97
T1 negative affect	8.78	3.71
T1 social anxiety	15.46	4.96
T1 loneliness	37.12	7.22
T2 IGD symptoms	29.31	7.47
T2 risky online behavior	7.50	2.18
T2 positive affect	17.85	5.59
T2 negative affect	9.24	4.55
T2 social anxiety	15.36	5.41
T2 loneliness	38.69	9.51

IGD = internet gaming disorder; T1 = time 1; T2 = time 2.

TABLE 2 | Zero-order correlation coefficients among study variables.

Study variable	2	3	4	5	6	7	8	9	10	11	12
1. T1 IGD symptoms	0.39**	−0.06	0.29**	0.31**	0.19**	0.53**	0.34**	−0.15*	0.21**	0.25**	0.13
2. T1 risky online behavior	–	−0.07	0.25**	0.20**	0.10	0.28**	0.42**	−0.19**	0.20**	0.13	0.06
3. T1 positive affect		–	−0.12	−0.09	0.09	−0.14*	0.04	0.60**	−0.10	−0.11	0.07
4. T1 negative affect			–	0.36**	0.17**	0.31**	0.20**	−0.24**	0.49**	0.21**	0.17*
5. T1 social anxiety				–	0.27**	0.27**	0.22**	−0.09	0.38**	0.56**	0.25**
6. T1 loneliness					–	0.12	0.26**	0.01	0.20**	0.13	0.23**
7. T2 IGD symptoms						–	0.34**	−0.29**	0.35**	0.32**	0.15*
8. T2 risky online behavior							–	−0.18**	0.29**	0.25**	0.20**
9. T2 positive affect								–	−0.22**	−0.06	0.14*
10. T2 negative affect									–	0.36**	0.23**
11. T2 social anxiety										–	0.38**
12. T2 loneliness											–

*IGD = internet gaming disorder; T1 = time 1; T2 = time 2. *p < 0.05. **p < 0.01.*
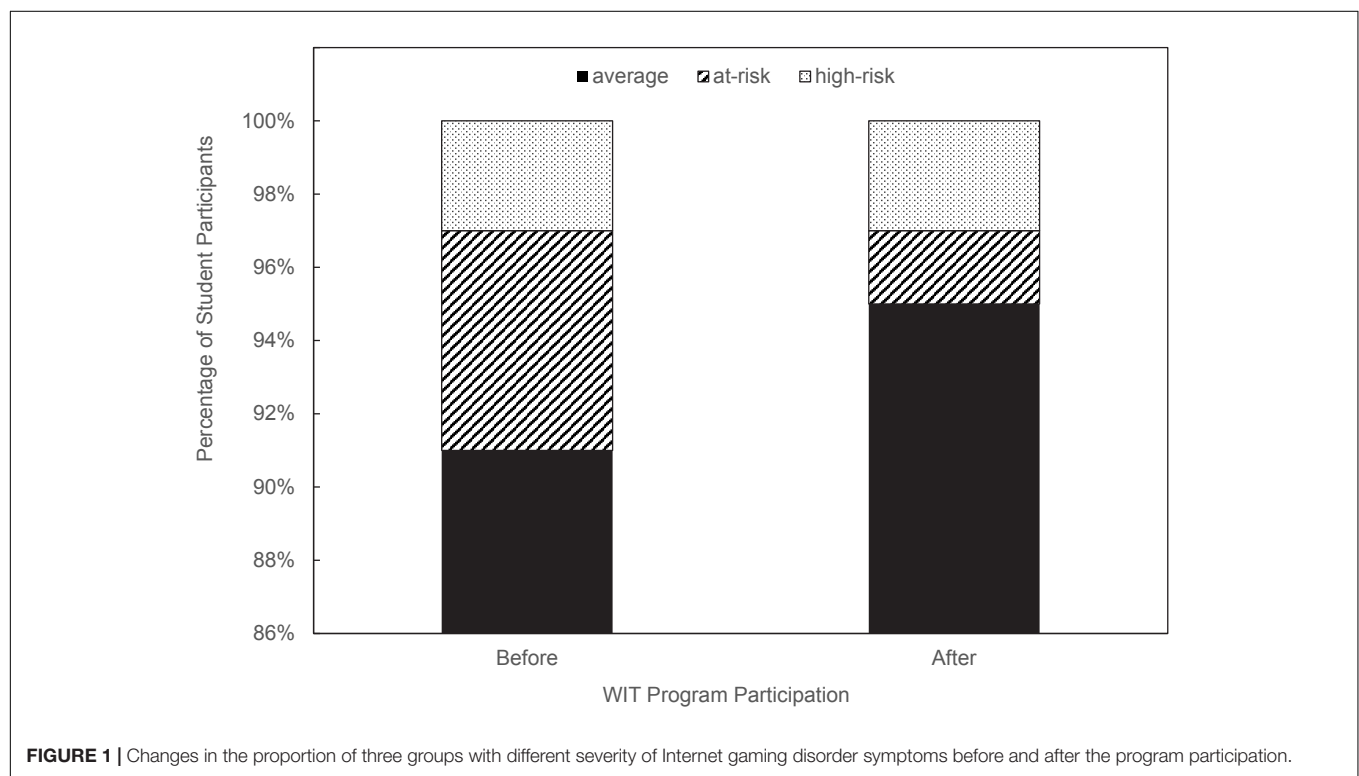
FIGURE 1 | Changes in the proportion of three groups with different severity of Internet gaming disorder symptoms before and after the program participation.

stakeholder group of Chinese primary school students. The social impact of this program received empirical support demonstrating its effectiveness in (a) shrinking the group at risk for Internet gaming disorder, (b) mitigating the symptoms of Internet gaming disorder among primary school students over a 6-month period, and (c) bolstering students' emotional well-being through increasing levels of positive affect while decreasing levels of negative affect across the same period.

Our findings corroborate the results of previous studies, which have indicated that reduced problematic IT use is related to mental health improvement (e.g., Ceyhan and Ceyhan, 2008; Mei et al., 2016). Taken together, these findings indicate the

promising psychological impact of the newly developed program on promoting emotional well-being among primary school students, as the alleviation of problematic IT use mitigates the risks of its comorbid conditions (e.g., depression) and reduces susceptibility to lower levels of self-control and self-esteem, and poorer well-being outcomes (e.g., Ceyhan and Ceyhan, 2008; Mei et al., 2016).

Evaluation of Program Effectiveness at Three Levels of Prevention

To tackle the societal problems of prevalent problematic IT use and the escalating demands of mental health services,

we designed a universal prevention program targeting the general population of primary school students, most of whom had a low to moderate risk of developing Internet gaming disorder. Our prevention program was designed to supplement previous intervention studies, which have focused primarily on tackling mental health issues in individuals who have already developed Internet gaming disorder while neglecting those at risk of the disorder who have manifested some symptoms but not yet developed the condition. As previously noted, the pattern of our findings parallels that of studies examining individuals diagnosed with the disorder. Such empirical consistency indicates that the detrimental mental health and interpersonal consequences of Internet gaming disorder are not limited solely to individuals who have developed the disorder, but are found across a broad spectrum of risk profiles, ranging from very low to very high susceptibility to Internet gaming disorder.

Our study provides evidence indicating that the WIT program is an efficacious universal intervention strategy for both primary and secondary prevention. At the primary level, where the aim is to reduce new incidences of a public health problem (Haggerty and Mrazek, 1994), the program's effectiveness is substantiated by the post-program increase in the proportion of low-risk students in the current evaluation study. At the secondary level, where the aim is to halt any further increase in established cases of the problem (Haggerty and Mrazek, 1994), the program's effectiveness is shown by the drop in the proportion of at-risk students. More specifically, those students initially identified as being at risk of developing Internet gaming disorder generally have a low risk after participating in the program.

Despite its effectiveness at both the primary and secondary prevention levels, the WIT program's psychological benefits are less obvious at the tertiary level, where the aim is to mitigate the symptoms of an existing public health problem (Haggerty and Mrazek, 1994). To elaborate, in the present study the proportion of high-risk students remained the same before and after the program. This unexpected finding is attributable to the preventive nature of our program design. The preventive strategies adopted in the program may be less efficacious for treating Internet gaming disorder because addictive habits require a substantial amount of time and effort to change. Previous systematic reviews have indicated that treating withdrawal symptoms (e.g., restlessness and irritability) and preventing the relapse of Internet gaming disorder require long-term intervention, warranting continuous assessment of the problem and its remission (King and Delfabbro, 2014; Kaptsis et al., 2016). Accordingly, a more comprehensive public health promotion program should incorporate both the WIT prevention program and some existing intervention programs, with the former targeting individuals who may develop Internet gaming disorder and the latter targeting those who have already developed the disorder.

Social Impact of the WIT Program

The universal approach adopted by our WIT program is conducive to serving a general student population with a relatively wide range of vulnerabilities to Internet gaming disorder, and the program also displays practical utility in exerting a social impact on mental health promotion. As Internet gaming disorder is comorbid with depression, anxiety, attention deficit disorder, and alcohol abuse (Ho et al., 2014), reduced incidences of the disorder are valuable for mitigating these psychosocial and behavioral problems, in turn decreasing the demands on mental health services and the related public expenditures.

Impact on Mental Health Service Demand and Related Public Expenditures

Mental health professionals in Hong Kong face immense workloads and work-related pressures, with a ratio of 1 mental health professional to 50 clients with mental illness (Chan, 2019b). This undesirable ratio is largely attributable to the constant escalation in mental health problems over recent years. This escalation is particularly prominent among Hong Kong youths, whose incidence of mental health problems increased by over 50% from 2011 to 2016 (Food and Health Bureau, 2017). Despite the surge in demand for mental health services, the number of psychiatrists and community psychiatric nurses increased by only 3 and 4%, respectively, during the same period.

Long waiting times for treatment are an inevitable consequence of this inflated demand in the face of a shortage in the supply of mental health services. The average waiting time for various child and adolescent psychiatric services increased by 38% over the 2011–2016 period (Research Office of the Legislative Council Secretariat, 2017). Clients and families in need of treatment services often experience considerable distress during the long waiting period. By lowering the incidence of Internet gaming disorder and its related problems, our WIT program can help tackle the long waiting times currently faced by many young Hong Kong clients and their families.

The surging demand for professional services has also generated higher medical costs. In the 2013–2014 financial year, for example, public expenditure on mental health services stood at HK\$3.8 billion, increasing to approximately HK\$5.1 billion just 5 years later (Chan, 2019a). However, even this markedly elevated expenditure is failing to keep pace with the sharp rise in the demand for mental health services. Providing sufficient services to fully meet that demand would require a substantial increase in public expenditure.

In this light, the primary and secondary prevention strategies adopted by our WIT program are of great practical value in terms of cost-effectiveness. Cost-benefit analyses of mental health services generally indicate that primary and secondary prevention strategies are relatively cost-effective (Harper and Balch, 1975; Barry et al., 2009), as their implementation costs are typically much lower than those of interventions at the tertiary level (Springer and Phillips, 2007). Other findings similarly show that secondary prevention strategies restrict the surge in new cases of psychological problems, which in turn decreases overall expenditure and the need for costlier interventions such as psychotherapy (Durlak and Wells, 1998). These broader benefits of universal programs for the prevention of mental health problems

are important, as cost-effectiveness is a crucial criterion for evaluating the feasibility of implementing mental health prevention strategies (e.g., Haggerty and Mrazek, 1994; O'connell et al., 2009).

Impact on Various Ecological Systems to Foster Children's Psychosocial Development

To compile a best practice report for public mental health promotion, it is important to consider the interactions among different ecological systems to meet emergent societal needs. A recent review advocates that "using Bronfenbrenner's ecological system concepts by clearly considering interactions between and within these systems can result in recommendations that are most useful for guiding public mental health policy and practice" (Eriksson et al., 2018, p. 414). In this light, we propose a system-wide implementation of the WIT program that encourages interactions among various ecological systems (Bronfenbrenner, 2009), at the microsystem (i.e., family and school) and mesosystem (i.e., interconnections between family and school) levels.

Apart from serving students, our WIT program could be expanded to engage teachers and parents. Such an expansion in the scope of the WIT program would incorporate the principles of "scaffolding," a form of educational practice derived from the sociocultural theory of learning (Gibbons, 2002). Adopting the scaffolding approach, teachers and parents could assist students in the psychoeducation components and activities of our program in an "interactive system of exchange" (Wood et al., 1976, p. 99), enabling students to achieve what is beyond their current ability or what they cannot achieve by themselves (Bakker et al., 2015). Endowing these two stakeholder groups with public health knowledge would invite greater school involvement and augment the ability of parents to strengthen their children's psychosocial competence.

To attain these goals, teachers could receive training in how to run the WIT program in their schools, thus allowing the program to reach successive cohorts of student beneficiaries. In addition to the formal program, school administrators could also incorporate healthy Internet use into their school curricula; for instance, regular classes could include discussions on such topics as healthy Internet use and ways of managing risky online behaviors. Parents could also be equipped with knowledge to foster the effective monitoring of their children's Internet use and gaming behavior, and the provision of Internet safety guidance at home.

More broadly, the WIT program may confer further constructive social impacts at the macrosystem level (i.e., culture). As the Internet is intrinsically entwined with culture (e.g., Manovich, 2003; Porter, 2013), the WIT program's advocacy for reducing problematic IT use and gaming may help to promote positive changes in youth culture. Children and adolescents are "digital natives" who were born into and grew up in a world of IT devices (Teo, 2013), and gaming-related problems are particularly serious for this cohort (Wang et al., 2019). Reducing problematic IT use and gaming would thus free up more time for youngsters to engage in alternative activities in offline contexts with real-life social network members, such as family members and classmates.

The amelioration of problematic Internet behavior may also facilitate the attenuation of "toxic technocultures;" that is, contemporary cultures of anonymous Internet gangs who gather online to harass persons with particular demographic characteristics, such as ethnic and sexual identities (Massanari, 2017). The WIT program endows student participants with opportunities to discuss and reflect on the harmful consequences of toxic cultures for both victims and bullies, and encourages them to stay away from such online groups and forums so as to maintain healthy Internet use, responsible digital citizenship, and good mental health.

RESEARCH CAVEATS, FUTURE DIRECTIONS, AND CONCLUDING REMARKS

Before drawing our conclusions, it is important to raise some caveats about the findings obtained in this pilot study and suggest directions for future research. First, the beneficiaries of our new prevention program were confined to a relatively homogenous group of primary school students residing in Hong Kong. As the resources for this pilot study were limited, the school sample was selected from our team's list of strategic partners, and participation was entirely voluntary. Once the practical utility of our new program has been established, our team intends to seek extended grants and resources to expand the scope of our community service and research to a much larger pool of schools. To reach out to a greater variety of schools that are more representative of the population, an ideal school sample should be derived from probability sampling based on districts rather than broad regions of Hong Kong (Som, 1995).

With the empirical support provided by the present study, the WIT program can be further implemented with the involvement of additional stakeholder groups. Extension of the program may involve the family and school systems (through, for example, psychoeducation sessions for parents and teachers in addition to students) in Internet gaming disorder prevention to further benefit vulnerable groups of youngsters. Such an extension would be based on the influential role played by parents and teachers in children's learning through "scaffolding," a teaching and learning approach to strengthen socio-emotional learning (e.g., monitoring processes) and the psychosocial competence of children (e.g., Gennari et al., 2017; Näykki et al., 2017). Moreover, studies have documented that parental involvement in Internet gaming disorder functions to reduce children's symptoms of Internet gaming disorder as well as alleviate their gaming-related problems (e.g., Li et al., 2019; Pellerone et al., 2019). Furthermore, extending the WIT program to the school system could help to tackle some of the psychosocial risk factors of Internet gaming disorder, such as poor school connectedness, academic stress, and adverse classmate relations, all of which exacerbate problematic IT use among adolescents (e.g., Li et al., 2013; Wang et al., 2011).

The present social impact assessment yielded encouraging findings for the short- to medium-term benefits conferred by the new WIT program. However, individuals at a high risk of gaming disorder experience the withdrawal symptoms and relapses pertinent to the condition (e.g., Pontes et al., 2014; Kaptsis et al., 2016). A longer assessment period is thus desirable for identifying the possible development of relapse, as the DSM-5 classification of Internet gaming disorder specify that its symptoms must be present for a 12-month period to qualify for a diagnosis (American Psychiatric Association, 2013). Therefore, the length of time covered by the current study may be inadequate for the purpose of tracking the progression and potential re-emergence of this disorder. In the long term, it would be worthwhile to evaluate the therapeutic benefits conferred by our program for a longer period, such as 12 to 36 months, allowing for a more sophisticated investigation of the potential problems of relapse and remission for participants who have shown initial improvement after their program participation (King and Delfabbro, 2014; King et al., 2017). If such a long-term study is not feasible, researchers may use available data to assess the recurrence of symptoms of Internet gaming disorder, with the caveat of the short timeframe (King and Delfabbro, 2014).

To conclude, the WIT program is a universal prevention program developed in response to the Hong Kong SAR government's call for mental health service provision with reference to contemporary societal needs, specifically the current prevalence of Internet gaming disorder and the escalation in mental health problems among young people. This evaluation study demonstrates that our newly developed program exerts a desirable social impact by mitigating the risks of Internet gaming disorder, along with its concomitant symptoms, and promoting mental wellness among primary school students over time. As a newly proposed program for universal prevention, the evidence-based WIT program has the potential to contribute to the enhancement of dedicated public health services for Internet gaming disorder and to enrich technocultures and educational practices that promote the furtherance of social welfare and the quality of life of young people.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Human Research Ethics Committee of the University of Hong Kong. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

AUTHOR CONTRIBUTIONS

C-LC and CC contributed to the conception and design of the study. CC coordinated the data collection process. C-LC and YT conducted the literature review. YT and CC performed the statistical analysis and wrote the sections of the manuscript. C-LC wrote the first draft of the manuscript. All authors contributed to the editing and revision of the manuscript, and approved the submitted version.

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Effectiveness of a Prevention Program for Gender-Based Intimate Partner Violence at a Colombian Primary School

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Intimate partner violence, particularly against women, is widely studied owing to its high rates, based on transnational data. Colombia, where this form of violence is considerably common, is no exception, and such violence is occurring more and more often in increasingly younger couples (10—14 years old). Further, risk factors such as wide acceptance, the justification of intimate partner violence, extremely rigid traditional gender roles, and poor socio-emotional skills play a crucial role. In accordance with this reality, a gender-based intimate partner violence prevention program was designed, implemented, and evaluated for primary school children in Colombia based on a review of successful preventive programs and an identification of the main predictors of intimate partner violence. The program was evaluated using a quantitative study with a quasi-experimental design that included an experimental and a control group. In total, 344 participants were involved in the study: 195 boys (56.7%) and 149 girls (43.4%) from the second and third grades of a primary school (average age: 7.8 years) at a Colombian educational institution. The experimental group consisted of 200 participants and the control group of 144 participants. The program's effectiveness was evaluated by measuring three groups of variables (gender stereotypes, the acceptance of violence, and socio-emotional skills) using reliable scales. To analyze the program's effectiveness, mixed ANOVAs with a within-subjects factor (when the group was measured), two between-subjects factors (group and gender), and a covariate (age) were used. The results showed that the participants in the experimental group had lower scores in gender stereotypes, acceptance of peer aggression, and acceptance of physical violence against women compared to the control group. Conversely, they had higher scores in affective empathy after the intervention; both groups showed no significant differences before the intervention. This program is highly relevant because it has proven to have a positive impact on the participants and is innovative due to the lack of preventive programs that have been implemented in primary education and evaluated within the Colombian context.

Keywords: intimate partner violence, prevention, middle childhood, primary education, gender stereotypes, socio-emotional skills

INTRODUCTION

Intimate partner violence, particularly against women, is a notably common problem across several countries (Pan American Health Organization [PAHO], 2003). In Colombia, specifically, multiple factors contribute to intimate partner violence: the country suffers high rates of intimate partner violence in a variety of forms, particularly against women (according to the National Institute of Legal Medicine and Forensic Sciences, 2019), with 49,669 cases of intimate partner violence reported in 2018, of which 86% were against women.

Similarly, intimate partner violence is occurring in increasingly younger couples and in those who live separately. According to the National Institute of Legal Medicine and Forensic Sciences (2019), cases have been reported in couples with ages ranging from 10 to 14 years old (95 cases in 2016, 89 cases in 2017, and 73 cases in 2018) and from 15 to 17 years old (1,397 in 2016, 1,342 cases in 2017, and 1,217 in 2018), and primarily among domestic partnerships and single women (45.6 and 45.5%, respectively). In relation to this, romantic relationships begin at an early age in Colombia (10−14 years old), leading to teenage pregnancies and an increased risk of experiencing intimate partner violence during adulthood (Observatory on Gender Affairs, 2012; Economic Commission for Latin America and the Caribbean, 2015; National Administrative Department of Statistics, 2016).

The Current Situation Regarding the Prevention of Gender-Based Intimate Partner Violence in Colombia

Currently, according to the Pan American Health Organization [PAHO] (2014), the only strategy whose scientific evidence demonstrates its effectiveness in preventing intimate partner violence is the implementation of school programs on the prevention of violence in relationships. Notwithstanding, the lack of programs aimed at preventing intimate partner violence in the educational environment plays a crucial role. In Colombia, only two programs aimed at implementing and evaluating the prevention of intimate partner violence in adolescence were found: the Martínez (2014) program and the Constructive Romantic Relationships Program (RRC, for its Spanish acronym), by Gómez (2014). Both programs proved to be effective in preventing partner violence in Colombian adolescents. This highlights the educational context as an enabling environment which has a bearing on the risk factors that cause violence.

However, taking into account that the mean age at which a romantic relationship begins in Colombia is younger than in other countries (Economic Commission for Latin America and the Caribbean, 2015) and the existence of reports of partner violence at 10–14 years old (National Institute of Legal Medicine and Forensic Sciences, 2019), there is a clear need to initiate preventive interventions before the onset of adolescence. In this regard, only one program focused on the prevention of gender violence was aimed at primary school students [the *Machismo no es destino* program (Fernández and Ayllón, 2014)]. While it should be noted that this program was proposed as a product of previous research evidencing sexist beliefs and tracking the presence of negative male models on Mexican boys and girls of 8 to 13 years of age (Vargas and Fernández, 2011; Bailón et al., 2013), unfortunately no evaluation of its efficacy was conducted.

Conversely, there is significant demand for the development of preadolescent intimate partner violence prevention programs (Gorrotxategi and de Haro, 1999; Segato, 2003; Alonso and Castellanos, 2006; UN Agency for Refugees – UNHCR, 2008; Fernández and Ayllón, 2014; Valle, 2015). After conducting a comprehensive review of relevant studies, no specific prevention program for primary school students has been found at the international level. All interventions were aimed at adolescents and young adults (e.g., Jaycox et al., 2006; Schwartz et al., 2006; Wolfe et al., 2009), and yet none at primary school students. Some programs were focused on gender inequality and gender roles at primary education, however gender or partner violence were not a central aspects of the program (e.g., Rainey and Rust, 1999). As a consequence, a new intervention had to be developed. The question at this point was how to select the contents of an effective program.

The Development of a Program for the Prevention of Partner Violence in Primary Education

In order to develop a new intervention, four sources were considered of paramount importance: (1) developmental determinants, present before the age of 10, of partner violence in adolescence and/or adulthood; (2) determinants of partner violence in adolescence, the next and most proximal developmental stage; (3) contents of effective partner violence prevention programs in adolescence; and (4) theoretical models which explain partner violence.

With respect to the developmental determinants of partner violence in adolescence and/or adulthood present before age 10, the systematic review of 25 longitudinal studies conducted by Costa et al. (2015) has found as predictors of domestic violence (defined as violent acts between adult intimate partners, and can include physical, sexual, emotional and/or psychological abuse) perpetration and/or victimization related to child and adolescent abuse experiences (e.g., substantiated physical abuse before age six –Linder and Collins, 2005–), family of origin risks (e.g., weak attachment to parents and poor quality of family relationships – Magdol et al., 1998–), and behavioral problems (aggressive and antisocial behavior –Magdol et al., 1998–), and less consistently, sociodemographic risks (e.g., low socio-economic status in the family of origin). As for adolescence, the same aspects were found to be associated with domestic violence.

Likewise Farrington et al. (2017) conducted a review of 42 systematic reviews and meta-analyses (16 of them specifically focused on dating and partner violence), identifying the following risk factors for intimate partner violence: masculine gender-role stress (Baugher and Gazmararian, 2015), child abuse (Fry et al., 2012), peer risk factors (Garthe et al., 2017), childhood experiences of violence (Smith-Marek et al., 2015), economic stress, male dominance, male privilege (West, 2016),

aggressive/antisocial peer behavior and dating violence (Garthe et al., 2017), and in general terms for the explanation of violence they found child abuse and the low empathy as significant individual risk factors.

Both reviews with different age groups, which also coincide with the determinants of violence among intimate adult partners, highlight the presence of differing experiences of violence or aggression, the acceptance of gender roles and gender stereotypes, and socioemotional competence like empathy as determinants of partner violence. With regard to experiences of violence and/or aggression, Colombia is one of the countries with the highest level of violence at a cultural level which has also been linked to increased levels of violence in other spheres such as romantic relationships (Noe and Rieckmann, 2013). One of the possible consequences of being in contact with violence is its normalization. A partner violence prevention program in primary education should therefore address attitudes toward partner violence because it has been identified as a key factor for primary prevention due to the significant relationship it has with aggressive partner behaviors among adolescents and young adults (Slep et al., 2001; Wolfe et al., 2004; Taylor and Mouzos, 2006; Próspero, 2007; Sears et al., 2007; Machado et al., 2009; Abramsky et al., 2011; Muñoz-Rivas et al., 2011). Given that risks have also been found among adolescent peer groups as significant predictors of intimate partner violence, addressing attitudes toward peer violence should also be incorporated into a preventive program.

Previous research also suggests that there are gender-related risk factors associated with intimate partner violence; in this way, gender roles and stereotypes are accepted, as well as a rigidity in the definitions of masculinity and femininity and a notion of masculinity based on authority, domination, honor and aggression (Foshee et al., 1998, 2004; Mahlstedt and Welsh, 2005; Aumman, 2006; Ferrer et al., 2006; Sears et al., 2007; González-Ortega et al., 2008; White and Smith, 2011; Shen et al., 2012); at the sociocultural level there is gender inequality, the sexual division of power and labor (Heise et al., 1999), socialization in patriarchal cultural norms (Dutton and Golant, 1997; Turinetto and Vicente, 2008) and a lack of visible female role models (Echeburúa and Fernández-Montalvo, 1998; Aumman, 2006). Thus, gender roles and stereotypes must also be addressed in prevention interventions.

Finally, socioemotional competencies also play an important role. Deficiencies have been found in empathy, both in the cognitive and affective dimensions (Echeburúa et al., 2009, 2010; Boira and Tomas-Aragonones, 2011; Romero-Martínez et al., 2013, 2016; Echeburúa and Amor, 2016) as well as in the expression and understanding of the emotions of perpetrators of partner violence (Winters et al., 2004; Quinteros and Carbajosa, 2008; Boira, 2010; Boira et al., 2013). This deficiency is the root cause of the use of violence against romantic partners. In this sense, it has been suggested that the psychological construct of emotional intelligence can help clarify which mechanisms are needed to increase male awareness of intimate partner violence against women (Bosch and Ferrer, 2013). In addition, empathy has also been considered as a necessary skill for providing social support to victims (i.e., Sugarman and Hotaling, 1997; Weisz

et al., 2007). Several authors likewise suggest that low self-esteem represents a risk factor for becoming a victim or perpetrator of intimate partner violence (Stith and Farley, 1993; Echeburúa and Fernández-Montalvo, 1997, 1998; Kesner et al., 1997; Sharpe and Taylor, 1999; Aumman, 2006; Santandreu et al., 2014).

Interestingly, addressing attitudes toward violence, gender roles and stereotypes, and socio-emotional competencies has been central to previous programs for the prevention of intimate partner violence in adolescence and youth. Programs addressing (1) attitudes toward partner violence can be seen in Jaffe et al. (1992), Lavoie et al. (1995), Avery-Leaf et al. (1997), Weisz and Black (2001), Schwartz et al. (2006), Alexander et al. (2014), Miller et al. (2014), Hines and Palm Reed (2015), McLeod et al. (2015), and Velasco (2015), as well as other programs developed by Díaz-Aguado and Martínez-Arias (2001), Hernando-Gómez (2007), Muñoz-Rivas (2010), Póo and Vizcarra (2011), and Fernández (2013); (2) gender stereotypes, sexist beliefs and attitudes and negative gender attitudes in adolescence and young adulthood in Foshee et al. (1998), Foshee et al. (2000), Foshee et al. (2004), Rainey and Rust (1999), Díaz-Aguado and Martínez-Arias (2001), Schwartz et al. (2006), Miller et al. (2014), and Velasco (2015); and (3) socioemotional competences such as self-esteem in Josephson and Proulx (1999) and Mateos-Inchaurrondo (2013), empathy in Hines and Palm Reed (2015), emotional intelligence in Murta et al. (2013), and emotional skills in Wolfe et al. (2009). Although all these programs have been implemented from adolescence onwards, the promotion of negative attitudes toward violence and gender inequality, and socioemotional learning are all aspects of paramount importance for children in primary education (Durlak, 1997; Durlak et al., 2010, 2011; Rimm-Kaufman and Hulleman, 2015).

Drawing on the above, this study is founded on the notion that intimate partner violence is multicausal as evidenced. As such, the theoretical framework is based on multicausal models (Riggs and O'Leary, 1989, 1996; Stith and Farley, 1993) and the integration of the ecological model (Ravazzola, 1997; Heise, 1998; Sluzki, 1998), the gender perspective (Olivares and Inchaustegui, 2011; White and Smith, 2011), the socio-emotional learning model (CASEL, Weissberg et al., 2015) and the multi-causal models (Riggs and O'Leary, 1989, 1996; Stith and Farley, 1993).

In view of the aforementioned, the main of objective was to design, implement, and evaluate a program for the prevention of gender-based intimate partner violence oriented at primary school children within the context of Colombia. Age was considered as a covariate due to the significant differences in cognitive development and knowledge acquisition among the different primary education courses (Fischer and Bullock, 1984). Gender was also taken into consideration given the existence of previous evidence pointing to gender differences in the flexibilization of gender stereotypes (Smetana, 1986; Henshaw et al., 1992; Signorella et al., 1993; Fernández-Rouco et al., 2019), the acceptance of aggression and the type of aggression used (Askew and Ross, 1991; Crick et al., 1997; Subirats and Tomé, 2007), empathy (Tobari, 2003; Mestre et al., 2009), self-esteem (Watkins et al., 1997; Israel and Ivanova, 2002; Frisén et al., 2014), and emotional intelligence (Bar-On and Parker, 2000; Karma and Maliha, 2005; Ferrando,

2006). As a result, consideration was given to the role of gender in the effectiveness of the program. In accordance with the main goal of this study, the following hypotheses were suggested:

(1) Controlling for the effect of age, participants in the experimental group will have lower scores in attitudes toward violence in partner relationships and with peers after the intervention compared to before the intervention, while participants in the control group will not show significant change.

(2) Controlling for the effect of age, participants in the experimental group will have lower scores in gender stereotypes after the intervention compared to before the intervention, while participants in the control group will not show significant change.

(3) Controlling for the effect of age, participants in the experimental group will have higher scores in socio-emotional skills after the intervention compared to before the intervention, while participants in the control group will not show significant change.

(4) Gender will play a moderating role in the effect of the intervention program on attitudes toward violence in partner relationships and with peers, gender stereotypes, and socio-emotional skills and attitudes.

MATERIALS AND METHODS

Participants

The population sample included 344 children enrolled in the second and third grades of primary education at a Colombian public educational institution in the municipality of Chía, Cundinamarca. Of the sample, 56.7% of the participants were male and 43.4% were female. Participants ranged in age from 7 to 9 years, with an average age of 7.8 years ($SD = 0.73$). In relation to their socioeconomic level, 24.8% comprised the lower socioeconomic level, 68.7% the lower-middle, and 6.5% the middle level. In terms of family structure, 62.4% lived in a nuclear household (father, mother, and children living together); 11.7% included the extended family (in addition to the nuclear family, other relatives such as aunts, uncles, and grandparents lived in the household); 24.2% lived in a single-parent household in which the mother and her children lived together in the household; and 1.7% were part of a single-parent household in which the father and his children lived together in the household.

Regarding the parents' occupations, the fathers had the following occupations: machinery operator (9.9%), public or private transportation driver (15.9%), company employee (24.6%), construction worker (7.5%), security guard (4.8%), retailer (19.2%), and other (18.1%). Mothers had the following occupations: machinery operator (12.2%), unpaid domestic worker (25.7%), company employee (34.6%), general services employee (9.3%), beauty and fashion specialist (1.5%), education provider (3.9%), and retailer (12.8%). The fathers' education levels were as follows: 1.74% had received technical or professional training, while 98.20% held a high school diploma;

and for mothers, 5.2% had received technical or professional training, while 94.8% held a high school diploma.

In addition, regarding their education level, the sample's distribution was found to be 53.8% in second grade of primary school and 46.2% in third grade. Within each education level, students were distributed into groups, creating six groups in second grade and six groups in third grade. Further, 48.5% of the participants attended school in the morning and 51.5% in the afternoon.

The sample was distributed equally between the control and experimental groups, with 144 participants (41.9%) in the control group and 200 participants (58.1%) in the experimental group. The only significant difference found was for age [$t(342) = 2,451$; $p = 0.015$]; hence, this variable was controlled in the analysis of the results. On average, the experimental group was younger (Age = 7.7; $SD = 0.73$) than the control group (Age = 7.9; $SD = 0.72$).

Procedure

This study was carried out in accordance with the recommendations of the following Colombian laws and protocols: which regulates the practice of the Psychology profession and dictates the code of ethics and bioethics on scientific, technical and administrative standards for health research (Resolution 8430 of 1993), in Law 379 of 1997 for research that includes statistics and data, in article 189 of the Political Constitution, in Law 1581 of 2012 and in Decree 1377 of 2013. All subjects gave written informed consent in accordance with the Declaration of Helsinki. Data was collected on two occasions, with a 3-month interim period. To begin collecting data, permission was requested from the educational institution to access its facilities and contact teachers and students. Subsequently, parents of students were asked permission for their children to participate in the intervention and to administer the tests using an informed consent form, which outlined the procedures, benefits, risks, and implications of their children's participation in the program. Information was also provided concerning the protection of the identity of participants and persons involved in this context, ensuring confidentiality and the use of the information provided for statistical purposes only. Once parental permission was obtained, each of the primary school's second and third grade classes was visited and each teacher was asked to allow some time to administer the tests.

Since the number of tests could cause fatigue in the participants, the tests were administered over a period of 2 weeks before the intervention and 2 weeks after the intervention with two sessions for each class on consecutive days. Each session lasted for an average of 1 h. The tests were administered in the classroom; each student was given a booklet with the questions and multiple choice options for each of the tests administered. During this period, participants were supervised to help resolve any questions that came up and to verify that the questionnaire was completed.

As access to classes for administering the tests and intervention depended on when the teachers could leave time in their class schedules, the control and experimental groups were distributed according to availability and scheduling, resulting in

the aforementioned distribution: seven experimental groups (4 s grade and 3 third grade classes) and five control groups (2 s grade and 3 third grade classes).

The program lasted 3 months, with each experimental group receiving 2 1-h sessions every week. Each session was held in the classroom and the classroom teacher was present. During the first 10 min of each session, time was spent reviewing what was covered in the last session and the lessons learned, allowing children to share in their own words the activities completed and the lessons learned. Subsequently, we focused on the session's core activities. At the end, the group drew conclusions on the topics that were covered.

The gender-based intimate partner violence prevention program covered three intervention units (gender, socio-emotional skills, and intimate partner violence), which were consistent with the predictors and intervening factors that were found in the theoretical and empirical review conducted. In turn, the program was designed by taking the characteristics of successful programs into consideration, such as taking guidance from rigorous models on gender-based intimate partner violence (ecological model, gender perspective, socio-emotional learning, and multi-causal models). In addition, successful psychoeducational principles such as experiential learning, *SAFE* (*sequenced, active, focused,* and *explicit*) skills training, socio-emotional learning (*SEL*), and the promotion of cognitive, emotional, and behavioral change were used for the intervention.

The program was divided into three didactic units: gender construction, gender-based partner violence, and socio-emotional skills. In general, this program aims to improve attitudes toward gender equality, decrease the acceptance of attitudes toward partner violence, and develop socio-emotional competencies as a means of preventing gender-based partner violence. Below (see **Table 1**) is a general overview of the contents and objectives of each unit.

Measurement Scales: Variables
Attitudes Toward Intimate Partner and Peer Violence
Attitudes Toward Violence in Partner Relationships

To assess the attitudes of acceptance toward violence in relationships, the Attitudes about Aggression in Dating Situations Scale (Slep et al., 2001; validated in Spanish by Muñoz-Rivas et al., 2011) was implemented. This scale assesses attitudes toward aggression in partner relationships by evaluating situations in which a man or a woman uses physical aggression against his or her partner. Participants have to state the degree to which they agree or disagree with the behavior being carried out by the person via a Likert-type scale with the following responses: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree." The scale contains 10 items, with a mean reliability in its original application of $\alpha = 0.70$ (Slep et al., 2001), and $\alpha = 0.76$, for the Spanish validation of the scale (Muñoz-Rivas et al., 2011).

The scale was assessed according to violence against women and men as well as justification for gender-based physical and verbal or psychological violence. Thus, this scale comprised of the following subscales: verbal violence (e.g., "Laura keeps laughing at Lorenzo in front of her friends, Lorenzo loses control and insults her"; $\alpha = 0.78$ in the pre-test and $\alpha = 0.89$ in the post-test), verbal violence against men (e.g., "Toni is teasing Rosa about her new haircut and tells her that it looks like a dog, Rosa gets very angry and yells at him."; $\alpha = 0.69$ in the pre-test and $\alpha = 0.79$ in the post-test), verbal violence against women (e.g., "Miguel catches Carmen flirting with Roberto. Miguel gets very angry and yells at Roberto for flirting with Carmen"; $\alpha = 0.55$ in the pre-test and $\alpha = 0.79$ in the post-test), physical violence (e.g., "Miguel catches Carmen flirting with Roberto. Miguel gets very angry and hits Roberto for flirting with Carmen"; $\alpha = 0.82$ in both the pre- and post-tests), physical violence against men (e.g., "Toni is teasing Rosa about her new haircut and tells her that it looks like

TABLE 1 | Summary of unit, objectives and contents of the program.

Unit	Objective of the unit	Contents
(1) Gender stereotypes	To make traditional gender roles and stereotypes more flexible by identifying them and recognizing the limitations they place on the unrestricted development of personality.	1.1. Gender precepts 1.2. Professions and trades 1.3. Domestic work 1.4. Clothing, colors and toys 1.5. Role problems 1.6. The value of difference 1.7. Construction of complete identities 1.8. Importance of unrestricted personality development 1.9. Promotion of gender equality from childhood onwards
(2) Gender-based intimate partner violence	Identify violence, its forms and implications, and recognize alternatives and solutions to gender-based intimate partner violence.	2.1. Recognizing violence 2.2. Types of violence 2.3. Alternatives and solutions to gender-based partner violence
(3) Socio-emotional competences	Develop the ability to recognize and value one's own capabilities and emotions, identify the emotions of others and the importance of such, and regulate one's own emotions and behaviors for non-violent conflict resolution.	3.1. Self-concept and self-esteem 3.2. Emotional perception 3.3. Emotional facilitation 3.4. Emotional understanding and empathy 3.5. Emotional regulation

a dog, Rosa gets very angry and pushes him"; α = 0.70 in the pre-test and α = 0.63 in the post-test), and physical violence against women (e.g., "Luis finds out Alicia's been dating someone behind his back. He gets very angry and slaps her"; α = 0.66 in the pre-test and α = 0.77 in the post-test). This scale was measured using a Likert scale that evaluated the participants' level of agreement with the proposed statements: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree."

Attitudes Toward Peer Aggression

To measure the acceptance of peer aggression, the Normative Beliefs about Aggression and Aggressive Behavior scale (Huesmann and Guerra, 1997) was used. This scale included 20 items that assessed primary school children's normative beliefs about aggression by asking how positive or negative the participants felt about aggressive verbal or physical behavior against children. The scale comprised the following subscales: acceptance of weak provocation (e.g., "It's wrong to take it out on others by saying cruel things when you're angry"; α = 0.87 in both the pre- and post-tests for the acceptance of weak provocation), acceptance of strong provocation (e.g., "It's generally okay to hit others when you're angry."; α = 0.92 in the pre-test and α = 0.91) acceptance of aggression against men (e.g., "Imagine a boy saying something mean to a girl. Do you think it would be wrong for the girl to yell at him?"; α = 0.83 in the pre-test and α = 0.82) and acceptance of aggression against women (e.g., "Imagine a girl saying something mean to a boy. Do you think it would be wrong for the boy to hit her?"; α = 0.94 in the pre-test and α = 0.91). The reliability in the original study was α = 0.80 for general acceptance of aggression, α = 0.75 for acceptance of weak provocation, α = 0.71 for acceptance of strong aggression, α = 0.70 for the acceptance of aggression against men, and α = 0.69 acceptance of aggression against women. Each item was measured using a Likert-type scale that assessed the participants' level of agreement with the proposed statements: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree."

Gender Stereotypes

Gender stereotypes were measured using the Gender Stereotype Attitudes Scale for Children (Signorella and Liben, 1984). The original scale showed an average reliability of α = 0.88 among different samples (Signorella and Liben, 1985). It included 46 items divided into two scales: female gender stereotypes (e.g., "Who plays with dolls?"; α = 0.67 in the pre-test and α = 0.79 in the post-test) and male stereotypes (e.g., "Who plays with cars?"; α = 0.68 in the pre-test and α = 0.79 in the post-test). There are three response options: "males," "females," or "both." Accordingly, for the scale with female stereotypes, the coding "0" was used for the response "females," "1" for the response "males," and "2" for the response "both." For the scale with male stereotypes, "0" was coded as follows: "0" for the response "males," "1" for the response "females," and "2" for the response "both." Thus, a higher score represented a less stereotyped attitude toward traditional gender roles. This process helped to clarify whether the child had a high or low level of

gender stereotyping. In addition, using the same method as in the previous subscales, 10 items were added to analyze gender stereotypes in the context of a romantic relationship (e.g., "when you are dating someone, who gives gifts?, who pays the bill? who expresses his or her feelings?"). These items comprised the romantic relationships stereotypes subscale (α = 0.75 in the pre-test and α = 0.79 in the post-test).

Socio-Emotional Competences

Socio-emotional skills were measured using three variables: empathy, self-esteem, and emotional intelligence. The scales for each variable are detailed below.

Self-esteem

Self-esteem was measured using the Self-Esteem Scale (Rosenberg, 1965), which assesses personal self-esteem through questions on self-respect and feelings of self-worth. The reliability of this scale in the original study was found to be α = 0.80. It included 10 items (e.g., "I am convinced that I have good qualities"), although the inverse items or those that lowered the instrument's reliability (items 2, 3, 5, and 10) were excluded in this study (α = 0.70 in the pre-test and α = 0.74 in the post-test). Each item was measured using a Likert scale that assessed the participants' level of agreement with the proposed statements: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree."

Empathy

Empathy was measured using the Basic Empathy Scale (Sánchez-Pérez et al., 2014). It included 20 items that were divided into two subscales: one for affective empathy (e.g., "After being with a friend who is sad, for some reason I usually feel sad"; α = 0.66 in the pre-test and α = 0.63 in the post-test) and another for cognitive empathy (e.g., "I can understand my friend's happiness when she or he does something well"; α = 0.63 in the pre-test and α = 0.67 in the post-test). Reliability coefficient of internal consistency in the original study was found as α = 0.73 for affective empathy and α = 0.63 for cognitive empathy (Oliva et al., 2011). Each item was measured using a Likert scale that assessed the participants' level of agreement with the proposed statements: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree."

Emotional intelligence

Emotional intelligence was assessed using the Trait Meta-Mood Scale (TMMS) on Emotional States (from Salovey et al., 1995; validated in Spanish by Fernández-Berrocal et al., 1998; Fernández-Berrocal et al., 2004). It comprises three subscales: emotional support (e.g., "I am able to feel and express feelings appropriately"; Cronbach's alpha = 0.70 in the pre-test and α = 0.78 in the post-test), emotional openness (e.g., "I understand my emotional states well"; α = 0.74 and α = 0.82 in the post-test), and emotional healing (e.g., "I am able to regulate my emotional states correctly"; α = 0.87 in the pre-test and α = 0.80 in the post-test). Each item was measured using a Likert scale that assessed the participants' level of agreement with the proposed statements: "0" for "strongly disagree," "1" for "somewhat disagree," "2" for "somewhat agree," and "3" for "strongly agree." Each subscale

presented good reliability with $\alpha > 0.80$ in the original study (Fernández-Berrocal and Extremera, 2006).

Statistical Analysis

The results were analyzed using the SPSS 22.0 statistical package which was used to provide a descriptive analysis of the averages, standard deviations, frequencies, and percentages used to characterize the population and each analyzed variable.

T-tests for independent samples and the chi-square test were performed for the differences in the distribution of the control and experimental groups in the socio-demographic variables (age, gender, socioeconomic level, and parents' educational level). Furthermore, to analyze the program's effectiveness, mixed ANOVAs with a within-subjects factor (when the group was measured), two between-subjects factors (group and gender), and a covariate (age) were used.

RESULTS

To measure the program's effectiveness, 20 mixed ANOVAs with a within-subjects factor (when the group was measured), two between-subjects factors (group and gender), and a covariate (age) were used. The program was effective with regard to the following variables: male and female gender stereotypes, gender stereotypes in romantic relationships, normative beliefs regarding strong aggression, weak aggression, aggression against women and men among themselves, affective empathy, and attitudes about aggression in romantic relationships. In these cases, the time at which the interaction was measured was significant. The time at which group interaction by gender was measured was only significant with the dependant variable "acceptance of strong peer aggression" ($p = 0.002$) (see **Table 2**).

The significant interactions are described below.

Significant interactions were found with the physical violence ($F_{(1, 284)} = 5.579$; $p = 0.017$) and physical violence against women ($F_{(1, 283)} = 11.483$; $p = 0.001$) variables. In these cases, the experimental group had lower scores, namely, less justification of aggression in romantic relationships after intervention (see **Figures 1**, **2**). No significant interactions were found for the remaining variables in this scale (physical violence against men, psychological violence, psychological violence against men, and psychological violence against women); however, there was a tendency toward lower levels of justification for aggression in romantic relationships in the experimental group.

In relation to normative beliefs on peer aggression, for the acceptance of strong aggression, a significant interaction was found among the time of measurement*group*gender ($F_{(1, 315)} = 11.417$; $p = 0.001$). In this case, it was possible to identify that the male participants in the control group had an increased average value after intervention, in contrast to the male participants in the experimental group, who showed decreased scores. No differences were found for female participants in the experimental and control group prior to and after the intervention (see **Figures 3**, **4**). These gender differences suggest that the program was more effective for men regarding this variable.

In addition, significant interactions were found for the acceptance of weak aggression ($F_{(1, 320)} = 4.426$; $p = 0.036$), acceptance of aggression against men ($F_{(1, 320)} = 5.899$; $p = 0.016$), and the acceptance of aggression against women ($F_{(1, 337)} = 3.882$; $p = 0.049$). It was found that the average values decreased after intervention exclusively in the experimental group, showing less justification for the use of peer aggression after the program was administered (see **Figures 5–7**).

Female gender stereotypes $F_{(1, 334)} = 34.984$, $p < 0.001$, male gender stereotypes $F_{(1, 334)} = 39.995$, $p < 0.001$, and those specific to romantic relationships $F_{(1, 326)} = 5.296$, $p = 0.022$ scored lower after the intervention in the experimental group, whereas no change was observed in the control group. In all three cases there were fewer stereotyped beliefs after the intervention (see **Figures 8–10**).

Finally, for empathy, significant interaction with affective empathy was observed, wherein a stable average was identified in the experimental group after intervention, in contrast to a lower score in the control group ($F_{(1, 311)} = 6.362$; $p = 0.020$) (see **Figure 11**).

No age effect (covariate) was observed in any of the analyses.

DISCUSSION

Attitudes Toward Violence in Intimate Partner Relationships

The program was effective for the variables of general physical violence and physical violence against women, as the participants of the experimental group reduced their mean approval in these variables. When comparing these findings to those obtained in other programs for the prevention of partner violence in youth and adolescents, several programs were identified that have also reduced the mean in relation to attitudes and beliefs that justify partner violence in their experimental groups (i.e., Muñoz-Rivas, 2010; Póo and Vizcarra, 2011; Fernández, 2013; Hines and Palm Reed, 2015; McLeod et al., 2015; Velasco, 2015).

It is important to note, however, that in the analysis of the scales used, most of these programs made no distinction between attitudes regarding physical and verbal violence or the gender of the victim. The only program that analyzed forms of aggression was that of Muñoz-Rivas (2010), who found that attitudes justifying physical violence were reduced and extended over time in contrast to decreases in attitudes justifying psychological violence, which once again increased in the follow-up assessment. This finding, compared to the conclusions of this study, may be a hindrance to bringing about significant changes with respect to the devaluation of verbal violence in couples, although this hypothesis needs to be studied further.

Conversely, in terms of the results of the program's effectiveness on general physical violence and that against women, comparisons with other studies are challenging as there is no existing research that measures attitudes toward aggression in middle childhood relationships. These findings can nonetheless be interpreted by considering other studies on the development of aggression during childhood and the findings of

TABLE 2 | Summary of the program's effectiveness for the analyzed variables.

	Pre						Post						Time∗Group Interactions		Interaction interpretation	
	Experimental group			Control group			Experimental group			Control group						
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	p	η^2 semi-partial	Exp	Control
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)				
Attitude towards adressions (romantic relationships)																
Verbal violence	1.03 (0.74)	0.92 (0.65)	0.98 (0.70)	0.83 (0.63)	0.77 (0.54)	0.81 (0.59)	0.76 (0.72)	0.83 (0.71)	0.79 (0.72)	0.81 (0.82)	0.73 (0.80)	0.77 (0.81)	0.167	0.007		
Verbal violence against men	1.03 (0.84)	0.93 (0.73)	0.99 (0.80)	0.71 (0.71)	0.61 (0.66)	0.67 (0.69)	0.78 (0.76)	0.81 (0.72)	0.79 (0.74)	0.73 (0.80)	0.65 (0.74)	0.69 (0.77)	0.076	0.011		
Verbal violence against women	1.04 (0.83)	0.81 (0.75)	0.95 (0.81)	0.96 (0.73)	0.94 (0.69)	0.95 (0.71)	0.77 (0.89)	0.86 (0.84)	0.81 (0.87)	0.91 (0.96)	0.82 (0.97)	0.87 (0.96)	0.534 / 0.017	0.001 / 0.020		b > a*
Physical violence	0.89 (0.78)	0.93 (0.75)	0.91 (0.77)	0.75 (0.60)	0.66 (0.68)	0.71 (0.63)	0.70 (0.72)	0.72 (0.67)	0.71 (0.70)	0.78 (1.02)	0.73 (0.82)	0.76 (0.93)	0.174	0.006		b > a**
Physical violence against men	0.84 (0.82)	0.93 (0.85)	0.88 (0.83)	0.79 (0.75)	0.66 (0.73)	0.73 (0.74)	0.75 (0.76)	0.72 (0.72)	0.73 (0.74)	0.82 (1.41)	0.67 (0.82)	0.75 (1.19)	0.001	0.039		
Physical violence against women	0.89 (0.90)	0.85 (0.82)	0.87 (0.87)	0.69 (0.68)	0.64 (0.72)	0.67 (0.70)	0.64 (0.76)	0.62 (0.72)	0.64 (0.74)	0.79 (0.90)	0.83 (0.95)	0.81 (0.91)	0.036	014		
Attitudes toward aggression (peers)																
Acceptance of weak aggression	0.42 (0.72)	0.33 (0.64)	0.38 (0.69)	0.58 (1.81)	0.44 (0.69)	0.52 (1.10)	0.36 (0.58)	0.20 (0.44)	0.29 (0.53)	0.79 (0.96)	0.44 (0.64)	0.63 (0.84)	0.015	019		b > a**
Acceptance of strong aggression	0.44 (0.95)	0.26 (0.68)	0.36 (0.85)	0.56 (1.07)	0.52 (1.10)	0.54 (1.08)	0.23 (0.61)	0.26 (0.69)	0.24 (0.64)	1.02 (1.41)	0.47 (0.92)	0.77 (1.23)	0.16	0.18		
Acceptance of aggression against men	0.44 (0.78)	0.30 (0.70)	0.38 (0.74)	0.49 (0.73)	0.30 (0.57)	0.40 (0.66)	0.32 (0.56)	0.20 (0.46)	0.27 (0.52)	0.74 (0.98)	0.30 (0.54)	0.54 (0.84)	0.049	012		
Acceptance of aggression against women	0.39 (0.79)	0.32 (0.63)	0.36 (0.72)	0.70 (1.19)	0.69 (1.22)	0.70 (1.20)	0.36 (0.64)	0.22 (0.49)	0.30 (0.59)	1.00 (1.18)	0.67 (1.06)	0.85 (1.14)				
Gender stereotypes																
Female stereotypes	1.02 (0.34)	0.96 (0.30)	0.99 (0.33)	0.93 (0.27)	0.91 (0.30)	0.92 (0.28)	0.75 (0.44)	0.78 (0.37)	1.00 (0.41)	0.99 (0.31)	0.000 (0.36)	0.95 (0.33)				b > a*** b < a*
Male stereotypes	1.14 (0.32)	1.01 (0.29)	1.09 (0.31)	1.01 (0.28)	1.02 (0.27)	1.01 (0.28)	0.75 (0.44)	1.02 (0.35)	0.98 (0.40)	1.00 (0.36)	0.000 (0.32)	0.107 (0.34)				b > a***
Stereotypes in romantic relationships	0.62 (0.24)	0.59 (0.24)	0.61 (0.24)	0.78 (0.38)	0.73 (0.29)	0.76 (0.34)	0.52 (0.28)	0.50 (0.27)	0.51 (0.27)	0.87 (0.79)	0.64 (0.32)	0.77 (0.64)	0.022	0.016		b> a** b < a*
Socio-emotional Skills																
Self-esteem	1.84 (0.74)	1.95 (0.65)	1.88 (0.68)	1.66 (0.77)	1.87 (0.69)	1.76 (0.74)	1.77 (0.71)	1.74 (0.69)	1.76 (0.70)	1.54 (0.71)	1.67 (0.78)	1.61 (0.74)	0.774	0.000		b > a*
Empathy																
Cognitive empathy	1.75 (0.65)	1.94 (0.60)	1.83 (0.63)	1.41 (0.60)	1.65 (0.59)	1.52 (0.61)	1.80 (0.69)	1.72 (0.56)	1.77 (0.64)	1.44 (0.64)	1.64 (0.61)	1.53 (0.63)	0.371	0.003		
Affective empathy	1.47 (0.73)	1.60 (0.73)	1.53 (0.73)	1.37 (0.75)	1.68 (0.64)	1.51 (0.71)	1.59 (0.73)	1.58 (0.63)	1.59 (0.68)	1.23 (0.59)	1.45 (0.70)	1.33 (0.65)	0.012	0.020		b > a**
Perceived Emotional Intelligence																
Emotional support	1.62 (0.62)	1.85 (0.57)	1.72 (0.61)	1.59 (0.72)	1.81 (0.58)	1.69 (0.67)	1.60 (0.72)	1.70 (0.55)	1.65 (0.65)	1.47 (0.76)	1.68 (0.72)	1.57 (0.75)	0.693	0.001		
Emotional clarity	1.65 (0.72)	1.86 (0.57)	1.74 (0.66)	1.48 (0.71)	1.53 (0.56)	1.50 (0.64)	1.64 (0.74)	1.76 (0.58)	1.69 (0.68)	1.35 (0.80)	1.53 (0.74)	1.43 (0.78)	0.879	0.000		
Emotional healing	1.81 (0.70)	1.89 (0.54)	1.85 (0.63)	1.38 (0.64)	1.44 (0.64)	1.40 (0.64)	1.78 (0.66)	1.87 (0.50)	1.81 (0.60)	1.36 (0.81)	1.45 (0.72)	1.40 (0.77)	0.847	0.000		

b: before; a: after. *p-Value < 0.05; **p < 0.01; ***p < 0.001 (in this case, for the p-value of the post hoc multiple comparison test with the Bonferroni correction).
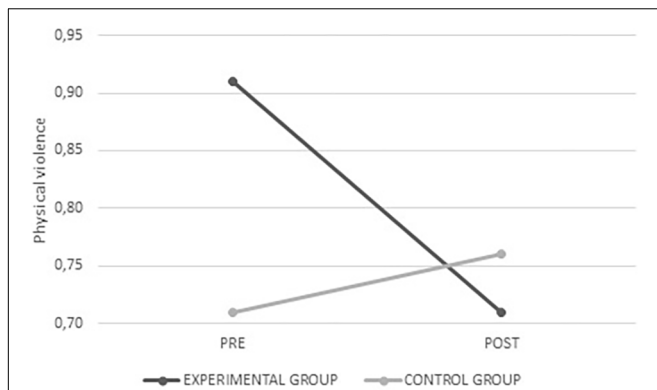
FIGURE 1 | Average values for physical violence from the experimental and control groups before and after intervention.
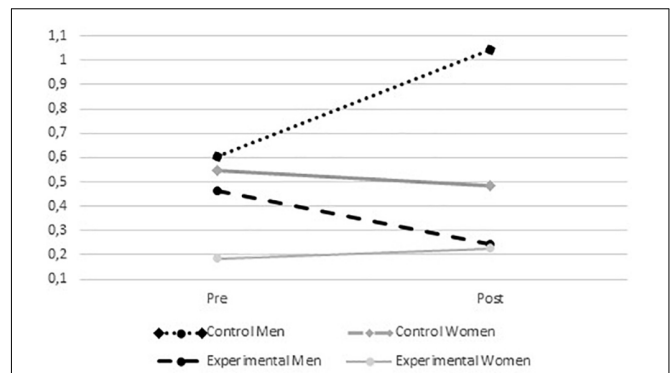
FIGURE 4 | Average values in acceptance of strong aggression from the experimental and control groups according to gender before and after intervention.
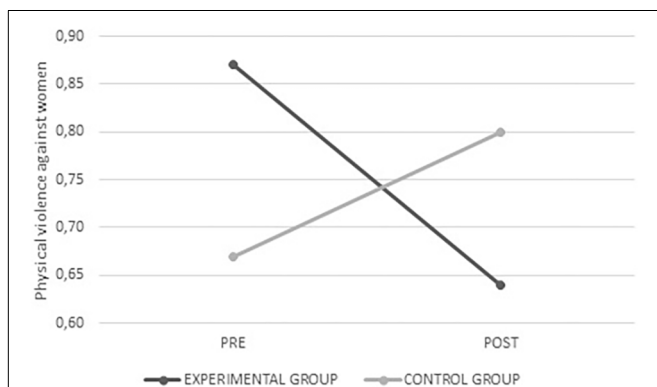
FIGURE 2 | Average values for physical violence against women from the experimental and control groups before and after intervention.
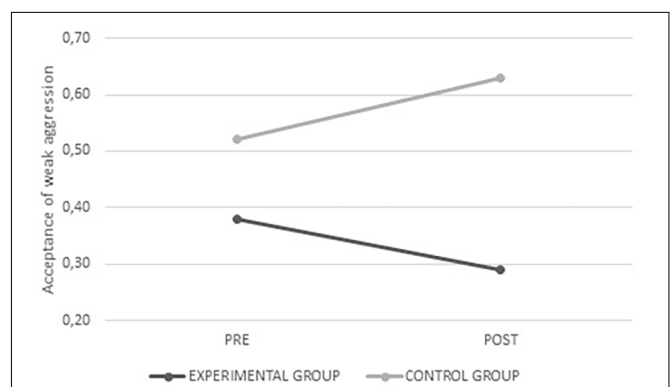
FIGURE 5 | Average values for acceptance of weak aggression from the experimental and control groups before and after intervention.
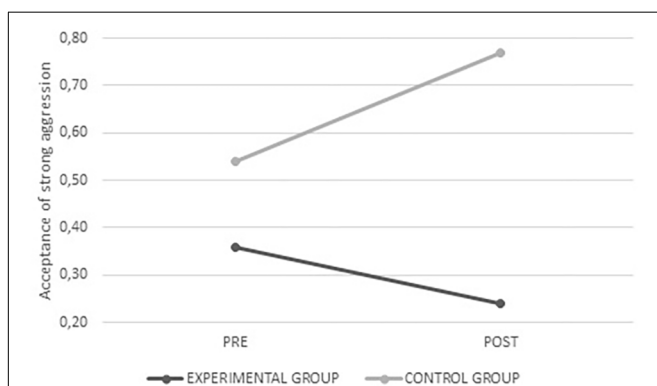
FIGURE 3 | Average values for acceptance of strong aggression from the experimental and control groups before and after intervention.
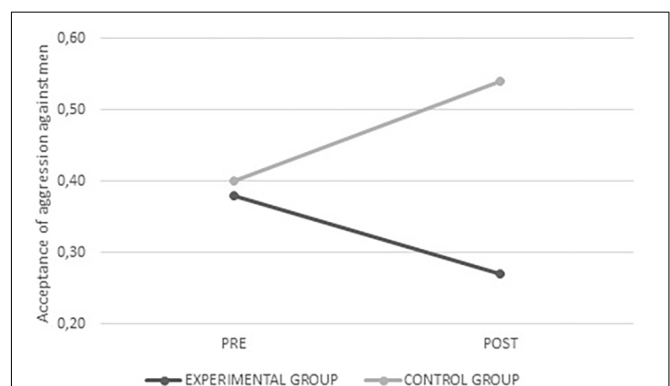
FIGURE 6 | Average values for acceptance of aggression against men from the experimental and control groups before and after intervention.

other investigations on the meaning of violence in childhood, which may shed more light on the findings of this study.

Studies on childhood aggression have shown that in middle childhood, verbal abuse is more common than physical aggression. Further, the importance given to the social sphere (peers and teachers, among others) causes children to seek new cooperative ways to solve conflicts, as their understanding of the rules of behavior as agreements made for the common good increases, leading the child to judge behavior according to its consequences (Furman, 1982; Coie et al., 1991; Hartup, 1992; Newcomb and Bagwell, 1995; Hartup and Stevens, 1999; Pellegrini and Archer, 2005; Delgado and Contreras, 2009;
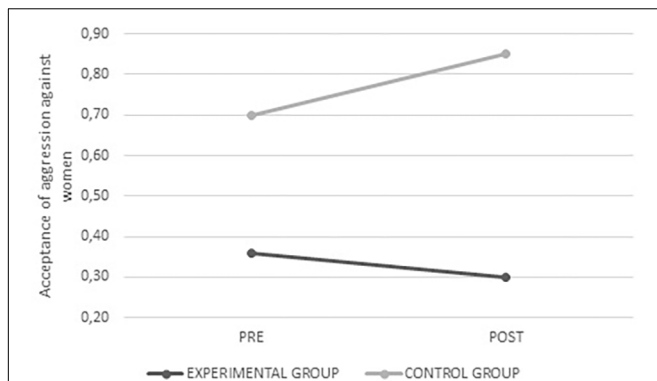
FIGURE 7 | Average values for acceptance of aggression against women from the experimental and control groups before and after intervention.

FIGURE 8 | Average values for female gender stereotypes from the experimental and control groups before and after intervention.

FIGURE 9 | Average values for male gender stereotypes from the experimental and control groups before and after intervention.
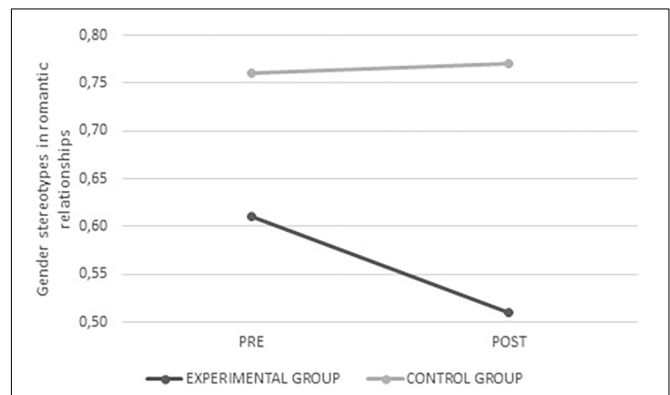
FIGURE 10 | Average values for gender stereotypes in romantic relationships from the experimental and control groups before and after intervention.

FIGURE 11 | Average values for affective empathy from the experimental and control groups before and after intervention.

Etxebarria, 2014; Swit et al., 2016). We therefore speculate that the participants of this study may have applied the socioemotional learning acquired during the program to the assessment of situations of partner violence.

This can be reinforced if one considers the findings of Piedrahita et al. (2007) on the meaning of violence in childhood. Their study showed that Colombian children between the ages of 6 and 8 recognize a situation as being either good or bad and therefore consider fighting to be an inadequate solution to conflict, with negative consequences for all involved. In relation to partner violence, they express displeasure when it comes to fights among their parents or when their father strikes their mother. The children consider that having seen this behavior in their parents could lead them to reproduce it themselves. Finally, they state that the family should seek solutions and maintain loving relationships.

Furthermore, the UN Latin America Regional Commission (2005) conducted a study with 1,800 children and adolescents in 17 Latin American countries and found that with regard to partner violence among their parents, the children showed displeasure; the children considered partner violence to be a form of violence toward them as well and believed that these fights had

an affect on their academic performance. In the Spanish context, a study carried out by Bello (2016) with children aged 10–12 years old showed that they considered the violence they witnessed to be of a reproductive nature, as they believed that in relation to the violence that occurred between their parents, for example, in the cases that this violence occurred in front of them, they

could imagine themselves replicating it. Furthermore, regarding abuse against a person of the opposite sex, children affirm the importance of reporting these cases of abuse and consider it important that in order to prevent such cases, people – adults, children and society in general – should be made aware of and educated accordingly.

Based on the aforementioned information, it can be identified that, in general and in accordance with the results of this research, children from different contexts tend to disapprove of violence. Furthermore, it is important to note that although the implications of the findings in these studies relate to either generalized violence or violence among the parents of the children who participated in the study, the findings nevertheless provide some insight on how children interpret situations of violence in the context of romantic relationships.

The fact, however, that the program results were effective for the variables on physical violence and physical violence against women confirms the greater tendency in middle childhood to accept and express subtle, or verbal aggressions. This compares with the approval and use of harsher forms, such as physical aggression; in addition, it indicates that violence against men continues to be considered more acceptable than violence against women in the context of intimate relationships. Consequently, the association of attributes such as strength and resilience ascribed to men persists, despite the significant decrease of male gender stereotypes. This may be explained by the more static and rigid perception of boys and girls with respect to male stereotypes (Smetana, 1986), or it may indicate the presence of spontaneous stereotyping when assessing this type of situation.

By contrast, there was a greater disapproval of physical violence against women, which may be due to the fact that they are considered more vulnerable to this type of abuse. This may be the result of the gender stereotyping of women's weaknesses and sensitivities. However, owing to the fact that the level of approval decreased significantly throughout the intervention and the levels of female gender stereotypes were reduced, this may indicate that the program allowed for a more realistic observation on the forms of partner abuse and, via these activities, women were recognized as the group most frequently affected by partner violence.

Attitudes Toward Aggression Among Peers

In turn, the intervention was effective in influencing attitudes toward aggression among peers, since it was observed that the experimental group showed lower levels of approval than the control group in the variables of soft and strong aggression against women and men after the intervention.

With respect to the effective results of the program concerning the acceptance of all forms of aggression assessed, it may be stated that the results are in accordance with the developmental stage of the participants, as several authors have reported that children from 6 to12 years of age tend to reduce physical aggression to make way for more subtle forms of aggression (Furman, 1982; Hartup, 1992; Newcomb and Bagwell, 1995; Coie and Dodge, 1998; Hartup and Stevens, 1999; Pellegrini and Archer, 2005; Delgado and Contreras, 2009; Etxebarria, 2014; Swit et al., 2016).

The experimental group, however, also showed a significant decrease in the approval of soft or verbal aggression, which would mean that the program achieved significant changes in all forms of aggression acceptance, beyond the effects at the developmental stage.

In the strong aggression approval variable however, it was found that after the intervention, the program was effective only for boys, and not for girls. In general terms, previous studies have indicated that the reported approval of aggression in children is often mediated by social approval and normative gender beliefs (Martin et al., 2002; Giles and Heyman, 2005; Smith et al., 2009). In addition, it has been found that boys tend to approve of aggression at higher rates than girls (Huesmann and Guerra, 1997), and that they rely more heavily on physical aggression than girls (Archer, 2004; Côté et al., 2006). As a result, the program could have had a differential effect owing to the fact that the approval of strong violence is more prevalent in boys and, furthermore, the girls in the experimental group had very low levels of approval of violence before the intervention, making it virtually impossible to decrease their approval after the intervention. Only in this case was hypothesis 4 confirmed.

Finally, the changes made in the acceptance of peer aggression variables are fundamental in preventing gender-based intimate partner violence since, as stated by Underwood and Rosen (2009), "gender differences in relationships among peers in middle childhood may set the stage for difficulties in emerging heterosexual romantic relationships in adolescence" (p. 4). Therefore, given the relationship between the attitudes toward the acceptance of aggression and aggressive behavior (Huesmann et al., 1992; Tolan et al., 1995; Sprinkle, 2010; Busching and Krahé, 2015), a decrease in the acceptance of aggression in boys and girls has a positive effect when it comes to relating with peers and may lead to healthier future romantic relationships.

Gender Stereotypes

The program was effective in the gender stereotypes variable since the experimental group showed significantly lower levels of male and female gender stereotypes and relationships after the intervention, whereas members of the control group either significantly increased their level of stereotype (female and in relationships) or remained stable (male stereotypes). Thus, the second hypothesis of this study is proven.

Similar results were found in other programs that aimed to prevent intimate partner violence, given that these programs also led to a decrease in gender stereotypes (Foshee et al., 1998, 2000, 2004), sexist attitudes and beliefs (Díaz-Aguado and Martínez-Arias, 2001; Schwartz et al., 2006; Velasco, 2015), and in negative attitudes toward gender equity (Miller et al., 2014). However, all the aforementioned programs were carried out with youth and adolescents, making a comparison with respect to age difficult. With respect to the programs focused on decreasing gender stereotypes in childhood, the "Words can Hurt You" anti-bias curriculum program by Rainey and Rust (1999) was aimed at middle childhood boys and girls, and significant differences in the experimental group were found after the intervention, as boys and girls within this group presented an increased number of androgynous answers measured through the

Gender-Stereotyped Attitude Scale for Children, showing greater flexibility of gender stereotypes.

Having discussed other programs, it is important to explain the results of the program's effectiveness on gender stereotypes in further detail. First, the participants' age (7-9 years old) corresponds to the period of gender flexibility, which makes it possible to reduce the level of stereotypes (Freixas Farré, 2012). However, in addition to flexibility, knowledge on gender stereotypes remain stable during this stage (Huston, 1983, 1985; Ruble et al., 2006), and it has been shown that flexibility alone is not enough to reduce spontaneous stereotyping, although it may be influenced by knowledge of stereotypes (Devine, 1989; Strack and Deutsch, 2004). This is noteworthy since it can be understood that the content discussed with the participants in the experimental group led to a decrease in gender stereotyping levels, despite the application of the program at an age that facilitated the receptivity of participants' concepts about non-traditional genders. Such changes were not observed in the control group participants.

Before ending this section, it is important to mention that positive results of the intervention on gender stereotypes and attitudes toward violence can have a cumulative effect since previous research has shown a clear relationship between sexism and acceptance of gender-based violence (Valor-Segura et al., 2014; Fernández-Fuertes et al., 2018).

Socio-Emotional Skills

Empathy

The results on the effectiveness of the program regarding the socio-emotional skills assessed (self-esteem, empathy, and emotional intelligence) demonstrate significant differences on the emotional empathy variable in the experimental group. In this sense, the experimental group maintained the same levels of empathy while the control group presented a significant drop. Therefore, the program had a protective effect on empathy in the experimental group.

After analyzing the result obtained on the effectiveness of maintaining emotional empathy but not cognitive empathy, it may be stated that, according to the conceptualization made by Preston and de Waal (2002) on empathy components, the participants in the experimental group provided more emotionally charged responses to other people's emotions (emotional empathy), though no changes were detected in comprehension and/or understanding of other people's feelings (cognitive empathy). It could be said that these findings confirm that emotional and cognitive empathy develop separately and follow different paths (Hodges and Klein, 2001; Decety and Jackson, 2004; Eisenberg and Eggum, 2009), although cognitive processes are necessary in the emotional comprehension that precedes emotional processes (Fernández-Pinto et al., 2008).

This would imply that, based on the scale punctuations, mid-to-low levels of cognitive empathy could be sufficient to stimulate emotional empathy stability. It is important to note that the mean emotional empathy prior to the intervention was lower than the mean cognitive empathy and, after the intervention, although the emotional empathy score was maintained in the experimental

group, cognitive empathy continued to have a higher mean than emotional empathy in the group. Therefore, although this difference in mean is quite small, it can be concluded that the program achieved a balance between the levels of cognitive and emotional empathy.

Finally, the aforementioned details show that the applied and assessed program had a positive impact on empathy, indicating the need to continue investigating the impact of interventions for the prevention of intimate partner violence through empathy at different ages, as well as a simultaneous examination of the effects of its components.

Self-Esteem

The program was not effective on the self-esteem variable given that the experimental group presented no significant changes with the intervention. This can be explained by some contextual elements which may have caused a negative effect on self-esteem. In general terms, it was possible to identify that the children who participated in this study were exposed to constant criticism from their teachers, even in sessions aimed at building self-esteem, leading to contradictory messages for the students. Furthermore, the sessions conducted for this research were constantly interrupted by school activities, and on several occasions the teachers interrupted the sessions to begin their classes. This situation prevented the programed activities from being carried out as initially planned. Also in middle childhood, social norms and rules significantly affect self-concept and increase negative feedback from teachers, leading to low self-esteem (Robins and Trzesniewski, 2005). Research has shown that students' feelings of satisfaction and comfort with their teachers influence self-esteem (Dessel et al., 2017), that the way in which teachers deal with situations affect the students' self-image (Bruno and Njoku, 2014), and that negligence by teachers may bring about low self-esteem (Obidigbo, 2006). Moreover, the importance of feedback from teachers through compliments or criticism has been studied, finding that compliments and positive statements to their students have a positive impact on their self-esteem, self-concept, positive self-talk, and on the classroom environment as a whole (Burnett, 1996, 2003; Yaratan and Yucesoylu, 2010).

Another plausible explanation might be that the measure of self-esteem is quite broad and readily susceptible to maximum social desirability if applied in a group setting, even though the conditions of anonymity and confidentiality were maintained.

Nonetheless, in spite of the limitations encountered, it is important to remember that the level of self-esteem in the experimental groups tended to be more stable. This may be considered a contributing factor as the program, although not significant, reveals the potential for obtaining greater effects by allowing for the time and availability needed to implement the self-esteem sessions.

Emotional Intelligence

The program was ineffective with regard to emotional intelligence, since no significant differences were found on attention, clarity, and emotional redress in the experimental group after the intervention. Thus, it is important to analyze these

results in comparison to other interventions aimed at preventing partner violence as well as at improving emotional intelligence.

Regarding programs on prevention of partner violence, none of the ones analyzed here in assessed the emotional intelligence level, although two programs assessed some of its components: the Murta et al. (2013) program evaluated the difficulties to regulate emotions. Nevertheless, after the intervention, the quantitative assessment of this variable showed no significant changes, although students showed an increase in the use of emotional expressions and social skills at the qualitative level. Furthermore, the Fourth "R" program by Wolfe et al. (2009) assessed the emotional stress and found that the experimental group participants reported less emotional abuse by their partners after the intervention.

It is important to note that studies on emotional intelligence in childhood that assess the three components of emotional intelligence through the TMMS scale used in this study are usually of the correlational type. This makes it difficult to identify the attention, clarity, and emotional redress levels obtained from the samples of the children assessed. Thus, for example, studies that seek to determine the influence of parental styles on the emotional intelligence of their children (Baumrind, 1978; Lopes et al., 2004; Bennett et al., 2005; Páez et al., 2006; Schaffer et al., 2009; Asghari and Besharat, 2011; Sánchez-Núñez et al., 2013; Stein et al., 2013; Ramírez-Lucas et al., 2015) and studies that associate childhood emotional intelligence with other variables such as social competence (Rockhill and Greener, 1999), social achievement (Fatum, 2008), and academic adjustment to school (Mestre et al., 2006) can be found. However, this makes it difficult to compare the results found in this study to those of other studies.

In accordance with the above, and given that the program assessed herein included several of the characteristics of effective programs (objectives and clear goals, assessment severity, work on developing skills, use of experiential activities), one differentiating element might have been the focus on working with other actors within the environment such as fathers, mothers, and teachers. As stated earlier, the school environment created limitations that may be settled via complementary education with respect to emotional skills. In addition, a longer intervention program that includes a more substantial contribution from the context (namely, parents and teachers) could have resulted in significant changes to emotional intelligence.

Limitations of the Study and Future Lines of Research

The main limitation of this study was that communication with the teachers and families was not effective, though the intervention with the children was. Group management was difficult because some teachers interrupted sessions of intervention and evaluation or gave conflicting messages regarding the contents of the program. With regard to the family, greater inclusion in the program activities would have been relevant, however due to the socio-economic and working situation of the parents, it was not possible for them to be actively

involved. All of the above highlights the need for intervention with parents and teachers, not only to improve the effects of the program on participating children, but also to promote coherence between the principles of the program and the beliefs and attitudes of the community. These effects were designed to facilitate the development of socio-emotional skills and to increase knowledge for the promotion of healthy relationships and general well-being in family and school contexts. All these aspects could have a greater impact on the prevention of gender-based dating violence.

Another element that may have limited the research results was the type of instruments used for evaluation, given that self-reports were used for program evaluation. Although this technique is used in other programs, it can generate reports based on the social desirability, particularly for scales that evaluate aspects related to social norms (Chaux, 2003). However, according to the results, it was possible to ascertain that the students responded sincerely. To reduce bias due to social desirability, participants were reminded throughout the administration of the tests that there were no right or wrong answers. They were also told that their response was anonymous.

Another aspect to consider is that the effects of the program were not monitored 3 or 6 months after its application. A follow-up evaluation would have been useful in identifying the effects of the program in the medium term. In addition, it is equally relevant to note that the effects of the program directly on gender-based intimate partner violent behavior are unknown. Subsequent measurements of the effectiveness of the program over time are necessary owing to the fact that children at this age are often not in couple relationships, even if they have knowledge about them. However, this intervention achieved significant effects on most of the factors involved in its development. It would therefore be important to continue and expand the work of this research by testing the same participants at different periods of their lives, while meanwhile replicating the program at different stages of the life cycle (i.e., adolescents).

Lastly, according to the aforementioned limitations, the following elements have been foreseen as worth consideration for future investigations: (1) development of gender-based violence prevention programs that include training for teachers and parents of the participating students; (2) implementation of programs in the families and in the community regarding the prevention of gender-based partner violence as a means of generating more coherent changes with the dynamics of the context; (3) use of different types of assessment instruments (quantitative and qualitative) and different sources of information on the changes made (parents, teachers, teachers and other caregivers); (4) given the importance of a cross-cultural perspective to understand the effects of each culture and children's learning environments on development (Best and Williams, 1993), it would be pertinent to compare the results obtained in this research with children of other countries, which would also allow the effects of the program to be gauged depending on the context of application; (5) carrying out measurements of the effectiveness of the program by reapplying the tests to the children participating in this research during adolescence, in order to monitor its effects; (6) conducting

research and longitudinal interventions that allow primary and secondary prevention of gender-based dating violence in childhood and adolescence, thereby evaluating the effectiveness of the programs over time.

CONCLUSION

Overall, the program presented adequate levels of effectiveness that can be improved upon with a larger degree of control and support from the school environment. This allows for the possibility of replicating the program within other contexts and populations with the primary aim of strengthening its effects to prevent gender-based intimate partner violence. Furthermore, the level of innovation of this program gives rise to a new line of research on the prevention of gender-based partner violence from childhood.

Given that the Colombian context faces particular conditions (high rates of gender-based partner violence, poor education on gender equality, and deficiencies in socio-emotional skills), these factors indicate the need to apply the suggested program, taking into account the implications of its effectiveness, in order to reduce the risk factors entailed in gender-based partner violence. Thus, in light of the lack of these types of programs and, moreover, the lack of effective programs in Colombia, the importance of continuing and expanding psychological research in the Colombian context has been highlighted so as to promote personal and social well-being as well as to prevent gender-based intimate partner violence in primary education.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin in accordance with the local legislation and institutional requirements for the study on human participants.

AUTHOR CONTRIBUTIONS

AG and RC conceived and designed the study, wrote the sections of the manuscript, revised the manuscript, and read and approved the submitted version. AG organized the database and wrote the first draft of the manuscript. RC performed the statistical analysis.

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Our Right to the Pleasure of Falling in Love

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The social impact of psychology on the field of human sexuality is extensively wide. From Freud to Masters and Johnson, many are the research which have broken barriers and provided citizens with new knowledge to improve their lives. One of the lines of research which are now contributing to this social impact from psychology is that of the dominant coercive discourse (Gómez, 2015), which portrays power relationships as exciting and egalitarian relationships as convenient. Drawing from this theory, the aim of this research is to shed light on the influence of the coercive discourse on women's pleasure in their intimate relationships. In an exploratory study, women between 20 and 29 years old were interviewed under the communicative methodology. Results show three main findings. First, participants who reject the coercive discourse find pleasure in egalitarian relationships. On the contrary, participants who had coerced relationships acknowledge a lack of excitement in egalitarian relationships, while associating pleasure to the power nature of the former. Finally, some participants who initially had coerced sexual–affective relationships were able to disassociate pleasure from coerced relationships and break with them. Moreover, these women claim to feel more pleasure in their new egalitarian relationships. These findings open a new path of research that unveils the lack of pleasure in coerced relationships and vindicates our right to the pleasure of falling in love.

Keywords: coercive dominant discourse, attraction to violence, hooking up, romantic relationships, social impact

INTRODUCTION

Psychology has had a wide social impact on the fields of human sexual behavior and sexual desire. Advances in the field of psychology have demonstrated that, besides biological or even sociological factors, sexual desire depends as well on psychological ones.

One of the first authors to explore the topic was the psychoanalyst Freud. Freud (2016) focused on sex as the main element in human development, since he described libido as the force driving human behavior. Through his psychosexual development theory, he described five stages which humans follow in their lifespan: the oral stage, the anal stage, the phallic stage, the latent stage, and the genital stage. According to him, these were determinant to human development: failing to successfully pass them could lead to psychological problems and mental disorders. Even if psychoanalysis is now being questioned because of the difficulties to evaluate this theory following a scientific methodology (Kandel, 2018), its contributions to the exploration of human sexuality and human behavior regarding sex cannot be denied.

In the late 1940s, Kinsey (Kinsey, 1998; Kinsey et al., 1998) started conducting large-scale surveys of the American population's sexual activities published. For the first time, his reports provided evidence of sexual behavior of humans, including frequency, practices, and lifestyle, among others. However, the information gathered in these reports about sexual behaviors remained statistical.

Indeed, it was not until the research of Masters and Johnson that the first evidence of how humans experience sexual arousal and sexual activity arrived. Even if now ethically controversial, the research conducted by Masters and Johnson regarding human sexual response (Masters and Johnson, 1966) and human sexual inadequacy (Masters and Masters, 1980) are considered among the 40 studies that changed psychology (Hock, 2001). These researchers explored the physiological responses in human sexuality, which they saw as fundamental for a satisfying sex life. Masters and Johnson complemented these works with a series of books in which they explored the psychological aspects of sexuality. Their work continues to influence scientific research on human sexuality in several fields, including psychology.

More recent research keeps challenging the reproduction theories by bringing forward evidence of pleasure being one of the main variables that explain sexual motivation (Meston and Buss, 2007; Barnett and Melugin, 2016). Indeed, hooking-up has been associated with physical pleasures (Farvid, 2014), such as stress and tension relief or fun, as well as with psychological and affective pleasures, including ego boosting and thrills linked to mischieving, transgression, and novelty (Farvid and Braun, 2017). Often these casual sex experiences involve alcohol intake (Claxton et al., 2015), which Pedersen et al. (2017) link to pleasure derived from control loss, time-out from normative life and recounting it to friends as "a crazy and wild experience."

However, research also shows that women associate hooking up with high regret (Campbell, 2008) and disgust (Al-Shawaf et al., 2018; Kennair et al., 2018) after engaging in casual sex, while those in a relationship report higher levels of pleasure than those who engage in casual sex and highlight the importance of care and love for "good sex" (Paik, 2010; Carlson and Soller, 2019). According to different papers, the negative feelings could be due to multiple and inconsistent reasons such as impelling sexual motivation (Campbell, 2008) or sexual double standards (Armstrong et al., 2010; Snapp et al., 2015; Rodrigue and Fernet, 2016; Farvid and Braun, 2017; Uecker and Martinez, 2017), and some point out to the negative outcomes of long-term relationships, such as controlling and violent partners (Armstrong et al., 2010). Nevertheless, scientific research has already provided evidence which shows that positive or negative outcome in a relationship do not depend on its length, but on the partner of choice (Puigvert et al., 2019).

In this vein, another theory which has contributed to the social impact of psychology is that of the coercive dominant discourse (hereinafter, CDD). Gómez (2015) argued that the traditional model of partner election which links sexual attraction to domination, imposition, and contempt is one of the socializing elements that influence the association of passion with suffering, while more egalitarian values are seen as convenient but lay far from desire. This traditional model is conveyed through the CDD in numerous daily interactions with peers, TV shows, popular songs, and social media, among others.

This continuous presentation of men with violent attitudes and behaviors as attractive progressively socializes some women from a young age into attraction toward violent attitudes and behaviors. Indeed, novel research on socioneuroscience has pointed out that the frequent association of violence to attractiveness is internalized by some women, leading them to feel aroused before men that present violent characteristics (Puigvert Mallart et al., 2019). As the authors explain, this emotional reactions are not in fact their own, but the consequence of the socialization in the pressures of the CDD that emerges from the power imbalance within relationships fostered by our patriarchal society. In line with these findings, many studies report girls to prefer partners with aggressive features for hooking up (Valls et al., 2008; Puigvert et al., 2019). These girls say to prefer "good guys" for when they get established in relationships, while they rather choose the bad ones, the fun ones, for short stands (Gómez, 2015). Nevertheless, preferring this type of guys puts them at a greater risk to suffer intimate partner violence.

Alongside, as part of this discourse, girls and women are told to break with alleged "pressures" which force them to save their virginity. However, the peer pressure conveyed through the CDD is also related to what has been defined by existing literature on gender violence prevention as the "upward mobility mirage" (Oliver, 2010–2012). When girls and women fall victims of this process of upward mobility mirage, they think that having intimate relationships with boys and men with violent attitudes and behaviors, they will move up in the social chain. However, what actually happens is the opposite: girls who hook up with many "bad boys" are less socially valued by their male and female peers. Therefore, gratification and pleasure in these cases seems to be related to the perceived social status. In addition, several studies show that students who felt pressured by their peers to engage in casual relationships seemed more susceptible to adverse outcomes related to hooking up, as well as were those hooking up with multiple partners (Montes et al., 2016, 2017).

The notion of romantic love has traditionally included inequality between men and women but at the same time love and respect and not violence at all. Currently there is a feminist transformation of this concept which maintains the non-violence but overcoming its inequalities. However, at the same time, there are other transformations of the concept which maintain inequalities and include violence in romantic love (Lelaurain et al., 2018). The feminist transformation of the concept allows girls and women to choose if they want to look for romantic love free of violence with other girls or boys. The other transformation of the concept prevents women to have that kind of love while it pushes them to sporadic relationships which often include more violence than stable ones. Indeed, there is no evidence of romantic relationships under these terms leading to gender-based violence (Yuste et al., 2014).

Drawing from the idea that pleasure is one of the main reasons to engage in sexual relationships, in the present study we explore the effects of the CDD on the pleasure of young women. The aim is to provide evidence on how CDD influences the partners they choose, the type of relationship they have, the sexual pleasure they associate to them and, on the long-term, what they expect from a relationship and partners (sporadic or stable). On the other hand, we also want to explore if these preferences are different in young women who have not been victims of these pressures. We hypothesize that pleasure in relationships is not related to the duration of those (long or short-term, sporadic, and stable) or to sex, but to dominant and coercive social preferences

regarding the type of partner and relationship (coercive vs. egalitarian) which have been internalized through socialization. Conversely, we expect love to be a protective factor against the CDD. With our results we expect to extend the social impact of psychology by providing some answers that allow to move forward toward violence-free and consented sexual–affective relationships (Vidu Afloarei and Tomás Martínez, 2019).

MATERIALS AND METHODS

Design

The study follows the communicative methodology of research (CMR). This approach pursues the transformation of social realities through the egalitarian dialog and the inclusion of all voices (Gomez et al., 2019). In the CMR, researchers share their scientific knowledge with the researched subjects, who in turn contribute with their own knowledge and experiences of the social reality which is being explored. This is possible thanks to the establishment of an egalitarian dialog that allows to overcome the relevant gap between scientists and researched subjects (Habermas, 1987) and to provide new solutions to the problematics being discussed. The implementation of CMR has contributed to the social impact of psychology regarding violence prevention (Oliver, 2014).

Participants

Thirteen young women (P1–P13) from different socioeconomic backgrounds and geographical regions within the Spanish context were recruited for the study, using purposive and snowball sampling. No gatekeepers were used. All of them were between 20 and 29 years old and all of them reported having had heterosexual relationships. Twelve of them had completed a bachelor's degree and one of them was in the process of doing so. Eight of them had also completed a master's degree and two of them were currently in the process of finishing it. No participants withdrew from the research after signing the consent form.

Materials and Procedure

The current research was fully approved by Community of Researchers on Excellence for All's (CREA) Ethics Committee. It complies with the European Commission's Ethics Review Procedure (2013), the Data Protection Directive 95/46/EC, and EU's Charter of Fundamental Rights (2000/C 364/01). Before being involved in the research, participants were contacted individually by the researchers, who fully informed them about the study. They were given a written "informed consent" in which the specifications of the study were detailed: scientific background of the proposal, aim, methods, and procedure. Participants were given time to read it and were told that they could ask any questions at all times. The researchers gave clarifications when necessary. Participants were also informed about their possibility to withdraw at any time from the study. Taking the intimate content of their testimonies, they were granted full anonymity and their identities were concealed from the beginning of the research. Due to the nature of

their responses, they could decide if they wanted to be audio-recorded or if they preferred the researcher to take notes on their statements. Once the results of the study were ready, they were sent to the participants in order to ensure their conformity with publication.

A semi-structured interview was conducted with each participant individually. The questions for the interview were designed by consensus between all researchers. Knowledge from previous studies regarding the CDD and its influences on relationships and partners was considered when creating the interview. Questions were arranged temporally, from childhood to present. Finally, the script was composed by 33 open-ended questions and subquestions about their sexual–affective relationships, their own feelings, and behavior about them, as well as that of their peers. Interviews lasted from 50′ to 1h15′. Each testimony was either audio recorded or gathered through the researcher's notes, according to the participant's will.

Data Analysis

The current study follows the saturation criteria of Guest et al. (2006), according to which these 13 interviews allow for reaching theoretical saturation since participants were purposively selected; besides location and SES, the group was relatively homogeneous and the domain of inquiry has been delimited. The participants' narratives were analyzed as communicative acts (Searle and Soler, 2004). This approach considers the role of both verbal and non-verbal communication, it separates the intentions behind the acts from their consequences, and accounts for existing power relations in the social context of the speakers. The approach has already proven successful at better identifying situations of coercion, while providing elements of analysis for overcoming difficulties and transforming realities (Rios and Christou, 2010). Under this approach, the gathered testimonies were analyzed following a line-by-line technique. For the early coding, the content of their testimonies was classified into three temporal categories: childhood, adolescence, and early adulthood. Within each category, testimonies were scrutinized for evidence regarding the type of relationship and partner preferred, their own behaviors, feelings, and attitudes toward, as well as that of their peers. Discrepancies between the researchers concerning the data coding were sorted out by consensus. For these cases, researchers discussed the interpretation of each fragment and collectively decided its categorization.

On a second review of the categorization, the following elements of the CDD were identified (**Table 1**).

The analysis of the participants showed certain patterns in the appearance of the aforementioned elements, which had an impact on the way participants understood and perceived pleasure. The three models and their characteristics and differences will be presented in the following section.

RESULTS

As a result of the analysis, a series of elements were identified in the speech of participants. The way in which these elements appeared and converged allowed the identification of three

TABLE 1 | Elements of the CDD.

Elements	Description
e1. Peer pressure	How have the ideas and preferences in their context influenced them?
e2. Partner and relationship choice	How and why did they choose their partners and relationships?
e3. Coerced relationships and partners	How are coerced relationships and partners described and remembered?
e4. Fake narratives	Have they justified bad experiences or share them as exciting to meet social expectations?
e5. Transformation	Is there a change of view regarding intimate relationships preferences and the feeling of pleasure over time and experiences?
e6. Egalitarian relationships and partners	How are they described and remembered?
e7. Right to pleasure	What do they find exciting and/or remember as exciting?

different models, regarding how participants have chosen and choose their partners and relationships, as well as the impact this has on the way they understand and experience pleasure. These elements result from the CDD conveyed through multiple interactions in the context of a patriarchal society. They reflect the effects of such discourse on young women's partners of choice and relationships and the pleasure they associated to these. **Table 2** presents the distribution of the participants in each model.

Model 1 – Not Giving Up the Right to the Pleasure of Falling in Love

When participants were first asked about their childhood, they were suggested to describe their ideal partner and their ideal relationship; to share what these would entitle. Participants classified into Model 1 (M1) described positive and egalitarian relationships as it can be seen below:

"*Very romantic, like in Disney movies. a person who is always, always there, someone emotional, romantic . . . . someone who fits in my family, funny, loving, who takes care of me. Someone with whom I have a good time, outgoing.*" (P1)

In this extract we can see that M1 participants think that an egalitarian relationship can have both love and passion. They also describe their partners through the language of desire, that is the type of language to express admiration, attraction, and desire (Rios-González et al., 2018), with words such as "loving" and "romantic."

However, participants in M1 explain that during adolescence the view of relationships which was socially shared among their peers had nothing to do with their own ideal. In fact, they acknowledge having experienced *peer pressure* (e1) to engage in other type of relationships and partners. However, they also state that even if what their friends did was important to them and that they felt curious about it, they did reject these pressures. An example of this can be read below:

"*I didn't experience direct pressure, but indirect yes. Since others were doing it you, you felt the desire to do it as well . . . They used to tell me 'but don't you get bored? You're very young, you have to try more . . .' And if I don't want to, what? It has been very clear to me from the beginning.*" (P2)

In this extract P2 describes how those in her group of friends kept questioning her choices and pushing her to try something different. However, her ideal of a relationship and partner was

so clear to her that she did not want to give it up and remained strong before these pressures. Accordingly, regarding *partner and relationship choice* (e2), participants in M1 describe to have chosen and still choose their partners and relationships based on their own convictions. In their testimonies, there is a clear rejection to being with someone for any other reason than love and attraction. As P2 explains:

"*Sporadic relationships have never attracted me, going to a house to have [sexual] relations with a stranger, with a stranger? That has never excited me. I do not get excited with a stranger. I have to like previous things.*" (P2)

In the same vein, when talking about *coerced relationships* (e3), M1 participants share strong negative feelings about them. They explain how some of their friends ended up with boys without liking them or with boys who did not treat them well, just because they were socially valued. However, even if they understand the reasons behind their friends' actions, they recognize a lack of pleasure in such practices and express it this way. As P1 explains:

"*There were people around me who did things because they felt they had to, especially in sex. Maybe at that time they didn't give the same value to what they did and what they felt. To me, both have always been equally important . . . I shared what I felt and what happened to me. With some friends I have doubted that they were telling the truth. for whatever reason, to please more, because of what others may think.*" (P1)

In addition, as it can be seen in the extract, M1 participants acknowledge to be aware of the fact that some of the things their friends were sharing regarding these relationships were not true; they were telling them in order to meet social expectations. Moreover, they also recognize that sharing these *fake narratives* (e4), in which they did not feel the need to engage, has led their friends to end up liking such coerced relationships and partners who mistreated them. This is the situation described by P2:

"*In this girl's case* [a friend], *she gave in to the pressure and it was not a good experience for her. She wanted to like the boy, even if she was disgusted by him, and then she ended up liking him.*" (P2)

Therefore, taking into account both their ideal of a relationship as children and this same ideal now, no *coercive transformation* (e5) is perceived in M1 participants, rather a continuous preference toward egalitarian relationships and partners. As seen in this subsection, M1 participants have preferred this latter type of relationship throughout their life,

TABLE 2 | Distribution of participants in each model.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
Model 1	X	X											
Model 2			X	X	X	X	X	X	X	X			X
Model 3											X	X	

even when other type of relationships was socially valued by their peers. In addition, they explain to have chosen egalitarian relationships over coerced ones, because they understand that pleasure is a core component of the former, while the latter completely lack it. In this vein, M1 participants share that they choose *egalitarian relationships and partners* (e6) because according to them they unite both, ethics and desire. As P1 shares:

"*In my case, as I have been with my partner for so many years, I can say it's the best memory I have, both emotionally and sexually . . . My relationship is passionate because of what it makes me feel. It makes me feel great in all physical and emotional aspects. it moves me. To me that is passionate.*" (P1)

Through this example we see how M1 participants have not given up their *right to pleasure* (e7). In fact, they believe pleasure is linked to falling in love and freedom. They feel they have passionate relationships in which they share tenderness and excitement and that these are feelings they have built their relationship upon, making it ideal to them.

Model 2 – When the Coercive Dominant Discourse Steals the Right to the Pleasure of Falling in Love

When asked about their ideal partner and their ideal relationship, participants classified into Model 2 (M2) also described egalitarian relationships with handsome and brave partners:

"*I imagined it as what it is seen on TV, in movies, that everything is ideal, everything is going great, boy and girl in love, all beautiful, they have no problems, and then you see that it's a lie, obviously.*" (P8)

As seen in this example, participants in M2 mainly dreamt too with idyllic relationships in which there is love and everything works out. However, a feeling of deceit can be perceived in the words of some of the participants in M2 regarding this ideal of relationship they had as children. In this vein, one can see how P8 points out that her former ideals were naive and unrealistic. She feels everything is "a lie"; these ideals are something unachievable to her.

When looking at what happened during adolescence, most M2 participants describe strong *peer pressure* (e1) in their context, even if they are not directly aware of it:

"*There was a time in which if you didn't have a boyfriend or weren't hooking up with someone, you were considered a loser. I started late . . . The one who was with the most handsome guy, with the hottest, was the most socially valued . . . At that time, I don't believe that having a stable relationship was more valued . . . the one hooking up with more guys was more socially valued.*" (P3)

In this extract P3 recognizes that not falling into the pressures of the CDD had negative social consequences, which is the reason young women in M2 fall into them, as we will see in this section. Along the same line, most young women in M2, like P3, mentioned that they believed that the more you hooked up with the cool guys, the more your social status increased. This fact has highly affected M2 participants' partner and relationship choices (e2). In their narratives, these young women share that they have primarily chosen those partners and relationships which were valued in their social groups, sometimes even when they knew it was not something they wanted:

"[The guys with whom to hook up were] *the indifferent, the bad boys. They had to be handsome in the eye of others, yes . . .* [about hooking up with them] *Everyone was doing it, otherwise I wouldn't have done it. It was what had to be done and almost everyone in my group did it. It was important to do it, not what you felt, because if you were going out and didn't do it on the next day you were devastated.*" (P6)

In this extract P6 clearly acknowledges that the partners they chose had to be accepted by their social group. This is a common characteristic for young women in M2, who fell into peer pressure in order to fit in and keep a status within their group, as commented above. Another fact that can be observed in this extract is related to the type of relationships they engage in. In this case, we see how P6 recognizes that what was important was doing what was expected from you, beyond your liking or your feelings. Indeed, she acknowledges she would not have done it if everyone else was not doing the same and, at the same time, she shares that not engaging in such practices had negative social consequences. In the same way, this evidence shows how M2 participants, because of the CDD, end up in *coerced relationships* (e4). Regarding these, another common characteristic of M2 participants is that they share ambivalent feelings related to the coerced relationships in which they engaged and the coercive partners they choose:

"*I told it as if it had been very cool, but in reality, I had experienced anxiety in a boy's house, but then I came back. why did I repeat* [with him] *if I felt anxious, why did I go back to his house? With my friends it was more like 'wow, I've done this, I've done a bad thing' It was about doing something malicious, a mischief.*" (P10)

The ambivalence is clearly present in P10's testimony. She acknowledges having a bad time, feeling anxiety, but repeating this behavior she considered "bad" because she then felt excited about telling her friends, even though she knew it was not true: "*the next day you were devastated*". In fact, fake narratives are another common element to most young women in M2. In their testimonies, these young women often acknowledge a lack of pleasure in the coerced relationship in which they engage, but end

up justifying their actions or sharing them as exciting, in order to meet social expectations:

"*I was doing it wherever and before doing it I wanted to, but later I regretted it because I thought 'what a drag!'. Doing it like that, one night. I did not enjoy it. To me, doing it like that was not like 'wow, how cool'; rather, it was like eating an expired yogurt. People sell it like it's amazing, but they do not feel it that way. I think it's a lie, it's to fit in. It's like when you go on a trip and you say it's been amazing, but it's really been a fucking shit.*" (P6)

Both the lack of pleasure and the fake narratives are mentioned in P6 testimony. She acknowledges that she was not forced to do anything she was not choosing, but she did not feel like doing it either. In fact, she describes those relationships as "being a drag" and compares the encounter with "eating an expired yogurt," which is something clearly unpleasant. In addition, she acknowledges to lie about it in order to fit in and she believes everyone around her participated in the elaboration of these lies.

Therefore, considering their childhood ideal of a relationship, together with their life experiences and how they share them, a *coercive transformation* (e5) is identified in participants in M2. Looking at the evidence presented this far, a negative shift is perceived: they have given up their ideal of a relationship and fallen into coerced relationships and partners. In addition, when looking at how they talk about their current relationships, M2 participants fall into double standards. In the same spirit, *egalitarian relationships and partners* (e6) are described through the language of ethics in their testimonies:

[talking about the best and the most exciting] "*they are completely opposite. [The best one, the current one, is] healthy, public, close, routine, status, couple, economy between two people, fixed, comfortable. The other one [the most exciting] is natural, uncontrollable emotions, was not forbidden but out of context, having a partner, was a teacher, we did not fit. there was the tension factor, tension to think that we had such a strong connection, ignorance, lack of control, disinformation, desire, sexual tension when it is not easy. They break what you've learned, surprises come, taking off, more instinct.*" (P7)

In this extract we see how even if saying that the best relationship is the current one, her description lacks excitement, as she continuously describes it in terms of "convenience": status, economy, comfortable. This characteristic is common between participants in M2, who consciously or unconsciously end up choosing nice partners who treat them well. However, as seen before, there is a lack of transformation because they still identify those relationships in which they recognized coercion and a lack of pleasure as even more exciting than their best relationship. This leads to the last identified element shared by young women in M2. Regarding pleasure, this element is not a key component of the egalitarian relationships they now say to prefer. Similarly, some participants, like P7, pretend to fill this void by cheating on their partners, while others, like P6, consciously or unconsciously keep separating ethics and desire:

[talking about their most exciting relationship] "*just before being with him [current boyfriend], I had a boyfriend. He was older. I met him on twitter. It was very cool on twitter; typical platonic love. I could not imagine getting to be with him, but then it was a fucking*

shit. At first it was exciting, then it was shit. At first, I did not know him very well. At the beginning, with the other I had to fight for him. I wondered about things, but with [my current boyfriend] it was more tender. He wanted to get to know me, he was very good, and he wanted to protect me. If I had to choose, I would choose this as the other was a fantasy.*" (P6)

P6 was the girl who described coerced relationship as "eating an expired yogurt" and she now acknowledges she now has a good boyfriend by her side. However, when asked to talk about her most exciting relationship, she decides to share one that was very tempestuous and, even if in the end she says that she prefers her current one, she finishes by saying that the former one was a "fantasy." This shows that pleasure is still subject to the coercive discourse to her, since a single partner cannot unite both love and passion. Thus, the evidence presented this far shows that young women in M2 may have given up their right to the pleasure of falling in love.

Model 3 – Taking Back the Right to the Pleasure of Falling in Love

When asked about their childhood ideal of a partner and relationship, participants classified into Model 3 (M3) also mentioned egalitarian relationships and partners, which they describe through the language of desire:

"*A prince who treats you well, helps you when you're in trouble, based on love. The brave boy, attractive, nice, who doesn't speak badly or treat you badly.*" (P11)

As this extract shows, young women in M3 also preferred egalitarian relationships when they were younger. The partners that they dreamt of united ethics and desire, as it can be seen through words such as "nice" or "treats you well" for the former and "attractive" and "brave" for the latter. Moreover, in this case, unlike M2, no deceit is shown toward these ideas. In fact, this contrasts with the peer pressure (e1) young women in M3 describe:

"*Yes, social pressure in general. When someone started dating guys, you felt pressured not to be the last one. There might have been things that you did not like at all but you did not think about them because what most people thought of that person was more important.*" (P12)

All young women in M3 recognize to have felt social pressure and to have fallen into it. As shared by P12, they acknowledge that they felt pressured to start hooking up with boys, even when they did not really like what was going on, because they were more concerned about fitting in. In addition, through this extract we can recognize another common characteristic of young women in M3, regarding their partner and relationship choices (e2). Likewise, P12 acknowledges to have chosen the partners and relationships which were valued in her social groups and looked right to her friends. In a similar sense P11 explains:

"*You were pressured to hook up with one of those [a popular guy], but really with anyone. It had to be a jerk. He didn't have to be the coolest. Hooking up with someone of that style was enough. [My friends] They never pressured me to hook up with a nice guy.*" (P11)

In this extract P11 explains how you had to choose a partner that was socially valued in order to be socially valued too, and how her friends were the ones pushing her to do it. However, from her words one can see that she resents this behavior, because she states that it never targeted the nice boy. Rather, she says she was pushed to engage in coerced relationships (e3). In Fact, when talking about those, the young women in M3 display negative feelings toward coercive partners and/or coerced relationships. As P11 shares:

"*I did not like the boy, or what was happening, I just hooked up with him to take away that pressure, but I didn't like it. Those are guys who take advantage of these pressures. They do not care about you. I did not have a good time. I did what I did not because I wanted to, but because I felt I had to. At some point I came to want to do it, but I wanted more to stop being the one that did not hook up, than hooking up itself* [.] *I would say that I did not feel pleasure. Once I hooked up with a guy and, on the next day, I felt so disgusting. And at that moment I was disgusted, that's why it was the last time. I thought that it changed the way they saw me, I wanted to think that they saw me as being at their level.*" (P11)

As seen in this extract, young women in M3 are very critical about their past coerced relationships and the partners they used to choose. They acknowledge feeling disgust, doing it without really feeling to and giving greater consideration to social status. However, the rejection present in their statements and their critical thinking allows them to recognize that they engaged in fake narratives. Nevertheless, they also explain that they do not do so anymore, because they have broken with the social pressures that pushed them to such behavior. As P12 explains:

"*When I hooked up with a guy I did not like, I told them* [my friends] *it had been cool, and it really hadn't. Not anymore. I am very honest with myself, if I do not like someone, I am not with him. I do not have to lie; I don't make things complicated.*" (P12)

In this vein, regarding the presence of fake narratives, young women in M3 do not try to justify themselves or share coerced relationships and partners as exciting anymore, in order to meet social expectations. On the contrary, breaking with the social pressure and acknowledging the lack of pleasure in the relationships they had allows them to understand that these are not what they really want and to stop the circle of lies. P12 admits not feeling the need to lie anymore because she just does not engage with partners she does not like. P11 recognizes not feeling pleasure, rather disgust. This critical reflection allowed her to unmask the truth behind coerced relationships and free herself from the peer pressure that had led her to choose those relationships and partners. Partners who she acknowledges did not care about her but took advantage of the situation.

Taking all the above into account, one clearly sees a common characteristic of M3 young women: *liberating transformation* (e5). Participants in M3 have come to reject past relationships based on pressures and now look for relationships and partners in which there is love, freedom, and attraction. For this reason, participants in M3 state to now prefer *egalitarian relationships and partners* (e6) that unite ethics and desire:

"*My current relationship* [is the best]. *This relationship brings me positive things in all aspects. It adds. it is a different relationship from the rest, it is something I had not felt before by anyone else, it is special. it's healthy, I have full confidence in my partner, like he has in me. it's not routineer, but it's very stable; I laugh a lot, even on bad days. it's a super nice, stable and real relationship. My most exciting relationship is also this one, there is always novelty, plans for the future, fun, sexual passion. I think they coincide* [the best and the most exciting] *because there is a balance between physical and spiritual attraction. Everything is connected and compensated.*" (p12)

As P12 explains, she now has a relationship that pleases her in every way. It is both her best experience and her most exciting one, because as she explains there is both the physical attraction and the spiritual connection. In a similar way, P11 explains:

"[my best relationship] *is the last one, because it was not with any pressure, because it was what I wanted. It was not with one of those guys who takes advantage of that* [coercion, social pressure]. *You have freed yourself from that* [coercion, social pressure] *and you are well, and you can enjoy. You enjoy really choosing. The most exciting* [relationship] *is that one too. I was excited because I liked him, and I felt he liked me.*" (p11)

These two last testimonies reflect the transformation that M3 young women have experienced regarding sexual affective relationships, partners, and pleasure. Even if they once fell for them, they now clearly reject past relationships based on pressures and choose egalitarian relationships and partners because they unite ethics and desire. Therefore, even though they initially subjected pleasure to coercion and power, they have seen that this is greater when it is associated with falling in love and freedom. They have taken back their *right to pleasure of falling in love* (e7).

DISCUSSION

The aim of this research is to shed new light on the influence of the CDD on the pleasure that young women feel or felt in their intimate relationships. The results found in this paper have led to three different models of women (in the sense of the Weberian ideal types) regarding the effects of the CDD on their partner and relationship choice and its relation to the pleasure they feel.

M1, as teenagers, rejected the pressure to engage in casual sex with those portrayed by the CDD as the "cool boys" and sought for egalitarian relationships and partners in which they united both ethics and desire. Some studies point out that frequent communication with parents regarding sexual issues significantly reduces falling into peer pressure (van de Bongardt et al., 2014). As well social interactions have proven to be a key element in rejecting the pressures of the CDD (Puigvert Mallart et al., 2019). However, further research is needed in order to provide more knowledge about the factors that allow girls and women to reject the CDD and freely choose egalitarian relationships.

Currently, M1 participants still link pleasure to their romantic relationships. They describe their partners as being supportive and good, but also attractive and passionate.

They feel that their relationships are what they have always wanted, with sexual desire being an important part of them. Therefore, pleasure relies in the relationships they have built and the connection they feel. These results are consistent with other studies reporting greater sexual satisfaction in romantic relationships (Armstrong et al., 2012; Barnett and Melugin, 2016).

Moreover, the narratives of participants in M1 challenge the idea of the downside of long-term relationships having worse outcomes for women than hooking up (Armstrong et al., 2010), as all participants in romantic relationships (love-based) reported high satisfaction with their relationships. Indeed, these findings support the idea that the positive or negative outcomes of a relationship are not in its duration, but in the partner of choice. These findings are more aligned with those of Carlson and Soller (2019), which found sexual empowerment and sexual well-being in egalitarian relationships, led by increased communication within the couple. The narratives of participants in M1 also contribute to the empowerment of all those girls and women who freely decide to never engage with men portrayed as more attractive through the CDD because of being violent. In line with previous research by Puigvert Mallart et al. (2019), the self-interrogation that this girls undergo about who they want to be and with whom they choose to have sexual relationships allows them to break the association between violence and attraction, and to associate this later feeling to partners that respect them and feel too passionate about them. Furthermore, they prove that one does not need to suffer the negative consequences of coerced relationships to reject them.

Conversely to participants in M1, M2 participants link pleasure to elements of the CDD. In their narratives, directly or indirectly, they describe peer pressure to hook up with the bad boys. M2 participants' attitudes toward casual relationships are consistent with Suleiman and Deardorff (2015), which found that the majority of participants in their study mentioned their choice of relationship being influenced by their peers. In addition, young women in M2 indicate having engaged in such relationships for status matters. They felt that conveying which was expected from them would make them more socially valued by their peers. This behavior can be explained when girls and/or young women fall victims of the "upward mobility mirage" (Oliver, 2010–2012), which results from the CDD present in interactions with peers. It is also consistent with other studies (Pedersen et al., 2017), in which participants, through their narratives, share that having wild experiences to recount to friends is important to them. In addition, the fact that all young women in M2 recall engaging in sexual–affective relationships that they did not enjoy or choosing partners who they did not like is also in accordance with studies (Montes et al., 2016, 2017) showing that students experiencing peer pressure to engage in casual relationships seem more susceptible to adverse outcomes related to hooking up.

Nevertheless, young women in M2 also had good memories about these relationships, even if vaguer. These results would be consistent with studies reporting that pleasure in casual relationships often lies beyond the sexual encounter itself

(Farvid and Braun, 2017; Pedersen et al., 2017). Rather, these studies show that pleasure in these encounters relies on elements as the "hunt," status, or sharing the story with friends; all these elements being consistent with the CDD. For instance, participants in Pedersen et al. (2017) recounted their "wild experiences" as being fun, but provided ambivalent reports of these encounters. Thus, by including in the analysis the existence of the CDD, the present study provides new insights on the fact that girls and women under the pressures of the CDD engage in relationships that are not pleasurable *per se*. This is in line with studies from the field of socioneuroscience which explain how the CDD can shape the neural networks of some women and lead them to feel attraction toward these men and relationships, even though they can be aware at the same time that they do not feel pleasure in them. These finding can also contribute to explain why some women feel regret (Campbell, 2008) or disgust (Al-Shawaf et al., 2018; Kennair et al., 2018) after hooking up, by evidencing the contradictions between what they think of these relationships because of the CDD and what they actually experience in them. Moreover, the current study challenges those studies that explain these feelings of regret as a consequence of social double-standards that punish women, and not men, for being in casual relationships (Armstrong et al., 2010; Snapp et al., 2015; Rodrigue and Fernet, 2016; Farvid and Braun, 2017; Uecker and Martinez, 2017). In this vein, it provides evidence on how their choices are a consequence of the CDD, which in turn drives them to have behaviors that they do not fully consciously decide and thus, they later regret.

Furthermore, evidence in the current study supports that hook-ups do not inherently lead to negative outcomes. Rather it points out that they have negative effects on women when they are the consequence of the CDD, which is consistent with previous investigations (Valls et al., 2008; Puigvert et al., 2019).

In addition, the present study also provides evidence about how engaging in coerced relationships can have long-term effects in later relationships and partner choice. Participants in this study classified as M2 currently report to prefer egalitarian relationships, while they still think that hook-ups were more exciting. This drives them to a double standards cul-de-sac: while egalitarian relationships are now seen as more convenient, hook-ups with the "bad boys" still are more exciting (Gómez, 2015). This apparent contradiction could be explained at the light of results found by Racionero-Plaza et al. (2018), which show that violent sexual–affective relationships could include feelings of attraction and desire. According to the authors, this behavior would be influenced and triggered by the consequence of storing in their memory coerced situations as desirable, because of the CDD, and would, in turn, set a frame of reference infused of coercive elements for future relationships (Racionero-Plaza et al., 2018). Findings from the field of socioneuroscience also support this idea and provide an explanation of why it happens: in the same schemata and as a consequence of the CDD, there are stored memories of aggression in an intimate relationship (what happened) and attraction toward the aggressor.

Therefore, the current study points out how the CDD might be responsible for leading adolescents to engage in pleasureless and coerced relationships, where pleasure lays outside the relationship itself. Moreover, the results presented in this paper also challenge the idea that bad hook-ups do not have negative long-term effects on women's relationships (Armstrong et al., 2010; Farvid and Braun, 2017). As well, it offers an explanation to the mixed-results found in the association between well-being and hooking-up (Vrangalova, 2015).

Finally, M3 participants explain how they fell into the pressures of the CDD and engaged in relationships with the bad boys for external reasons to the relationships, just as M2 participants (Oliver, 2010–2012; Gómez, 2015). However, conversely to those in M2, M3 participants fully acknowledge the lack of pleasure in those relationships, as well as the fact that they used to share them as exciting to meet social expectations. The capacity of these young women to break with the pressures of the CDD and transform their relationships is consistent with the analysis of Puigvert Mallart et al. (2019), who explain that critical awareness about the influence of CDD is key to dissociate attraction from violent partners and relationships. Indeed, all young women in M3 who undergo the process of rejecting the CDD regain control of their choices and preferences and transform the type of relationships they prefer.

In addition, these findings also contribute to explain the fact that women in egalitarian relationships report pleasure to be greater in such relationships, just as participants in M1. However, participants in M3 also contribute to challenge the pressures that women in M1 suffer when they are told that they prefer their egalitarian relationships because they do not know other relationships than those. Indeed, women in M3 provide first-hand narratives that unveil the lack of pleasure in coerced relationships and recognize how sexual pleasure can only be found with an egalitarian partner that does not treat you with contempt. Indeed, their narratives shed new light on aspects such as why the pleasure relies in external factors of the relationship [i.e., the hunt, status, feeling wild, etc. (Farvid and Braun, 2017; Pedersen et al., 2017)] and provide an explanation to why adolescents and young adults allege to engage in such relationships for the sex, while they also report the sex to be less physically pleasurable (Farvid and Braun, 2017). They also provide an alternative answer to why women can easily share the details about the lack of pleasure in coerced relationships but not the positive ones: challenging Farvid (2014) hypothesis, this would not be because they lack to resources to narrate such pleasures, but simply because these experiences were never truly pleasurable.

In addition, M3 participants support that egalitarian romantic relationships can be sexually empowering and satisfactory (Carlson and Soller, 2019). According to these participants, their egalitarian relationships are of higher quality (Paik, 2010) and more pleasurable, not only regarding orgasm (Armstrong et al., 2012), but because they unite in the same person passion and love (Gómez, 2015). These findings bring forward the idea that pleasure is closely associated with falling in love and challenge once again the idea of love being a damaging force (Lelaurain et al., 2018).

Limitations

The current research aimed at exploring pleasure taking into account the presence of the CDD. Our findings show how this new approach provides new answers for questions and behaviors that remained unexplained. However, because of its exploratory nature, the current study does not provide an in-depth explanation of the elements underlying the association between pleasure and the CDD, for which further research is needed.

Another limitation of the study is that participants shared their own narratives. Therefore, it must be taken into account that some questions were partially answered or that some tried to respond in line with what they consider to be more socially valued. This limitation was addressed by asking the same questions from different angles, which allowed us to detect inconsistencies and ask for clarifications. Nevertheless, the possibility of answers not being fully representative of their experiences cannot be rejected.

Further Research

The present study has unveiled new elements that should be considered in future researches. One of these elements of study refers to peer pressure under the CDD, in order to gain new insights on which factors put girls and women at risk of falling into its pressures and which factors can be considered protective. In this line, young women in M1 can provide new valuable knowledge.

Another element worth considering is the role of fake narratives in associating pleasure to coerced relationships. Providing new evidence of why girls and women engage in these practices, as well as to contrast what they experience with what they share would allow to provide further evidence supporting the lack of pleasure in coerced relationships. Young women in M2 and M3 could provide first-hand knowledge of this process. Moreover, the participation of young women in M2 in such a study under the frame of communicative methodology would provide them with scientific knowledge that could allow them to challenge their perceptions and engagement in coercive relationships.

Finally, further focus on egalitarian relationships will provide new evidence of which elements make these relationships pleasurable, contributing to a body of knowledge in which romantic relationships challenge the dichotomy between exciting relationships and convenient ones by uniting in the same person passion and love.

CONCLUSION

The current research is one of the many studies now contributing to further increase the social impact of psychology by providing new evidence regarding pleasure in sexual–affective relationships. Accounting for the presence of a CDD, this research has shown how peer pressure can lead to coerced relationships which completely lack pleasure but are perceived as pleasurable because of elements that lie outside of them and that are socially

constructed. Unveiling this fact has allowed us to see how those young women who reject the pressures of the CDD (M1) choose egalitarian relationships in which there is love and excitement. Pleasure is an important part of the relationship they have built; they have not given up the pleasure of falling in love.

On the contrary, those young women who fall into the pressures of the coercive discourse (M2) report ambivalent feelings about the relationships in which they used to engage: they signal that they started because they felt they had to and they describe experiencing negative situations; however, they still describe them as exciting because pleasure is subject to the elements of the CDD. Far from being isolated experiences with no further effects, this study shows how such behavior steals from women their right to the pleasure of falling in love, as it leads them to assume that egalitarian relationships even if convenient are boring, and that excitement lies elsewhere.

Nevertheless, our findings also suggest that the negative effect of falling into the pressures of the CDD can be overcome. This transformation lies in the rejection of coerced relationships by recognizing the lack of pleasure in them, the lack of truth in what was shared by friends (fake narratives) and the lack of freedom in those choices. In this vein, young women in M3 show how the right to the pleasure of falling in love can be taken back, since this transformation not only allows to unveil the negative truth behind coerced relationships, but also reveals how romantic relationships (long or short) are intrinsically free and satisfactory. As a M3, P11, stated:

> "*Those who still look for hook-ups, want the next one to be even worse; it's always like this.*
> *Those who want to settle in, look for nice guys who they think will accept them.*
> *Those who transform themselves, look for the prince.*"

As women, we thus vindicate our right to the pleasure of falling in love.

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DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Ethics Board of the Community of Researchers on Excellence for All (CREA). The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

LP was the IP of the research line from which this article derives. ET-G was responsible for the article's design and writing. AK and ET-G participated in some of the fieldwork. EA collaborated in the current line of research with LP and in the design of the article with ET-G. LP and ET-G participated in the analysis. AK and ET-G co-authored a communication on this topic at an international feminist conference.

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Social Impact of a Transformative Service-Learning Experience in a Post-conflict Setting

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In the context of the 2016 Peace Agreement signed between the Colombian government and the FARC-EP (Fuerzas Armadas Revolucionarias de Colombia-Ejército del Pueblo), several challenges for society and academia have emerged: (1) overcoming the gap between the rural and urban settings, which has been one of the roots of the Colombian armed conflict, and (2) training psychologists and transforming traditional educational practices, which have not been designed to fulfill community needs in a post-conflict setting. One of the strategies from academia to overcome these difficulties is to create alliances with rural communities where students learn key competences to foster a horizontal approach while actively working with the community. In the region of Caquetá, Colombia, two Territorial Spaces for Training and Reincorporation (ETCR) were created in order to provide a space for former guerrilla members' reintegration to civil society. In the ETCR Héctor Ramírez, 27 students and two faculty participated in a service-learning project (2 weeks in December 2018 and two in June 2019) where they engaged in local daily practices and social projects based on the community's prioritized needs. The aim of this study was to analyze the learning process of undergraduate psychology students in this community psychology service-learning project in the context of peacebuilding in Colombia. This study is grounded in a Participatory Action Research (PAR) approach and data collected include reflective narratives and video diaries by students before and during the course, and two focus groups after the experience. Findings suggest that students who participated in the experience are in the process of developing cultural humility, through affective understandings and the consolidation of communities of practice that include the former guerrilla members and their knowledges. Preparing psychologists to lead peacebuilding and reconciliation processes is of importance to the field because the professional competencies gained in this context surpass the professional practice as they become part of the students' abilities as citizens. The social impact is twofold: the students learn to create partnerships where purposes are co-constructed and trust-based, while the community takes the lead of their processes creating alliances with an academia that recognizes their knowledge and practices.

Keywords: transformative service-learning, post-conflict setting, cultural humility, undergraduate education, psychology education, psychology

INTRODUCTION

Colombia is currently amid the implementation of a peace agreement with one of the oldest guerrillas in the continent, the FARC-EP. Three years after the signature of the peace agreement, Colombia is still struggling with its implementation, mainly because of the lack of resources and political will of certain members of the government. This has resulted in a recent upraising of a group of dissidents of the FARC who have returned to the arms. In this scenario of potential conflict with the ongoing reincorporation of almost 10,000 former guerrilla members (ARN, 2019), there is an urgent need for the consolidation of citizen trust in the process, as well as building alliances between former guerrilla members who have decided to respect the peace agreement and society. In this context, there is an emergence of societal challenges for peacebuilding and reconciliation. Challenges are not only global, in terms of laws and policies; at the personal level, people also require a critical reflection of personal positions regarding the internal armed conflict of the country toward reconciliation (Oettler and Rettberg, 2019).

Historically, there has been a division between urban and rural areas in Colombia (Rettberg, 2019) with different effects: (1) the access to university is more likely for urban students than for rural ones, which results in a lack of professionals in the rural settings (Departamento Nacional de Planeación, 2015); (2) the urban areas, mainly the capital cities, have not been directly affected by the armed conflict and, therefore, the majority of urban youth is not as involved in the impact of the armed conflict as youth in the countryside (Oettler and Rettberg, 2019); and (3) the professionals that reach rural areas are not prepared to deal with the structural barriers linked to the socio-historic factors underpinning a post-conflict scenario (Vega and Bajaj, 2016).

Populations that have experienced the armed conflict and violence in Colombia suffered negative consequences on their mental health (Bonilla-Escobar et al., 2018). Research on mental health interventions in post-conflict contexts posits the need of trained psychologists who can support dissemination and implementation of evidence-based effective health care approaches (Murray et al., 2014). Further, some communities require community interventions that consider their cultural characteristics and their coping mechanisms (Bonilla-Escobar et al., 2017). In particular, post-conflict contexts require professionals who are prepared to work with culturally diverse populations, recognizing the victim's multiple local knowledges and cultural practices, and offering an empathetic and rigorous service (Osorio-Cuellar et al., 2017). These mental health needs pose challenges for psychology education and psychology training programs in higher education.

As a result, there have been institutional (Diazgranados et al., 2014; CNMH, 2015) and scholarly (Gómez-Suárez, 2017; Sánchez-Meertens, 2017; Díaz-Gómez et al., 2019; Oettler and Rettberg, 2019) efforts to promote peacebuilding processes by including them as part of the curriculum. In the case of universities, the approach has focused on formal settings, where the students have affective and emotional development by exploring the Colombian History (Gómez-Suárez, 2017; Corredor et al., 2018; Díaz-Gómez et al., 2019; Oettler and Rettberg, 2019). The importance of informal settings has been also highlighted, particularly by including visits to museums and media analysis as part of the curriculum (Corredor et al., 2018); however, this approach is yet to be further explored in the literature. In general, there is still a lack of analysis on the impact of peace pedagogies in the country (Sánchez-Meertens, 2017).

Bearing in mind that the educational proposals in terms of peacebuilding in the universities' curriculum is currently focused on formal settings, it is important to address the need to implement alternative approaches that provide students with real-life scenarios where they can incorporate theory and practice. Research on students' perceptions about the ex-combatants has shown that young adults in private universities are more likely to forgive former guerrilla members (López-López et al., 2016). As a result, in this sociopolitical scenario, a service-learning approach (García-Romero and Lalueza, 2019) can be useful to further promote safe spaces for students to engage in dialogue with historically distant groups. This approach can provide the basis for developing courses that incorporate not only the theory, but specific scenarios where students can critically think about their own positioning, practices and beliefs, and the impact that communities can have on them. This is also in line with current Colombian regulations (Decree 1030, 2019) which deem it crucial to engage psychology students in real-life scenarios where they learn to provide creative and transformative solutions to local, regional, and local problems (Corte Constitucional de Colombia, 2019). In addition, Law 1090 of 2006, which regulates psychology practice and education in Colombia, requires psychology programs to form practitioners who can work toward the development of communities under culturally responsive practices and ethical behavior (Corte Constitucional de Colombia, 2006).

Transformative Service-Learning (TSL) is a teaching strategy in which students are involved in a community that is different from their own (Jones and Abes, 2004) and it involves a process of individual and social transformation derived from this experience (Naudé, 2015). Moreover, it is a curricular activity (bearing credits) that requires students and faculty to work with the community (Bringle et al., 2016) with regular and structured spaces for reflection and meaning attribution to unknown cultures (Naudé, 2015; Bringle et al., 2016). The impact of service-learning in higher education has presented positive effects on student's formation (Chan et al., 2019). In the case of psychology, the implementation of service-learning classes has proven to be effective in developing key competences in students (Li et al., 2016), particularly the ethical and social responsibility in a diverse world, which is one of the goals of the APA Guidelines (Bringle et al., 2016) and is required by the Law 1090 of 2006. Psychology education has incorporated TSL; for instance, teaching in schools in South Africa (Naudé, 2015). However, there is only one reported study analyzing the role and benefits of service-learning teaching in a post-conflict scenario, for both citizenship and intercultural education in Serbia (Dull, 2009). Consequently, there is a need for research on

training future psychology professionals who can recognize their role as peacebuilding facilitators in post-conflict contexts. The aim of this paper is to analyze the learning process of undergraduate psychology students in a TSL project. This TSL experience took place in one of the 24 Territorial Spaces of Training and Reincorporation (ETCR in Spanish) in Caquetá, Colombia, where former guerrilla members and their families are currently building a community in peace.

Transformative Service-Learning

In order to foster critical reflection over the challenges of a post-conflict context, TSL can be useful to create enabling spaces for training future psychologists to become critically aware of the challenges people face after the end of an armed conflict. The axis of the TSL approach is the experience of alterity by the students, which implies an identity transformation based on crossing sociocultural borders (Naudé, 2015), as well as a critical reflection on these alternative worldviews (Gómez-Suárez, 2017). The emphasis on transformation highlights the fact that students experience a paradigmatic shift (Taylor, 2007), understood as a process of transforming the structures of assumptions through which we give sense to experience. A paradigmatic shift has three key elements involved: the first element is a *disorienting dilemma*, or "an activating event that typically exposes a discrepancy between what a person has always assumed to be true and what has just been experienced, heard or read" (Cranton, 2002, p. 66). Disorienting dilemmas can lead to transformation when they come with critical reflection or self-reflection, which is the second element of the process. Cranton (2002) defines critical reflection as, "the means by which we work through beliefs and assumptions, assessing their validity in the light of new experiences or knowledge, considering their sources, and examining underlying premises" (p. 65). The third element is the emotional process, emphasized by García-Romero and Lalueza (2019) as a crucial contribution from Kiely (2005) to the model; this key element is involved in the *contextual cross-bordering*, the experience of *dissonance* and the particular form of knowledge implied in the *personalization of the other* occurred as a result of relationships and bonding. According to Naudé (2015), as students build relationships with the community, peers, and faculty, they gain a comprehension of the emotions involved in the experience, an *affective understanding*, which is a critical component in the transformative process. In line with Mezirow (2000), she states, "high-intensity dissonance leads to intense emotions, the questioning of the self and society, and long-term adaptations. Thus, high-intensity dissonance facilitates true transformative learning" (Naudé, 2015, p. 86).

In sum, TSL provides the pedagogical tools to engage students in social transformation in unfamiliar contexts, such as post-conflict settings, and has been used in training cultural competences in health and education professionals. In turn, the concept of cultural humility informs the analysis of this TSL experience, considering the preliminary findings related to experiences of introspection, cultural awareness, and the learning of a specific role as psychologists.

Cultural Humility

Recently, UNESCO (2017) made a call to reinforce the development of intercultural competences in all scenarios of formal, non-formal, and informal education with the goal of *learning to live together and in peace* in a globalized world. However, no consensus has been reached about the *know-how, know-what, and know-who* required to live together, maximizing the advantages of cultural interactions (UNESCO, 2017).

From the beginning, cultural competences were aimed to overcome health inequities related to race and ethnicity by forming knowledgeable professionals about the others and their culture. However, cultural competence places the power in the professional's hands, and as a result they are the ones who define the problem and decide how to solve it (Isaacson, 2014; Hook et al., 2017). Moreover, expertise on the others and their culture does not necessarily result in culturally safe interactions (Brascoupé and Waters, 2009). In fact, expectations based on expertise may interfere in the intercultural learning process because the fear of being perceived as incompetent surpasses the possibilities of learning by recognizing what we do not know about the others (Hook et al., 2017).

Cultural humility is a value that informs one's culture and worldviews (Abbot et al., 2019), which is crucial in a multicultural framework (Hook and Davis, 2019). Instead of an achievable competence, it is a lifelong process with intrapersonal and interpersonal dimensions (Hook and Davis, 2019). The first involves cultural consciousness, cultural limitations, and self-reflection on one's privilege and power (Yeager and Bauer-Wu, 2013; Fischer-Borne et al., 2014), and awareness about the impossibility to fully understand other worldviews (Hook and Davis, 2019). The latter involves recognition of the others' knowledge and expertise (Isaacson, 2014), and respect and curiosity toward their culture and history (Hook and Davis, 2019), which leads to supportive interaction, honest working relationships, and caring (Foronda et al., 2015).

In psychology education, cultural humility has not played such an important role as in other health professions, but lessons learned in psychotherapy training can be used to teach how to work with communities in educational and research contexts (Abbot et al., 2019). Different teaching strategies have in common the importance of modeling this value by self-reflection on one's culture, limitations and privilege; showing openness and curiosity to others, honoring their identity, and facilitating educational spaces in which humility can occur (Abbot et al., 2019).

The concept of cultural humility served as a framework for this study as we aimed to understand how students and teachers worked toward a transformation on their conceptions about and understandings of former guerrilla members, their families, and their recently formed communities.

METHODS

Study Context

This study was conducted in a psychology program in a private university in Bogota, Colombia. As part of the

undergraduate curriculum, a TSL course called "Community Psychology Applied to Post-conflict Settings" was designed in alliance with the ETCR Héctor Ramírez (ETCR-HR) in Caquetá, Colombia, where former guerrilla members and their families are currently living and constructing a community. The design and approval of the course was a challenging task given the university's mistrust and unawareness of communities created by former guerrilla members. This could be due to the historical disconnection between urban and rural settings, particularly in areas directly affected by the armed conflict.

The main objective of the course was to apply the values and foundations of transformative community psychology to nurturing, bridging, and bonding social capital through collaborative interactions with community stakeholders. The course was 14 days long, with 3 days of teaching on campus and 11 days in the ETCR-HR in Caquetá. Students lived in the former guerrilla members' households during the visit and shared their daily activities as part of the TSL course.

Caquetá is located in the South of Colombia, in the Amazon piedmont. This region is characterized by being a historical stronghold of the FARC-EP guerrilla, particularly due to the vast mountains and rainforest where they used to live. As such, this is mainly a rural area which has been neglected by the State. From the main airport of the region, the students and teachers had to travel 1 h by bus to the village. The ETCR-HR is a community formed by 90 former guerilla members and their families (around 250 people). This territory was initially rented to the community by the State and it is currently owned by its inhabitants as a result of the implementation of agricultural self-income generating projects. In front of the Amazon piedmont, lines of colorful houses, crops, and roads have become the niche of a peaceful community that struggles to build peace in a polarized country.

Research Design

This study was designed following a Participatory Action Research (PAR) methodology, in order to plan, monitor, and evaluate the students' learning process and interactions before, during, and after the implementation of the TSL course. PAR methodology followed a process of (1) a collective recognition of all the participants involved (students, teachers, and community stakeholders), their concerns, needs, and current activities through the consolidation of a public sphere; (2) the participatory planning of actions to collaborate with the community processes; (3) the implementation, monitoring, and evaluation of the project; and (4) a collective reflection on the whole process (Kemmis et al., 2014; Loewenson et al., 2014).

The PAR cyclical and spiral process was developed for the TSL courses held in December 2018 and in June 2019. The analysis we present here also involves the use of a PAR to evaluate the impact of the TSL course in the training of psychology students in both versions of the course. Three moments of the process were analyzed for each version: on-campus training (before traveling to ETCR-HR), fieldwork in ETCR-HR, and the reflections of the team 1 month after

they finished the TSL course. This analysis acknowledges the spiral and cyclical nature of a PAR approach, as we consider transformation as a continuous and incremental process.

Study Population, Sampling, and Recruitment

The selection process for the two versions of the course included an open call to all the undergraduate students of the Psychology Program. This call was sent *via* email and social networks, as well as printed flyers on campus. The students who participated in December were selected based on their academic achievement and their previous participation on the undergraduate student's research seedbed group called "Social Action and Communities" (SRG). For the June version, considering suggestions from the December group, students participated in an assessment center with tasks to evaluate teamwork, creativity, and assertiveness, as basic skills required for the course. After they were selected, students and parents signed an informed consent for their participation in the TSL course and in this study.

Participants

Selected participants included 16 students in the December version (Group A) and 11 in the June version (Group B). In both TSL courses, two faculty members with experience in social and community psychology oversaw the course and fieldtrips. Group A was composed mainly of senior psychology students (12 women and 4 men) who had worked closely in the SRG; the mean age was 20 years old. Group B was formed by second year students (seven women and four men); only three students were part of the SRG and the mean age was 19 years. Researchers conducted an oral informed consent process with the students explaining the nature of the project, the extent of their participation, and the possibility to withdraw at any time. Students had time to ask questions regarding the project and then they agreed to participate orally, and it was recorded in a recording device. We changed all names by pseudonyms to protect the students' confidentiality.

Data Collection

Data collection varied from one version to another given the evolution of the course through time (**Table 1**).

TABLE 1 | Data collected for each group.

Group	Type of data collected		
	Pre-departure	**During the SL course**	**After arrival**
Group A December 2018	Narratives about expectations	Individual narratives of the experience Group reports of daily activities	Focus group
Group B June 2019	Individual and collective timeline	Audiovisual reports Video diaries	Focus group

Data Collected on Campus (Before Traveling)

Students were part of different training classes and reflection activities to be prepared for fieldwork.

Narratives About Expectations

In group A, each student wrote their expectations before traveling to the ETCR-HR in a short paragraph.

Timeline

In group B, students had to collectively construct a timeline of Colombia's history and, then, each one had to locate their own history within the timeline. The emphasis of this session was on the reflections about the relationship between the personal stories and the country's history.

Data Collected on Site

During the 11 days of fieldwork in the ETCR-HR, students had to write down different types of texts as a way to reflect about their own experience.

Narratives About Significant Experiences

In group A, a book was written based on the students' and community members' experiences; chapters were written individually by the students and community leaders. The design of the book was co-constructed with the participants, as they chose the subject they wanted to explore, based on the most significant situation or event they experienced there. Sixteen narratives were selected for the purpose of this study. Additionally, participants were assigned into groups of three and each night one group had to write a small report of the events of the day.

Audiovisual Data

In group B, students recorded video diaries of their experiences at the end of the day. As in the December visit, they were assigned in groups of three to report the events of the day. Additionally, as part of the final product of this visit, participants had to construct a photo report of a subject that caught their attention during the course. The presentation of the photo reportage to the community on the final day was recorded by one of the professors.

Data Collected on Campus (After Traveling)

After 1 month of arrival to Bogota, students were invited to analyze the process.

Focus Group

In both versions of the course, students participated in a focus group to analyze the TSL experience following the spiral process of PAR. The dialogical spiral was drawn in a cardboard with the four moments of the cycle: collective recognition, participatory planning, action, and reflection (Kemmis et al., 2014; Loewenson et al., 2014). Students identified the activities that were crucial for each moment, wrote them on post-its and pasted them on the cardboard. A discussion was developed based on the collective construction of the cycle. Five students participated in the group A and 9 in the group B focus groups.

Analytic Approach (Data Analysis)

Data collected were analyzed following the procedures of initial, focused, and axial coding proposed by Charmaz for critical qualitative inquiry (Charmaz, 2014, 2017). The process involved a team-based, inductive, bottom-up coding in order to develop a rigorous analytic process (Cascio et al., 2019). The authors of the paper and two research assistants had weekly meetings to jointly analyze the transcripts and videos of the different groups. Additionally, the coding process was informed by the TSL and cultural humility theories (Taylor, 2007; Abbot et al., 2019).

Initial coding included line by line coding (Charmaz, 2014). Emerging themes were related to previous worldviews about the former guerrilla members and their communities, paradigmatic shifts during fieldwork, and transformations after the TSL course. We found some *in vivo* codes, such as "getting out of the bubble" and "looking at the reality." Focused coding (Charmaz, 2014) was more significant than the initial codes. In this stage, we concentrated on analyzing transformation through time and the emotional understandings gained by students during and after the experience. We also looked at salient codes that emerged during the initial coding in Excel tables. Finally, we conducted axial coding (Charmaz, 2014), where we organized data into major categories and subcategories. Final categories included: *(1) The other one as different, (2) developing affective understandings, (3) developing cultural humility for community partnerships, (4) forming communities of practice,* and *(5) from peace agents to self-reflective practitioners.* These categories are developed in the next section.

Trustworthiness

To grapple with preconceptions about the students and the community of former guerrilla members, we developed methodological self-consciousness (Charmaz 2017), or a deeply reflective gaze on ourselves and the research process. This was achieved as a result of the characteristics and experiences of the researchers. One of the authors was not a professor of the course but had conducted research fieldwork in this community, another author was one of the teachers of both courses (groups A and B), and a final author was the teacher of group A. The three authors have had experiences of alterity and significant intercultural interactions; one of them working with indigenous communities in Colombia, and the other two living abroad for extended periods of time.

In order to guarantee trustworthiness, the three researchers created field journals, triangulated data sources and data analyses, conducted frequent peer debriefing, maintained audit trail, and mounted other safeguards (Lincoln and Guba, 1985). Because two members of the research team were also teachers of the two TSL course groups, all data analyses were carried out after the end of the two versions of the course, data were analyzed independently and in group, and the third researcher frequently brought an outsider perspective to the analysis.

RESULTS

The aim of this study was to analyze the learning process of undergraduate psychology students in a community TSL course

in the ETCR Héctor Ramírez in Caquetá, Colombia, where former FARC guerrilla members and their families are constructing a community in the context of peacebuilding. Results from this study suggest that undergraduate psychology students experienced a positive social impact during and after the TSL course, as they developed at different levels and in different degrees intercultural competences. In this study, we focused on cultural humility as a framework to transform one's worldviews and to understand others and self, while building a different kind of relationship with those formerly constructed as other. We argue that a TSL experience as the one described in this study helped undergraduate psychology students revalue their own preconceptions about people who were involved in the Colombian armed conflict and their role as practitioners and citizens in the context of peacebuilding. Further, affective understandings allowed the personalization of the other and personal transformation. It emerged through bonding and reflection processes between students and local actors and their families, with whom they shared everyday life. The process of developing cultural humility through the pedagogical strategy designed in the TSL project shapes the specific role of a psychologist able to build bidirectional partnerships with community members in contexts of peacebuilding.

The Other One as Different (Conceptualizing the Idea of the Other)

Initial reports by students started with a notion of "understanding the other," which for them entailed sharing time with people they did not know and assumed as different. Narratives about their expectations presented an idea of the former guerrilla members as people to be known and discovered by them as part of the experience:

> I chose the course because of the different type of experiences it offers, the new opportunities to know yourself and to share with others. My main expectations are: To discover a way of being, living and interacting with the ETCR community and to contribute in any way I can. (Marcela, 22 years old 7th semester, group A, Narratives about expectations)

In the case of the group B, the individual and collective timeline allowed them to identify the plurality of life stories that classmates had regarding the armed conflict:

> The first day we met in class [before traveling to Caquetá], when we were telling our individual stories, it was very shocking to know that some were related to the military, and then I understood that each of us has different realities and that the experiences that we were going to have were going to be completely different. (Diana, 19 years old, 7th Semester, group B, timeline)

Nevertheless, once students started living with the community, narratives of the experience started to highlight the importance of sharing stories in daily activities as a mutual process. Then, students began to understand that community

was not only an object to be analyzed but a subject who was also interested in the stories they brought from the capital city, as private-university students. Students reported the initial difficulty to engage in conversations with the community members, particularly because of the silence over the questions they were asking. However, at the end of the process, in the focus group discussion, they recognized their own role as "the other" for the community, which entailed acknowledging that not only they as students had preconceptions about the former guerrilla members, they were also being considered as different and, therefore, a dialogical relationship had to be built:

> As I got closer to the designated date place, I still had many thoughts. I felt like a foreigner, but that feeling dissipated quickly [...] Our chat was absolutely natural, and it was quite peculiar. It amazed me how, in this case, I had turned into the interrogated. This was one of the few moments in my life where I was the one sharing the anecdotes and urban sensations of a student. (Juan, 20 years old, 8th semester, group A)

Undergraduate psychology students had preconceptions of the former guerrilla members based on what they saw in the media – because they had never interacted with one before. However, as they shared time with the community, these preconceptions changed. Further, they realized they were represented as "the other" by the community. The process of getting to know one another was mutual: students from the capital city and former guerrilla members.

Developing Affective Understandings

The process of peacebuilding in Colombia has been emotional for most Colombians (signing the peace agreement after more than 40 years of armed conflict and after years of expectation). As predicted, the encounter with former guerrilla members also brought an intensity of emotions to the students because they had not experienced something like this before. During the TSL course, students reported experiencing emotional struggles as part of the process of the encounter. For most students of group A, the affective understandings came more easily, along with the critical group reflections around the other as different, which resulted in the personalization of the other, the acceptance of difference, and the emergence of a shared identity:

> I understood that we're not the same. We will never be, and that's ok. Actually, being different is what allows us to grow, build and, in some way, re-define the circle of "us," including the wrongly so-called "others." In spite of not being the same, the abyss I imagined when traveling in the "chiva" (rural bus) is more like a crack than the huge abyss I once saw. The once clear abyss disappeared in front of my eyes and of the gaze of that distant observer, who now reflected compassion and acceptance. (Pablo, 20 years old, 8th semester, group A, Individual narrative of the experience)

Some students of this group experienced emotional struggles during their time in Caquetá. One student reflected specifically over the continuous fear she experienced, which started before arriving to the territory with the remembrance of the former presidential candidate Ingrid Betancourt taken as political prisoner in the region of Caquetá many years ago:

> Each of the eleven days I shared in the ETCR was a game of emotions. I have the opportunity to narrate an encounter, not a war. I am lucky I had the shake of a hand, not a bullet; to share a home and not a cage. Fear was the reason I came and maybe a bit of it goes back with me. (…) Monsters stop being so as soon as they walk out of the darkness, and you can see their faces. When the encounter allows comprehension and hand shaking in the difference. I am not coming back with answers or truths; I am not leaving believing I know them or that the 53-year-old reality is solved. I leave being certain that reconciliation exists here, and it needs constant work. (Sandra, 9th semester, group A, Individual narrative of the experience)

In the case of group B, emotional struggle was related to the mixed messages students faced before traveling to Caquetá: (1) families were concerned over their safety and the possibility they would become left-wing advocates, (2) prejudice over the former guerrilla members, and (3) the students' own desire to go despite everything they had heard. Once they were in the field, students reported a dilemma about the positive experiences they had with the community, while at the same time having a hard time understanding the different values they hold. As a student stated, "We thought they could be humbler about their process and their current projects, as they are acting as if nothing happened. How can you justify people being killed in the past?" (Jessica, 19 years old, 6th semester, group B, Focus Group). For those students who did not report such mixed messages, the confusion appeared when they saw their fellow classmates struggling:

> I was very confused because I thought: Am I doing this the wrong way? No one else said they were not struggling so I was questioning myself: Am I doing this the wrong way? Should I not put their history in brackets to understand other possible views? Then I realize that we are all different and we live the experience differently. (Marcela, 19 years old, 7th semester, group B, focus group)

In both groups, students reported one key aspect to overcome emotional struggling and to each affective understandings: the daily gatherings organized as part of the course, which took place in the mornings to plan the activities of the day and at night to reflect over their process and what happened during their interactions. For the students, having specific reflecting spaces as part of the course was essential to share their emotions, concerns, questions, and progress throughout the course:

> I think that the first night was very important for us and every night that we gathered was very meaningful for us. I think it was because it was the moment you had to organize all the information you had and we all talked and talked and talked, we didn't stop, we talked for hours every night, and it was very important, right? (Sonia, 19 years old, 7th semester, group B, focus group)

Additionally, students argued that daily interaction in their host houses also allowed them to work through the dilemmas, confusions, or struggles during the course:

> I think there is planning at the micro level: we planned to wake up early to help with the chores, or to talk to the family, or to teach English to our landlord; it was a very important system in order to live with the others. (Catalina, 19 years old, 5th semester, group B, focus group)

Students experienced complex emotions before and during the encounter with former guerrilla members. They had different expectations based on their experiences and histories. However, affective understanding was important to achieve comprehension of one's feelings and of others. Affective understanding through relationship establishment configured the role required for community psychologist to be part of social transformation.

Developing Cultural Humility for Community Partnership

Before traveling to Caquetá, most of the students had hierarchical views of collaboration with the community. Some students may have been uncomfortable with the idea of not having a previous community intervention plan, and others expressed they wanted to contribute to the community as part of their vocation. Despite the good intentions, this perspective holds views of the community as the other in need, to be helped by professional experts. Then, during fieldwork, when the students interacted with people in daily-life activities, they realized former guerrilla members and their families were autonomous. If a partnership was to be constructed, it had to recognize everybody's potential to equally contribute to the work.

After the first interactions, students started to develop respect and curiosity for the community members' history, as expressed in the stories compiled in the book and the photo reportage. For example, Daniela, one of the students from group A wrote in her chronicle:

> The former guerrilla member's stories allow me to move from my prejudice towards the unexpected, which manages to appear as a small silver lining. "If I had a gun, you wouldn't be here", said one of the ex-combatants, excited about our presence. This phrase summarizes my confusion of a war that was born out of lack of opportunities, of a country that has forgotten about its people and the value of the difference. Behind the AK-47 rifles, responsible for the death of people during decades,

human beings wishing for a better life have always existed. (Daniela, 21 years old, 7th semester, individual narrative of the experience)

After the experience, most students had developed a more bidirectional view of community learning and collaboration. For example, during one of the literacy classes they were collaborating with, one of the students managed to overcome the initial frustration of teaching something to an apparently ignorant person:

So, the first time I was there [in the class], I have to admit it humbly, I felt as if I was the one who knew everything, with all the knowledge, I thought I knew all the answers, I have to confess. The next day… I didn't want to go again […] but then one of the professors said "you have to go again", right after I said I didn't want to go, that I didn't feel like a good teacher, and then she said I had to go. The next day it was better for me […] when I let him speak it was beautiful because he showed me a different way of understanding the problem. (Lorena, 9th semester, 20 years old, group A, focus group)

In both groups, this shift was based on the recognition of the other's expertise and agency, as well as the recognition of one's limitation of previous knowledge about others. In this process, the experience of being learners of daily-life tasks involved in making a living of a rural community was significant:

Today, we were divided into small committees of about 2 or 3 students, pineapple harvesting, making shoes, removing weed of the coffee crops. The experience was… I had to remove the weeds of the coffee crops and it was a beautiful experience because I was thinking, while I was doing it, that sometimes I take my coffee in the morning and most of the time we don't know where it comes from and the effort for people to produce the coffee and take it to the city […]. The day ended with a football match with the community and it was very touching to see how the community has welcomed us and invited us to all their daily activities. (Santiago and Rodrigo, 19 years old, 7th and 8th semester, group B, video diaries)

Most of the group B students experienced a strong dilemma around the former guerrilla members' values that students did not share. Therefore, more reflective spaces were required during and after fieldwork in Caquetá in order to problematize the possibility of working together while recognizing at the same time different worldviews. In group A, the experience of building partnerships arose easily once the community and the students experienced the "encounter" and the possibility of an alliance:

Talking about our differences, we talked about love stories and even their perceptions about public and private universities. This man, with a child soul, ended up sharing a reflection when I asked him persistently

what he thought about us: "You are like 18 different worlds [referring to the students and professors], 18 seeds to harvest, just like us, in order to build a better country to live" […] What we don't know is that to have an encounter with the other, we don't have to erase the differences, but to shorten them. The tension among our differences can work as a hinge to open windows for those who still have them shut. (Sarah, 22 years, 10th semester, group A, individual narratives of the experience)

It is important to highlight that students reported the teachers' role in developing self-consciousness by modeling and facilitating critical reflection. They valued being recognized as capable of teaching (when they collaborated in the education committee explaining people math and Spanish exercises they had to complete), but also struggled when they found out and had to recognize their own limitations. They also discovered cultural humility in their teachers, who were open to learning from the students and the community in similar terms:

They [a group of community members] confessed that when they heard that people from a private university were visiting, they thought we were going to be "shallow". This was contradicted when they realized that the two women they had recently talked to in such a natural way, turned out to be the professors. (Kattia, 21 years old, 10th semester, group A, individual narratives of the experience)

In summary, as students interacted with the community people, they started to understand that effective partnership with communities require the recognition of the others' abilities and knowledge. Instead of a hierarchical approach where professionals are the only experts, students recognized that expertise is a complex concept, and all the participants in the partnership could and should collaborate. This comprehension helped students to develop respect and genuine curiosity toward the community members. This ability to work in partnership with communities from a cultural humility framework is essential to the formation of psychology professionals in the context of peacebuilding.

Forming Communities of Practice

At the beginning of the course, before traveling to Caquetá, students saw in the experience an opportunity to learn from their peers and professors since they shared similar interests and backgrounds. The students wanted to expand their knowledge about community psychology and about the "reality of the country" through direct experience. As one student stated:

Why did I choose this course? Ever since the professors told us about the idea of the course, it caught my attention because it is an opportunity to "get out of the bubble," which is Bogota and the University, and to be able to get to know another part of the country's reality. (Carlos, 19 years old, 5th semester, group A, narratives about expectations)

However, as they traveled and started to interact with the community, they realized that there is no one single reality and that the former guerrilla members could also be part of the community of practice, where they both could learn from one another.

Through dialogue, students became aware of the community knowledge and expertise. Former guerrilla members possessed specific knowledge about farming, shoemaking, and nature, among others, that was useful for their daily-life activities. After some interactions, students realized that learning not only happened in formal educational settings; learning occurred in informal interactions and practices within the community. As students interacted with the community in daily practices, they became aware of the potential of learning *with and from* the community members. For example, one student recalled,

> I have always considered myself a person with an important tie to nature. During my childhood, I visited various forest, and considered I had a significant knowledge about nature […] They [former guerrilla members] know how to live in the jungle, and I barely could observe and listen to the forest. However, we both knew how to walk in the jungle (*en el monte*). (Selena, 20 years old, 8th semester, group A, individual narratives of the experience)

As part of the final projects for both courses, the students in collaboration with the community engaged in one project of interest for the community. In December, the students wrote about their experience at the ETCR-HR and some of the stories of former guerrilla members, as a result they published a book titled "Meeting Point. Chronicles of the Encounter." In June, the students did a photo reportage with former guerrilla members about the intersections between their lives and experiences. In both settings, an editorial committee was created: the professors were the first filter, whose job was to proofread and suggest content adjustments. Teachers encouraged students to work with peers, so students were also editors in a second stage. But the most important one was the third filter: the leaders of the local library as well as the community members that were being portrayed or written about, who read and approved the documents/photos. This exercise was another opportunity to consolidate the collaborative relationships where even the construction of an academic text required self and collective reflection:

> Some students had finished their texts, so it was time to show them to the community, so they could be sure that we were telling things as they happened, but also as a way to check if they agreed on what we had written. Our purpose was to leave to the community something transparent and adequate. We went in pairs to show our texts and we were very nervous. It wasn't easy for us to show community members our texts; we didn't know if they would like what we wrote. (Renata, 21 years old, 10th semester, group A)

Moreover, most students experienced a paradigmatic shift when they understood there was something important that they could learn from the community members beyond their personal experience. When they co-constructed stories and photo reportages, students gained a comprehension that knowledge goes beyond academic knowledge. To survive in the jungle (*en el monte*), former guerrilla members needed specific knowledge about the weather, natural cycles, animal behavior, and even medicine, that students had not considered before these interactions. As they started to learn from the community, they expanded their community of practice to include community members as significant others, as experts in their own domains. Then, students began to understand how collaborative relationships can consolidate strong and lasting alliances that are able to mobilize social transformation.

From Peace Agents to Self-Reflective Practitioners

As we have previously mentioned, initially, students' main goal was to become an example of peacebuilding, to become peace agents as a result of the participation in the experience. Moreover, the narratives of the experience during the 2 weeks presented the complexity of becoming part of a peacebuilding academic project. Moving from a notion of superiority to one of awareness of the value of the community entails an emotional struggle that, in turns, helps them understand multiple realities. Thus, cultural humility appears as the interphase between a state of confusion and the openness to establish dialogical relationships with community members by recognizing the plurality and legitimacy of knowledges. Forming communities of practice is then the final step toward understanding the bidirectional nature of community psychology and the importance of collaboratively developing projects.

It is worth noting that this transition is framed within intentional pedagogical spaces designed to support students throughout their process. The design and execution of the project entailed permanent and fluid communication between the students and the professors, where grades and academic performance were not the main goal; on the contrary, performance was achieved through the levels of self-awareness and the type of connections and bonds they created among themselves and the community:

> We were heading towards the restaurant for the last time, in the midst of a heavy rain, and we finished our journey with a self and peer evaluation to fulfill our academic duty. But that was not the most important thing from our last breakfast there […] the most important thing was our last meeting, where we discussed the strengths and things to improve in the course. We all agreed that the best part of the experience was the overall unremarkable experience we had. (Mauricio and Victoria, group A, daily experience journals)

After the TSL experience, students realized that the essentialized idea of the "other" played an important role in peacebuilding processes in a post-conflict setting. Therefore, some students went back to their context, aware of the responsibility of sharing with other people the multiple stories and practices they had experienced:

So, back home, we [two students from group A] volunteered in a retirement home, in a poetry club for the elderly. We had the book that was written by the former guerrilla members and we told the elderly about it. The grannies are so lovely and cute, and then we started telling them about our experience, through some poems that were part of the book. They were so excited about our experience that the next time, we kept on discussing what had happened to us over there. It was so beautiful. (Miranda, 19 years old, 8th semester, focus group)

This example outlines the ways in which some students have managed to challenge black and white versions of the armed conflict and have started introducing alternative understandings of former guerrilla members. As such, TSL can serve as a platform to trigger conversations about rurality and seemingly distant problems into an urban setting that has been historically indifferent to those stories.

DISCUSSION

Building peace is a complex process that should involve all members of society, universities and professionals included. Therefore, consolidating a curricular approach toward peacebuilding in universities implies the development of specific competences that enable future psychology professionals to understand the articulation between their discipline and its application in a post-conflict setting. New approaches – such as the historical memory education (Corredor et al., 2018) – highlight the importance of formal and informal settings to promote discussions, debates, and reflections about the structural factors that have promoted violence in the country, as well as to provide space for affective understandings of the contexts and emotions involved in the experience.

The TSL experience we present in this paper is an example of one possible venue to close the gap between rural and urban communities in a divided and polarized country. We argue that intentional pedagogical spaces in real-life scenarios with former guerrilla members can be not only a curricular innovation in terms of training psychologists, but also a peacebuilding strategy for young citizens. Because of the high-intensity dissonance the experience creates in the students (Naudé, 2015), it offers a unique opportunity to generate deep, long lasting personal transformations, which in turn will foster social change (Mezirow, 2000). For this reason, it is important to consider the elements of the intentional pedagogical spaces that provide the foundation for a positive experience in TSL.

First, by intentional pedagogical spaces we refer to the design and implementation of courses on-site where there is space for an encounter or a high-intensity dissonance. In a post-conflict setting such as Colombia, the focus has been on teaching history of the armed conflict and creating debates in class about the country current situation (Gómez-Suárez, 2017; Corredor et al., 2018; Díaz-Gómez et al., 2019; Oettler and Rettberg, 2019). However, these pedagogical strategies are framed during class or using specific activities with special

guests on campus. In the current study, one of the critical aspects that triggered a contextual understanding of the socio-economic situation of people in a reincorporation process was the possibility to spend time with them in informal, daily-life scenarios in context. This is in line with studies on the importance of service-learning experiences in the psychology curriculum, especially on the benefits of community partnerships to create opportunities for critical reflection (Bringle et al., 2016).

Second, cultural humility offers a framework to educate psychologists with intercultural competences to work in post-conflict scenarios. Some characteristics of cultural humility include: cultural consciousness, cultural limitations, self-reflection on one's privilege and power (Fischer-Borne et al., 2014), awareness about the impossibility to fully understand other worldviews (Hook and Davis, 2019), the recognition of the others' knowledge and expertise (Isaacson, 2014), and respect and curiosity toward their culture and history (Hook and Davis, 2019). We recognize that one 2-week experience is not enough to fully develop cultural humility, but as students experienced paradigmatic shifts and high-intensity dissonances, they showed development of various elements of cultural humility in progress.

Findings suggests that self-reflection, cultural consciousness, and recognition of others knowledge played a role on the quality of the relationships between teachers, students, and the community. This finding agrees with research on cultural humility and how it facilitates partnership in psychology scenarios as it works for therapeutic alliances in clinical settings (Abbot et al., 2019). Even more, the centrality of emotional struggles and dilemmas related to preconceptions of the other indicates that a multicultural orientation is key for peacebuilding interventions whose goal is to train self-aware and critical professionals.

Finally, critical reflection plays an essential role in the transformative process before, during, and after the field experience. This curricular design involves a critical approach to education, where the relationship between students and professors is horizontal, and safe spaces are guaranteed in order to deal with the emotional struggle students face during the TSL experience. This supporting relationship is consistent with research about critical reflection and metacognition as a positive way to foster reflection, be consciously aware of biases and prejudices, and therefore promote cultural humility (Sánchez et al., 2019). In this study, safe spaces for discussion were provided both orally and in written through daily meetings with the students, and with the daily recordings or texts about their experience. The creation of the editorial committees with the community was an additional, non-planned space that further created room for self-awareness and reflection about the writing process.

In conclusion, building peace is a complex process that requires the commitment of all sectors of society. If universities are to contribute to this endeavor, complex and innovative solutions should be proposed with the input and collaboration of those who have been involved in the process. TSL offers a pedagogical strategy to develop intercultural competences in post-conflict settings in future psychology professionals. The social impact of these interventions goes beyond the profession as it serves to close the gap between rural and urban contexts,

and fosters dialogues between former guerilla members and civilians that were unthinkable in the past.

Strengths and Limitations of the Present Study

This study is drawn from two on-site courses held during two intensive weeks. Analysis of students' transformation and self-reflection can only be extended to the 4 months after the experience, where focus groups were held. Additionally, student characteristics, such as participating previously in a Student Research Group, could have an influence on the willingness and openness to participate in this type of experiences.

Nevertheless, it is worth noting that this study presents a rigorous systematization of the self-reflection processes of undergraduate psychology students, as well as documentation of pedagogical strategies used to develop cultural humility in students. By combining not only written texts but oral experiences, the study delves deep into different forms of expression of self-awareness and the development of critical consciousness.

Future Research

The development of cultural humility is a lifelong process (Sánchez et al., 2019) that can start during an intensive 2 weeks course but needs time to settle in. The results of this study suggest that openness to learn from others and a self-reflection process indeed took place during and after the course. Future studies need to examine whether the intercultural competences gained in this experience are transferred to professional practice.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available upon request to the corresponding author.

ETHICS STATEMENT

The present study is part of a larger research project approved by the Ethical Committee of Universidad de La Sabana in

session Number 77 on August 14, 2019. All participants provided oral informed consent, which was audio recorded. No explicit informed consent was collected from the parents/legal guardians of non-adult participants, as all participants were above the age of 18. Written consent can be provided if required.

AUTHOR CONTRIBUTIONS

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Improved Leadership Skills and Aptitudes in an Excellence EMBA Program: Creating Synergies With Dialogic Leadership to Achieve Social Impact

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Psychological research on leadership has demonstrated that it achieves social impact, particularly in the improvement of working environments and organizational performance. The understanding of the organizational context of leader behavior and its different components is crucial to analyzing the impact of leadership in organizations. The purpose of this study is to identify and analyze the transformation and change of leadership skills and aptitudes before and after the implementation of an excellence EMBA program, particularly in relation to two components of the organizational context: (1) goals and purposes, and (2) people and groups. Data were collected from open-ended questionnaires completed by alumni and current participants in an Executive MBA program (EMBA) and enrolled in leadership courses. The emerging issues identified in the responses include themes linked to dialogic leadership and show that participants improve their leadership skills and aptitudes, advancing toward effective leadership and potential social impact in their organizations. The article concludes with a discussion identifying synergies with current developments of psychological research in leadership and the social impact of science.

Keywords: social impact, business leadership, dialogic leadership, EMBA, organizational context

INTRODUCTION

Since the beginning of the 20th century, psychological research on leadership has contributed to generating improvements in business organizations that positively influence their performance and working environments, thus achieving social impact. Some of the most relevant scientific contributions analyze the effects of leadership on the improvement of interpersonal skills and the ability to reach personal and organizational objectives. In higher education studies, the research includes how to provide students with the necessary psychological competencies, skills, and abilities required to deal with a constantly evolving business climate (Thompson et al., 2019). Thus, a growing number of studies are focusing on the competencies required to generate an impact on business organizations, such as self-efficacy, leadership, and locus of control. In fact, leadership plays a key role in these studies in terms of the actions developed through leadership, their reception among organizational groups, and the impact generated on business organizations (Mumford et al., 2007; Thompson et al., 2019).

Among the contributions to classic psychological studies linked to leadership, Lewin et al. (1939) analyzed groups of children who experienced three leadership styles, demonstrating the effect of each one on the groups' atmosphere and productivity. The initial psychological studies on the different types of leadership produced innovative contributions in the business context, showing how scientific research can generate social and economic improvements in business organizations. Moving forward to 2007, a special issue of "American Psychologist" introduced the latest theories and cutting-edge research on leadership, providing information that may motivate researchers to advance in leadership studies using a psychological perspective (Sternberg, 2007). The underlying questions in the special issue included aspects linked to the conditions in which leadership matters, the personal attributes of leaders that interact with situational properties to shape outcomes, and the reformulation of leadership models to treat all system members as both leaders and followers (Hackman and Wageman, 2007). The contribution by Bennis (2007) links leadership to the improvement of society and major world challenges. Furthermore, Avolio and Walumbwa (2006) advanced the knowledge related to building an integrative proposal of the developments and impact of psychological research to better understand leadership, paying special attention to cognitive elements and to the relationship between individual-follower behavior, among others. In this line, recent studies (Alase, 2017; Cai et al., 2018) analyze the inclusion of creativity into leadership. According to these contributions, the achievement of impact by leadership is related to motivating workers to develop objectives, enhance their perseverance, and generate different spaces to solve the same problem. Similarly, Chen (2007) suggests that teams are a key resource of new companies when these realize the potential for growth of the team's creative ability and that business leaders can inspire employes to work together.

Toward a Social Impact for Leadership and Psychological Research

Psychological research raises concerns about the well-being of citizens, including in the workplace, and how to develop research that has an impact on society. As in other disciplines, the impact of psychological research can occur in real or potential terms. Real impact implies that the research results have led to current improvements for society, whereas potential impact indicates some evidence of the effectiveness of research but that the results are not yet transferred (Pulido et al., 2018). Taking this into consideration, advancements in the field of leadership and psychology that address the decent work and economic growth of Goal 8 of the UN's Sustainable Development Goals (United Nations, 2019) can contribute to real or potential impacts. Several authors and contributions have followed these approaches. House (2008) published a study focused on a historical analysis of social psychology, social sciences, and economics stating that economic power has grown exponentially during the last century thanks to the contributions of social sciences and psychology.

Such developments are related to the promotion of inclusive and sustainable economic growth, employment, and decent work for all as assessed in the "Sustainable Development Goals Report 2019" (United Nations, 2019). Psychological research on leadership in organizations has had a relevant impact on management and economics studies. The 6th International Conference on Management, Leadership, and Governance (Riviere, 2018) focused on leadership knowledge in the context of three research dimensions: psychology, business economics, and project management. Some contributions highlighted the role of psychological training on leadership to achieve a social impact, particularly an economic impact. The impact of psychological research includes an improvement in the competencies and skills of undergraduate and MBA students, which also supports the advancement of international objectives focused on improving the economy and decent work.

Approaching Leadership and Dialogic Leadership

Various fields of research have approached the study of leadership. On the one hand, studies in the fields of organizational behavior and industrial psychology focus on the negative features of leadership, such as abusive behaviors, toxic relationships, and bullying tactics (Harris and Jones, 2018). On the other hand, in the field of psychology, Vroom and Jago (2007) proposed that leadership is "a process of motivating people to work together collaboratively to accomplish great things" (p. 18). Chatman and Kennedy (2010) pointed out the need to study the theoretical approaches from psychology that allow leaders to develop skills and interact with small groups and large corporations. In this way, psychological studies in the field of business leadership can help inspire members of organizations to achieve organizational goals. According to Mumford et al. (2007), there is a need for in-depth psychological analysis to understand how leaders are able to influence others.

The conceptualization of diverse types of leadership has increased in recent years. Jardon and Martínez-Cobas (2019) developed a study based on the primary contributions of different types of leadership, such as ethical leadership, authentic leadership, spiritual leadership, and transformational leadership. Other authors (Bryant, 2003) relate the latter with transactional leadership, while Hitt and Duane (2002) study strategic leadership. Padrós and Flecha (2014) developed the conceptualization of dialogic leadership, defined as the process of creation, development, and consolidation of the leadership practices of diverse community members. The authors believe that one cannot reduce leadership to attributing a role to a person and not to the rest; rather, it has a human dimension. Leaders, in their dialogic responsibility, discover the required mechanisms for working together to support and promote actions that enhance changes in the organization and beyond. The conceptualization of dialogic leadership relates to entrepreneurial leadership, understood as a mechanism aimed at taking advantage of the creative potential of workers, supporting trust-building in the creative processes of organizations (Cai et al., 2018).

Creativity and Heterogeneity: Toward Effective Leadership

In business, leaders drive or influence workers as role models (Más-Machuca, 2014; Renko, 2017). Some studies indicate the need for leadership to motivate workers with support and perseverance, facilitating the emergence of creative proposals from workers on their own (Gupta et al., 2004; Chen, 2007). In this sense, Cai et al. (2018) explain that entrepreneurial leaders should motivate team members to support benefits for both the team and its members. Furthermore, the authors state that the daily management of the company generates a specific type of leadership aimed at driving people toward creativity and new opportunities. On the basis of common objectives and a shared vision of the organization, the achievements of a group will generate a specific type of leadership. In this sense, leadership with a strong influence on business and able to thrive and work in a creative and innovative way supports successful business (Gupta et al., 2004).

Several studies approach the analysis of heterogeneity as comprising dimensions influencing effectiveness in organizations. Workforce diversity–defined as similarities and differences among employes in terms of age, cultural background, physical abilities and disabilities, race, religion, gender, and sexual orientation–is a key to improving productivity (Saxena, 2014) and makes the workforce heterogeneous. It is accompany the development of population mobility, fierce competition, and the expansion of the global market (Jackson et al., 2003). Scholars are trying to prove the relationship between heterogeneity and team performance through research. Hoch (2014), in examining diversity, sharing leadership, and information sharing, emphasized diversity as one of the conditions that influence the relationship between shared leadership and performance. In a similar vein, Kearney and Gebert (2009) highlighted the importance of transformational leadership, that is, when levels of transformational leadership are high, nationality and educational diversity are positively related to team leaders' longitudinal ratings of team performance. Saxena (2014) emphasized the role of proper management, affirming that hiring a diversified workforce will definitely lead to improved productivity.

Leadership Components of the Organizational Context

The scientific literature in the field of psychology includes analyses of very diverse components of leadership development in organizational contexts. Several studies have arrived at a possible agreement on the most relevant ones. According to Porter and McLaughlin (2006), the most relevant components identified in a review of leadership from 1990 to 2005 were culture/climate, goals/purposes, people/composition, processes, status/condition, structure, and time. Given that this study focuses on the leadership components of goals/purposes and people/composition, a more detailed description is provided.

Several scientific contributions introduce the relevant organizational context for the creation of leadership in relation to organizational goals and purposes. For instance, in the nursing field, a recent study identifies the essential components of nursing leadership as envisioning goals on the basis of what occurs in a specific context. In this respect, according to Miles and Scott (2019), "the context includes the follower's commitment to leaders, socio-cultural realities, gender bias, situational realities, as well as the social, legal and political environment" (p. 9). A similar approach in tourism research notes that when leaders use empowering behaviors such as enhancing meaningful work or fostering autonomy, they develop supportive organizational structures that empower employes in a way that creates positive attitudes and promotes organizational goals (Amor et al., 2019).

The people/composition component is based on individual potential and its impact on leadership or performance (Porter and McLaughlin, 2006) and appears in the scientific literature in diverse forms. Miles and Scott (2019) studied the leadership curriculum framework to select skills capable of demonstrating a positive influence on others, identifying appropriate and inappropriate leadership and management behaviors, attitudes, and styles, or assessing personal strengths and weaknesses related to management and leadership in nursing, among other professions. The proposed skills show the relationship between individual and collective factors, which determines the group's interactions and the possibilities of developing the proposed goals. In a similar vein, other studies (Salas-Vallina et al., 2018) advocate for leadership that enhances aspects such as happiness and well-being at work, focusing on interactions and reciprocal links.

The Present Study and the Context of the EMBA

The purpose of this study is to identify and analyze the transformation of and changes in leadership skills and aptitudes before and after the implementation of an excellence EMBA program, specifically in relation to two components of the organizational context: (1) goals and purposes and (2) people and groups. The EMBA program at the core of this study is an advanced interdisciplinary course for senior managers who must hold responsible positions in companies. The primary purpose of the program is to improve the knowledge and abilities of the participants, making them directly confront professional challenges. The content of the EMBA program includes analyzing the influence of external factors on company performance, cultivating one's leadership and decision-making capacity, exchanging rich experience among different managers in various industries, and supporting participants to create an interpersonal connection.

The program is divided into three horizons to respond to globalization challenges, leadership, and the integration of the various elements comprising a company. The first horizon pursues the idea that company executives must continue to understand the changing trends of the business environment and control the latest business operations rules. The second horizon is 21st-century company strategic thinking, as the traditional view based on pre-established patterns is no longer sufficient to respond to changes in business trends. The third horizon is a strategic vision centered on decision-makers. Training executives

show them how to use leadership, motivation, and negotiation to guide others to follow their thinking. This particular horizon highlights research into personality, including how to solve difficulties through behavioral analysis and communication skills.

Developmental psychological research in leadership includes topics such as building individual capacities to lead change, improving a shared vision among people, and heterogeneity in working groups, among others. However, less is known about the development of these topics in excellence EMBA programs addressed to leaders in business organizations. This article focuses on the organizational components of goals/purposes and people/composition to analyze to what extent their development has an impact on the leadership skills and aptitudes of participants.

MATERIALS AND METHODS

Study Design

We conducted this study using open-ended questionnaires filled out by alumni and current participants of an EMBA at the University of Deusto (Bilbao, Spain) whose syllabus offers several leadership courses. The open-ended questionnaire was sent via an email providing a link to obtain qualitative data on interpretations of, reflections on, and self-evaluation of the improvements resulting from the EMBA in the development of leadership skills and attitudes. This approach considers that the improvement in leadership skills and aptitudes may have a potential social impact on organizations.

Participants

The EMBA involving the participants in this study targets professionals in managerial positions (such as commercial directors, technical and financial managers, etc.) in specific areas of business organizations, the idea being that they can assume new challenges and make the leap to top management. Participants in the EMBA come from different industries and sectors, resulting in a heterogeneous group. Including the 2018–2019 academic course, there have been ten offerings of the EMBA, producing approximately 250 alumni, and another is underway. All alumni and current participants were given information about the study and invited to participate.

The open-ended questionnaire was completed by 28 alumni and seven current participants in the EMBA. Of the 28 alumni, 69% were male and 31% female. Their ages ranged from 34 to 59 years old. Among them, six alumni were 44 years old, accounting for 21.43% of all alumni, followed by those 34 years old, accounting for 10.71% of past respondents. Five alumni were 35, 36, 38, 41, and 49, accounting for 7.14%. The number of 2019 graduates was the highest, five, accounting for 5% of all alumni, followed by students who graduated in 2013, 2015, and 2018, with four alumni of each year participating in the open-ended questionnaire in this study (**Table 1**).

In the case of current EMBA participants, seven males were involved in this study, two of whom were 31 years old, two were 35, one was 36, one was 38, and one was 44. Overall, current EMBA participants range in age from 31 to 44 (**Table 2**).

Design of the Open-Ended Questionnaire

The design of the core sections of the open-ended questionnaire follows three stages: a literature review to identify relevant components, the definition of synergies with leadership components of the EMBA, and the incorporation of the dialogic dimension of leadership.

First, we reviewed which potential leadership components to include in the questionnaire according to the literature review. The selection was based on literature linked to leadership and psychology that is relevant in the organizational context of leadership behavior. According to Porter and McLaughlin (2006), there is no universally agreed-upon set of components or other types of behavior occurring within an organizational setting, but there is a fair degree of consensus about seven components: culture/climate, goals/purposes, people/composition, processes, status/condition, structure, and time.

Second, we defined the synergies between the components identified in stage one and the leadership contents of the EMBA courses "Organizational Behavior" and "High-performing teams." "Organizational Behavior" provides knowledge of the fundamental aspects involved in leading people in organizations, including understanding human behavior and motivation in the workplace, self-leadership, obtaining trust and commitment, establishing authority, developing talent via coaching skills, and creating a sense of mission and purpose. We identified the components of goals/purposes and people/composition as being the most suited to this approach. The "High-performing teams" course involves analyzing the characteristics of successful leaders, situational leadership, and the most important aspects of the results that a leader must have. Here we also identified goals/purposes and people/composition as being the most suitable for the questionnaire.

Third, we included the dialogic dimension in the open-ended questions, considering, in particular, the components of goals/purposes and people/composition identified in stage one and the contents of the EMBA courses highlighted in stage two. In this way, we specifically focused on the skills and aptitudes required to facilitate leading a diverse group and to promote a shared vision that leads to improving organizations, an approach that puts people at the center of changes.

As a result of these stages, we defined two core sections in the open-ended questionnaire: the leadership, objectives, and mission of the organization and people-oriented leadership (**Tables 3**, **4**). Furthermore, we incorporated two other sections: individual data and a section introducing the major issues of the EMBA.

Contents of the Open-Ended Questionnaires

We formulated two questionnaires with four sections each. One open-ended questionnaire was addressed to current participants of the EMBA and another to the alumni that had finished their EMBA. The underlying sections and questions were coherent between the two questionnaires.

TABLE 1 | EMBA Alumni profiles (Alumni = A).

Questionnaire number	Age	Gender	Bachelor's degree	EMBA graduation year	Responsibility in the company	Main activity of the company
A1	44	Female	BMA	1999	Senior manager/director	Strategic consulting
A2	47	Man	Business and marketing	2010–2011	Corporate and operations director	Insurance
A3	42	Man	Industrial organization engineering	2011	Manufacturing directorate	Operations
A4	36	Man	Industrial engineering	2011	Directorate general	Cold-stamping metals
A5	49	Man	Sociology; law	2013	Incubator manager	Education
A6	48	Female	Engineering	2013	Functional direction	Building
A7	38	Man	Telecommunications engineering	2013	Department manager	Railway signaling
A8	41	Man	Chemical sciences	2013	Direction	Transport paint marketer
A9	36	Man	Industrial electronics and automatic engineering	2014	General address	Manufacture and design of electronic boards
A10	41	Female	Engineering	2014	Functional address	Building
A11	50	Man	Engineering	2015	Managing director	Industrial
A12	44	Man	Engineering	2015	Head of area in project management	Rail transport systems
A13	44	Female	Doctor of informatics	2015	Entrepreneur and intermediate management	Telemedicine
A14	37	Female	Bachelor's degree	2015	Freelance/entrepreneur	Business consulting
A15	59	Female	Telecommunication engineering	2016	General-partner address	Consultancy
A16	43	Man	Tourism	2016	CEO subsidiary United States	Data analytics
A17	39	Man	Telecommunications engineering	2017	Middle management	New business development (security + Big data)
A18	35	Female	Humanities: communication	2017	Middle management	Sanitary
A19	34	Female	Telecommunications engineering	2018	Middle management	Industrial equipment electrical sector
A20	44	Man	Law	2018	Directorate general	Public administration
A21	44	Female	Electronics engineering	2018	Department director	Train manufacturing
A22	38	Man	Engineering	2018	Partner	Consultancy
A23	35	Man	Industrial engineering	2019	Project manager	Manufacture of flexible packaging for all types of markets
A24	40	Man	Industrial engineering	2019	Department address	Rail services
A25	34	Man	Computer engineering	2019	Business unit director	Engineering
A26	49	Man	Industrial engineer	2019	Directorate general	Cold-rolled steel
A27	34	Man	Engineering	2019	Systems technician	Railway industry
A28	44	Man	Postgraduate	2019	Intermediate business	Banking

Open-ended questionnaire for current participants. The first section of the questionnaire collects personal data on the participant, including their age, gender, grade degree, responsibility in the organization, and principal activity. The purpose of the second section is to identify the participants' background of leadership prior to the EMBA, addressing whether they had leadership training and what their existing knowledge of leadership roles was. The third section identifies the participants' perspectives on leadership and the objectives and mission of the organization: investment in a shared vision, the relationship between effectiveness and creating a sense of mission and purpose, and the consolidation of organizational goals. Finally, the objective of the fourth section is to determine participants' perceptions of people-oriented leadership by asking them to identifying team members' weaknesses and strengths, their

views of the relationship between the degree of membership heterogeneity and job performance, and their views of the effect of improving the context in developing people's leadership skills.

Open-ended questionnaire for alumni. The first section includes personal information and adds a question about "Graduation Year." The second section adds a question about the EMBA's assessment of leadership knowledge. The goal of the third section is to understand participants' perceptions of leadership and the objectives and mission of the organization and identifies changes in their perceptions of how people in the organization understand its objectives after completing the EMBA. The fourth section asks for participants' views on people-oriented leadership. In addition, it includes a question about the improvement in participants' people-oriented leadership capabilities after completing the EMBA.

TABLE 2 | Profiles of participants currently involved in the EMBA (current participants = CP).

Questionnaire number	Age	Gender	Bachelor's degree	Responsibility in the company	Main activity of the company
CP1	35	Man	Ph.D.	Directorate general	Biosanitary
CP1	31	Man	Industrial engineering	Functional direction	Automotive
CP3	31	Man	Industrial engineering	Functional direction	Development and production of consumer electronics
CP4	35	Man	Industrial engineering	Engineering coordination and project management	Turnkey energy projects
CP5	36	Man	Science and food technology	General address	Production, distribution, marketing, and sale of bakery products and pastry
CP6	44	Man	Industrial engineering	Head of engineering and general services	Management of investments, energy, works, large projects, and warehouses; member of the steering committee
CP7	38	Man	Bachelor's degree	Intermediate control	Industrial

TABLE 3 | Open-ended questionnaire of the core section: leadership, objectives, and mission of the organization.

For alumni	For current students
1. Lead people and/or teams in your organization; have you reverted to generating and consolidating a shared vision of what the organization is and what its purpose is? Why?	1. Lead people and/or teams in your organization; do you invest in generating and consolidating a shared vision of what the organization is and what its purpose is? Why?
2. Do you think that creating a sense of mission and purpose in your organization comes down to the effectiveness of groups and people? Why?	2. Do you think that creating a sense of mission and purpose in your organization comes down to the effectiveness of groups and people? Why?
3. What knowledge of leadership do you consider most useful in consolidating the objectives of the organization in working groups?	3. What knowledge of leadership do you think can be more useful in consolidating the objectives of the organization in working groups?
4. After taking your master's degree, have you changed your perception of how people in your organization understand its objectives? In what sense?	

TABLE 4 | Open-ended questionnaire of the core section: people-oriented leadership.

For alumni	For current participants
(1) What improvements do you identify from what you learned in the EMBA in relation to the development of successful leadership?	(1) Are you able to identify weaknesses and strengths in members of your team? In what sense and/or aspects?
(2) Are you now more able to identify weaknesses and strengths in members of your team? In what sense and/or in what aspects?	(2) To what extent do you think the heterogeneity of individuals favors greater effectiveness in the performance of your work?
(3) To what extent do you think the heterogeneity of individuals favors greater effectiveness in the performance of your work?	(3) Do you think that the context can be improved so that different people in your organization can develop leadership? Why?
(4) Do you think that, after taking your master's degree, you have been able to improve the context for various individuals in your organization to develop leadership? Why?	

Data Collection

The EMBA-DBS Director emailed the current participants and alumni with an invitation to complete the open-ended questionnaire via a link with the questions. The responses were automatically collected and shared with the research team in order to identify themes and subthemes appearing in the core sections.

Data Analysis

The analysis involved identifying preliminary categories across responses, with particular attention to the core sections, 2 and 3. The preliminary categories were refined with a second and third round to review all responses, implicating different team members and linking categories and subcategories until the final list of themes was agreed upon. The names of the categories and subcategories were defined according to their presence and relevance in the responses.

RESULTS

All categories and subcategories were established inductively after a thorough reading of all responses from alumni and current participants. The categories of the current participants are heterogeneity in teams, dialogue and communication, goals and consensus, and group membership. The categories and subcategories of alumni are heterogeneity in teams (with a

subcategory of cohesion), dialogue and communication (with subcategories of self-leadership, ability to listen and empathy), leadership of different profiles, confidence (with subcategories of efficiency), and goals (with subcategories of transmission capacity and identification with the group) (**Table 5**).

Although alumni participants are present in some subcategories, the responses to the open-ended questionnaires are analyzed and divided into five main categories: heterogeneity in teams, dialogue and communication, goals and consensus, role of leadership and different profiles, and confidence in following.

Heterogeneity in Teams

Responses by current participants indicate that they believe that heterogeneity makes teams more competitive and richer in ideas, as illustrated in the following quotation: "A homogeneous group may be easy to lead, but I think it is not valid for competitiveness. A heterogeneous group is richer in ideas and allows each person to be located in the area where the best performance is obtained."

Meanwhile, the responses by alumni participants are more numerous. They highlight the role of heterogeneity in identifying possible challenges and enriching decision-making, the wealth generated by heterogeneity, and aspects that should be accompanied by heterogeneity, such as a common purpose and a high degree of confidence:

"To a large degree, heterogeneity is the mother of big teams. The combined talent of the team is greater than the sum of its talents. But alone, it is not worth it. It must be accompanied by a common purpose and a high degree of confidence among its members."

Heterogeneity has been directly linked with success, not only in terms of economic success but also in relation to the wealth and enrichment of decision-making processes within the company. A well-applied diversity strategy enables the creation of well-balanced teams, which is in fact connected to efficiency. One of the participants highlighted this diversity as follows: "Success lies in diversity, since it helps one understand and address the possible challenges that exist from different angles, and that always enriches decision-making and even execution."

"Diversity brings a lot of wealth, not only in technical capabilities but in everything else. And you have to take into account the characteristics of each one when creating the equipment."

Dialogue and Communication

Current participants believe that communication is crucial in order to "transmit the objectives in the best possible way and thus 'convince' your team." Compared with current

TABLE 5 | Comparative categories and subcategories and illustrative quotes for current participants and alumni.

	Alumni	Illustrative quotes
Categories	**Subcategories**	
Heterogeneity in teams		To a large extent, heterogeneity is the mother of big teams. The combined talent of the team is greater than the sum of talents. However, alone, it is not worth it.
	Cohesion	I have understood that each individual is different and that we have different needs. The way we talk and address each other should vary if we want these messages to reach a deeper level. It is not the ability we have to attract people but the ability we have to adapt to them.
Dialogue and communication		Increasing communication to realize that different types of people have different needs has led me to generate environments where new voices, ideas, and concepts arise.
	Self-leadership, ability to listen, and empathy	Among other things, I have adopted the ability to understand different types of profiles, and this has helped me to understand their personal goals reflected in their daily actions within the organization.
Leadership of different profiles, confidence		Yes, one must first gain the ability to detect people who wish to develop leadership, and who are aligned with the leader profile required by the rest of the team and the company itself, in order to allow them to lead projects and teams of people, which in turn allows them to demonstrate their strengths as leaders.
	Efficiency	People are more effective and efficient when they have a purpose.
Goals		Yes. When people participate in defining the values and strategy of the company (it is not something exclusive to management), we manage to create a climate of confidence and a shared project.
	Transmission and identification with the group	The alignment of one's personal purpose with that of the company is fundamental. That is why a shared vision is very relevant to making team leadership successful.
Current participants		**Illustrative quotes**
Heterogeneity in teams		A heterogeneous group is richer in ideas and allows each person to be located where the best performance is obtained.
Dialogue and communication		Communicate in order to transmit the objectives in the best possible way and thus "convince" your team.
Goals and consensus		When an objective is based on consensus, it is more likely to succeed. Having a clear company mission and transmitting it properly to the entire organization aligns the objectives of its members and motivates them to work together, thus greatly increasing the chances of success.
Group membership		The leader must transmit passion and enthusiasm, spreading them to everyone within the organization, and exhibit an empathy that makes workers identify with the project.

participants, alumni participants believe that after their EMBA, they have changed their perceptions of how people understand the objectives in an organization in the sense of "objectives and missions." In this regard, one of the participants said, "by increasing communication, by realizing that different types of people have different needs, this has led me to generate environments where new voices, ideas, and concepts come up."

Some participants link the importance of communication to the ability of leaders to listen and empathize. To transmit objectives within a company, it is necessary to demonstrate this empathy with all members. If you can handle the great diversity of members and manage their abilities, your work may have a greater impact. This is illustrated by one participant as follows:

> "I have adopted the ability to understand the different types of profiles, and it has helped me to understand their personal goals reflected in their daily actions within the organization. This has allowed me, through team management learned in the Master's, to build their strengths and focus them as far as possible in order to align these needs and personal preferences within the organization, thus maximizing their efficiency and motivation."

The Role of Leadership in Relation to Different Profiles and Confidence

The role of leadership was linked to the notions of passion, enthusiasm, and empathy by one of the current participants: "transmit passion and enthusiasm, spreading them to everyone within the organization, in addition to showing empathy that makes workers identify with the project."

The leader's role was highlighted as a basic pillar for the effective development of a company. The difference between a good and a bad leader is fundamental for achieving success or, conversely, failing:

> "Good leadership can make a difference between the success and failure of an organization. The figure of the leader is important in making a difference, since it provides the differential point when making strategies, defining objectives, etc. Similarly, bad leadership can condemn an organization to failure."

Alumni, after studying for their master's, connected the role of leadership to motivating people's participation, getting the best out of each member, and situational and shared leadership, as follows:

> "I understand leadership in my company as a situational and shared leadership in which sometimes one leads a project and, on another occasion, leads another with the support and help of others (. . .); it is the ability to connect with your team, to motivate and get the best out of each member."

In addition, after obtaining his master's degree, one alumnus believes that he has been able to improve the context for different people in his organization to develop leadership. This is clearly stated as follows:

> "First, obtaining the ability to detect people who wish to develop leadership, and who are aligned with the leader profile required by the rest of the team and the company itself, in order to allow them to lead projects and teams of people, which in turn allows them to demonstrate their strengths as leaders."

Although confidence is an important element for alumni, it is not mentioned by current participants. One alumnus links the idea of confidence with the notion of identifying different qualities in a great diversity of members. In other words, you need confidence if you want to be successful within the organization. "Each person is a treasure different from the rest of the team. It is part of my job and my responsibility to identify those qualities and give them a value for the organization."

> "To manage teams, it is essential to know each of the people and whether they have enough confidence and motivation to express their thoughts, feelings, and particular perspectives on their work and the company's global aims to manage teams and to identify each of their profiles."

Some alumni link the notion of confidence with common goals and efficiency. One of them replied that "people are more effective and efficient when they have a purpose." It is also important to highlight that alumni not only think about the members of their organizations but also about how they can improve their role as leaders in the company. Along these lines, one alumnus said that

> "Not only has it covered the initial needs and expectations, but it has also allowed me to know myself as a leader and thus build up my strengths and turn my weaknesses into opportunities for improvement, facilitating the daily management of the teams."

Goals and Consensus

Current participants noted the importance of consensus to reach success within the company. Effective leadership must seek consensus in all undertakings. A current participant commented: "When an objective is based on consensus, it is more likely to succeed."

Another current participant discussed the need to have the goals of the company clarified in order to achieve success. Having a clear company mission is fundamental. In the words of one current participant, "Having a clear company mission and transmitting it properly to the entire organization aligns the objectives of its members and motivates them to work together, greatly increasing the chances of success."

One alumnus introduced an important element regarding the goals of a company. In this case, the participant focuses on the way in which the goals are specified within a company. If you encourage the participation of all members, independently of their status in the company, you will reach common goals and achieve a better environment within the company. "When people participate in defining the values and strategy of the company (it

is not something exclusive to Management), we manage to create a climate of confidence and a shared project."

Directly related to goals and consensus, one alumnus mentioned transmission capacity and identification with the group as two key elements. "The alignment of one's personal purpose with that of the company is fundamental. That is why a shared vision is very relevant to making team leadership a success."

Lastly, one alumnus noted another key element related to the importance of working as a large team within the company. To do so, one must look for common goals within the company's great diversity and heterogeneity:

> "In organizations, it is customary to promote teamwork within each of the teams, but this can also encourage the isolation of teams among themselves and the loss of a common goal. Within our organization, work among teams is encouraged through different methods toward a common vision and purpose and so that all people are able to recognize the work of others."

DISCUSSION

The aim of this study was to identify and analyze the improvement in leadership skills and aptitudes before and after the implementation of an excellence EMBA program, particularly in relation to two components linked to leader behavior: goals/purposes and people/composition. Understanding these components, which are analyzed in depth throughout this study, becomes crucial to exploring the impact of leadership on organizations.

Using data analysis, we have identified that the leadership skills and aptitudes resulting from the implementation of the EMBA have had a positive impact on alumni compared with current EMBA participants. The leadership courses included in the EMBA have clear relationships with the components identified in the scientific literature, and some aspects may create synergies with a dialogic dimension of leadership addressed to achieve social impact. Such improvements in leadership skills and aptitudes indicate the potential for achieving social impact in their organizations, which is coherent with recent developments in the field of social impact research (Reale et al., 2017; European Commission, 2018; Pulido et al., 2018).

After finalizing the EMBA, Alumni highlighted heterogeneity and cohesion as key elements in advancing toward a better-performing and more competitive organization. Professional performance is clearly linked with a multidisciplinary team structure. Both heterogeneity and cohesion have been addressed in the leadership literature, highlighting diversity as a key pillar of reaching optimum performance (Hoch, 2014) and linking educational diversity to effective team performance (Kearney and Gebert, 2009).

Dialogue and communication have been linked by participants to self-leadership, the ability to listen, and to empathy (Berkovich, 2014). This is covered in more detail and

in more numerous contributions by alumni than by current EMBA participants. The scientific literature explains that this occurs because the capacity for dialogue maximizes efficiency and motivation in organizations (Chen and Kanfer, 2006). This explains why the EMBA has helped alumni maximize their work in their respective companies through team management, with dialogue and communication as their two key pillars, in line with dialogic leadership (Padrós and Flecha, 2014). Furthermore, according to the literature, dialogue and communication may influence the promotion of creativity linked to leadership (Cai et al., 2018) because it motivates team members to develop company objectives, thus favoring potential social impact. Along with this aspect, it is also important to mention that motivation has been highlighted by psychological research and studies on leadership in organizations. Chen (2007) corroborated the need for leadership to motivate members, thus facilitating the emergence of creative proposals directly related to higher performance and impact.

Effective leadership has been linked with the notion of a good manager, thus maximizing the efficiency and performance in the company. To move in this direction, one must identify the company's main goals and base actions on consensus, sharing the company's mission and purpose. That mission must be transmitted properly to all members and, to do so, an effective leadership approach is crucial, one that motivates all members and increases an organization's potential social impact.

LIMITATIONS AND FUTURE RESEARCH

This is an exploratory study of the improvement in leadership skills and aptitudes in an excellence EMBA program, comparing insights from alumni who completed the program and current EMBA participants. The study is limited by the wide period covered, as it includes alumni from the 10 completed offerings of the EMBA, although most respondents belong to the most recent offering. Another limitation is that no previous studies have been carried out on this specific EMBA concerning leadership, which made it difficult for us to create synergies with similar studies.

Despite these limitations, the study illustrates the improvement in the leadership skills and aptitudes of alumni, the synergies with dialogic leadership, and the potential social impact in their organizations. Future research analyzing the social impact achieved could not only provide evidence of advancements toward Goal 8 of the Sustainable Development Goals but also provide ways of improving the excellence of the EMBA.

CONCLUSION

The results demonstrate an improvement in leadership skills and aptitudes as a result of the development of an excellence EMBA program, which contributes to the potential social impact of organizations. There are several areas in particular in which alumni have increased their effective leadership compared with current EMBA participants: heterogeneity in teams (with subcategories of cohesion), dialogue and communication (with

subcategories of self-leadership, ability to listen, and empathy), leadership of different profiles, confidence (with subcategories of efficiency), and goals (with subcategories of transmission capacity and identification with the group). These features, linked to more effective leadership, arise as a result of having completed the EMBA program. Our findings contribute to improving the EMBA itself, as our results will be shared with the academic staff of the program responsible for the content concerning leadership.

DATA AVAILABILITY STATEMENT

All datasets generated for this study are included in the article/supplementary material.

ETHICS STATEMENT

Alumni were invited to participate in order to obtain a better understanding of their professional development after completing the EMBA and for EMBA accreditation. Current participants of the EMBA were invited, by email and personally, to participate in the context of EMBA accreditation. In both cases, participants were informed about the potential publication of the results in order to enhance the prestige of the EMBA. All participants were informed that their participation was anonymous and voluntary and that data would be treated with confidentiality and used solely for research purposes. Ethical requirements were addressed following the Ethics Review Procedure established by the European Commission (2013) for

EU research, the Data Protection Directive 95/46/EC, and the Charter of Fundamental Rights of the European Union (2000/C 364/01). The above procedure was reviewed and approved by the Ethics Committee of the Community of Research on Excellence for All.

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"Life Starts for Me Again." The Social Impact of Psychology on Programs for Homeless People: Solidarity Networks for the Effectiveness of Interventions

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The role of psychology in the improvement of people's lives is consistent, according to the scientific literature review. More and more studies within psychology, and other social sciences, are pointing out the importance of the quality of social interactions on physical and mental health and upon perceived wellbeing. When talking about homelessness, psychology has served these individuals mostly by informing intervention programs related to preventing and responding to substance abuse, healthcare, sexual risks, or mental illnesses, and these are key problems that psychology has also studied and found to be connected to homelessness. Such strategies, which were traditionally mostly centered on tackling the weaknesses that homeless people face, are now increasingly considering the role of the social support services. The aim of this study was, on the one hand, to identify evidence on the importance of solidarity as a key factor in the process of overcoming homelessness, and associated substance abuse situations, and the barriers and conditions to achieve it. On another hand, the aim was also to approach the impact of that solidarity on their general wellbeing from the perspective of homeless subjects themselves. To achieve this aim, 20 life stories of people aged 35 to 70 years old were conducted in the metropolitan area of Barcelona. The people interviewed had been homeless in a recent period of their lives and were currently dependent on different services. The communicative methodology allowed deepening into the life stories of these individuals via egalitarian dialogue between the researchers and the participants. The results of the qualitative analysis showed that a strong solidarity network was crucial in the process of overcoming the participants' homelessness situation and to tackle related circumstances (alcoholism and drug abuse among others), and this has had an impact in their general wellbeing and in the development of more solidarity

attitudes. These findings are discussed in light of psychological knowledge and other social sciences literature on the importance of quality social environments to support positive developmental trajectories and considering the potential social impact of the intervention programs that take into account the factor of solidarity during their implementation process.

INTRODUCTION

The role that psychology has in the improvement of people's lives is undeniable and pervasive in the literature on psychological research. Contributions from psychology are crucial to the understanding and improvement of the living conditions of people living in complex situations that profoundly affect their wellbeing and quality of life, such as people in situations of homelessness. Research within psychology in the last decades has contributed to further the understanding of the phenomenon of homelessness, and it has also clarified associated causes, consequences, and related risks as well as preventive and mitigating factors. Being male, having low educational levels, being unemployed, and being separated from family at an early age have been identified as risk factors that can lead to homelessness, although, within homeless people, children, youth, and women are considered the most vulnerable groups (Browne, 1993; Philippot et al., 2007). Homelessness is associated with poor physical and mental health, and there is a high prevalence of substance abuse and dependence; in many cases, this was already a problem before the onset of homelessness (Philippot et al., 2007).

If one considers social impact to infer social improvements attained from the transference of the research results (Pulido et al., 2018), the social impact of psychology has served homeless people mostly by informing intervention programs related to preventing and responding to substance abuse (Davidson et al., 2013), healthcare (Salem and Ma-Pham, 2015; Fajardo-Bullón et al., 2019), sexual risks (Pedersen et al., 2018), or mental illnesses (Noël et al., 2016; Fond et al., 2019) – key problems that also psychology has studied and found to be connected to homelessness. Such strategies have often been centered on tackling the challenges that homeless people face, such as those mentioned above. However, homelessness is the result of the interaction of several factors, including socioeconomic factors and conditions of personal vulnerability (Shinn and Weitzman, 1990; Philippot et al., 2007).

Classical contributions of psychology have emphasized the multidimensionality of human wellbeing; they have helped further the understanding of the phenomenon of homelessness in which personal, interpersonal, and social dimensions interact as well as aided the analysis of the components that may contribute to overcoming it. This is the case of the humanist psychology, which stands out for its holistic approach to human existence. The contributions of Maslow (1943) and his pyramid of the hierarchy of needs to describe human motivations has particularly aided the understanding of the diversity of human needs, going from physiological needs to follow with safety, love, belonging, self-esteem, and finally self-actualization. Although Maslow's original theory stated that higher levels in the hierarchy were pursued when a certain degree of the lower level needs were achieved, subsequent developments of the theory (Maslow, 1970), other authors' contributions to this approach (Wahba and Bridwell, 1976), and research into the phenomenon of homelessness based on the theory (Henwood et al., 2015) take a less linear understanding and sustain the idea that also the frustration–and not only the fulfillment–of lower-level needs can lead to the pursuit of self-actualization, showing that there can be simultaneously different types of needs that are perceived and pursued, and these different needs are present at the same time, not only when the basic needs are covered.

Psychological theory also argues that the pursuit of higher-order needs can be hampered by sustained negative experiences of frustration, which could explain the maintenance of homelessness (Philippot et al., 2007). In this regard, the ideas of learned helplessness and self-efficacy (Bandura, 1997) are useful to explain this reality. Learned helplessness refers to the behavior of a person, after repeated negative events or situations not under their control, that results in abandoning efforts to escape the undesired situation. It is related to low self-efficacy, where self-efficacy is the personal judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982). Higher levels of self-efficacy are related to higher performance achievements and account for coping behavior, self-regulation of refractory behavior, resignation and despondency to failure experiences, and achievement strivings. Focusing on homelessness, Bandura (Epel et al., 1999) found that individuals with higher self-efficacy were more active in searching for housing and employment and had shorter stays in shelters, whereas individuals with lower self-efficacy tended to stay longer at the shelter.

This is related to the connection between homelessness and the experience of trauma. According to Goodman et al. (1991), for many homeless people, and especially for women, homelessness appears as a consequence of a situation entailing psychological trauma, such as physical or sexual abuse; furthermore, the presence of a high number of stressful events in their lives is a frequent occurrence in homeless people (Philippot et al., 2007). But homelessness itself is also itself a cause for the experience of psychological trauma because of the loss of one's home and the conditions of shelter life (Goodman et al., 1991). The multiple trauma events experienced by homeless people would lead to the development of learned helplessness and

low self-efficacy, preventing the overcoming of their situation. According to the authors, the prevention and reduction of the consequences of trauma can be achieved with a supportive and empowering environment, highlighting the importance of the social context and social relationships in fighting the negative psychological consequences of homelessness.

Resilience, as the ability to successfully adapt despite challenging or threatening circumstances, has also been studied within the context of homeless people (Masten et al., 1990; Paul et al., 2018). In this regard, research and interventions have focused on improving individuals' resilience. Some interventions improved resilience and coping, focusing on raising awareness of personal character strengths and attitudes (Paul et al., 2018; Cooley et al., 2019). But far from being a purely individual way to react in difficult times, resilience is also related to social contexts and relationships.

According to Durbin et al. (2019), social support is related to increased resilience and reduced stress, thus minimizing the harmful consequences of stressful life events that homeless individuals face. The authors suggest the importance of interventions to help homeless people build support networks while measures are taken to improve their housing conditions. Paul et al. (2018) identified as coping strategies some that involved social relationships: seeking support from family, friends, and professionals; socializing with peers; engaging in meaningful activities; distancing from overwhelming challenges; and finding an anchor. Similarly, Miller and Bowen (2019) found the creation of support systems to be one of the attitudinal and behavior dimensions of resilience for homeless emerging adults. Other dimensions were perceptions of homelessness as a surmountable obstacle, externalization of homelessness, and the maintenance of personal health. Knight (2017) reported the use of group work to promote resilience among especially vulnerable groups of homeless people, such as homeless mothers, which facilitated sharing challenges, receiving support, and revealing participants' strengths, which encouraged them to persevere to improve the situation they and their children were facing. For homeless adults with mental illness and substance use disorders, social support (either formal or informal) has been identified to be important for finding and maintaining housing (Gabrielian et al., 2018), and this has consequently highlighted the importance of developing practices that improve the social resources of homeless people. Social networks have also been related to the higher or lower risk for alcohol and other drugs consumption and have been the object of interventions that improve readiness to change the use of alcohol and other drugs and abstinence self-efficacy (Kennedy et al., 2017). Finally, social support has been promoted through physical activity; fitness interventions in the framework of supporting housing facilities (Sofija et al., 2018) and running groups for homeless women (Dawes et al., 2019) showed benefits both for physical and mental wellbeing and for social inclusion.

Through this body of research, it is shown how scientific literature is increasingly considering social support as a powerful element for overcoming the homelessness issue and how community-based interventions focused on social support can improve the personal resources for homeless people to cope and overcome their situation. Within the many forms that social support can take, *solidarity*, understood as the conjunction of every kind of prosocial behavior, such as being considerate, trustworthiness, cooperation, altruism, fairness, and not only to helping others but also a kind of sacrifice, has been widely studied and theorized from the point of view of psychology and other social sciences (Lindenberg, 2006). Research into community-based psychology has emphasized solidarity for its transformative potential to promote social change within vulnerable groups (Nelson and Evans, 2014). Less is known about the role that solidarity, as a specific form of social support, can have with regards to the homelessness issue. The purpose of this study was threefold: (a) to identify evidence regarding solidarity networks and attitudes as a key factor in the process of overcoming homelessness and related substance abuse situations; (b) to detect which barriers could hinder that solidarity and community support; and (c) to examine the impact of that solidarity on participants' wellbeing from the perspective of homeless subjects themselves.

MATERIALS AND METHODS

Design

The methodological design has been rooted in the Communicative Methodology, which is internationally recognized as a suitable method when working with groups of people in a vulnerable situation (Gómez et al., 2011; Puigvert et al., 2012; Gómez, 2019) and known for the political and social impact of the research that implements it (European Commission, 2010; Gómez and Jiménez, 2018). Communicative Methodology is based on egalitarian dialogue among researchers and the research end-users in all the stages of the research process, thus making it possible to construct knowledge from intersubjectivity and reflection among the different participants (Flecha, 2000; Lopez de Aguileta, 2019). This way, researchers' biases are eliminated, and the benefits for the end-users increase, overcoming end-users' concerns with other methodologies in which the researchers' interests are prioritized over the social actors' ones (Touraine et al., 2004; Flecha and Soler, 2014).

Reaching an effective implementation of the Communicative Methodology requires permeating the whole process with the aforementioned *egalitarian dialogue*, by which all contributions are considered according to validity claims (Habermas, 1989) instead of the power position of the participants (Flecha and Soler, 2014). Communicative Methodology incorporates within its analytical procedure two inherent components: the *exclusionary dimension*, entailing the identification of barriers, and the *transformative dimension*, which analyses the facilitators for reaching social transformation, i.e., the social impact (Gómez, 2017; García-Carrión et al., 2018; Gómez et al., 2019). Two main features of this methodology have led to its selection as the most appropriate method for the current study: (a) the way in which it finds the boundaries and enablers for a change that is consistent with the search for social impact and (b) an egalitarian and intersubjective dialogue

among researchers and the participants that constitutes the sample of study. We needed a methodology that ensured the maximum openness of those men and women in a vulnerable situation, who had been victims of many adverse circumstances, in front of researchers given the distance of the social, academic, or economic realities of both parts, always with the stress being on the discovery of conditions for the social transformation of their realities through a common interpretation.

Participants and Ethics

The research counted on the participation of 20 adult people, 14 women and 6 men, from 35 to 70 years old (with a high representation of people between the ages of 40 and 50), who had recently experienced–or where in process of overcoming–homelessness, and most of them were recovering from alcoholism and/or drug abuse. Regarding time experiencing homelessness, we found two kinds of situations: half of the people had lived on the street and another half of people had lived in temporary shelters and/or health services. The range of time for roofless participants covers from 3 weeks until 16 years with a higher representativity among 3 and 16 years. Participants who only lived in temporary accommodations covered a range from 1 to 4 years with the highest representativity between 1 and 2 years.

These people were recruited from the council's social services and eight well-known public and private entities or non-profit organizations in Barcelona (Spain) located in different places of the metropolitan area (see **Table 1**). The recruitment of participants took part through snowball sampling, due to the previous relationships of researchers with the entities and particular professionals. The life stories were always conducted by a researcher in the entity or the accommodation of the participants, according to their convenience, and the goal was always to seek out natural interactions. Only the researcher and the interviewee were in the room during the interviews. They were audio recorded and subsequently transcribed.

The participants in the research were informed that their involvement was voluntary and anonymous and that all the data would be managed confidentially for solely research purposes. The ethical requirements were managed following the Ethics Review Procedure established by the European Commission (2013) for EU research, the Data Protection Directive 95/46/EC, and the Charter of Fundamental Rights of the European Union (2000/C 364/01). This study was entirely endorsed by the Ethics Board of the Community of Researchers on Excellence for All (CREA)[1]. To safeguard anonymity, original names of

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[1]The Ethics Board was composed by: Dr. Marta Soler (president), who has expertise within the evaluation of projects from the European Framework Program of Research of the European Union and of European projects in the area of ethics; Dr. Teresa Sordé, who has expertise within the evaluation of projects from the European Framework Program of Research and is a researcher of Roma studies; Dr. Patricia Melgar, a founding member of the Catalan Platform against gender violence and researcher within the area of gender and gender violence; Dr. Sandra Racionero, a former secretary and member of the Ethics Board at Loyola University Andalusia (2016–2018) and review panel member for COST action proposals in the area of health; Dr. Cristina Pulido, an expert in data protection policies and child protection in research and communication and researcher of communication

TABLE 1 | Organizations participants were affiliated to. Information collected from the official websites of the organizations.

Llar de Pau	A catholic social work program focused on women without resources in a situation of social exclusion. It is aimed at hosting and aiding in personal promotion toward the autonomy and the achievement of a personal life project.
Arrels	An organization that guides and assists the homeless people in Barcelona, providing coverage for health care, social or basic needs, and guaranteeing housing to the most vulnerable cases. They also work on the civil society and administrations awareness.
ProHabitatge	An independent non-profit association that works from a Human Rights angle with the aim of eliminating and preventing homelessness and residential exclusion in Catalonia. It runs housing and residential programs.
Cáritas	A charity organization founded by the Spanish Episcopal Conference with the aim of carrying out charitable and social actions through the promotion of an integral development, especially for the people most excluded in need.
Assís	A Reception Center with the objective of improving the wellbeing and quality of life of homeless people, especially women, through the implementation of projects and intervention programs focused on training, labor, health, basic needs and decent housing, and collaborating with other entities to search for sensibilization and an awareness of society.
Santa Lluïsa de Marillac	A social integration program from a Catholic charity aimed at people in a situation of social exclusion without resources that carries out attention actions through different project interventions: a welcome and counseling service; a day-care center; a center for limited housing for recovering homeless men; and housing for social inclusion.
Can Planas	Reception center in Barcelona for homeless adult people, which has the objective of covering basic needs through personalized help for the social insertion. It is focused on the development of skills and motivations of the people who are expected to lead a self-sufficient life once intervention in the center finishes. They also look for permanent resources for those people who need supervision or an adapted center indefinitely.
Sant Joan de Déu Solidarity	Non-profit religious entity aimed at supporting the fragile population of society (homeless people, mental illnesses, in dependency situation, childhood and youth, and disabilities) from three cornerstones: international cooperation, social work, and volunteering. It counts more than 400 social and sanitary centers in 55 countries.

the participants has been substituted by pseudonyms when presenting the results of the study.

Data Collection

Data were gathered through communicative life stories (Gómez et al., 2006; Gómez and Sordé, 2012) in order to delve deeper into the participants' life trajectories from childhood until the present day. This was in order to have a complete understanding of every situation. For that purpose, a flexible interview guideline was used in order to ease the narrative and a comprehensive understanding, distinguishing the three stages of their life cycle

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studies; Dr. Oriol Rios, a founding member of the "Men in Dialogue" association, a researcher within the area of masculinities, as well as an editor of "Masculinities and Social Change," a journal indexed in WoS and Scopus; and Dr. Esther Oliver, who has expertise within the evaluation of projects from the European Framework Program of Research and is a researcher within the area of gender violence.

(childhood, adolescence, and present day) while covering several topics transversally: familiar/love/social relationships, relations with professionals and friendships; economic situation; training and employment; housing; substance abuse; gender violence; what drove them to the organization; coexistence; effects of homelessness; wellbeing and health; coping mechanisms; and future prospects.

Each life story lasted around 2 h; some of them were conducted in a sole session, while others needed two sessions. These communicative life stories, where the subjects and the researchers, through an egalitarian dialogue, shared the life experiences of the end-users and the scientific knowledge of the researchers (Flecha and Soler, 2014), have helped to reveal interpretations and identify conditions and boundaries for the social transformation of this group of homeless men and women who participate in different organizations and programs with the purpose of normalizing their situation.

Data Analysis

With the aim of the effective detection of the exclusionary and transformative dimensions in this study, i.e., the barriers and facilitators that homeless women and men find in their processes to transform their vulnerable circumstances through solidarity networks and a powerful social environment of support, the Communicative Methodology has been also implemented at the analysis stage. In order to follow the procedure of this methodology, with the information gathered through all the life stories, they have detected (a) an exclusionary dimension, according to all of the boundaries identified for the purpose of overcoming the cited vulnerable conditions of these homeless people, and (b) a transformative dimension, including the conditions that participants consider that have favored their process of recovery and the impact of solidarity on their general wellbeing.

Through the aforementioned intersubjective dialogue, the researcher and interviewees talked about the above topics during the communicative life story, pursuing the collection of the data needed for the analysis of both dimensions. The researcher and participants were at the same level, but the scientific background of the researcher allowed them to focus the conversation on the detection of barriers and facilitators. Once the information gathered, the analysis went on identifying both dimensions, exclusionary and transformative, for all categories. The categories coincided with topics proposed for the life stories, focusing especially on the coping mechanisms for overcoming homelessness and substance abuse and their impact in their general wellbeing.

RESULTS

The analysis carried out has shed light on the initial purposes of the research: finding the barriers that participants identify that impede achieving a stable situation regarding housing or detoxification; assessing the solidarity networks and attitudes as the conditions they value as the most significant for the overcoming of both their homelessness situation and

other associated circumstances, such as alcoholism or drug dependence; and identifying the impact of these solidarity attitudes to their personal processes of recovery and general wellbeing. The next subsections show results structured according to these three core points.

Negative Social Environments and Occultations: The Boundaries for the Transformation

When participants share their life stories, they perform an evaluation and a balance the factors that led them to the streets or to substance dependence. They share their life experiences while searching for answers that they themselves try to find along their narratives. In this pursuit of clues for understanding why things happened in that way and what helped them to get out of that situation, they found that there were some barriers that create a hindrance for the total transformation of their circumstances.

One of the boundaries that participants have recognized in their life stories is their decision of masking their reality, which hindered others to acknowledge their situation and the act of providing help. In the fear of entailing a burden, bothering their social network, being judged, or any other repercussions, some of the participants acknowledged that they preferred not to inform their relatives of their situation: "I have not told [family] what is my current situation. It would entail a problem rather than any other thing" (Mar). "[Daughters] have never known that I am this way" (Manuel).

The factor of "being alone," without a network of family and/or friends for support, has also been evaluated as a boundary for overcoming homelessness and the illnesses resulting from substance abuse. For instance, Sergio's problem is the lack of a family to sharing his difficulties with and a consequent lack of opportunities to be supported, and he believes that this circumstance has hindered and delayed his recovery process:

"It is difficult itself. I have few possibilities to get out of considering my situation, my family environment (I don't have it), without family support, I don't have it. My parents passed away. I don't have siblings. I am a single son. I don't have family support and it is very difficult…" (Sergio).

The last barrier identified has to do with the presence of a social environment, but it is a negative one in this case. The pressure felt by a toxic social group, which pushes to start or to continue consuming alcohol or drugs and other substances, is associated by participants with more difficulties to get out of the damaging spiral. Some participants recognize that they know the ethics, but, in practice, they feel unable or reluctant to say "no" when it comes to their acquaintances, and sometimes this is because the message for consuming is attractive: "You think they are your friends… Although you know that it is wrong [to consume], as they do it, [you think] 'why I don't too? It's not that bad,' and then you fall into the well" (Margarita). "[…] The friends told me 'do you want to taste this [drug]? You will like it!' […] Once, in the streets, they invited me" (Virginia).

Significant Conditions for Overcoming Homelessness: Solidarity Attitudes and Networks

When participants communicated their experience of the process of overcoming their homelessness situation and the circumstances associated with it, there is a condition that always appeared in the life stories: the solidarity networks they found along the way. Although there are people who expressed that the solidarity performed by their family or friends had been the pillar of their recovery, most of them underlined that the improvement of their situation could not have been possible without the strong solidarity network of professionals and volunteers they had found along their path.

In terms of the support provided by the net of professionals, participants expressed how social workers, but also psychologists and doctors, had been a great help in their particular processes. Javier, who thought there was no solution for his alcohol addiction, happily said that he found the help he needed in the doctor of the entity where he was conducting his recovery program who encouraged him to trust his own capability to fight against the addiction and recognized his achievements: "I was lucky to find 'the doctor' [...] I wonder how [I would stop drinking], because I don't have willpower. The doctor says that it is the merit of mine, but I say that it is his merit" (Javier). For Emilio, everybody can find support in all the professionals of the entity, but he underlined the importance of being predisposed to being helped: "All the professionals help you [...] If they don't help you it is because you don't accept the help" (Emilio). Virginia expressed her gratitude toward all the professionals, especially her social assistant, talking about them as a "big family": "Rafael [social worker]... wow! Have you seen him? He is very kind, he is my family. Is he my support! The rest of them [the professionals of the entity] too [...] It is the big family! (Virginia). In the case of Noelia, the solidarity and support performed by the entity's workers enabled the transformation of much of her reality. She felt they have saved her from alcoholism and living on the street, and that they have provided her with the opportunity to get a new stable situation, to feel included in society, and to have a positive attitude toward life:

> "In the entity they helped me a lot and they saved me [...] I couldn't [stop drinking] before, and they did it [...] I started to have a normal life [...] Everyone needs to feel included at society, and they distanced me from the negativism" (Noelia).

The solidarity performed by the volunteers has also been strongly acknowledged. For many participants, volunteer people have given their time to cover many basic needs (providing food, clothes, or blankets) but also to listen to them and providing emotional support; this was what many of the interviewees estimated as the most important kind of help. This support materialized in the form of the interviewees gaining confidence on their own capabilities, and they were trusted and encouraged: "The clue is that [the volunteers] gave me confidence" (Javier). Here Virginia stresses the solidarity and the help on the behalf of the volunteers, and the wonderful job they do: The

volunteers of the street, they have helped me a lot, they supported me a lot [...] They helped us, they listened to us... wow, very, very nice! Thanks to them who do such beautiful work" (Virginia).

Some of the participants went a step forward and revendicated the idea of investing in more professionals instead of other kinds of resources. As they stated, food is available and ensured, basic needs are already covered (in entities), but what they consider most significant, the support networks, should receive more attention. Manuel wondered why there are not more professionals working in entities considering that they are crucial in the processes, attending and helping to solve complex circumstances, such as the substance abuse problem: "Why are not there more job posts like that? [...] Those who tell you 'you have a problem with alcohol,' and they solve it. They accompany you in the process [...] It helps a lot!" (Manuel).

Regarding the role of friends and family, subjects reflected on how important the solidarity of their relatives has been in the process of overcoming their difficult situation. Thus, and in a complementary way, while participants were being attended by one or more of these entities, they counted on the collaboration of their inner circle, which made efforts to provide the help necessary to reach recovery or a stable situation. In this sense, Sonia expresses that her friend employed her for work, so she could have a salary, despite her poor financial situation: "My friend, who has a small shop, has hired me [...] although things are not going well for her" (Sonia). In the case of Ana, her most significant cornerstones have been her mother as well as her significant other who has been a great support in her fight against alcoholism for years: "They are my two pillars [...] Without them, I would not be alive, I wouldn't have a life."

According to the life stories, solidarity networks helped many participants to make homelessness more bearable during that previous stage of their lives. Even in those extreme and challenging circumstances, they acknowledged that they sometimes felt positive feelings, happiness even, due to the solidarity they experienced. For Sonia, to be homeless was not a disturbing experience because of the strong supporting network she had behind her while on the streets: "It has not been a traumatic experience. It has been a stage of my life where I have found people who have helped me!" (Sonia). Manuel also remembers the kindness of homeless mates and their willingness to help: "People at the streets helps each other a lot! I have seen many solidary people at the street [...] Homeless people is very warm; they inform you about everything!" (Manuel). It is under these difficult homeless circumstances when the solidarity network of friends was a source of great support for some interviewees. Virginia said that different homeless mates joined together to share common spaces and resources and to help each other as a unit: "We joined together. I had good friends; we were a good team!" (Virginia). For Sergio, it was in these extreme conditions that he has realized who his actual friends were–the ones who had been available to him when he had nothing to offer: "I had three close friends, which are the ones I appeal in extreme situations [...] It is [in those extreme circumstances] when you realize who are your real friends" (Sergio).

The Impact of Solidarity: Consolidation of Social Networks, More Solidarity, and the Emergence of Feelings

Participants showed that the solidarity actions they experienced had an influence on their general wellbeing. Resulting from that, participants stressed their need for recognizing and thanking the network of professionals that were such a big support and also their willingness to contribute and toward other users.

One of the direct impacts of the solidarity demonstrations experienced by the participants was the reinforcement of that supportive social network, which started in a tough stage of their lives, and they looked for its maintenance and continuity. Many interviewees underlined how, at a time after their treatments and/or completing their intervention programs, they look for the social workers, psychologists, or other professionals who helped them in the process, in order to keep in contact, thank them, and to worry about them. Margarita said that she usually goes to the entity where her former social assistant works in order to meet her: "I went to meet her and we were talking [. . .] I go there and ask about her" (Margarita). The way Teresa thanks all the permanent support received by professionals is cooking for them and inviting them for a meal: "I cooked chicken for them, and [the social worker] came [. . .] They have always been there. They supported me when I was sad" (Teresa). Virginia expresses her gratitude toward volunteers, meeting them once a week and maintaining a close relationship with them: "I come [where volunteers are] once a week, just to meet them, and we have such a nice relationship with them. . . thanks, thanks, thanks to them who do a beautiful job!" (Virginia).

Another consequence of the solidarity support is the willingness of participants to contribute to the entity with their own work and effort, i.e., the development of more solidarity attitudes. Depending on their availabilities, some of them maintain regular collaboration as volunteers, while others look for the occasions for fixing and repair elements of the building according to their expertise. This has been the case of Javier, who feels the need to cooperate in order to show his gratitude for the assistance he received: "They helped you, you must collaborate too" (Javier). Estefania, apart from being a user, regularly participates as a volunteer, for tidying and cleaning rooms; her wish to help is a product that emerged after receiving a great support:

"I come from 4 p.m. until 8 p.m. [. . .] I do laundry, I tidy the rooms [. . .] I was helping the cleanser for a period [. . .] and they offered me to be volunteer [. . .] and I go there from 4 to 8 p.m." (Estefania).

After experiencing the solidarity attitudes in the social environment of the entities, a new and strong network of relationships has been established, and feelings of love, appreciation, or friendship emerged toward those people who provided great support for the participants. In the words of Sonia, the help was much more than she could have expected, and it developed a sentiment of brotherhood, where they considered the professionals as part of their family–as essential figures of their overcoming process. Margarita, for her part, expresses how much she loves her social assistant, attributing to her the recuperation of enthusiasm for life and her second opportunity:

"Really, I couldn't imagine [the reception], what these [professionals] do, like if they were your own family, like if you were a part of them. The siblings who give you a goodnight kiss [. . .] Without them, I would not be overcome it" (Sonia).

"I love [my social worker]so much. I will thank her to the rest of my life; she has understood me, she has listened to me a lot. And she has understood me quite well [. . .] Life starts for me again" (Margarita).

Like Margarita and Sonia, more participants have experienced a change in their lives. The impact of this solidarity environment is reflected on their words when they recognize how their lives have come back on track and how hope and passion have emerged again in their lives. Virginia not only feels that she has recovered a stable life as well as positive sentiments of optimism and enthusiasm: "I have moved off the streets and with hope and illusion" (Virginia). In the case of Ana, this solidarity networks and the strong relationships have reversed her disappointment with life to a fervent desire for living:

"I am very excited for being here [. . .] And it is very beautiful because, otherwise, I would not have the fight for rising up every day [. . .] Five months ago, I wanted to die and, now, look! I want to live!" (Ana).

As mentioned before, participants feel that the people from the entities, regarding professionals and users, are like a family. Coexistence is sometimes recognized as being complex, but many of the subjects feel the people who share housing with them are like new relatives who encourage them to perpetuate solidarity attitudes. For Manuel, coexistence is fine, and he consider his roommates to be like his family: "[Coexistence] is quite good! We are like a family" (Manuel). Sonia said the same, and she values the good coexistence with her mates, with whom she shares and enjoy common daily moments and who also show solidarity attitudes toward her in daily life:

"[Coexistence] goes pretty well because [my roommates] are quite nice! [. . .] We have dinner together, we watch TV together. . . doors are always open. I had been working the whole month [. . .] and I left the clothes inside the washing machine, and by the time I arrived I had my clothes hung out! They are very neat too" (Sonia).

DISCUSSION AND CONCLUSION

Psychology has greatly improved the study of different elements and risk factors that cause or are related to homelessness. It has also improved identification of consequences of this extreme situation. Conversely, many psychology (and other social sciences) contributions have stressed the importance of quality social networks on wellbeing and health in general (Umberson et al., 2010; Gerino et al., 2017; Holt-Lunstad et al., 2017), underlining the importance of social support for coping with the homelessness situation and the circumstances associated to it (Paul et al., 2018; Durbin et al., 2019; Miller and Bowen, 2019).

Solidarity, as a specific kind of social support that implies sacrifice, confidence, or trust, among other kinds of prosocial behaviors, can have a specific role in the overcoming of homelessness and its related problems. Therefore, when looking for a step forward in achieving a positive social impact through the research into the homeless population in their process of overcoming, it is necessary to (a) to take account the advances in psychology regarding the quality of social relationships for a better life and (b) to consider the end-users' own views and experiences, which stress the importance of solidarity attitudes and networks in their overcoming processes. Communicative Methodology, used in this study, has allowed progress in this respect to move toward an integral understanding of the situation and a joint construction of transformative alternatives. As has been shown along the results section, in the process of sharing their life stories, participants' dialogue showed how they balanced and evaluated their experiences, how they came to be in such a vulnerable situation, and how they searched for reasons and keys to understanding their realities. It is in that sense how Communicative Methodology contributed to the potential social impact of research, as it facilitates reflection on one's live and identifying barriers and facilitators, which can serve to guide their futures.

What participants of this study have underlined as the most significant condition that has helped them to overcome their vulnerable situation, either homelessness itself or homelessness associated with substance addiction, has been the solidarity networks they found in their environment. Some of the participants have valued the solidarity performed by their close family, and others have stressed the role of friends, even the solidarity attitudes among mates on the streets. They have all focused on the significant solidarity demonstrations provided by the community of volunteers and professionals. Many of them have also stressed the fact that what they needed was not the supply for covering physiological needs but those solidarity actions of support, which had an impact on them on an emotional level. This fact is consistent with the scientific literature, especially with the late contributions of Maslow (1970); Wahba and Bridwell (1976), and Henwood et al. (2015) regarding the need for covering higher-level needs related to the self. In this regard, homelessness, which is a matter of lacking the coverage of basic physiological needs and safety (food, sleep, shelter, etc.), will also entail difficulties related to belonging, esteem, and self-actualization. It seems clear that the mentioned solidarity networks that understood confidence attitudes, encouragement, and appreciation were key to the social support provided for guaranteeing good coverage of the people demands. The need to strongly consider the inclusion of this condition in all the intervention programs and actions addressed to people who are in the process of overcoming homelessness is therefore emphasized.

We have seen that solidarity actions have a positive impact on perceived wellbeing, a development of more solidarity attitudes as a permanent willingness to help others as well, but also the development and maintenance of ties of friendship or the emergence of feelings of affection, gratitude, and a positive attitude and enthusiasm toward life. These impacts would take

a step beyond to the recent literature regarding how social support from family, friends, and professionals (Paul et al., 2018) has been related to higher levels of resilience (Durbin et al., 2019). Evidence seems consistent with the literature on the importance of the social environment on alcohol and drug abuse (Kennedy et al., 2017), which has also been revealed in the research, such as how a negative social environment directly pressures people into getting involved in substance abuse. This study has brought into the conversation further evidence for overcoming a homeless situation and the circumstances associated with it. The most clear conclusions seems to be that (a) solidarity networks have a powerful impact on the process of reaching the stable situation desired, and (b) a supportive and empowering solidarity network is crucial to overcoming those negative circumstances and consequences related to or derived from homelessness.

Despite the difficulties of interviewing people in a situation of homelessness, 20 people voluntarily agreed to be interviewed. However, it is also necessary to consider the limitations of this study. The study could be deepened further with more interviews on other factors that have led people, especially women since they are one of the most vulnerable groups, to find themselves in a situation of homelessness, such as having suffered gender-based violence. Likewise, information was gathered in a specific period of their lives. Further longitudinal studies focused on the transformative role of solidarity and positive communitarian environments would be of interest in order to check the evolution of the people's circumstances. Action and intervention programs that provide an integrated approach, considering not only the potential of a quality social context but also putting emphasis on counting on a strong and continuous solidarity network, seem necessary to tackle the multidimensional problem of homelessness in pursuit of a potential social impact on these people's lives. The development of psychological intervention programs, including the emotional perspective regarding solidarity and friend networks, would be useful in the path for improving homeless people's lives from the perspective of psychology and other social sciences. Testing, with different samples (in terms of age, precedence, status, etc.), the efficacy of including these conditions on intervention programs would therefore advance the knowledge and social impact of psychological research.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics Committee of the Community of Researchers on Excellence for All, University of Barcelona.

The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

VM-D was responsible for the field work of the project. AM-P, VM-D, and ID developed the manuscript in relation to social work and the attention to homeless individuals and performed the data analysis. SL-J collaborated in the data analysis and in the final writing of the manuscript. AM-P revised and approved the submitted version.

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Implications for Social Impact of Dialogic Teaching and Learning

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The science of dialogic teaching and learning has especially flourished over the last four decades across age-groups, cultures, and contexts. A wide array of studies has examined the uniqueness of dialogue as a powerful tool to lead effective instructional practices, transform the socio-cultural context and people's mindsets, among many others. However, despite the efforts to extend the benefits of this approach, certain difficulties exist which have hindered the consolidation of dialogic pedagogies in the classroom. This review discusses the implications for social impact of the scientific developments on dialogic teaching and learning. Particularly, an overview of the state of the art on dialogic education is presented. Social improvements in academic attainment and social cohesion are some of the fundamental issues discussed. Those are especially relevant to address crucial needs in education and solve some of the most pressing social problems. A communicative mix-methods approach emerges as one of the critical aspects of this field of research in educational psychology to achieve social impact. Some limitations, such as teachers sustaining different forms of monologic discourse, and challenges for a broader impact are discussed in this review.

Keywords: dialogic teaching and learning, social impact, social improvements, social cohesion and education, dialogic education

INTRODUCTION

Consistent with the dialogic turn in our societies, educational psychology has been affected by this "dialogic shift" that has inspired the advancements in the science and practice of dialogic teaching and learning (Racionero and Padrós, 2010). Educational psychology made a turn in how individual and cognitive elements were understood, including broader factors in the learning process: from a focus on mental schemata of previous knowledge to a focus on culture, intersubjectivity, and dialogue as crucial for learning and development (Bruner, 1996; Lee, 2016). This shift has influenced a growing interest by researchers in the fields of educational psychology, sociology, anthropology, and linguistics to study the social processes of learning and development, as well as teachers' acceptance of the importance of classroom interactions (Mercer and Dawes, 2014). As a result, research on classroom dialogue and academic learning has grown considerably over the past 40 years (Howe and Abedin, 2013) and especially within the last decade (Resnick et al., 2015).

This shift in educational psychology has influenced multiple advancements in the creation of scientific knowledge on the diversity of instructional practices based on dialogic teaching

and learning which have contributed to several improvements: developing language and communication skills (van der Veen et al., 2017; Teo, 2019); promoting critical thinking and reasoning (Mercer et al., 1999; Teo, 2019); learning science and mathematics (Soong and Mercer, 2011; Díez-Palomar and Olivé, 2015; Alexander, 2018); boosting social inclusion and democratic values such as solidarity and friendship (Valero et al., 2017; Villardón-Gallego et al., 2018; Rios-Gonzalez et al., 2019); or empowering students to become agents of social change (García-Carrión and Díez-Palomar, 2015), among others.

Similarly, different methodologies have been recently developed in order to assess the impact of dialogic teaching and learning, as discussed in the Oxford Research Encyclopedia of Education (Wegerif, 2019). Due to the ambivalence derived from the multiple perspectives that inform meaning emerging in dialogism, assessing the impact of dialogic education can be complex. Therefore, particular methods that respond to the challenges that traditionally used monologic assumptions suppose – such as those used by government proxies and assessment interventions – have been developed. Among these methods, Flecha (2000) puts forward the "communicative method" of evaluation which – in line with dialogism claims – builds on the active engagement of the participants throughout the research process. Wegerif et al. (2017) proposed a type of evaluation in the form of written dialogue combining both "outside" views with "inside" ones, where the former is grounded in statistical sources and the latter in more qualitative insights. The abovementioned complexity of assessing the impact of dialogic education – in terms of, for instance, the extent to which certain ideas are being held down – claims the need for more than indicators such as success on standardized tests. Several authors have collected consistent evidence of the impact of dialogic education to meet curriculum goals including reasoning and also intelligence (Resnick et al., 2015).

Joint efforts between researchers and teachers have situated the use of dialogue at the center of educational classroom practices and research methodologies in different countries, school contexts, cultural groups, and educational levels (Hennessy et al., 2016; Teachman et al., 2018; Vrikki et al., 2019a). The use of dialogic interactions in the classroom has showed to create more opportunities for extended discourse and, consequently, it seems to be more beneficial for language development compared with non-dialogic interactions (Snow, 2014). However, the prevailing form of teacher–student interactions continues to be the traditional initiation–reply–evaluation (IRE) structure, in which the teacher initiates by posing a question looking for a preferred answer, the student responds, and the teacher evaluates the answer. Mehan and Cazden (2015) note that the classrooms which have followed this pattern have excluded many minority students, as it does not encourage them to actively participate in the classroom talk. Similarly, the initiation–response–feedback (IRF) format, originally recorded by Sinclair and Coulthard (1975), has been reported to be a common practice in classrooms worldwide (Nystrand et al., 1997; Wells and Arauz, 2006). This has been conveyed by observational studies by Howe and Abedin (2013), who note that the most effective forms of productive classroom dialogue are not as strongly rooted in daily classroom

practice. Indeed, in spite of all the efforts to transfer the evidence on the benefits of dialogic teaching and learning to the classrooms, dialogism still encounters many barriers in the school setting, hindering a broader and deeper potential social impact of dialogic education. Some of these barriers might come from teachers who follow the traditional classroom ground rules which sustain different forms of monologic discourse (Mercer and Howe, 2012), or teachers' tension between giving students freedom to interact with each other and delivering curriculum goals (Lyle, 2008; Howe and Abedin, 2013).

Consequently, the traditional forms of monologic discourse are still preventing many children from benefitting from the productive forms of dialogue and interaction that can "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations Economic and Social Council, 2019). But if educational psychology aims at reaching social impact, it must tackle the challenge to counteract those practices that are excluding many children from quality education. Providing evidence-based knowledge to obtain quality education for all is one of the foundations to create sustainable development. Indeed, the social impact of science refers to the achievement of social improvements aligned with the needs and goals of our societies, after disseminating and transferring research results (Reale et al., 2018). Thus, the science of dialogic teaching and learning should be relevant and effective in practice to ultimately lead to the social improvements required to provide all children with their inherent right to quality education. This is in line with this research topic and with the growing claim that the whole spectrum of sciences faces to demonstrate their public value.

This review argues that, although the scientific knowledge generated on dialogic teaching and learning during the last decades has contributed improvements which have opened pathways toward the achievement of the Sustainable Development Goals in education (SDG4-Quality Education), its implications for social impact have not been analyzed and developed in depth yet. This review aims at facilitating the theoretical discussion by making visible the existing implications and possibilities of educational research to contribute to the social impact of educational psychology and, in particular, of dialogic teaching and learning. Nonetheless, this attempt at exploring the social impact of the science of dialogic teaching and learning acknowledges the limitations the field has encountered for a more robust implementation of dialogic education in the classroom. To this end, the review discusses relevant works of the research line on dialogic education and their contributions to society. It shows two kinds of social impact and presents forms of measuring such impact to share it with the scientific community and put it at the disposal of society in order to keep moving forward on these advancements.

NAVIGATING A DIALOGIC APPROACH IN EDUCATIONAL PSYCHOLOGY

Literature in the social sciences in general and in education in particular is reporting that dialogue has become essential

in human relationships and actions in order to reach understanding and consensus among people (Habermas, 1981/1984). Grounding human relationships and actions on dialogue and interaction gives more agency to all individuals, instead of only to the ones who are in a power position, as it questions traditional hierarchies of power. As a result of the dialogic turn, dialogism is more and more present in every space conveying human relationships and actions, such as homes, the workplace, or classrooms, to name a few (Freire, 1970; Bakhtin, 1986).

Dialogue had already been one of the key elements in Vygotsky's theory of cognitive development, which set the roots for educational psychology as we conceive it today, placing social interaction at the center of the learning and development processes (Vygotsky, 1978). With his contributions, research in the field of educational psychology shifted from studying children's cognitive development as intra-mental activity to analyzing it as inter-mental activity, acquiring a sociocultural approach (García et al., 2010; Mercer and Howe, 2012; Littleton and Mercer, 2013). This is a fundamental Vygotskian concept that established our current understanding on the fact that language is the most important tool to think, learn, and develop, which takes place first at the social level and then at the individual one (Vygotsky, 1978). In other words, language serves as both a cultural (promoting *intermental* activity) and a psychological (promoting *intramental* activity) tool through which children *interthink*, that is, think and create meaning together, achieving higher mental functions which are central in cognitive development (Vygotsky, 1978; Mercer, 2000; Wells and Arauz, 2006). There is consensus on understanding that the social interactions that children have, both with their peers and with other adults, are crucial for their development and academic outcomes (Mercer and Howe, 2012).

Within this line of research, scholars have had different focuses of analysis from which to study dialogue and its impact on education. In what follows, some of the main perspectives placing dialogue at the center of their analysis are reviewed in order to highlight the contributions they have made to the theoretical discussion around the role of dialogue in teaching and learning. It will be made clear that, while some scholars direct their attention to the presence of dialogue in the teaching practice, others consider the relevance of dialogue as a tool for collective thinking in the classroom, and yet others are concerned with the elements that promote the creation of spaces that facilitate dialogic action.

Dialogic Teaching

One of the proposals studied and developed to advance scientific knowledge and progress in this regard is dialogic teaching, which aims at using talk in effective ways for children's learning and development. Several authors, such as Nystrand et al. (1997); Wells (1999), Alexander (2008); Resnick et al. (2015), or Mercer (1995) have been influential for the development of dialogic teaching. Such authors argue for the need to engage teachers and students in dialogue for the construction of knowledge and the understanding of the curriculum content, instead of knowledge and curriculum content being transmitted from

teachers to students. Dialogic teaching thus moves away from the traditional teacher–student question and answer pattern to a dialogue propelled by teachers seeking to improve students' learning and understanding (Alexander, 2008). In a comparative study on classroom talk in different countries, Alexander (2001) observed that in some schools, particularly in Russia, teachers used dialogue to engage students in questions and answers to develop their thinking. Influenced by Bakhtin's (1986) idea that "if an answer does not give rise to a new question from itself, it falls out of the dialogue" (Bakhtin, 1986), he has contributed evidence on the dialogic approach to teaching to involve students in questions and answers with their peers and teachers in order to explore new thoughts and ideas (Wegerif, 2019). In his latest study, Alexander (2018) conducted a randomized control trial of an intervention of dialogic teaching which aimed at maximizing the benefits of classroom talk to promote students' engagement and learning. As a result of this large-scale study, data indicated that after 20 weeks participating in the study, students in the intervention group, whose teachers had received a more dialogic training, showed a 2-month advancement in English, Mathematics, and Science tests compared to the control group, whose teachers used traditional (Alexander, 2018).

The aim of dialogic teaching is to maximize the potential of the teacher–student interactions in order to attain the best educational outcomes and improvements for all children. Dialogic teaching encourages students to think and question ideas, to explore new points of view, and to construct knowledge in dialogue with their peers and with teachers (Alexander, 2008). Resulting from this, research has shown that classrooms become more inclusive, as all students are invited to increase their participation and take an active and meaningful role in the discussions (Lyle, 2008; Mercer and Howe, 2012). Through fostering dialogic interactions in the classroom, dialogic teaching not only promotes wider and deeper thinking and learning among students, but it transforms classroom relationships, readjusting the traditional power relation between teachers and students (Teo, 2019). The ground of this approach relies on dialogue based on democratic values, through which students work together to reach understanding and complete tasks, moving forward in their thinking and reasoning. Although more research is needed to gather the social impact of dialogic teaching, recent research has provided evidence which supports the idea that the way in which teachers use dialogue in the classroom matters for children's learning (Mercer, 2019). For instance, Howe et al. (2019) observed and recorded teacher and student dialogues in 72 diverse classrooms, finding that students whose teachers promoted classroom dialogue involving many students achieved better results in English and mathematics than the students whose teachers did not encourage such dialogue.

Importantly, fine-grained analysis of dialogic interactions has shown that not all kinds of dialogue in the classroom promote children's higher levels of thinking and understanding. Therefore, Mercer and Howe (2012) propose a distinctive use of the concept of dialogue, not to refer to any kind of talk, but rather to a "form of conversation in which the ideas of the various participants are heard, taken up and jointly considered" (p. 14). Due to the long tradition and prevalence of the monologic IRE and IRF models

in the classrooms, it is often the case that teachers are still the ones who direct the dialogues by making questions, pointing out who should speak, or being the only ones assessing the quality of the interactions (Mercer and Howe, 2012). This leaves little room for students to truly interact in a beneficial way, which is why research has emphasized the importance of teachers' role to scaffold students' development by encouraging interactions through which they exchange their ideas and thoughts in a truly dialogic, collaborative, and productive way (Alexander, 2001; Mercer, 2013). Building on his earlier work, Alexander (2018) provides a dialogic teaching framework where he discusses dialogic teaching not as a single definition but as "an interlocking set of permissive repertoires through which, steered by principles of procedure, teachers energize their own and their students' talk" (Alexander, 2018, p. 561). The five principles underpin teacher–student interactions and may foster a dialogic pedagogy in the classroom (**Supplementary Table 1**).

Using Language to Think Collectively

Another one of the most relevant schools of thought concerning the centrality of dialogue in education has focused precisely on the analysis of children's dialogue aiming to shed light on the type of interactions that effectively trigger higher levels of thinking and understanding. Mercer (2019) has been studying talk and how children and adults use it in the most effective and productive ways to "share information, guide learning, develop joint understanding, critically evaluate ideas and find creative solutions to life's burning issues" for decades (p. 8). To better understand the social nature of human cognition, as well as to contribute improvements to children's learning and to teaching practices, he is devoted to providing evidence that supports the view that learning and development, as well as creativity, are best attained in collaboration (Mercer, 2019). Being aware that not all classroom interactions lead to children's development and learning, Edwards and Mercer (1987); Mercer (1995), and Mercer and Dawes (2014) have studied different kinds of classroom talk in depth, providing repertoires of practices that lead to maximizing children's learning and development through particular types of dialogue and interactions (Vrikki et al., 2019b). As a result, three types of talk have been identified among students' interactions: disputational, cumulative, and exploratory talk (Littleton and Mercer, 2013) with different impacts on children's learning process. Disputational talk was found to be the least productive and collaborative one, as it refers to interactions where there is disagreement, competitiveness, and individualized decision-making. As concerns cumulative talk, although research shows that it entails a broader acceptance of others' ideas than disputational talk does, it still lacks the critical evaluation of these ideas. Unlike the two former ones, exploratory talk is the collaborative sort of dialogue through which students exchange and challenge each other's ideas and critically, but constructively, analyze them. Evidence shows that it is the most productive and effective form of student interaction among the three identified ones, contributing to improvements in students' attainments in several domains including mathematics, science, and problem-solving (Vrikki et al., 2019b).

Exploratory talk is characterized by a critical engagement with each other's ideas to ultimately achieve an agreement (Vrikki et al., 2019b). In exploratory talk, students are not only participating in a collaborative activity, but they are *interthinking* (Mercer, 2000). Therefore, this kind of interaction triggering collective thinking is essential for students in order not only to communicate with each other, but to understand other people's minds, help each other, reason, create knowledge, and solve problems together (Mercer, 2013). However, in spite of the positive impact collected, Mercer's analysis of different classroom interactions shows that exploratory talk has been observed to be used with less frequency (Mercer and Howe, 2012; Vrikki et al., 2019b). These authors explain that this is due to a set of conversational ground rules which are expected to be followed according to normal school culture, such as the monologic discourse in which teachers take up almost all classroom interactions (Mercer and Howe, 2012). As the authors point out, "research has shown that adherence to these ground rules limits the potential value of talk among teachers and students" (Mercer and Howe, 2012, p. 17). Barriers for interacting in exploratory talk in the classroom have been encountered by both teachers and students. On the one hand, teachers face tensions between providing students with freedom to discuss their ideas and views and their need to meet the curriculum goals; on the other hand, students also find it difficult to challenge each other's ideas (Howe and Abedin, 2013).

To counter these obstacles, and in line with dialogic teaching, Mercer also studies teacher–student interactions which can scaffold students' achievement of exploratory talk. In this sense, teachers (or other adults in the classroom) are prompted to take the responsibility of guiding students in challenging their classmates' ideas and proposing alternative hypotheses, urging them to develop arguments and reasoning (Mercer, 2013). In so doing, exploratory talk is granted with ground rules which will make this kind of talk truly dialogic and collaborative, by means of incorporating all students' voices and points of view in order to discuss them and ultimately reach an agreement on the problem solving (Knight and Mercer, 2015). Such ground rules are (Mercer et al., 1999, p. 98–99):

(1) all relevant information is shared,
(2) the group seeks to reach agreement,
(3) the group takes responsibility for decisions,
(4) reasons are expected,
(5) challenges are accepted,
(6) alternatives are discussed before a decision is taken, and
(7) all in the group are encouraged to speak by other group members.

When children are encouraged to follow these ground rules, they get directed to using talk in a collaborative and productive way in order to complete tasks together. Their thinking and reasoning skills are expanded when, in engaging in this kind of dialogue, they challenge each other's ideas at the same time that they provide arguments to support theirs in order to complete the activity. This dialogic practice triggered or facilitated by teachers, peers, or other adults focuses on the development of a particular

type of talk with its own rules to be followed in order to guarantee the quality of the dialogue.

Advancing Toward a Dialogic Space

Yet other approaches to dialogic education place the focus of attention not on the elements of the very dialogue which will promote a particular impact in the learning process, but rather on the social activity that facilitates dialogue. When students are engaged in truly collaborative activities in which they need to interact to discuss their ideas and construct common knowledge, dialogue is not just the means through which the students will complete the task, but it is also the goal of the collaborative activity and, in all, of education itself (Wegerif, 2011). In this vein, Wegerif (2011) developed the concept of the dialogic space applied to the interactive communications technology (ICT). By space he does not mean physical space, but rather the social activity of thinking and acting together (Mercer et al., 2010; Wegerif, 2011). The dialogic space therefore conveys the ground for shared thinking and reasoning to reach higher levels of learning and understanding and create new meanings. It is also the shared space through which students and teachers learn from each other by seeing "the task through each other's eyes" (Wegerif, 2007, in Mercer et al., 2010).

Wegerif (2011) argues that human thinking is essentially dialogic. As has been previously mentioned, dialogism is more and more present in our everyday lives; we are constantly sharing thoughts, knowledge, different viewpoints which, in dialogue, can serve us to develop our own – and our communities' – arguments and ideas and to advance in the construction of new knowledge. Thinking and reasoning necessarily requires listening to each other's ideas and learning from different perspectives in dialogue with each other and with ourselves (Wegerif, 2011). Therefore, education needs to convey dialogic spaces to prepare children for these dialogues in order to advance their learning, thinking, and development, contributing not only to their success at school, but also in new contexts throughout their lives.

As a result of these advancements in the knowledge generated on dialogic education, Cambridge Educational Dialogue Research Group (CEDiR) was launched in the University of Cambridge in 2015 and is currently co-led by Sara Hennessy and Rupert Wegerif. The group's aim is to conduct cross-disciplinary research that contributes to the development of educational dialogue and its impact in theory, practice, and policy.

Theory and Practice of Dialogic Learning

Devoting his analysis not only to the theoretical advances of dialogic learning but also to its most successful practice, Flecha (2000) has conducted research to study the transformative impact of dialogue in different spheres of society. The work of Flecha (2000) provides all children – regardless of their origin, culture, or background – with the same opportunities to participate in dialogic spaces that promote their learning and development. He has done so, on the one hand, through his theoretical development of the seven principles of dialogic learning; and, on the other hand, through research evidence on the educational actions which promote dialogic learning and improve learning and development. Through dialogic

learning, children become the protagonists of their own learning process by engaging in dialogues with peers, teachers, and other volunteering adults who help them reach higher levels of thinking, reasoning, and understanding which they would not be able to attain on their own.

Flecha (2000) has devoted research to studying the transformative impact of dialogue in different spheres of society. The seven principles of dialogic learning provide conceptual guidelines to facilitate the process of in-depth learning-related social transformations (**Supplementary Table 2**).

In line with previously discussed authors, dialogic learning grants students opportunities to engage in interactions which lead them to higher levels of reasoning, thinking, and development. This is done through the creation of dialogic spaces that put these principles into practice, like the dialogic literary gatherings (DLG). These are contexts where participants (who might be adults in literacy processes or school children) engage in a dialogue around the classical works of universal literature such as Cervantes's *Quixote*, Joyce's *Ulysses*, or Garcia Lorca's *La Casa de Bernarda Alba*, to name only a few. Through the particular functioning of the DLG – all participants have the equal right to speak, the contributions are given value according to the argument they convey and not to an alleged hierarchy of participants, etc. – participants create new meaning about the particular literary work they are discussing. Flecha's (2000) contributions have an extended impact, as students internalize the learning outcomes and transfer them onto their families, neighborhoods, and communities, becoming not only the recipients of profound transformations but also their very triggers in enlarged contexts (Soler, 2015).

In 2006, Flecha conducted the only EU-funded research project in the field of Socioeconomic Sciences and Humanities of the Framework Programmes for Research selected by the European Commission among the 10 examples of success stories (European Commission, 2011). The project studied and analyzed several successful educational actions (SEAs) throughout different European countries (Flecha, 2015). SEAs are evidence-based educational actions grounded on dialogic learning which have shown to achieve the best results in different contexts all over the world (Flecha, 2015). Therefore, SEAs provide all students, no matter where they come from, with the same opportunities for attaining excellent academic achievements and participating in transformations which overcome exclusion and many other barriers children in different contexts encounter.

SOCIAL IMPACT OF IMPLEMENTING DIALOGIC TEACHING AND LEARNING IN SCHOOLS

The demand for science to generate socially relevant knowledge that contributes improvements to society is becoming increasingly relevant in all scientific domains and social contexts (Reale et al., 2018). In spite of the limitations identified and introduced in this review, sufficient evidence has been provided showing the particular benefits for education – in at least two

dimensions: academic achievement and social cohesion – of dialogic teaching and learning, thus contributing to generating the desired social impact. These dimensions are at the core of the targets defined by the United Nations Statistics Division Goal 4: Quality Education. Therefore, the goal has been to collect, systematize, and present evidence of this social impact from different European research projects, showing the improvements and benefits achieved with dialogic teaching and learning in the two dimensions mentioned here (Howe et al., 2019).

Dialogic Education for Improving Academic Achievement

Accumulated evidence both from small-scale and large-scale studies has provided relevant evidence supporting dialogic teaching and learning as a key contribution to education. For example, a number of studies based on intervention programs for teaching children how to use dialogue in a productive and efficient way have also been found to achieve improvements in academic attainments in different subjects and skills, such as reasoning or math problem-solving (Mercer and Sams, 2006). Relevant evidence, both quantitative and qualitative, show that after participating in intervention studies based on dialogic teaching, children in the target groups increase the use of exploratory talk during group activities as opposed to the control groups (Mercer et al., 1999; Mercer, 2000). These results imply that, when children are taught how to use language in an effective way for collaborative activities, their participation in the dialogue increases, and so do their achievements, contributing to improvements in different subjects and skills (Mercer and Sams, 2006). A study carried out with 60 British Primary students revealed that after the 10 weeks that the dialogic teaching program lasted, children's individual scores in the Raven's Progressive Matrices showed greater gains in the students of the target group than those of the control group (Mercer et al., 1999). Although dialogic interaction studies have traditionally focused on small group interactions among students, other more recent large-scale studies have focused on the impact of interactions between teachers and students on the latter's performance.

The benefits associated to these interventions are especially relevant for children with the least resources, who live in low socioeconomic status (SES) backgrounds when acquiring and developing, for example, literacy skills (Levy et al., 2018). Indeed, academic attainment is one of the key elements which can help them break the barriers imposed to them and overcome such exclusion, defying deterministic theories which have long been proven wrong. Existing evidence shows the relevant implications that different practices and interventions grounded in dialogic education are providing to improve children's educational outcomes, particularly important in the case of the most vulnerable groups living in poverty (Lampert et al., 2019). In this line, research on dialogic teaching indicated that, after the 20-week large-scale intervention with 2493 4th grade students, those in the target group achieved an average of a 2-month greater progress in English and science than the control group, and a 1-month progress in mathematics (Alexander, 2018). This is particularly important in the case of students

qualifying for free school meals (a standard measure for poverty in the United Kingdom) who attained a 2-month progress in mathematics (Alexander, 2018).

Alexander's (2018) and Howe et al.'s (2019) studies are in line with another key large-scale research project funded by the European Commission's Framework Programme[1], which after conducting 26 longitudinal case studies in 7 European countries, presented a set of SEAs based on dialogic learning which achieved improvements in academic outcomes in a range of diverse schools and contexts (Flecha, 2015). These results have been further analyzed during the last decade through other EC-funded projects that study the elements facilitating the implementation and transfer of SEA to new contexts in different EU countries.

Some of the main results of the analyses conducted throughout such research point that SEA have contributed to high quality education at the different educational levels and contexts they have been implemented in, from early childhood education to adult education or out-of-home child care centers (Pulido, 2015; Aubert et al., 2017; Garcia Yeste et al., 2018). For instance, research has shown that interactions based on egalitarian dialogue operating in small heterogeneous groups of students known as interactive groups (IGs) boost children's learning of mathematics, particularly in terms of mathematics understanding and problem-solving, contributing to the improvement in mathematics performance (Díez-Palomar and Olivé, 2015; Flecha, 2015; García-Carrión and Díez-Palomar, 2015). The evidence shows that the advancements in mathematics skills due to participating in IG also foster an increase in students' self-confidence, self-efficacy, and a positive attitude toward mathematics (Díez-Palomar and Olivé, 2015; García-Carrión and Díez-Palomar, 2015; Díez-Palomar et al., 2018). In a similar vein, an experimental study conducted to analyze children's productivity when working in groups to solve math problems showed that the children in the target group engaged in collaborative, enthusiastic, and productive ways more than the control group and, as a result, achieved greater improvements in their attainments in mathematics (Mercer and Sams, 2006).

On the other hand, DLG, another SEA promoting interactions based on egalitarian dialogue, have been reported to enhance students' reading skills, vocabulary acquisition, and knowledge of cultural and historical concepts (de Botton et al., 2014; Serradell, 2015). Research has found a shift in the teacher–student talk ratio in DLG from the monologic discourse to students' participation taking up over 80% of classroom talk (Hargreaves and García-Carrión, 2016). However, the egalitarian dialogue upon which DLG are based does not only increase students' talk ratio, but it also improves the quality of classroom interactions. Indeed, following the egalitarian dialogue principle of dialogic learning, all children have the same rights and opportunities to participate and provide their own ideas and opinions to the dialogue, supporting them with arguments rather than imposing them through power positions. This way, students are encouraged to develop argumentation and reasoning, as well as to question

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[1] INCLUD-ED Project. Strategies for inclusion and social cohesion in Europe from education. 2006–2011. 6th Framework Programme. Citizens and Governance in a Knowledge-based Society. CIT4-CT-2006-028603. Directorate-General for Research, European Commission.

and counter-argue classmates' ideas (Flecha and Soler, 2013; Serradell, 2015).

The social improvements generated as a result of implementing these dialogic learning-based actions have been found to benefit all students, including those with disabilities. A case study aimed at exploring the learning opportunities that these actions grant children with disabilities in special schools found that interactions among students became richer, and that instrumental learning, especially in mathematics, improved in these dialogic spaces (García-Carrión et al., 2018).

Fostering Social Cohesion Through Dialogic Education

Classrooms based on dialogic teaching and learning have proven that teachers do not need to choose between fostering students' academic achievements or social cohesion. Rather, evidence on some of the dialogue-based practices presented in the previous section shows that developments in instrumental learning, competences, and skills, when boosted through egalitarian dialogue, influence prosocial values such as solidarity and friendship (Villardón-Gallego et al., 2018); and that, at the same time, when such values are developed, instrumental learning and academic attainments are propelled. Therefore, one dimension promotes the other, and vice versa.

Dialogic learning environments, for instance IG, are one of the examples of how this reciprocal relationship between instrumental learning and prosocial behaviors occurs. Because the aim of IG is not only for children to complete the activities but for all of them to understand and solve them together, children are required to interact to help each other, to explain the activity to those who have not understood it. This overarching goal of IG builds dynamics of mutual support among peers: while children's instrumental learning in different subjects is being promoted, the fact that the activities need to be completed in dialogic interactions boosts inclusion and democratic values such as solidarity, support, and friendship among the students who help each other to solve the activities (Aubert et al., 2017; Valero et al., 2017). Therefore, children do not learn these values by being talked about them, but by putting them into practice (Aubert et al., 2017; Valero et al., 2017). At the same time, learning those values by putting them into practice contributes to a deeper internalization of them. Moreover, the values they learn and internalize do not just stay inside the classroom, but students transfer them to other spaces such as the playground, the neighborhood, or the family (Aubert et al., 2017). Besides, this dialogic environment can be particularly beneficial for students with disabilities, who often suffer from exclusion and are discriminated against (García-Carrión et al., 2018). The egalitarian dialogue fostered in IG provides students with disabilities with the same opportunities as the rest of the students to participate and contribute to the group, thus promoting the rejection of the labeling commonly attached to these children (García-Carrión et al., 2018). The previously mentioned study on interactive environments in special schools contributed evidence that, besides the academic achievements, the students with disabilities who participated in IG constructed

safe, solidary, and supportive relationships with their peers, promoting their social inclusion (García-Carrión et al., 2018).

Promoting behaviors and relationships based on values such as solidarity, peer support, and friendship has also been found to reduce school conflict (Aubert, 2015; Villarejo-Carballido et al., 2019). In particular, the dialogic model of conflict prevention and resolution – a community-based educational intervention – has shown to be fostering solidarity networks among students facing school conflicts, creating safer learning environments in which conflicts such as bullying or cyberbullying are decreased (Villarejo-Carballido et al., 2019).

Research on other dialogic spaces such as DLG, in which through the universal classics of literature students open up to each other about their lives, feelings, and experiences regarding some of humanity's deepest issues portrayed in the classic texts has reported evidence that these dialogues promote respect, tolerance, and empathy, among others, toward one another. It is the case of Amaya, a Roma girl who used to suffer bullying from her classmates and, as a result, started getting disengaged in school activities. However, when she started participating in DLGs at school, her classmates' (and her own) perceptions toward her were transformed when seeing the passion with which she got involved in the DLG, and they stopped bullying her (Aubert, 2015). These findings were reported in a study that used the communicative methodology, in which through the egalitarian dialogue established between the researcher and Amaya herself, they constructed her biography by reflecting turning points in her school trajectory (Aubert, 2015). On the other hand, the first quasi-experimental study on the impact of DLG on children's prosocial behavior provided evidence that the experimental groups which participated in 10 weekly DLG sessions developed prosocial behaviors such as solidarity and friendship to a greater extent than the control groups, which maintained or even decreased such behaviors during the same period (Villardón-Gallego et al., 2018).

As dialogue has entered the classroom, the monologic discourse is being increasingly replaced by egalitarian interactions, providing students with high-quality education and agency to become the protagonists of their own learning process and social development. Although more efforts need to be made to overcome the limitations for a more propagated implementation of dialogic teaching and learning practices into the classrooms, findings reported so far show that the inclusion of the students' voices in the teaching and learning process contributes to a greater social engagement, as it encourages them to take an active role in the classroom, to develop reasoning, and their own viewpoints (Alexander et al., 2017).

DISCUSSION, LIMITATIONS, AND FURTHER RESEARCH

The efforts and dedication of countless researchers in the field of educational psychology to provide answers and solutions to educational and social challenges have been consolidated over the last decades. In particular, the potential benefits of dialogic teaching and learning have been explored through a series of

small-scale (Díez-Palomar and Olivé, 2015; Aubert et al., 2017; García-Carrión et al., 2018; Garcia Yeste et al., 2018) and large-scale studies (Mercer and Sams, 2006; Flecha, 2015; Alexander, 2018; Howe et al., 2019). Currently, we count with enough evidence supporting the dialogic approach to ultimately provide effective pedagogical responses in which no child is excluded from classroom discourse.

This manuscript has discussed some of the studies and highly renowned contributions in the field with the aim of gathering their potential social impact to advance toward an inclusive and equitable quality education for all. We argue that the science of teaching and learning can play an important role in that ambitious endeavor. Indeed, evidence regarding the improvements achieved in learning outcomes and social cohesion in schools offers an opportunity for practitioners and policymakers to make the most of the evidence reported for more than 40 decades. At the same time, the researcher's focus needs to move beyond the ivory tower to address the current educational and social needs (Tierney, 2013).

These improvements are persistently included in all public definitions of desirable horizons to be attained by our societies, as it was the case in the past Europe 2020 Agenda, where Education was one of the five targets defined, and now in the current Sustainable Development Goals of the United Nations. In this sense, educational research needs to be directed to providing all children with the opportunity to achieve academic outcomes while developing values, serving them as tools for hopeful, successful futures. The studies reviewed in this manuscript reveal that the science of dialogic teaching and learning has a potential for achieving such impacts.

Nonetheless, in spite of the progress made toward the social impact of dialogic teaching and learning, it has still not been expanded to all classrooms. This is clearly a limitation for measuring the potential social impact of this approach. In fact, a series of barriers have been encountered and discussed above hindering a more robust propagation of dialogicity. Particularly, Mercer and Howe (2012) highlight the school culture in which teachers dominate classroom dialogue as one of the obstacles for the implementation of dialogic education. They claim that traditional ground rules by which teachers are the only ones who, among other things, decide who should speak, make the questions, or evaluate students' comments, are still prevalent in many classrooms, therefore leaving little space for effective and valuable talk among students (Mercer and Howe, 2012). In addition to these power relations between teachers and students, many teachers do not have the required skills for planning effective classroom dialogue, thus decreasing its potential to benefit children's learning (Lyle, 2008). In a similar vein, Howe and Abedin (2013) point that teachers often find it difficult to promote exploratory talk among students as they find a tension between letting children discuss and explore each other's views freely while monitoring what students are saying and introducing target knowledge in the discussion. In this sense, little guidance is given to teachers on how to effectively organize group work (Howe et al., 2007).

Students also find their own barriers for engaging in effective classroom dialogue, as many have experienced traditional forms of classroom talk such as the IRE or IRF models and, therefore, are not used to interacting among each other in a way that is not constrained by the teacher. In order to work effectively in groups, students need to learn and understand the new ground rules for effective classroom dialogue, as well as the value of effective dialogue for learning (Mercer and Howe, 2012). However, despite the evidence provided on the benefits of group work, proving to be an effective pedagogy, it is still a neglected art in many classrooms, and teachers in England do not use it enough, favoring more traditional classrooms (Galton and Hargreaves, 2009).

Research methodologies should tackle the problem aiming at obtaining socially relevant results. For that purpose, including the voices of teachers and students, as well as other end-users from the education community, can further contribute to the overcoming of the limitations and challenges they face in the implementation of dialogic teaching and learning. In line with the dialogic turn of our societies, some of the research approaches exploring the impact of dialogic teaching and learning are developed through the communicative methodology, an approach that places dialogue with the participants in a research process at its very core (Gómez et al., 2019). The involvement of teachers, students, and relatives in discussions on the results throughout the whole research process contributes to the prevention of bias on the interpretations of data and, thus, to better responding to their real needs. This involvement also facilitates the production of early improvements for the end-users, improves the credibility of the results, and expands the dissemination of dialogicity in formal and informal ways to a wider range of actors (other teachers, families, students).

Involving families and teachers in the educational theories and practices which have been proven to have an impact in other contexts gives them the opportunity, as well as their right, to demand such evidence to be put into practice in their educational communities. In the case of educational psychology, particularly of research on dialogic teaching and learning, scientific contributions might be critical for generating improvements in different settings and collecting evidence of such improvements to eventually extend and replicate them across contexts. This dialogic process implemented throughout all the research process, from providing participants with evidence of dialogic education in other contexts to discussing with them current challenges and possibilities for its implementation in their own context, allows both scientists and end-users to co-create new knowledge which will benefit the communities themselves and can contribute to social impact. It is essential to co-create knowledge with teachers and families to boost the overcoming of monologic discourse-based practices and increase the actual praxis of dialogic spaces and interactions that foster learning opportunities for all.

Although this review has discussed the implications for social impact of the science of dialogic teaching and learning, efforts must continue to be made in order to assess such impact. Assessing and evaluating the impact of dialogic education is still a complex task that, however, needs to be done. The challenges that lay ahead for assessing social impact (time lapse for achieving

or extending that impact, or attribution of improvements to a specific research, for instance) are shared with all other scientific fields. Following the EC Report on *Monitoring the impact of EU Framework Programmes* (van den Besselaar et al., 2018), new assessments need to avoid the confusion between dissemination or transference and social impact, as the mere use of knowledge does not necessarily involve positive effects. In this vein, and following the indicators of the mentioned Report, researchers in educational psychology will need to gather evidence of the effects of the use of scientific results on tackling the SDG4, as well as of their replicability and sustainability. While there is an assumption that complete social impact is achieved in a long term, the examples that we have presented in this article support the standpoint that social impact can already be achieved from early stages and even during the lifespan of a project. In fact, the very nature of dialogic teaching and learning research, many times undertaken in close relationship with schools and end-users, allows to have both quantitative and qualitative evidences of the actual development of these dialogic practices. Even if these evidences are from small samples, understanding the link between research, research use, and social impact achieved will enhance the opportunities of scaling up the implementation of dialogic education.

Future research should therefore focus on advancing tools and methods to assess the improvements, sustainability, and replicability of dialogic teaching and learning in order to, on the one hand, advance in the visibility of this social impact. The prevailing trend of making the results of scientific research open to all citizenry is contributing to the expansion of the number of citizens from all walks of life who have access to research results, including the evidence of educational psychology that improves these same citizens' and their children's lives.

AUTHOR CONTRIBUTIONS

RG-C, GL, MP, and MR-S made substantial contributions to the conception of the manuscript, searching the literature, drafting the article, and revising it critically for important intellectual content, provided approval for publication of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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On the Shoulders of Giants: Benefits of Participating in a Dialogic Professional Development Program for In-Service Teachers

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This study explores the impact of a seminar on self-efficacy and argumentative skills on teachers' professional development. In this seminar, called "On the Shoulders of Giants," a group of teachers meet once a month. They debate scientific readings to critically discuss educational theory, which transforms their everyday practices in the school. A survey using a questionnaire was conducted to collect the data. The results show that teachers' involvement in dialogic-based training positively impacts their ability to address current school problems and that the teachers transfer their new knowledge to their work. The effectiveness of the teachers' practices increases and, consequently, their students' learning also improves.

Keywords: professional development, in-service training, self-efficacy, argumentative skills, dialogic-based training

INTRODUCTION

Over the last two decades, international research on professional development has led to an understanding of the factors that contribute to high-quality and effective teacher professional development, which improves teaching and student achievement (Penuel et al., 2007; Pianta et al., 2008; Desimone, 2009; Downer et al., 2009; Higgins and Parsons, 2009; Hill et al., 2013; Knight et al., 2014, 2015; Cordingley et al., 2015; Brown and Weber, 2016; De Naeghel et al., 2016; Jukes et al., 2017; Kutaka et al., 2017). This previous research has identified the positive impact that teacher training programs have on in-service teachers' activities. According to Desimone (2009), teacher-training programs increase teacher knowledge and skills. Teachers participating in these programs change their attitudes and beliefs and have a great impact on instruction, which increases students' performance as the main result (Desimone, 2009, p. 185). Highly efficacious teachers tend to be more organized. They try to identify better ways of teaching, drawing on the use of innovative methods that have been supported by scientific research. Borko (2004) also points out the importance of the context for teacher learning. Thus, the educational action that demonstrably produces better results in several different contexts is the so-called dialogic teacher training (Roca et al., 2015).

This article explores a specific bottom-up teachers' movement, based on recovering the meaning of teacher training through dialogic pedagogical gatherings (seminars) (Roca et al., 2015). These seminars are based on reading and discussing scientific research on educational approaches that successfully improve student outcomes. These seminars have seen exponential growth in

attendance in recent years, leading to unprecedented in-service training experiences.

In this article, we present a study of one of these seminars, called "On the Shoulders of Giants", which adopted the aphorism popularized by Robert Merton to explain scientific progress (Merton, 1965). This study was supported by the European Union's Seventh Framework Programme for a research project called "IMPACT-EV. Evaluating the impact and outcomes of EU Social Science and Humanities research."

Professional Development Research: Impact on Teachers' Self-Efficacy and Effective Teaching

Over the last two decades, one of the topics in educational psychology research has focused on responding to the need for more empirically validated studies to assess how effectively teachers' professional development (TPD) improves their self-efficacy, knowledge, skills, and teaching practice as well as how TPD contributes to their personal, social, and emotional growth as teachers. This literature review includes some of these contributions and others from other disciplines that have also provided knowledge about the impact that TPD has on teachers' and students' learning (Penuel et al., 2007; Pianta et al., 2008; Desimone, 2009; Hill et al., 2013; Desimone and Garet, 2015; Gutierrez-Cobo et al., 2019; Kurtovic et al., 2019).

Desimone and Garet (2015) suggest five key features on which there is consensus that they make TPD effective: (a) content focus: activities that are focused on subject matter content and how students learn that content; (b) active learning: opportunities for teachers to observe, receive feedback, analyze student work, or make presentations, as opposed to passively listening to lectures; (c) coherence: content, goals, and activities that are consistent with the school curriculum and goals, teacher knowledge and beliefs, the needs of students, and school, district, and state reforms and policies; (d) sustained duration: TPD activities that are ongoing throughout the school year and include 20 h or more of contact time; and (e) collective participation: groups of teachers from the same grade, subject, or school participate in TPD activities together to build an interactive learning community (Desimone and Garet, 2015, p. 253).

In recent years, TPD research has focused on creating knowledge that contributes to teacher quality and effective teaching in a context in which students are increasingly diverse, guaranteeing both equitable learning opportunities and outcomes (Knight et al., 2015; Impedovo, 2016; Chatelier and Rudolph, 2018). The latest contributions are directed toward reconceptualizing high-quality teacher professional development, starting from a socially inclusive pedagogic work based on what is already known about the new conceptions of teaching and learning that are contributing to not leaving any students behind (Knight et al., 2015; Gale et al., 2017; Lampert et al., 2019).

In this context, TPD research has increased considerably and has focused on evaluating the impact that in-service TPD programs have on both teacher learning and student achievement in mathematics, language, literacy, reading, science, and arts from early childhood education onward (Downer et al., 2009; Higgins and Parsons, 2009; Brown and Weber, 2016; Caddle et al., 2016; De Naeghel et al., 2016; Jukes et al., 2017; Kutaka et al., 2017; Shernoff et al., 2017). Some of this research has further focused on the learning experiences that promote teachers with professional development programs that are based not only on best practices but also on practices that reflect their students' sociocultural context (Brown and Weber, 2016). These practices also start from solidarity with families and local communities to guarantee professionally developed teachers who respond to their students' needs (Zeichner et al., 2016; Lampert et al., 2019).

There is also a significant amount of literature on TPD regarding evidence-based approaches that promote interaction, dialogue, and reflection in the classroom, that achieve positive results regarding children's literacy (Pianta and Hamre, 2009), and that create productive learning environments in classrooms (Hagelskamp et al., 2013). Within the framework of this research, some analyses pay attention to the need for TPD to be aligned with research on effective teacher professional development so that TPD has an impact on the self-efficacy of teachers and the improvement of student outcomes (McElearney et al., 2018).

Nevertheless, some contributions have provided relevant insight into this field from different perspectives and disciplines. Some of these contributions have been realized in qualitative case studies on the effectiveness of TPD in integrating interdisciplinary civic education into high school humanities courses (Barr et al., 2015).

Specifically, the TPD assessed by Barr and colleagues was focused on the development of workshops, in which teachers are engaged in reflective discussions on evidence-based approaches to teaching interdisciplinary historical case studies. This program's assessment produced important evidence regarding the progress of teacher self-efficacy. This assessment also revealed important steps regarding student learning achievement, such as the building of historical thinking and civic dispositions, as well as the capacity to engage in relevant ethical reflections (Barr et al., 2015). Five elements of success were identified that could be integrated into other professional development programs: (1) active learning as an opportunity to be involved instead of passive learning as a mere attendee, (2) coherence between theory and practice, (3) connection to the demands placed on teachers, (4) ability to apply the knowledge gained in schools in which the teachers are involved, and (5) collective participation based on teachers' involvement in reflective practices, in which evidence-based approaches to TPD and teaching are discussed (Barr et al., 2015). The last dimension has been widely explored as a successful component of TPD (Marques et al., 2016; Paula, 2018).

There is strong evidence on how the dialogue and joint reflection of teachers on pedagogical content improves their self-efficacy. Kiemer et al. (2018) analyzed the impact of a TPD program on productive classroom discourse and communication strategies on teacher practice. Ten teachers from science and mathematics classes from middle and high schools participated for a whole year in various theoretical seminars on productive classroom discourse and the scaffolding of student ideas. After the theoretical inputs, the teachers reflected together on how

knowledge about high-quality discourse and active learning methods could enrich their classes. Approximately 2 weeks later, after the theoretical workshops, the teachers were recorded in their lessons in what has been called "dialogic videos." Afterward, a selection of these videos was viewed by the teachers. Again, the teachers discussed these together, but this time, they placed their professional development in a realistic context. After participation in this TPD program, all teachers reported that they had changed their teaching practice. They began to use a discourse that motivated students to learn and participate in the classrooms. In turn, the students perceived their teachers as more competent in fostering a supportive context for students and in promoting a climate of motivation for learning.

Along these lines, other studies have explored the importance of including the active agency of teachers in their professional development as a mechanism to improve their self-efficacy (Pyhältö et al., 2015; Tam, 2015; Wanless et al., 2015; Ciampa and Gallagher, 2016; Liu et al., 2016). For instance, Liu et al. (2016) analyzed the impact of 6 years of the TPD program on building a self-sustainable and democratic community of practice. On several Saturdays during these school years, workshops were held that combined lectures, readings, and discussions on East Asian topics according to the Wisconsin K-12 Social Studies Content Standards. This study identified that ongoing teachers' dialogue and reflection on the application of content in their classes not only improved their knowledge and skills to develop new ways of internationalizing their curricula and schools but also improved their ability to research, organize, and lead initiatives in their schools and communities.

Finland is one of the countries promoting TPD based on scientific evidence that has been shown to improve the self-efficacy of teachers and student learning. One of the TPD studies developed in Finland was carried out with a survey of all comprehensive schoolteachers. This study identified that one of the keys to an effective TPD was the promotion of dynamics that would facilitate the active participation of teachers in their professional development. The results indicate that effective TPD consists of several elements, including skills, efficacy beliefs, and motivational factors, which entail transforming one's teaching practices, experiencing collective efficacy, constructing positive interdependency, appreciating mutual agreements, and using active strategies for help-seeking (Pyhältö et al., 2015).

Teachers' professional development that is based on a collaborative inquiry is another approach that leads to effectiveness and that has an impact on teachers' self-efficacy (Ciampa and Gallagher, 2016). This approach creates opportunities for teachers to become involved in building pedagogical knowledge together by means of a permanent dialogue through the following four stages: (1) identifying the problem, (2) collecting evidence, (3) analyzing evidence, (4) and reflecting, sharing, and celebrating the results. Ciampa and Gallagher (2016), in their qualitative case study with elementary (grade 8) and secondary (grade 9) literacy teachers who participated in a TPD program on the collaborative inquiry approach, identified that teachers improved their skills in understanding common student literacy learning needs and effective literacy instruction and assessment practices.

Furthermore, there is also evidence that in TPD programs that promote effective and active teachers' involvement teachers not only improve their learning but also assume a responsibility for the professional growth of their colleagues, thus transforming their communities of practice into a workforce of teachers who are committed to creating successful schools (Tam, 2015).

Another effective TPD approach identified is the "responsive classroom approach" (Wanless et al., 2015). Attention is paid to the implementation of evidence-based interventions that are aimed at achieving safe, challenging, and joyful classrooms and schools by combining social and academic learning for all children. This approach stresses the importance of developing teachers' emotional skills to manage classroom social relationships and encourage a proper climate in parallel with students' academic achievement (Wanless et al., 2015).

However, evidence also exists that professional communities become spaces where productive learning to reach the aforementioned objectives is not commonly undertaken (Opfer and Pedder, 2011; Popp and Goldman, 2016). For this reason, the impact of professional development programs must be assessed according to teachers' self-efficacy and their impact on improving student performance, and research must be conducted on the features of effective and ongoing professional development that promote a disposition in teachers toward a lifelong evidence-based learning (Knight et al., 2015).

HOW THE SEMINAR "ON THE SHOULDERS OF GIANTS" WORKS

The seminar "On the Shoulders of Giants" started in 2012 through the initiative of 20 primary and secondary school teachers in the city of Valencia, Spain. The teachers started gathering relevant research contributions that provided relevant knowledge on which educational actions improve children's learning. This seminar is not compulsory; teachers participate voluntarily in the training, which is self-organized on Saturdays, once a month, outside of regular working hours. Nonetheless, after 6 years, this seminar is established and sustainable, as more than 100 teachers are currently registered. Furthermore, an average of 80 teachers regularly attend the seminar every month.

Participants are preprimary, primary, and secondary school teachers, including principals and educational advisors from different cities and towns in the Autonomous Community of Valencia, Spain. At the beginning of the academic year, books and scientific articles are selected for discussion in each session. Some authors that these teachers have read and discussed include Lev Vygotsky, Jerome Bruner, and Paulo Freire, among others. Additionally, the latest contributions to learning and teaching published in international peer-review journals with high scientific impact factor are also discussed.

This new movement has been defined as dialogic teacher education (Roca et al., 2015), in which teachers are exposed to scientific reasoning regarding teaching, learning, and educational actions that have previously been implemented

and that have achieved relevant learning outcomes. In dialogic teacher education, changes arise when teachers' professional development is based on scientific evidence and there is an acknowledgment that teachers and students' families have the right to obtain the best and latest international knowledge about learning and educational research (Garcia-Carrion et al., 2017). The seminar "On the Shoulders of Giants" is an example of such an approach.

Participants read the literature before each session and select at least one paragraph of interest to share with the group. Each Saturday, the seminar proceeds as follows: between 9:30 and 11 am, all participants discuss the selected reading according to the principles of an egalitarian dialogue with respect to different opinions. Based on these criteria, anyone who wants to speak raises his/her hand and develops an argument based on a passage from the selected article or book, which should be referenced by page and paragraph. Thus, other participants can add comments regarding the same passage to collectively provide a deeper reflection on their teaching practice. At 11:30 am, after a coffee break, participants split into several thematic working groups in which desired goals for the year are shared and agreed upon. These groups mainly discuss and share the impact of evidence-based actions that participants are implementing in their classrooms and schools. These teachers achieve the double task of finding and reviewing the scientific literature (to expand their knowledge and propose readings to the entire group) and sharing experiences regarding the implementation of the evidence-based actions discussed. At the end of the academic year, a closing session is held, consisting of a 1-day session in which the participants are invited to evaluate the seminar and draw conclusions for the upcoming year. Participants in this seminar use Telegram, Google Drive, Facebook, and Twitter to organize, coordinate, and share documents and materials. Using these tools, the participants produce leaflets, notes, and papers that are made available to all members. Most participants also use social networks to spread information and receive updates, thereby creating a network of professionals who not only share a monthly space but also become a reference group for the teaching profession.

RESEARCH METHOD

Research Question and Survey Instrument

The research question addressed in this study is as follows: Which are the impacts or benefits that teachers report as a consequence of their participation in the seminar "On the Shoulders of Giants"?

The data used in this research were derived from a questionnaire (see **Supplementary Material**) aiming at analyzing the aspects that motivate the participating teachers in the seminar "On the Shoulders of Giants" held in Valencia, as well as at analyzing the benefits of this participation. The questionnaire was distributed among preprimary, primary, and secondary teachers both at the end of the journey

and through a digital platform. A total of 40 items were included in the questionnaire, organized into seven sections: context, the functioning of the seminar, satisfaction with the seminar, the usefulness of the seminar and empowerment, intention to continue attending the seminar, relationships, and sociodemographic information. The results presented in this article are related to the specific questions that focused on the teachers' perceptions of how the readings and discussions in the seminars are useful for improving teachers' self-efficacy and argumentation skills in their professional practice and how they are useful for improving students' achievement. The questionnaire was designed *ad hoc* for implementation at a particular seminar session, in which it underwent pilot testing with a small number of participants to correct potential bias items. The questionnaire included multiple-choice items as well as items based on the use of a Likert scale ranging either from 1 ("totally disagree") to 10 ("totally agree") or from 1 ("minimum") to 10 ("maximum").

Sample

The seminar "On the Shoulders of Giants" was defined as a case study. Purposive sampling was used, asking teachers who attended the seminar "On the Shoulders of Giants" to participate voluntarily in the survey. A total of 69 preprimary, primary, and secondary teachers decided to participate. A total of 69.6% of the participants in the survey were women, whereas 30.4% were men (which is in line with the regular gender distribution of teachers in Spain). Half of the teachers were between 30 and 40 years old (51%), while 30.3% were older than 40 years old (between 41 and 50), and almost two teachers over 10 were "young" teachers with "limited" teaching experience (18.7%). The quantitative case study, therefore, aims to evaluate the distribution of the variables and the relationships between them. The study cannot be extrapolated to other cases because it is not a comparative study, but this fact does not limit or invalidate its results (Yin, 2018).

Procedure

The questionnaire was distributed in paper format to all seminar attendees at the end of a Saturday meeting, as well as in digital format through a digital platform. Ethical procedures were presented to the participants. Researchers explained the objectives of the study, noting the potential risks of participating in the survey, the contact information for further questions about the project, and the explicit condition that participation is voluntary. An open space was set up for the participants to ask questions and resolve their doubts regarding the survey. Participants were also informed both during the seminar and on the digital platform that any data collected would be kept anonymous and confidential. Participants provided either oral or digital consent (agreeing to answer the questionnaire) to participate in the survey. All participants were informed about their right to leave the survey at any time and remove their data from the database. The study was approved by the Ethics Committee of the Community of Researchers on Excellence for All (CREA).

TABLE 1 | Spearman's bivariate analysis of involvement in the seminar and use of scientific literature.

		Provides key information to understand current school problems	Helps identify best solutions based on scientific evidence	Provides access to other forums (seminars, conferences, etc.) that are very useful for improving my practice	Provides a network of professionals who I can rely on and collaborate with to improve education
Involvement (books read)	Correlation coefficient	0.497*	0.447*	0.582*	0.522*
	Sig. (bilateral)	0.002	0.006	0.000	0.001
	N	36	37	37	37

*Correlation is significant at the 0.01 level (bilateral).

Data Analysis

A descriptive statistical analysis was conducted on the data collected from the survey to answer the research question. Additionally, multivariate analysis was conducted to explore potential associations among variables, drawing on the use of the correlation coefficient in the bilateral analysis. Several categorical analyses were established about teacher participation in the seminar and the learning and self-efficacy improvements examined. Drawing on the sets of questions comprising this questionnaire (contextualization, dynamics of the seminar, satisfaction with the seminar, seminar utility, and empowerment), the following three main statements framed the data analysis: (1) scientific knowledge leading to an educational improvement, (2) strengthening debate skills with colleagues, and (3) improving teaching practice and student learning. In terms of the validity of the content, a confirmatory analysis with experts was conducted. Regarding the validity and reliability of the questionnaire, a factorial analysis was conducted.

RESULTS

The data collected suggest that participating in the seminar "On the Shoulders of Giants" not only impacts teachers' practices and attitudes toward in-service teacher training but also encourages "networking" among teachers, who are more willing to create or participate in collaborative discussions, drawing on the principles of dialogic learning (Flecha, 2000) and defining what we call "dialogic teacher education". Therefore, according to the respondents of the survey, the benefits of participating in the seminar may include four different types:

- Transforming the individual teachers' practices.
- Increasing the use of scientific evidence to inform teachers' practices.
- Engaging in and creating networks of teachers for discussing lesson plans and practices with colleagues, drawing on scientific evidence.
- Noticing students' improvement in terms of learning.

Transforming the Teachers' Practices

"On the Shoulders of Giants" is distinctive because it is based on reading and discussing scientific literature on evidence-based approaches to teaching and learning. We found a significant correlation between involvement in the seminar and

the use of the scientific knowledge acquired (see **Table 1**). Spearman's bivariate analysis revealed a high correlation between involvement (number of articles/books read) and the use of scientific knowledge.

According to the respondents of the survey, participating in the seminar provides them with access to other forums (seminars, conferences, etc.) that might help expose them to data, practices, and other sources of knowledge that they consider "very useful" for improving their practice. Checking other sources of evidence, participating in networks of professionals, and using scientific evidence as the main source of "evidence" appears to transform these teachers' regular practices. The data suggest that these three variables are somehow associated with the practice of participating in the seminar (**Table 1**).

Increasing the Use of Scientific Evidence to Inform Teachers' Practices

The abovementioned data indicate a clear increase in the use of scientific knowledge that is associated with attending the seminar. Attending the seminar greatly contributes to increasing the number of scientific books and journal articles read by the teachers (see **Table 2** for a comparison of before and after the respondents' participation in the seminar).

Furthermore, we found that for teachers involved in this seminar, the improvement in professional practice meant not only methodological improvements but also improvements in the learning outcomes of their students as well as improvements in the school and classroom climate (74.5%) and the effectiveness of the methodologies implemented (72%) (see **Table 6**).

Nearly 29% of the participants never read a scientific journal article on educational research and learning processes before attending this seminar. After becoming involved in the seminar,

TABLE 2 | Use of scientific literature by teachers.

Number of scientific articles/books read	Before participation in the seminar	After participation in the seminar
None	28.4%	0.0%
Between 1 and 5	44.8%	21.7%
Between 6 and 10	9.0%	29.0%
Between 11 and 20	6.0%	17.4%
More than 20	11.8%	31.9%
Total	100.0% (n = 67)	100.0% (n = 67)

TABLE 3 | Knowledge acquisition by teachers after participating in the seminar.

Question	% Answers
Acquired new knowledge about the scientific basis of learning that I did not know about in the past	89.9% (*n* = 62)
Acquired new knowledge about the scientific basis of learning that corrected preexisting assumptions about learning	73.9% (*n* = 62)
Strengthened and extended preexisting knowledge	58.0% (*n* = 62)

that practice was dramatically transformed: no one declared not reading any scientific articles or books. On the contrary, three out of four teachers participating in the survey claimed that they had read six articles/books or more (31.9% of participants said that they had read more than 20 articles or books). This is a significant transformation of teachers' practices, especially because most of them come from a tradition of not reading scientific literature related to their professional activity. These findings also show how the participation in this professional development activity was a turning point for a large number of participating teachers regarding the use of scientific literature to understand current school problems, identify best solutions, and improve their practice.

Engaging in and Creating Networks of Teachers to Discuss Scientific Research Evidence to Improve Their Teaching Practices

Most of the teachers agreed that they acquired new scientific knowledge and that they corrected their pre-existing assumptions through the seminar readings (see **Table 3**). This finding is particularly relevant because unlike other fields of social action (such as health), many education professionals in Spain base their teaching strategies on popular beliefs or assumptions and not on evidence-based practices (Flecha, 2015).

By participating in the seminar, many teachers developed the ability to improve their practices using solid information about proven key elements of learning from fields such as psychology, pedagogy, and sociology. Moreover, when the teachers were asked whether discussing these readings during the seminar helps them strengthen their capacity for analysis and debate with other education professionals, 98.6% answered "yes". This newly developed capacity for argumentation can be explained by the high rate of participants who use scientific knowledge to understand educational problems aimed to find the best solutions to overcome these problems (see **Table 4**).

FIGURE 1 | Impact of the seminar on teaching practice.

The seminar became a space for teachers to network (**Table 1**) based on a discussion of selected articles and books and to collaborate to improve their practices.

Improving Teaching Practice and Student Learning

The impact of the seminar on the improvement in teaching practice and student learning was found to be one of the primary benefits of participation in the seminar. However, this study further shows the real impact on the teachers' professional practice. **Figure 1** and **Table 5** show that most of the teachers (74.2%) transferred their learning of evidence-based educational actions to their teaching practice.

In the questionnaire, teachers evaluated the impact of their training on student performance using a score between 1 and 10, where 1 represented the minimum and 10 represented the maximum. Most of the teachers responded with scores between 8 and 10, especially regarding learning (64.7%), attention (65.3%), and the capacity for reflection and debate (83.7%). Evidence of improving students' achievement after implementing evidence-based educational actions was very relevant for teachers who participated in this study and played a key role in their continued interest in attending the seminar.

DISCUSSION

Over the last decade, the research has claimed that TPD has a great impact on improving in-service and preservice teachers'

TABLE 4 | Impact of the seminar on the use of scientific knowledge for debating with other professionals.

Question	(%) Scale from 1 to 10				
	1 to 4	**5 to 7**	**8 to 10**	**Total**	**Mean**
It provides me with key information to understand current school problems	1.5%	19.4%	79.1%	100.0% (*n* = 67)	8.493
It helps me identify the best solutions according to scientific evidence	1.5%	29.4%	69.1%	100.0% (*n* = 68)	8.353

TABLE 5 | Impact of the seminar on improvement in teaching practice.

Question	% Answers
Both my scientific knowledge and my teaching practice improved because I transfer the knowledge acquired to my work	74.2%
While my scientific knowledge is improving, I still find it difficult to translate this knowledge into my teaching practice	16.7%
It did not improve my knowledge or my teaching	0%
I do not identify with any of these statements	1.5%
Other	7.5%
Total:	100% (n = 68)

practices in the classroom. International research on teacher professional development has already shown that teachers attend professional development courses to improve their self-efficacy in their professional practice (Gorozidis and Papaioannou, 2014, 2011). This is also the case with this seminar. Evidence suggests that teachers with a solid academic background are more able to adjust their teaching based on informed and systematic reflection, which has a great impact on students' performance. Thompson (2012) compared the achievement of students who had teachers with an extensive academic background and found that teachers with professional training correlate positively with students' performance. Shulman (1986) coined the term pedagogical content knowledge (PCK) to refer to this type of a background, adding the pedagogical component to "classic" content knowledge, which has been at the center of the TPD programs. An extensive body of research has provided evidence of TPD impact on teachers' practice (Pianta and Hamre, 2009; Barr et al., 2015; Liu et al., 2016; Matic, 2019). The results reported by the participants in this study are consistent with this previous body of research. The teachers participating in the seminar "On the Shoulders of Giants" claim that attending the seminar provides them with solid training to address "current school problems" effectively, helping them identify the best solutions to solve these problems. The five features identified by Desimone and Garet (2015) that make TPD effective are also present in the teachers' discourse in the survey discussed here. The teachers highlight aspects such as content (drawing on their readings), active learning, and collective participation, which is consistent with Desimone and Garet's (2015) findings. TPD provides in-depth training for in-service teachers, who become

more able to "identify the best solutions based on scientific evidence" (**Table 1**).

As in these previous studies, the survey conducted in this study confirms that TPD contributes to improving teachers' practices. However, unlike these previous studies, the case of the seminar "On the Shoulders of Giants" suggests that TPD might be based on "scientific evidence", that is, the use of evidence that has been confirmed by the scientific community (i.e., contributions of authors such as Vygotsky, Bruner, Freire, Flecha, etc.). Barr et al. (2015) point out that "workshops with teachers" contribute to engaging the teachers in a reflective discussion, whereby the teachers develop the agency to make critical decisions in everyday school-learning situations. Similarly, the teachers participating in the seminar "On the Shoulders of Giants" claim that discussing current problems in light of others' contributions (connecting practice with theory) (a) provides key information for understanding current school problems and helps them find the best solutions (drawing on research-evidence from previous cases). Teachers increase their knowledge of these "scientific bases" by reading classic books (in education, the psychology of education, and other related fields). The data show how the teachers' participation in the seminar greatly increased the number of scientific articles and books read by the teachers who participated in the survey (**Table 2**). This practice not only (a) transformed the teachers' practices (as teachers) in terms of in-service TPD activities but also (b) became the basis for their actions in the school.

The dialogic teacher training illustrated by the seminar "On the Shoulders of Giants" is consistent with the findings of Barr et al. (2015): "the ability to apply the knowledge gained in schools" with the added component of "dialogic," as at type of reflective practice based on the use of dialogic speech (Garcia-Carrion and Diez-Palomar, 2015) to discuss the chosen readings. Drawing on dialogic speech, participants in the seminar can understand the contributions of the previous research in teaching and related learning fields, providing them with key information to understand current school problems (**Table 2**). Expanding teachers' backgrounds through their participation in the seminar also explains the transformation of their practices, because a high number of the teachers tends to transfer the new knowledge acquired into their work (**Table 5**).

The data collected are also consistent with Barr et al. (2015), who found that "collective participation in reflective practices" is one of the main ways for teachers to improve the effectiveness

TABLE 6 | Impact of the seminar on student improvement.

	(%) scale from 1 to 10				
	% answers	1 to 4	5 to 7	8 to 10	Total	Mean
Improved learning	73.9%	0.0%	35.3%	64.7%	100.0%	7.941
Improved attention and interest	75.4%	0.0%	34.7%	65.3%	100.0%	8.096
Improved reflection and debate	71.0%	0.0%	16.3%	83.7%	100.0%	8.673
Improved effectiveness of the methodologies implemented	72.5%	0.0%	28.0%	72.0%	100.0%	8.300
Improved classroom climate	73.9%	0.0%	25.5%	74.5%	100.0%	8.196
Improved school climate	68.1%	6.4%	34.1%	59.5%	100.0%	7.617

of their practice. There are different approaches based on this finding that have already been validated by research, such as lesson study (Murata, 2011; Fernandez and Yoshida, 2012) and the use of didactical artifacts such as suitability criteria (Vanegas et al., 2014). Teachers participating in the seminar "On the Shoulders of Giants" also develop a sense of networking, sharing a dialogic reading that opens space for a multiplicity of entry points into the readings and that results in a deeper understanding (which is also consistent with relevant findings from research in psychology, which has found that cognition is socially constructed). **Table 6** reports the extensive impact (in terms of learning, attention, interest, reflection, etc.) that participation in the seminar has on the teachers.

CONCLUSION

This study contributes to the field of teacher professional development by providing new insights into the role of teacher training programs in in-service teachers' practices. As discussed above, scientific evidence-based literature has become a strong reference to improve both teachers' knowledge backgrounds and practices. Drawing on this kind of literature, the teachers participating in this study noticed benefits for their students' learning. At the same time, the teachers recognized improvements in their own analytical and argumentative skills while interacting with other education professionals who are consistently connected to scientific evidence for student improvement. Therefore, science-based in-service professional development strongly empowers teachers in their professional practice.

Based on this study, teachers attributed the improvement in their professional practice to their participation in the "On the Shoulders of Giants" seminar. Additionally, the teachers related this improvement to improvements in their students' school performance. All of these motivations are enhanced by the idea of stepping "On the Shoulders of Giants," referring to the scientific knowledge acquired in this seminar. Participating in this seminar provided teachers with the scientific skills needed to better understand the realities that schools are currently facing. Moreover, the teachers were better prepared to find possible solutions based on scientific evidence.

The seminar "On the Shoulders of Giants" is an example of a dialogic evidence-based in-service professional development space aimed at social impact. Teacher professional development that draws on scientific literature leads to actions that improve school performance and learning outcomes. This study focuses on one teacher professional development initiative that is voluntarily attended after working hours, with no credit awarded for attendance. The main findings highlight the seminar's social impact and how professional training and practice are linked to acquiring the knowledge and strategies needed to improve student results, thereby transforming students' future opportunities. It is necessary to point out the limitations of the results. The findings could be further enriched through interviews with teachers to obtain more details not only on the benefits of their participation in the seminar but also on the

aspects of the seminar to be improved. Further research on this TPD initiative is necessary for a more in-depth evaluation of its social impact: for instance, by performing qualitative research using in-depth interviews with and narratives of participating teachers, families, and students.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Ethics Committee of the Community of Researchers on Excellence for All (CREA), University of Barcelona. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

JR and JC-B designed the fieldwork and participated in the data analysis and drawing of the conclusions. LR and EO participated in the data analysis and wrote the final version of the manuscript.

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SUPPLEMENTARY MATERIAL

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"Architects of Their Own Brain." Social Impact of an Intervention Study for the Prevention of Gender-Based Violence in Adolescence

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Research in psychology has evidenced both the prevalence of gender-based violence among youth worldwide and the negative impacts that such violence has on the victims' mental and physical health. Neuroscience has proven that violent intimate relationships harm the brain, while very simple social experiences can change the brain architecture in positive directions. Also, interventions that have been demonstrated to be successful in preventing and responding to gender violence in adolescence have been informed by psychology. This article reviews the social impact of psychology in the field of teen gender violence and then reports on the potential social impact achieved by an intervention study consisting of seven interventions framed by the research line on the preventive socialization of gender violence. The program was addressed to 15- and 16-year-old adolescents and focused on supporting free reconstruction of mental and affective models of attractiveness via critical analysis of the *dominant coercive discourse*, which links attraction to violence. The communicative methodology involved working with an Advisory Committee from the beginning of the study, as well as continuous dialog between the researchers and the participants, which was used to refine subsequent interventions. The results show that the program contributed to raising participants' critical consciousness regarding the dominant coercive discourse in their life, provided the participant subjects with cognitive tools to better understand their own and others' sexual-affective thinking, emotions, and behaviors, in favor of rejecting violence, and supported the modification of female adolescents' sexual preferences for different types of men. Importantly, the findings also indicate that the interventions aided some participants' use of the knowledge gained in the project to help their friends and communities in reflecting upon coercive patterns of sexual attraction, the quality of their intimate relationships, and the different effects of sexual violence and toxic relationships on health. Some individuals reported leaving toxic relationships after the interventions. This intervention research illustrates Santiago Ramón y Cajal's metaphor, employed to

explain plasticity: that every person, if s/he decides it, can be the architect of her or his own brain. With evidence-based cognitive tools within the reach of every adolescent, and upon individual free choice for transformation, a new sexual-affective socialization free from violence is possible.

INTRODUCTION: SOCIAL IMPACT OF PSYCHOLOGICAL RESEARCH ON GENDER VIOLENCE

The research and innovation framework defined by the European Union, Horizon 2020, leaves no doubt about the need for science to be carried out with and for society (European Commission, 2014). Research must respond to social challenges by helping to create better societies (European Commission, 2018) and improving the lives of all citizens (Flecha et al., 2015). The social problems to be addressed by researchers are set by citizens and global institutions. The United Nations' 2030 Agenda in relation to sustainable development has shared 17 goals that are central to promoting prosperity and protecting the planet and which must be assumed by all countries, poor, rich, and middle-income. One of those goals, number five, focuses on gender equality, and gender violence is identified as one central target for making the goal real. The United Nations (2019) states that in the last 12 months, one out of five women between 15 and 49 years old have suffered physical or sexual violence by their partners and that there are currently 49 countries in which there is no law to protect these women from this type of violence. Society is concerned about this problem. In an investigation conducted to identify the relevance of research aims through the voices of citizenship in social networks, researchers found that "violence against women" was one of the most used keywords by users in social networks and in online resources (Cabré et al., 2017). Overcoming gender violence is a global social concern that urges evidence-based solutions.

Contributions of Psychology to Tackling Gender Violence

Research in psychology has been and continues to be key to helping us tackle gender violence worldwide, in terms of establishing its prevalence and informing its prevention. Indeed, thanks to the evidence provided by psychological research, we know that gender violence is a global problem (United Nations Statistics Division, 2015) that is suffered by women of different ages (Stöckl et al., 2014) from all socio-economic backgrounds and that occurs both in stable and sporadic relationships (Trygged et al., 2014; Bay-Cheng and Bruns, 2016; Puigvert et al., 2019). Several studies in psychology have shown a non-negligible prevalence of gender violence in the sexual-affective relationships of young people (Blattner et al., 2015; World Health Organization, 2015; Ybarra et al., 2016; Fernández de Juan and Florez Madan, 2018). Moreover, one of the first studies, which analyzed data about the prevalence of Intimate Partner Violence

(IPV) among adolescents and young women in nine countries, found that young women have a higher risk of experiencing IPV than older women (Stöckl et al., 2014). Stöckl et al. (2014) reported a prevalence of around 50 percent or higher in most sites, referring to the proportion of young women (between 15 and 24-years old) who had ever suffered IPV. The magnitude of this problem in adolescents is considered alarming (Lundgren and Amin, 2015) and is generating increasing concern among practitioners, scientists, policy-makers, and society as a whole (Barter, 2007; De Koker et al., 2014) given the devastating effects that research in psychology has shown that gender violence can have on the health and positive development of the victims (De Koker et al., 2014).

At the psychological level, research has reported a higher risk of the victims experiencing symptoms of depression and anxiety (Ackard et al., 2007; Exner-Cortens et al., 2013) and suicidal ideation (Ely et al., 2011; Exner-Cortens et al., 2013), among other disorders. Unhealthy behaviors such as using tobacco, drugs, and alcohol (Roberts et al., 2003; Exner-Cortens et al., 2013) or suffering from eating disorders (Ackard and Neumark-Sztainer, 2002; Sharp and Keyton, 2016) are found to be among the most common consequences in terms of habit disorders. At the educational level, there is evidence that demonstrates a higher risk of gender-based violence victimization during college among those who have suffered from IPV (Smith et al., 2003) and a decline in academic performance or increase in the dropout rate (Banyard and Cross, 2008; Holmes and Sher, 2013). This evidence from psychology provides strong arguments for the development of interventions that prevent gender violence among adolescents and youth, supporting the avoidance of future revictimization.

Psychological research has also been central in pointing out the risk factors for gender violence victimization, namely, among others, peer influence, substance abuse, psychological adjustment, and attitudes toward violence (Leen et al., 2013). Other interdisciplinary research has shown that socialization into a *dominant coercive discourse* (Puigvert and Flecha, 2018), where males with violent attitudes and behaviors are presented as more sexually attractive, is also one cause for gender violence among teenagers (Gómez, 2015). Such dominant coercive discourse is spread widely by the media, peer groups, and other socialization agents. Nevertheless, research in psychology, sociology and other social sciences has also evidenced that new interactions and social experiences can drive the learning of new attraction patterns that are able to weaken the link between violence and attractiveness and the development new mental and affective models where sexual attraction is associated with dialog and respect (Gómez, 2015; Racionero-Plaza et al., 2018). This evidence supports the relevance for the design and implementation of interventions and

programs that provide new opportunities for youth to revise their sexual-affective mental and affective models and to reconstruct them in the direction of avoiding violent intimate relationships, if the adolescents freely decide to do so. The program reported in this article responds to this need.

Psychology has also advanced knowledge that has helped in the design of more effective preventive actions. Psychological research has shown that preventive interventions, to be successful, have to take place in the environments where adolescents socialize, the school and the community mostly, and involve key adults, such as teachers, parents, or other community members (De Koker et al., 2014). Since the responsibility to combat violence against women is collective, the response must be collective too (Wagner and Magnusson, 2005). Thus, studies suggest that, among others, during childhood and adolescence, educational settings are ideal spaces in which to act preventively (Ozer, 2006; Lundgren and Amin, 2015; Theimann, 2016; Nakray, 2018; Solís Domínguez and Martínez Lozano, 2018), including by transforming hostile environments created by peers in high schools where sexual harassment happens (Fineran and Bennett, 1999).

Research in psychology has also shed light on the developmental stage at which to engage in preventive work on gender violence so as to raise its effectiveness (De Koker et al., 2014). This intervention period is adolescence. Adolescence and pre-adolescence is the time when the first sexual-affective relationships are established for many teens, and those first experiences will become the basis for subsequent healthy or toxic relationships (Stöckl et al., 2014; Gómez, 2015). Also, it is in adolescence when gender role differentiation strengthens, changing the way of acting in sexual-affective relationships, which represents a great opportunity to work on the promotion of attitudes to prevent IPV (Lundgren and Amin, 2015).

Social Impact of Psychology in the Area of Gender Violence

On the basis of all of the scientific evidence in psychology accumulated throughout time in relation to gender violence, a number of interventions and programs have been designed to tackle gender violence among adolescents and youth, with many proving their efficacy in dimensions associated with the problem.

Grounded on the evidence provided by psychology and other social sciences on the importance of educational settings as contexts for preventive action, diverse school-based dating violence prevention programs have shown proof of effectiveness in preventing perpetration and/or victimization of dating violence (De Koker et al., 2014; Lundgren and Amin, 2015). Three well-known programs are a good example of this. The *Safe Dates Project* (Foshee et al., 2005) is one of them. Including 10 classroom sessions taught by health and physical education teachers, an informational poster of the taught content, and a play performed by students, the program reported less psychological, moderate physical, and sexual dating perpetration and reduced moderate-physical dating violence victimization in adolescents who took part in it (Foshee et al., 2005). Secondly, *The Four R* program, which integrates 21 lessons focused on healthy

relationships, sexual health, and substance use prevention into the curriculum, obtained a reduction of physical dating violence among participants (Wolfe et al., 2009). Third, the importance of focusing on all school contexts was observed in the *Shifting Boundaries* intervention (Taylor et al., 2013, 2015). This program offers a classroom intervention, a building intervention, and a combined intervention or neither intervention options, and it was found that the building only and the combined intervention were effective in reducing sexual violence perpetration and victimization (Taylor et al., 2013, 2015).

Research has also shown that it is important that intervention programs for the prevention of gender violence among youth maintain the positive effects of the interventions over time. In this regard, studies have shown that obtaining behavioral changes in relationships, skills, and attitudes seems to be a factor that can help promote sustainability (Leen et al., 2013). Therefore, it is not enough for intervention programs to focus on decreasing dating violence; it is necessary as well to promote healthy relationships in order to sustain change over time (Miller et al., 2015), and friends, teachers, parents, or people from the community can help in achieving this; strong and positive interpersonal relationships are crucial for adolescents' healthy development and well-being. Along these lines, research has provided evidence that bystander attitudes from witnesses are essential to stop violent behaviors and set the basis to create environments where healthy relationships are prioritized. *TakeCARE* is a video bystander program designed to promote bystander behavior in situations where violent relationships and sexual violence happens in high schools (Sargent et al., 2017). The adolescents who watched the video were involved in more bystander behaviors than the students who did not watch it Sargent et al. (2017). This behavior needs to be extended to other contexts in which adolescents develop to achieve even better results. The intervention that Miller et al. (2013) carried out, training athletic coaches to integrate prevention messages in the activities that they guide, is a good example of this. This program achieved a lower level of negative bystander behaviors and less prevalence of dating violence in athletes involved in the intervention (Miller et al., 2013). These evidence-based programs show the importance of creating a sense of community and of feeling emotionally safe to promote healthier relationships. Different approaches can be taken to achieve such results. Dialog in support groups is a successful option that was evidenced in the *Expect Respect* teen violence prevention program (Ball et al., 2009). The promotion of positive communication between young people and its benefits were also reported by the *Healthy Relationship Campaign*, which, through the use of text messages, developed a sense of community and promoted healthy relationships between the adolescents who took part in the program (Guillot-Wright et al., 2018). To maintain this climate of respect, the prevention of peer aggressive behaviors needs to be developed not only in face-to-face environments but also inside social networks, as the *DARSI* program has achieved (Carrascosa et al., 2019).

Psychology has also shown that building safe environments and promoting healthy relationships is especially important in the case of adolescents who are in a situation of vulnerability, and a number of programs have been designed based on

such knowledge. To prevent dating violence against pregnant and parenting teens, an adaptation of the *Safe Date* program curriculum was carried out that obtained a reduction of incidence among participants (Herman and Waterhouse, 2014). Other successful interventions such as *Love 2*, addressed to low-income and high-risk youth (Antle et al., 2011), or the *Youth Relationship Project*, for teens with histories of maltreatment (Wolfe et al., 2003), have been implemented with good results. Programs that have taken into account differences in dating history and in history of dating violence victimization and perpetration, such as the *Teen Choices* online program, have achieved successful outcomes (Levesque et al., 2016).

Along the lines of emphasizing interventions with more vulnerable adolescents, preventive programs tackling the prevention of gender violence revictimization among youth becomes a priority. In this regard, research has indicated the importance of providing tools that enable youth to be more critical about violence (Aiello et al., 2018) and, starting from the power of the *dominant coercive discourse* in their sexual-affective socialization, to revise and modify attraction toward men with dominant and aggressive behavior (Gómez, 2015). Work on autobiographical memories of violent sexual-affective relationships can play an essential role in this sense, as this type of memory influences prospective thinking and behavior (Williams et al., 2008; Klein et al., 2010), emotional well-being, and overall health (Rubin, 2010). Interventions that aid young women in revising and reconstructing memories of violent sexual-affective relationships in positive directions, including the transformation of the emotions induced by the recall toward feelings of rejection, are grounded in the evidence of the malleability of autobiographical memories (Cohen and Conway, 2008) via specific learning experiences (Stone et al., 2010; Hirst and Rajaram, 2014). Such memory-based interventions have already proven promising for the prevention of gender-based violence revictimization among young women (Racionero-Plaza et al., 2018).

All of the aforementioned prevention programs have been informed by particular research findings from psychology and other social sciences on gender violence among teens and have made it possible for adolescents to engage in specific transformations of their sexual-affective thought and behavior in ways that can protect them from experiencing violence in their intimate relationships. The case of the MEMO4LOVE project, the intervention research reported in this article, builds upon the various research projects on the topic of preventive socialization of gender violence (Valls et al., 2008; Gómez, 2015; Puigvert, 2016; Puigvert et al., 2019), which have developed a strong body of evidence on the need to tackle the dominant coercive discourse in society to help youth escape from the social imposition of attraction models that link desire with violence and aggressiveness. The intervention program in the project adds to the current knowledge on prevention strategies for adolescents by focusing on the dominant coercive discourse, being a group-level intervention and school-based. The program is part of a group of interventions known as a 'dialogic model of conflict prevention and resolution.'

MATERIALS AND METHODS

Participants

The sample of participants in the MEMO4LOVE project comprised 126 adolescents attending three different high schools in Barcelona (Spain). This number fluctuated slightly throughout the project, as not all students in all classrooms attended every intervention. The three high schools constituted the experimental groups of the study, and the program of interventions for preventive socialization of gender violence was implemented over a period of 6 months (January–June 2019) in these schools. The interventions took place in the 4th grade of Compulsory Secondary Education. The age of the participants mostly ranged from 15 to 16 years. Two of the high schools were public, and one was semi-private. The class groups in all three high schools were highly diverse ethnically and culturally, and mostly had mid-low and low SES. Participants in the communicative focus groups and interviews were randomly selected females and males, and the questionnaires evaluating every intervention were answered by all students who had participated in the project.

Inclusion Criteria

Participants in the interventions and in the data collection were all students, females and males, enrolled in the 4th grades at every high school involved in the project, whose parents had given written informed consent for their participation in the study, as well as they themselves having provided written informed assent. No remuneration was given either to the adolescents or to the high schools for their participation in the study. The significant participant involvement in the project was supported by the commitment of the three high schools to equipping their students with evidence-based tools to prevent gender-based violence victimization or revictimization; no other activities on the same topic were taking place when the MEMO4LOVE interventions were implemented.

Material and Procedure

This study followed all ethical standards for research involving human participants in the Declaration of Helsinki (World Medical Association [WMA], 2013) and from Horizon 2020 (European Commission). Before participant subjects became involved in the study, the researchers fully informed the principals and teachers in the high schools, the parents and tutors of the adolescents, and the adolescents themselves about the project. In those informative sessions, all of them could ask questions of the researchers. The high schools received an informative letter sharing details of the study. Given that participants were under age 18, their parents and tutors completed written Informed Consent forms. Adolescent students were also informed orally via talks in their classes, had time to read the assent form and to ask questions of the researchers, and completed written Informed Assent forms afterward. Explanations were given by the researchers when necessary to the principals, teachers, parents, tutors, and students at any time before and during the interventions. The information provided in the consent and assent forms explained the objective

of the study, the voluntary nature of participation, the possibility to withdraw from the study at any time, the procedure to collect the data, the materials and measures to be used, and the anonymity and privacy statement. Codes were always employed in the quantitative data collection, and pseudonyms have always been used for quotations. The letter for the high schools also included this information. The Research Ethics Committee of the Virgen de la Macarena and Virgen del Rocío Hospitals (Government of Andalusia) revised and fully approved the study.

The entire project was conducted using the communicative methodology of research (Soller-Gallart, 2017). This election was made because the communicative methodology had proven efficacy in raising the social impact of research (Flecha et al., 2015), including the social impact of research on gender violence (Gómez González, 2019). The employment of this methodology in the project implied not only the use of communicative data-collection techniques and egalitarian interaction between the researchers and the research subjects but also the incorporation of some aspects of communicative organization. Among those aspects, of note was the constitution of an Advisory Council (AC) from the very beginning of the project. This AC was composed of representatives from two NGOs dedicated to education, one professional working with adolescents in the mental health field, one high school teacher, and two researchers in the field of gender violence prevention and response, one from the area of feminist studies and the other from the area of masculinity studies. The AC gave feedback on the program of interventions before its start, and members of the AC were asked for their inputs at certain moments within the project to make adjustments in the development of the program of interventions to better meet the schools' and adolescents' needs. Additionally, following the communicative paradigm, the questionnaires, surveys, and interview guidelines elaborated on the project, and the translation of other existing instruments was validated with adolescents different from the ones who later engaged in the program but of the same age and SES. This validation ended up introducing modifications in the translations of some instruments and language edits in one of the questionnaires and in the interview protocols. This communicative process of refinement was important to better tackle the object of the study and increase the likelihood of potential social impact. Also, the employment of the communicative methodology facilitated the finding of solutions to the difficulties and challenges that emerged during the intervention research in natural contexts, mostly changes in the schedule of interventions that resulted from needs and unforeseen circumstances in the high schools. The egalitarian dialog between the research team and members from the high schools and the high ethical standards of the same communicative methodology were very effective tools for tackling the challenges of the research process.

Intervention

The MEMO4LOVE research project involved the design of a program of seven interventions (see **Figure 1**) for the preventive socialization of gender violence. All interventions were grounded in evidence collected from the research line of preventive

socialization of gender violence developed at the Community of Researchers on Excellence for All (CREA) and also built upon other scientific evidence in the social and natural sciences about gender violence and toxic relationships. Every intervention lasted for an hour and took place during the school day, in the natural setting, the classroom, and in the natural group, the class group.

Interventions 2, 3, 4, 5, and 6 followed the format of lecturing by a researcher from the project in which scientific evidence on the topic of the session was shared, followed by a dialog with the whole group. The lectures were always supported by a PowerPoint presentation. The dialog with the class group was guided by two or three general questions but was open to taking new questions from the adolescents. Intervention 1 involved, instead of lecturing, the screening of a video of a lecture given by Professor Gómez (2004) on the social nature of love and attraction; this researcher was a leader in the field of research of preventive socialization of gender violence. Intervention 7 involved reading two brief texts published in *Diario Feminista* (Joanpere, 2017; Duque, 2018) and discussing them, following some guiding questions. One of the texts dealt with the idea that lacks scientific support but is much promulgated that 'love kills,' and the other text questioned another disseminated assumption in Spain on 'micro chauvinism.' Intervention 2 focused on the dominant coercive discourse; intervention 3 dealt with infidelity as a behavior that is submissive to the dominant coercive discourse and the role played by friends and peers in this circumstance. Intervention 4 shared scientific evidence in psychology, psychiatry, neuroscience, genetics, and medicine on the negative impact of toxic relationships on neural connections and brain architecture, even leading to neural death, as well as involving discussion of the evidence on the positive effects of quality close relationships on the brain and overall health. Intervention 5 presented the New Alternative Masculinities (NAM) as masculinities that are egalitarian and attractive (Flecha et al., 2013); and intervention 6 raised the important topic of consent in sexual-affective relationships. All interventions had the definitory characteristic of sharing with adolescents the scientific evidence on the topics discussed in every intervention, thus making real article 27 of the Universal Declaration of Human Rights United Nations (1948), which establishes all humans' right to access scientific knowledge and to participate in it. Also, in all interventions, the researchers linked the conceptual knowledge to everyday experiences of adolescents, to the TV series that many of them watch, the singers that many of them follow, the songs that are famous among them, etc., as illustrations of the dominant coercive discourse as well as to shed light on alternative sexual-affective models grounded in both equity and attraction. All interventions started from the hypothesis of brain plasticity and were designed and approached from the perspective of socioneuroscience, a line of research that understands that social interactions and experience shape neural wiring. While the dominant coercive discourse imposes a neural wiring that enslaves sexual-affective patterns of attraction, individuals, with the right stimuli and if they decide to do so, can raise their critical awareness about the dominant coercive discourse, revise such mental models, and rewire their brains to break free from such discourse.

FIGURE 1 | Overview of the interventions of preventive socialization of gender violence implemented in the project and the timings of measurements.
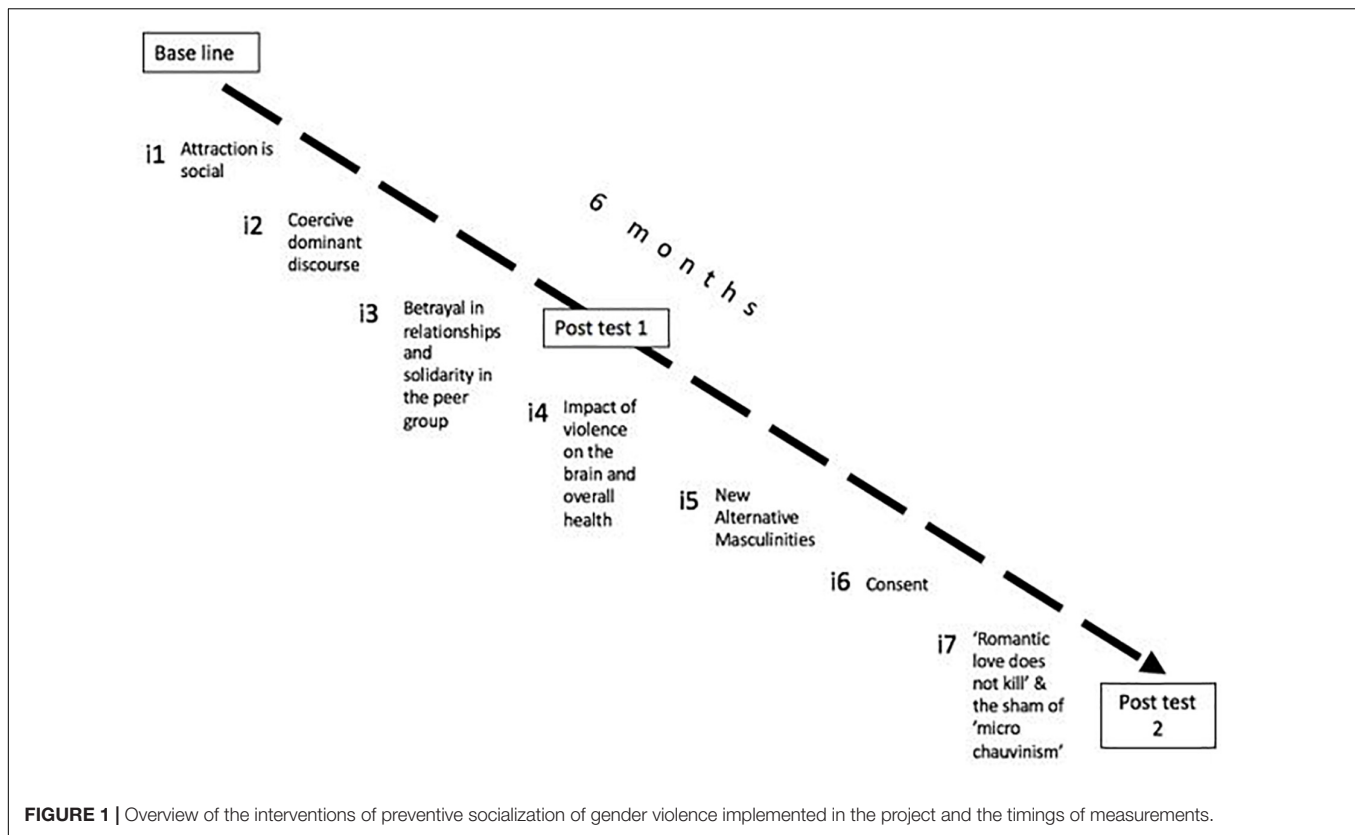
Figure 1 presents an overview of the seven interventions implemented in the project and the timings of measurements.

Measures and Instruments

The intervention project followed a longitudinal design of repeated measures. Quantitative and qualitative data were collected before the first intervention, as a baseline measurement. Once the program began, measurement was conducted for a second time (post-test 1) after intervention 3 and for a third and final time (post-test 2) when all interventions finished, that is, after intervention 7. The quantitative measures involved surveys and questionnaires elaborated for the project and other standardized instruments; they dealt with peer interactions' influence on gender violence, with attitudes toward violence in sexual-affective relationships, and with autobiographical memories of violent relationships. Qualitative data collection involved communicative focus groups and in-depth interviews with the participant subjects. Also, a survey was used to collect adolescents' perceptions of the utility and impact of every intervention. This written survey was administered immediately after every intervention.

In this manuscript, we report data from (a) 10 communicative focus groups that were conducted in the three high schools, in post-test 2 (month 6 and month 7), to specifically examine the impact of the project's interventions on adolescents' mental and affective models related to sexual attraction and gender violence, as well as upon their and their peers' behavior, and (b) the

surveys that evaluated adolescents' perception about the value of every intervention. Regarding the focus groups, out of the 10, four were with girls only, five were with girls and boys, and one was with boys only. The communicative focus groups are natural groups that construct a collective interpretation of reality through egalitarian dialog among all members, who have a nexus. In regard to the evaluation surveys, they were administered to the 126 adolescents in the project and involved four questions that focused on assessing: the utility of the intervention, whether there was different thinking after the intervention (if any), where there was better understanding, after the intervention, of things that happen to the adolescent or to his/her friends and other people (if any), and whether there was better ability, after the intervention, to help friends and others (if any). As for the first question, it read, "How useful was this session for reflecting about your feelings and relationships?," and responses were given on a five-point Likert scale ranging from not at all (1) to totally useful (5). The second question posed was, "Do you think that you now think differently about the topics that have been discussed?," and possible answers were given on a three-point Likert scale ranging from very different (1) to the same (3). The third question read, "Do you think that you now understand better some things that happen to you or to your friends?," with possible responses given on a three-point Likert scale ranging from much better (1) to the same (3). The fourth question was, "Do you think that you can now better help your friends?," and answers were given on a three-point Likert scale ranging from much better (1) to the same (3).

Data Analysis
Coding of Qualitative Data
The qualitative data was analyzed to identify the perceptions of adolescents regarding the impact of the program upon their mental and affective models of sexual-affective attraction and attitudes on gender violence prevention and response. Taking into account that psychological research has indicated that are gains that contribute to preventing the risk of gender violence victimization and the reduction of such, we elaborated a coding scheme for the analysis of the data that consisted of the following categories: (1) *Consciousness about the dominant coercive discourse in one's life*: adolescents' consciousness about the presence and influence of the dominant coercive discourse in their life and in that of their peers, friends, and other people they know. This consciousness can also occur via recovering autobiographical memories of experiences influenced by the dominant coercive discourse. (2) *Change in mental models of attraction*: change in thoughts about who is attractive (and successful) and why in line with emptying violent masculine models of attraction; (3) *Change in affective models of attraction*: change in emotions and feelings of attraction in line with feeling less attraction toward and rejection of males with aggressive attitudes and behaviors and more attraction toward egalitarian men; (4) *Taking a stand and help-giving*: providing help to friends, peers and other people in the community using the scientific knowledge gained in the interventions; this usually involves taking a stand against sexual-affective violence; (5) *Impact*: interventions with most impact for the adolescents and why.

This coding scheme was open enough to incorporate new emerging codes from the data. This bottom-up approach provided a new category of analysis named "new cognitive tools" (6), which are tools with which to analyze one's sexual-affective life and that of one's friends, family, and community members.

The quantitative data from the surveys evaluating the utility of the interventions were analyzed per intervention, and comparisons between interventions were performed to complement the results of the qualitative analyses about interventions with the most impact.

RESULTS

The analysis of the data from the communicative focus groups and interviews in the second post-test, and quantitative data from the evaluation questionnaires administered after every intervention showed that: (a) the program contributed to raising participants' critical consciousness regarding the presence of the dominant coercive discourse in society and in their life, (b) the interventions provided cognitive tools to the adolescents to better analyze their own and other's sexual-affective thinking, emotions, and behavior, in ways that favored rejection of violent intimate relationships, (c) the program supported the modification of female adolescents' sexual preferences for different types of men; (d) some participants used the cognitive tools learned in the interventions to help friends and community members in reflecting upon patterns of sexual attraction, the quality of their intimate relationships, and their different effects on health. Such

advice led some of those who received help to become aware of the type of relationship that they had and its health implications, with some of them even deciding to break with the violent sexual-affective relationship they had at that moment.

In what follows, each of these main results is presented accompanied by quotations from the focus groups and interviews and, in some cases, with complementary quantitative data.

Recovering Autobiographical Memories and Raising Consciousness Regarding the Influence of the Dominant Coercive Discourse in One's Life
Interventions supported adolescents' critical awareness of the influence of the dominant coercive discourse in their life, present and past, promoting recovering memories of social experiences where discourse that links males with aggressive attitudes and behavior with attractiveness was present. In one of the focus groups, Ana explained that the interventions made her recall some movies that she had watched in the past. She emphasized that she experienced this particularly with the movie "Three Steps Above Heaven," a very famous movie among adolescents that shares the relationship between an aggressive conflictive boy, who is presented as highly sexually desired and successful among women, and an upper-class girl. Ana explained that, at first, she did not realize that the popular boy in the movie was aggressive— she had a different image of him—but after the interventions she recalled the movie and was able to analyze it through the lenses of the dominant coercive discourse, acknowledging that Hache, the main character, was violent:

> Ana: When I came out of the cinema (this is some years ago), I saw the main character in a specific way. But after listening to you, having dialog, and with this project, I watched it again and saw it in a completely different way. Now I was not like 'WOW, look at that guy!'
>
> Researcher: Did you find that some flash memories about the movie have come to your mind, specific scenes from the movie, and you have recalled them and analyzed them differently? Could you give me an example?
>
> Ana: Yes, I can now see that right from the very beginning of the movie, in what is the very first encounter between them [the boy and the girl], Hache is already insulting the girl.

Marta, another participant in the communicative focus group, shared a very similar reflection but applied to a TV series also popular among adolescents. She explained that with the interventions, she recalled the series and analyzed the affective relationship in it differently. In this case, Marta came to realize that the girl character felt attracted to a boy that despised her, while she ignored another boy who was always there for her:

> Marta: I have watched a series in which the girl, at first, was dating a boy who did not treat her well, and then he left her. He kept saying to her that she was ugly, that he did not want to be with her. . . and she did not realize that there was

another boy in her class that was always looking after her and that he liked her. Yet, in the end, she came to realize that he liked her, and she hooked up with him.

Researcher: And when you watched the series, did the project help you?

Marta: Yes

Researcher: And how did it help you in particular?

Marta: Well, with the fact that she is now dating a boy who treats her well and is good with her, and now she is happier than before when she was with another guy.

Researcher: And the project has helped you, has it given you tools for that?

Marta: Yes.

Some female adolescents shared that the language (of desire) and examples employed in the interventions, which were very close to their life experiences, induced the recall of past sexual-affective relationships that were stored in their minds as positive but, after the interventions, they came to acknowledge that such relationships were violent or toxic. Fabiola, a girl in a communicative focus group, shared this as follows, stating that such memory reconstruction changes 'your way of choosing people':

Sometimes you might have a memory stored in your mind, but you do not recall it... and all of a sudden, in one of the interventions of the project, a word is mentioned, and then you recall the memory. And the memory comes, and you now remember the situation differently. Now you have other resources, and you can see it as it really was. For example, if you were dating a toxic person, in the past you thought that he was a good guy, but if you thought about that memory while participating in the project, then you came to realize that he was not, and it changes your way of choosing people.

Some female adolescents shared that after the interventions they understood better the influence of the coercive dominant discourse present in the media upon their own sexual-affective preferences toward aggressive boys and they could now see better the same process occurring in some of their friends who also felt attracted to boys with violent attitudes and behaviors. In these reflections, some adolescent females showed awareness of submission to the dominant coercive discourse and discussed that the interventions in the project were useful for making some of their friends come to acknowledge the violent attitudes and behavior of boys with whom those friends had a relationship in the past; though some participants might have told the friends similar things, it was with the interventions that they recognized the toxic character of the relationship they had. Alicia shared these ideas in a communicative focus group with girls and boys:

Until 2 years ago, I always looked at the guy who had this profile [she refers to the aggressive one], right? And he was the one that attracted me, because I saw him in the series,

in the movies, but then, when I saw how he treated other people. Little by little I began to change my preferences, and now I am more attracted to the boys I see that respect others, who are good people, and after these talks I have. They helped me understand why I looked at those guys in the beginning, right? And the talks help me understand what made me feel attracted to them. And now, I think about it and, honestly, those people don't, I don't like them. And I also have friends who, until recently, they also liked that profile of guy, and one even had a toxic relationship because of that, and, as much as I told her "he is treating you like this," "that is so with you, that you don't see what he is doing to you, that you are changing for him," she did not listen to me until after these talks she also realized what had happened to her. And she told me, "Hey, you were right." (Mixed communicative focus group, EHS1).

New Cognitive Tools to Better Analyze Their Own and Others' Sexual-Affective Thinking, Emotions, and Behaviors, Supporting the Rejection of Violent Intimate Relationships

The interventions provided participants with knowledge/cognitive tools that they are using to observe and better understand the sexual-affective realm of their present life in ways that can prevent gender violence victimization. Particularly, the data show that the scientific knowledge gained in the project has favored thinking about and better identification of their own sexual-affective thinking, emotions, and behaviors, along the lines of metacognition. This can be seen in this section of a communicative focus group in which participant girls acknowledge that the project has made them more conscious about the importance of attraction patterns in relation to gender violence and to see themselves as influenced by the dominant coercive discourse, for example, in realizing that some of them pay more attention to jerk boys than to egalitarian ones. In Marta's words:

Marta: From the beginning, we didn't see it as such a serious issue, but as you have given us examples that you put and all that. well. we have thought.

Researcher: What have you thought?

Marta: To decide who to be with.

Researcher: To decide who to be with... Can you specify a little more? Decide differently?

Marta: Yes. Changing the idea that we had, that it's not always the jerk boy or the cool boy that is the... the 'ideal' guy, you know? We look more at 'jerk' guys, but there are guys who are good, and we don't look at them.

Researcher: Has the project made you see this more clearly?

Marta: Yes. (Girls communicative focus group, EHS1).

There was also significant agreement among female and male participants regarding now being more equipped to discriminate between boys who fall into dominant traditional masculinities and can perpetuate violence and those who do not. The adolescents explained that the project can benefit them and adolescent girls who may feel attracted to violent boys as a result of socialization into the dominant coercive discourse so that such girls can use the knowledge shared over the seven interventions to analyze and understand the motivations behind their sexual-affective feelings, thoughts, and behaviors and redirect them toward healthier and more passionate horizons if they freely choose to do so. As Carol and Raquel explained in a communicative focus group, the interventions helped both of them better identify boys who represent a model of masculinity linked to violence, for example, by paying attention to how they treat other women; they also stated that all the knowledge gained in the project can help other girls who have felt attracted to boys with aggressive attitudes and behaviors by, first of all, being honest in acknowledging their sexual-affective preferences for such males:

> Carol: Well, if there is a girl that likes the guys that treat the girls bad, this [the program of interventions] will help her out as she would realize.

> Raquel: For us, it [the project] has been very positive as we have reinforced our perspectives. (. . .) And it has helped with how to differentiate a boy that is cocky from other ones.

> Researcher: And which are the tools that you consider that the project has given you in order to differentiate that? Are there things that you focus on now in order to differentiate the nice boys from the 'jerk' ones?

> Carol: Yes, how they treat the other ones. The way they treat other girls, and the people that are around them. . . if they feel superior to us or if they believe in equality. (Girls communicative focus group, EHS3).

It was common in the interviews and in the focus groups that female adolescents mostly affirmed that now, when they are on the street by themselves and see a male with aggressive attitudes and behaviors, they bring the project to their minds, think about the knowledge gained in it and quickly make the hypothesis that such male may be "jerk." As Fatima put it: "Now, when I see a jerk guy on the street, I think of the MEMO4LOVE project." Or, as Patricia shared: "When I see a boy like the ones you have described in the project, then you say, 'this one could be one of those with toxic behaviors.'"

Also, the analytical tools gained in the project are not limited to individual use; the interventions have promoted new dialogs between participants and their friends both inside the high school and outside. In those dialogs, the participants bring their new learnings to analyze sexual-affective relationships and behaviors and, again, to discriminate between violent and non-violent males. In a communicative focus group with girls, some explained that when they are together talking about boys sexually, someone usually brings the project into the conversation: "Hey, let's see what we say. Remember about the MEMO4LOVE project."

This use of the knowledge gained in the project to analyze reality through new scientific lenses, being more active and better in discriminating between dominant and non-dominant masculinities, occurred among females and among boys. For the case of egalitarian boys, this had a very relevant meaning; the project made them feel more confident about their identification of aggressive boys and reaffirmed them in their egalitarian behavior, making them more straightforward in raising their voices in peer groups to empty violent guys of attractiveness. In a mixed communicative focus group, Carlos explained this:

> Carlos: Well, outside the high school, we go with diverse people, and there is always someone new that we meet. And before, we saw that person and we said: 'this guy is amazing, he is very cool' and all that. But now, we see and say: 'that guy is an idiot, he is just doing that to get our attention.' That is something [he refers to the behavior of a male with an aggressive attitude] that, at least, my friend and I don't accept entirely. Yet in order to avoid that, they tell us in the group that we are a pain, we shut down and that's it. But if at some point that person crosses the red line, then we talk.

> Researcher: The project, then, has helped you to be more confident to speak your thoughts, like 'this person is not cool, he is an idiot'?

> Carlos: At least, now I say it right away.

The interventions also helped participants not normalize violence within intimate relationships. Participants learned that violence is not inevitable and consubstantial to relationships but that it can be avoided and prevented. As Gemma explained in one of the mixed communicative focus groups, the interventions have helped her to reject violent and toxic intimate relationships as a first step toward not being involved in future toxic relationships, which is something that after the interventions, Gemma realized can be prevented:

> Look, right now, for example, I just broke up with him (. . .) The memory of the relationship doesn't bother me when I talk about it. What is useful to me is to have it as a reference for what I no longer want to happen in a relationship. And it's like. I explained it to her [looks at a friend], I take that [the memory of the violent relationship] as a reference for something I don't want. I don't want it to happen again, it's like what you just said, that suddenly you see that it is inevitable, no, that is, you have been in a toxic relationship but, uh, not all relationships have to be toxic. [. . .] I do think, come on, it's not inevitable!

Also, the knowledge gained through the interventions in the project makes participants feel more confident in relation to their prospective sexual affective thoughts, behaviors, and decisions. Carol explained this in a communicative focus group with girls; she said that the cognitive resources learned in the project will help her both in the case of starting dating an aggressive boy as lenses to analyze the boy and the relationship and not to engage

in a relationship with a popular boy who has violent attitudes and behaviors:

> The fact of having resources makes you feel more secure. If I start dating a boy who is 'bad,' I would have resources obtained after having done this project, to remember what we talked about and I would think, reflect. . . and if it is my boyfriend, I would rather date somebody who is not popular than suffering for dating somebody who is 'popular' (Girls communicative focus group, EHS3).

Change in Preferences and Attraction: Greater Rejection of Violent Men and Enhanced Attraction Toward Egalitarian Masculinities

The interventions favored a change in female adolescents' perceptions of violent boys and toxic relationships, transforming the way they perceive those boys, increasing rejection of violence and supporting a positive change in their preferences for different types of men. In the following quote, Camila and Amina show that, after the interventions, they are more aware of the presence and consequences of violent intimate relationships, increasing their rejection of aggressive boys who are now perceived as less attractive than before:

> Researcher: Do you think that the interventions have helped you to change that idea?
>
> Camila: Yes
>
> Researcher: In what way? How? Explain to me a little how you saw it before and how you see it now, after the interventions.
>
> Camila: (. . .) Seeing it in another way, you stop liking that kind of boy because of all the things you've seen [in the program] and what can happen, and then it's like different, and it changes the way you think and how you see that person.
>
> Amina: The same as her. (Mixed communicative focus group, EHS2).

Rejecting violence and toxic intimate relationships has been one of the most successful results of the interventions, which followed a change among adolescent girls in their sexual preferences for different types of men. As Nuria started explaining, the interventions promoted participant girls to move from paying sexual attention to aggressive boys, the 'jerk' and 'jerk' ones, who were, after the interventions, less attractive for these girls, and to start paying attention to egalitarian boys:

> Researcher: Do you think that, as a result of the project, it is like you see more, or do you pay more attention to boys who treat women well?
>
> Several girls: Yes.
>
> Researcher: Well, explain.

> Nuria: (.) At one time, I liked the jerk guys. And then when you mature, you realize. And from the project, I have realized even more, I have opened my eyes more. (. . .) In my case, boys who I saw as handsome, now I see them in person, and I see them as they really are, and I don't like them anymore.
>
> Researcher: And does the project have to do with that?
>
> Nuria: Yes. (Girls communicative focus group, EHS3).

Along these lines, Nuria openly shared the deep change in her sexual preferences and desires for different types of men supported by the project. Thanks to the interventions, Nuria was able to identify a boy who behaved in a toxic way and to distinguish him from another boy who was egalitarian. Yet Nuria went a step further and started considering the egalitarian guy as more desirable and attractive than the violent one. In her own words, the nice guy was now "every time higher in the ranking." The interventions provided Nuria not only with cognitive tools for identifying and analyzing toxic behaviors and attitudes but favored a change in her sexual preferences in favor of liking egalitarian men:

> Nuria: There is a coach who is a little jerk, he is very handsome, very attractive. At first, he caught my attention, but as I saw that he was a little 'jerk,' I stopped liking him. And then, on the other hand, there is my brother's coach who is not. . ., he behaves very well with children and he speaks to me like super good, he has been kind. And then I realized that I liked him more, and being with men who treat children well, if they treat a child, who is innocent, well, then they will treat other people well too.
>
> Researcher: Is it like, then, you started seeing the nice boy with different eyes?
>
> Nuria: I already saw him [the 'jerk' boy] like that, but I saw the other one [the egalitarian one] differently. And now it's like he [the 'jerk' boy] swapped positions in the ranking. Now is like I can't bear him. And the other one [the egalitarian boy] is every time higher in the ranking. (Girls communicative focus group, EHS3).

Importantly, the transformative change in the desire and sexual preferences for different types of men reported by some adolescents also impacted, in some cases, their decisions regarding their sexual-affective relationships, if they had any. Some of the adolescents started dating egalitarian boys that, before the intervention, they would never have paid attention to and who were not considered by the adolescents to be as attractive as the "jerk" boys:

> Researcher: Have you started paying more attention to boys that you didn't notice before?
>
> Several girls: Yes!
>
> Researcher: Examples?

Ana: I'm dating a guy who, a while ago, I would never have thought I would date. (Girls communicative focus group, EHS1).

Taking a Stand and Giving Better Advice to Friends, Peers, and Others in the Community

The impact of the project went beyond adolescent participants and beyond the high schools where the research was conducted. Some of the adolescents went a step further and used the cognitive tools learned in the project to help their friends and other community members in reflecting upon their *sexual preferences* for different types of men, about the *quality of their intimate relationships* and the different *effects of violence and toxic relationships on the brain and overall health*. All of these were contents of the interventions of the project that were used by adolescents to give better advice to friends and others in the community. As Neus explained, the project helped her to take a stand against violence and give better advice to one of her friends who was in a toxic intimate relationship:

Neus: For example, when a friend tells me that she is with a boy and I know the boy is a 'jerk'…, before, I wouldn't have told her anything. Now, however, I would encourage her to split up with him because he is not suitable to her and, taking into account the topics we have spoken about, I can give her more and better advice.

Researcher: Do you feel that you give more and better advice than before? Have you experienced during these months having given advice to a friend?

[Neus noods].

Researcher: [to the rest of the group] Have you also experienced giving better advice?

Ana: Or even giving them to yourself. (Girls communicative focus group, EHS1).

Another adolescent, Teresa, who participated in a mixed communicative focus group explained that during the project she started talking with one of her friends; they dialoged and helped each other, sharing advice to improve their intimate relationships based on the knowledge gained in the interventions. This made it possible to achieve a shift in the relationships that they were having by that time, avoiding such relationships becoming toxic, as they had experienced in the past:

Teresa: We helped each other using the sessions of the MEMO4LOVE Project and our previous experiences.

Researcher: Nice, and how?

Teresa: For example, if there was something in my relationship or in her relationship that I did not like or that she saw was not right, then, taking into account what we have seen here and what we knew from before, we have managed to make the relationships of both of us more beautiful.

Researcher: That is very nice. Have those changes in the relationships happened?

Teresa: Yes.

Researcher: And how has that made you feel?

Teresa: Better

Researcher: And is the relationship better now?

Teresa: Yes.

Researcher: Could you tell me which ideas or which interventions from the project have been more useful in making that happen?

Teresa: The one that had most impact on us was the one related to health. We knew that having a toxic relationship was bad, but we didn't know that it could affect your neurons and all that. That is so heavy! Given that toxic relationships affect that much… and because we both had already experienced certain things, then we started thinking and then talking, and we said that if we continued the way our relationships were going, it was going to be like past relationships, toxic, and we said that we did not want that. (Mixed communicative focus group, EHS1).

In this regard, participants agreed that intervention number four, which focused on the impact of sexual-affective violent relationships on the brain and overall health, had a great impact on raising their awareness about the serious consequences of violent relationships and even made some change their sexual-affective decisions. Quantitative data from the surveys in which participants assessed every intervention also supports this participant perception. As shown in **Figure 2**, all seven interventions were highly valued (five out of seven, more than 70%) by the adolescents on the three dimensions measured in the surveys: the interventions aided change in adolescents' thinking about the topic, improved their understanding of the participants' own and other people's behavior and feelings, and improved the adolescents' ability to help others in the realm of sexual-affective relationships. Nonetheless, it was intervention number four that generated the most positive change, reaching almost 81% of positive evaluation in all of the three dimensions measured together.

As shown in **Figure 3**, focusing on each of the dimensions measured on intervention 4, on average, and with little deviation, 30% of participants stated that intervention 4 generated a very positive change in the three dimensions. 27.27% of the participants declared that intervention 4 contributed very much to their having new thinking about the impact of violent intimate relationships on health. 29.09% of participants indicated that this intervention helped them understanding much better their own and other people's sexual-affective behavior and feelings. Lastly, 32.73% of participants pointed out that the 4th intervention increased their ability to help others regarding sexual-affective relationships far more than the others.

The qualitative data from the communicative focus groups are coherent and reinforce the positive change shown in this
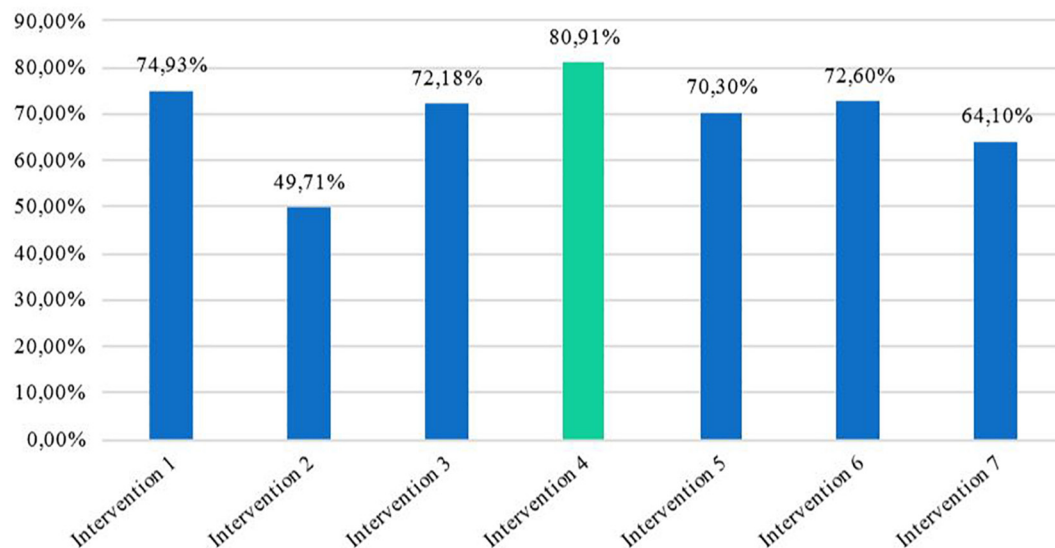
FIGURE 2 | Impact of the aggregated positive change in the three dimensions across the seven interventions.
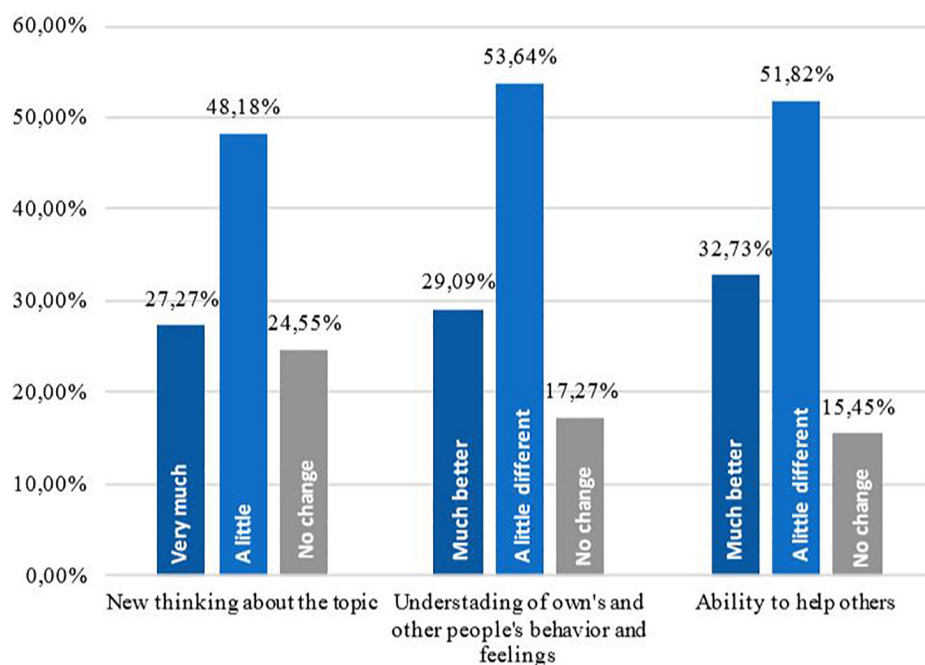
FIGURE 3 | Impact of Intervention number 4 in the three dimensions measured.

quantitative data. For some participants, getting to know the scientific evidence on the impact of violent intimate relationships, either sporadic or stable, on the brain left many adolescents thoughtful and motivated to change their behavior, actively reject violence, and share this knowledge with their friends and other people in the community to help them. As the following quote shows, when the health intervention ended, Carol thought about her mother's friend, who had many health problems that were

not to be expected considering the woman's age, 43. That day, after leaving school, Carol went to find her mother's friend to explain what she had learned in intervention 4. Carol had increased her awareness about the damage of toxic relationships on the brain and overall mental and physical health and brought that knowledge to another woman from the community to caution her about the type of relationships that she had. Carol had the appropriate cognitive tools to think critically about the

health condition of her mother's friend who was involved in a toxic relationship. The information Carol shared, particularly the knowledge gained on the *Telomere Effect* (Blackburn and Epel, 2017), the effect of toxic stress on shortening telomeres, made that woman aware of the effects of violence and toxic relationships on her own health:

> Carol: Each time that I see this woman that I know, who has a toxic relationship, she says that she has pain in her knee, and she is not that old to suffer that pain.
>
> Researcher: How old is she?
>
> Carol: 43. So when the session finished, I thought about her and told her that the pain she suffers could be due to that effect [the *Telomere effect*].
>
> Researcher: And did you speak to her? How was it?
>
> Carol: She was very stressed.
>
> Researcher: And do you think that the fact of you going there, telling her that and showing her the link between toxic relationships and illness helped her? If so, how did you notice that?
>
> Carol: Yes, by her face, I could see that she had not realized it before. (Girls communicative focus group, EHS3).

This case exemplifies that the impact of interventions transcended the participants themselves. In the case of intervention 4, the adolescents used knowledge of the impact of intimate partner violence/teen dating violence on health to give advice to their friends, to raise their awareness about the serious consequences of violence in sporadic or stable relationships, and, from there, to encourage their friends to leave toxic relationships. Crucially, some of the participants' friends left abusive relationships or modified their preferences for different types of men after receiving such informed advice. Teresa shared such a case. One of Teresa's friends was in a toxic intimate relationship, and Teresa took her aside and talked to her using the knowledge gained in the project. One of the most persuasive arguments that Teresa used with her friend was when she provided insights from intervention 4 on health, particularly about the neuronal death and loss of synaptic connections following toxic relationships. This was the determinant for Teresa's friend, who decided to break up with the boy she was dating:

> Teresa: I knew that a friend had a bad relationship, and I spoke to her and explained what she could do. (. . .) And it helped her a lot because she ended up splitting with him.
>
> Researcher: Was she the one finishing the relationship?
>
> Teresa: She was the one splitting up.
>
> Researcher: She split up? -the girl nods-, after having spoken with you? -the girl nods- and which arguments did you use? Which ideas did you pick up from the project?

> Teresa: I always see her crying a lot, she was always angry, depressed, and I told her, "Do not continue with this because you are hurting yourself." I told her about the neurons [she refers to the telomere effect and the neural death associated with the stress resulting from violence], and she told me that she didn't know that and appreciated the fact that I had told her, and she gave me a hug, and then she split up with him. (Mixed communicative focus group, EHS1).

DISCUSSION

The fifth sustainable development goal of the United Nations refers to Gender Equality. Achieving such a goal involves tackling violence against women around the world (United Nations Statistics Division, 2015), with a particular concern for girls who are victims of sexual violence. Thus, one of goal 5's targets is to "Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation." In making this social target real, the scientific community plays a central role, investigating which interventions can be most effective in preventing gender violence and in responding to it most successfully, as well as in informing the design of preventive programs. Psychology has played a fundamental role in providing scientific evidence on the causes and consequences for gender violence victimization and in noting the developmental importance of starting preventive work at the adolescence stage (Blattner et al., 2015; Lundgren and Amin, 2015) and the need to count on schools as sites at which to implement prevention programs (Ozer, 2006; Lundgren and Amin, 2015). Upon this body of research, some researchers in psychology and in other social and health sciences have designed preventive programs, some of which have demonstrated ability to reduce the risk for gender-based violence victimization and revictimization and to decrease victimization itself (Foshee et al., 2005; Wolfe et al., 2009; Taylor et al., 2013, 2015).

The MEMO4LOVE Project adds to this body of knowledge and evidence-based interventions. However, it does so from a new interdisciplinary research perspective, that of preventive socialization of gender violence, which starts from the evidence on the strong influence of the dominant coercive discourse (link between attraction and violence) in the sexual-affective learning of adolescents and its role in gender violence among teenagers (Gómez, 2015; Puigvert et al., 2019). Grounded on such research, the project involved the implementation of seven interventions of preventive socialization of gender violence in secondary school classrooms, and it was addressed to 15- and 16-year-old adolescents. The interventions focused on seven different topics, but all were dimensions of the influence of the dominant coercive discourse in adolescents' sexual-affective life, accompanied by egalitarian dialogs with the adolescents on how to break free from such discourse and thus avoid violence in sporadic or stable sexual-affective relationships.

The analysis of the data, mostly the adolescents' perceptions of the impact of the interventions, has shown that the project has produced benefits in attitudes toward violence, relationships,

skills, and emotions that the scientific literature in the field has noted to be instrumental in preventing and reducing gender violence in adolescence (Leen et al., 2013; Gómez, 2015; Miller et al., 2015). The adolescents shared that the project has helped them raise awareness about violence in intimate relationships, be better equipped to analyze sexual-affective relationships more critically, reduce attraction toward violent dominant traditional masculinities, take a stand in the face of violent attitudes and behaviors, and help others to prevent their gender-based violence victimization.

Firstly, the adolescents who took part in these interventions reported developing critical consciousness regarding the presence of the dominant coercive discourse in society and in their lives. This happened both via recalling sexual-affective autobiographical memories and/or by analyzing present experiences of their own and of others where the dominant coercive discourse manifests. Other participants shared memories of the presence of the dominant coercive discourse in the peer group, acknowledging that peers can coerce others to like boys with aggressive attitudes and behaviors and even to have a relationship with them. This is an important finding. Some studies (O'Sullivan and Meyer-Bahlburg, 2003; Collins et al., 2009) have pointed out the pressure that the female peer group can exercise upon a girl to have a relationship with a boy. If such pressure is aligned with the dominant coercive discourse, as some adolescents shared that it was in our study, then this is one more reason for prevention programs to focus on the peer group together. The greater the transformation of peer interactions, the greater the prevention of gender-based violence victimization. This is a potential social impact that derives from the study.

Also, generally, adolescents agreed that the interventions made them more able to "see" the dominant coercive discourse illustrated in the movies, singers, famous TV series, etc., that they follow. This consciousness is a first step in the potential process of weakening the connection between males with aggressive attitudes and behaviors and an emotional response of attraction, and this debilitation could protect this youth from gender-based violence victimization (Gómez, 2015). As the adolescent participants shared, the examples of the dominant coercive discourse presented in the interventions made them aware of the influence that this discourse had on them; the interventions generated a crucial opportunity for the adolescents to take a stand in the face of the dominant coercive discourse, as active independent people who decide not to subjugate their sexuality to it or stop doing so. This attentional (raising awareness) work among adolescents in relation to their everyday life experiences is important, given the very widespread teaching of this discourse via TV series, songs, movies, etc.

Secondly, as Aiello et al. (2018) have indicated, it is necessary that intervention strategies in education provide adolescents with tools that enable them to be more critical about violence in society. The program presented in this study showed effectiveness in reaching this goal. The adolescents shared that the interventions provided them with cognitive tools to better analyze their own and others' sexual-affective thinking, emotions, and behaviors in ways that favor the rejection of violent males and

violent sexual-affective relationships. Some participants affirmed that these tools helped them to better analyze and understand their past and present sexual relationships, understanding that violence can be avoided and prevented in relationships. This supported more profound thinking in the adolescents about what they wanted their intimate relationships to be like in the future, favoring the rejection of violent sexual-affective relationships. All this might indicate changes in adolescents' attitudes toward violence, one of the risk factors for gender-based violence victimization (Leen et al., 2013).

A third potential impact of the program, as shared by the adolescents, is particularly relevant: change in preferences and attraction, with greater rejection of violent men and enhanced attraction toward egalitarian masculinities. The key feature of the dominant coercive discourse is that it mostly operates at the emotional level. Consequently, it is significant to be aware of the dominant coercive discourse, but what is even more fundamental is to change the response of attraction toward men with violent attitudes and behaviors; that is what will make a difference in terms of preventing gender-based violence victimization. Puigvert and Flecha (2018) refer to *coerced preferences* as those that are imposed by the dominant coercive discourse and then internalized by the individual, something that has been evidenced to play a crucial role in engaging in violent sporadic relationships (Puigvert et al., 2019). Our results shed light on some adolescents coming to revise their coerced preferences along the course of the interventions in the project. This proves that affective models of attraction can be changed through simple social experiences, as not only psychology and other social sciences (Gómez, 2015) but also neuroscience have shown when differentiating between emotions and feelings (Kandel et al., 2013). This emotional plasticity reiterates the ability of certain educational interventions to give adolescents the opportunity to revise and transform their affective models of attraction, moving from attraction to men with violent attitudes and behaviors to egalitarian masculinities. Other interventions within the field of preventive socialization of gender violence, such as the *Heroes' Club 0 Violence*, had already been shown to be effective in the endeavor of emptying violence from attractiveness since early childhood (European Commission, 2015). Furthermore, moving one step further, from feeling to action, some adolescent girls declared that they ended toxic relationships and started dating egalitarian boys, acknowledging that the interventions helped them in making this change. This was very significant for some, who stated that they were now paying attention to or dating egalitarian boys whom they had never thought of before in sexual terms.

Leen et al. (2013) indicated that achieving behavioral changes in relationships, skills, and attitudes seems to be a factor that can help with the sustainability of changes induced by interventions in this area. All of the results discussed above involve skills, attitudes, and relationships, and so they might contribute to the potential sustainability of the new learnings in participant adolescents in the project. However, this is something that should be investigated by following the same subjects and measuring (quantitively and qualitatively) again in the near future and beyond. Another important factor that may help in sustainability is the promotion of healthy relationships (Miller et al., 2015).

Young people have to know which are the characteristics that define a healthy and passionate relationship, but they also have to feel secure enough to defend this type of relation. Because of the force of the coercive dominant discourse in some peer groups, it can be difficult for some adolescents not to support their friends' discourse. Bystander behavior can help create a secure environment where adolescents feel free enough to defend a different discourse that prioritizes and defends healthy relationships. Programs such as Take Care (Sargent et al., 2017) or the intervention carried out by Miller et al. (2013) with athletic coaches show their effectiveness by improving bystander behavior in the face of gender violence. Our study makes a complementary contribution that can also contribute to transforming the hostile environments sometimes created by peers in high schools (Fineran and Bennett, 1999). The results indicated that the set of interventions gave more confidence to adolescents who had already rejected the dominant coercive discourse and the violent relationships that it imposes and reaffirmed these adolescents' stand. This is a key finding, as research has shown that peer influence is a risk factor that could influence the perpetration of gender violence (Leen et al., 2013). It is vital that young people who already have an idea about what a healthy and passionate sexual and affective relationship is feel confident enough to defend their position within their peer group. Participant adolescents said that the project gave them more security to trust their own choices, making them free to make decisions according to what makes them feel better and not being conditioned by social pressure and the opinions of their peers. Some adolescent boys shared that the intervention gave them enough knowledge and security to raise their voices in front of the peer group and dare to give a different opinion on men with violent attitudes and behaviors, rejecting the attractiveness of such men. This is a very substantial result that constitutes another area for further exploration, as this position might help other members in the group not to submit to the dominant coercive discourse imposed by some group 'leaders.' Likewise, such a brave stand can constitute one more way to build secure environments where adolescents can feel emotionally safe.

Prior research in psychology has shown that programs for the prevention of violence that foster communication contribute to building a sense of community that provides good results, for example, the Expect Respect program (Ball et al., 2009) and the Healthy Relationship Campaign (Guillot-Wright et al., 2018). The importance of sharing ideas, talking, and reflecting with friends or other people was confirmed in our study, while shedding new light. Our findings show that the benefits obtained by the development of critical consciousness and learning of new cognitive tools in the participants impacted not only their personal lives but sometimes had impacts that also extended to friends and other people in the community. Some participants spontaneously decided to use the knowledge gained in the interventions to improve the intimate relationships of their friends, relatives, and community members who were experiencing a toxic relationship. Some adolescents even explained that thanks to sharing such knowledge with the motivation of helping others to escape violence, some people around them – who were not participants in the interventions –

became more conscious, left abusive relationships, or modified their sexual preferences for different types of men. This is an important potential social impact of the program that deserves attention. Among the knowledge shared with the adolescents, it was the scientific information on the damaging consequences of violent relationships on the brain and overall health that seemed to have moved them more to reach out diverse victims to help them. This proves the ability of adolescents and youth to not only understand sophisticated scientific knowledge on violent sexual-affective relationships but also use such knowledge to improve their lives and those of their loved ones. The discussion of original scientific knowledge with adolescents in gender violence prevention programs seems a line with potential social impact that should be further explored, which also makes real article 27 of the Universal Declaration of Human Rights United Nations (1948), which establishes all humans' right to access scientific knowledge and to participate in it.

There are limitations to the research reported. The first refers to the stability of change. The measures employed and reported here (focus groups, interviews, and assessment surveys) to evaluate the perceived impact of the project on the adolescents were conducted in months 6 and 7 of the intervention program; that is, after intervention 6 and the next month. To analyze the permanence of change, this measurement should be repeated at various times several months after the last intervention. Such data, together with the other quantitative measures (standardized tests on attitudes and memories) employed in the MEMO4LOVE research project, could reveal more about the power of the program of seven interventions in supporting adolescents' breaking free from the dominant coercive discourse, mentally and affectively, in the mid and long term. Persistent changes in attitudes, behaviors, and feelings are necessary to better prevent future gender-based violence victimization. This is an area for future research. A second limitation might be the self-reported nature of the data. It could be argued that the results are affected by social desirability (McDonald and Hirt, 1997). Although we collected data through validated quantitative instruments, such as the IPVAS scale on gender violence attitudes, for examining the potential social impact of the project, we decided to include the voices of adolescents. We did this for two reasons. One, because this interpretative approach is scarce in the area when assessing the impact of prevention programs, and, two, because existing scales measuring gender-based violence victimization and gender violence attitudes do not contemplate the most common types of first sexual-affective relationships among adolescents, which are sporadic, and where much violence occurs (Puigvert et al., 2019). The MEMO4LOVE interventions included many reflections on violence in sporadic sexual relationships, so instruments that allowed the examination of this reality (and changes in it influenced by the project, if any) were needed. The qualitative measures made this possible. Also, though not a limitation, there is a greater number of quotes from female adolescents in this manuscript. This has to do with the fact that the project starts from the evidence that the prevalence of gender-based violence victimization is much higher among women. Therefore, the changes reported in the manuscript are of particular significance among female participants.

In all, the study reported here illustrates the important social impact that psychology, together with other social sciences, can have in the prevention of gender-based violence victimization among adolescents and youth. Psychological research has long informed programs for the prevention of and response to gender violence in adolescence (De La Rue et al., 2017). In this manuscript, we have added a new contribution to this body of evidence-based programs: a set of seven interventions grounded in research results from the field of preventive socialization of gender violence that focuses on raising awareness about the presence of the dominant coercive discourse in adolescents' sexual-affective life, thoughts, and feelings; however, mostly, the interventions emphasized providing tools with which the adolescents could revise these dimensions to empty violence of attractiveness and ultimately to prevent gender-based violence victimization. The results provide information on the potential social impact of the interventions, echoing Santiago Ramón y Cajal's (1989) metaphor about plasticity. The outcomes of the project unveil the ability of every adolescent to be the architect of her or his own brain by means of freely choosing to break free from the dominant coercive discourse. In doing so, adolescents can improve not only their own lives but also those of their communities.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and fully approved by the Research Ethics Committee of the Virgen de la Macarena and Virgen del Rocío Hospitals (Government of Andalusia, Spain), as well as by the Ethics Committee

at Universidad Loyola Andalucía (Spain). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the minor(s)' legal guardian/next of kin for the publication of any potentially identifiable images or data included in this article. Written informed assent was also obtained from all participant minors.

AUTHOR CONTRIBUTIONS

SR-P conducted the research and investigation process. LU, GM, and NG-F participated in the data analysis, with a particular focus on the potential social impact of the research project. SR-P, LU, GM, and NG-F interpreted the data for the work and contributed to the formal analyses and discussion of the data and revised it critically for important intellectual content and approved the submitted version. SR-P, LU, and GM drafted the manuscript.

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Contributions From Psychology to Effectively Use, and Achieving Sexual Consent

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Psychology related to areas such as gender, language, education and violence has provided scientific knowledge that contributes to reducing coercive social relationships, and to expanding freedom in sexual-affective relationships. Nonetheless, today there are new challenges that require additional developments. In the area of consent, professionals from different fields, such as law, gender, and education, are in need of evidence differentiating human communication that produces consent, and those conditions that coerce. Up to now, consent has been focused on verbal language, for example, "no means no," or "anything less than yes is no." Despite the fact that focusing consent on verbal language is a very important part of the problem, it does not solve most of the issues currently raised, like the famous case of "La Manada" in Spain. This article presents the most recent results of a new line of research, which places the problem and the solution in communicative acts, not only in speech acts. Even though there might be a "yes" in a sexual-affective relationship, there might not be consent, and it is indeed a coercive relationship if that "yes" has been given in a relationship determined by institutional power or by interactive power. Institutional power may occur if whoever made the proposal for the relationship is a person in charge of the process of selecting personnel in a company, and one of the candidates is the person who receives the proposal. Interactive power may occur if whoever makes the proposal is situated in an equal or inferior position in the company to the person receiving it, but the former threatens sextortion the latter. The potential social impact of this research has been already shown in the cases analyzed for this study.

Keywords: sexual consent, social impact, communicative acts, sexual relationships institutional power, interactive power

INTRODUCTION

According to a 2017 report from the World Health Organization (WHO), 35% of women worldwide have suffered some kind of physical or sexual violence throughout their lives. The World Health Organization [WHO] (2017) also state that interpersonal violence is one of the leading causes of deaths in women aged between 15 and 44 worldwide; ahead of deaths caused by cancer, wars or traffic accidents (World Health Organization [WHO], 2018). In addition, another gender-based-violence (GBV) related concern is the decreasing age of the victims. Almost 1 in 3 adolescents aged 15–19 years suffer or have suffered violence in their sexual-affective relationships

(World Health Organization [WHO], 2018). This data leads us to consider GBV occurs from adolescence (Puigvert et al., 2019). Pressure from "friends" to have sporadic relationships or sexual encounters have, in some cases, led to the death of several girls who refused to continue the encounter at some point during the sexual contact.

Gang rapes are an increasingly present reality as recent media (Catalan News[1]; The Guardian[2]; BBC News[3]), statistics (Geoviolencia sexual[4]) and research (Dixon et al., 2019) has shown, and there is still little research dedicated to this phenomena. According to the Geoviolencia platform, gang rapes occurred in Spain increased from 18 in 2016, to 60 in 2018 (and counting 42 in the first half of 2019). Factors identified an intersection of several contextual elements to explain gang violence (Dixon et al., 2019). In the same way, authors claim the need for a bridge between interdisciplinary areas of study to better explain interpersonal violent crimes While studying gang-rape perpetuators, Porter and Alison (2019) determined the existence of leaders who are more influential in the offense, encouraging others to be implicated in the crime. Indeed, researchers have questioned the psychology of criminal conducts for decades (Fortune and Heffernan, 2018), and consider the need to socially approach criminal behaviors, involving both individuals and the community.

The analysis presented in this study by Puigvert et al. (2019), not only focuses on the problem related to the causes of gender-based violence, but also analyzes its underlying factors to identify effective actions that may contribute to prevent young girls and women from becoming victims. They observed that boys with violent attitudes and behaviors mostly preferred one night stands, while those boys with non-violent traits mostly preferred stable relationships. This separation between types of boys leads some girls to tend toward having a "a good time" with the more violent boy, and later in life to settle down with the other type of egalitarian boy (Gómez, 2014). These two models potentially lead to gender-based violence, and above all, it tends to force and intimidate girls, even at very early ages, to hook up and have sexual experiences that they may have not chosen on their own.

Duress and coercion also exist in relationships between teenagers. In a study conducted by Katz et al. (2019), 422 students between the ages of 15 and 16 were surveyedwith just one question: "Did someone with whom you are dating or with whom you dated, force you to do sexual things that you did not want to do?" The results showed that approximately 22% of women and 8% of men reported having experienced sexual coercion at least once in their life. Findings of this study illustrate that sexual coercion tends to be a common element among adolescents. Poor quality relationships, many of them based on this type of forceful friendship might have a long-lasting impact people's lives. On the other hand, high quality relationships protect against harassment and ensure a good quality of life (Harvard Study of Adult Development[5]). Positive relationships also improve work environments and may contribute to overcome situations of conflict and violence (De Cordova et al., 2019).

All types of relationships, at any age, should be free of coercion. Social influence, especially peer influence, plays a crucial role on adolescent decision making (Ciranka and van den Bos, 2019). Education on consent is needed for all children, youth, teens and adults. People from all walks of life are participating with the feminist movement, and joining the struggle against sexual harassment to make to possible to have positive sexual relationships (Joanpere and Morlà, 2019). Awareness on consent, from early ages, has to do with freedom, shaping the limits of one's own body and that of the other person. Duress, coercion and any similar kinds of acts committed by another individual, are considered harmful and they can potentially involve seriously adverse life-course health consequences (Bellis et al., 2019). Indeed, sexual harassment and gender-based violence have serious negative repercussions on people's physical and mental health (World Health Organization [WHO], 2018). Kandel et al. from the neuroscientific field, also demonstrated GBV's long-term effects on people's health (Kandel et al., 2012). Considering it as a public health issue, the damage of violence is difficult to endure psychologically for many victims. Addressing this reality becomes a matter of high importance for psychology.

To properly tackle this scourge, society is at a crucial historical moment; not only from social movements such as #MeToo and similar, but also from research. The European Commission and its Directorate of Research has social impact as one of their priorities for the near future (Flecha et al., 2015). In line with this concerning problem of GBV and with the aim of improving people's lives, the European Commission has designed 17 priorities within the agenda of its Sustainable Development Goals (SDGs), to carry out together with 169 associated targets. Goal 5: *Achieve gender equality and empower all women and girls* shows the EU commitment with Gender equality in line with European values rooted under the EU political and legal framework. "The EU's strategy and action plan to promote *Gender equality* and women's empowerment aims at changing the lives of girls and women by focusing on their physical integrity, promoting women and girls' economic and social rights, their empowerment and strengthening their voices and participation[6]." This statement also highlights the need and willingness of governments, professionals and policy-makers to act in this line, empowering women victims to make their voices heard, and to support them.

Different scientific research has already demonstrated the impact of interpersonal violence or aggression on the physical and mental health of people (Waldinger et al., 2006; Shonkoff et al., 2012). Indeed, gender-based violence may intersect with other inequalities (Shefer, 2019). Sexual justice and gender rights are becoming main aims for scholars and activists all over the world. Prevention interventions are also urgent and necessary,

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[1]For more information, see: http://www.catalannews.com/society-science/item/three-men-arrested-for-gang-rape-in-seaside-town

[2]For more information, see: https://www.theguardian.com/world/2019/aug/08/five-french-men-arrested-on-suspicion-of-gang-rape-in-costa-blanca

[3]For more information, see: https://www.bbc.com/news/world-europe-49248954

[4]For more information, see: www.geoviolenciasexual.com

[5]For more information, see: https://www.adultdevelopmentstudy.org/

[6]For more information, see: https://ec.europa.eu/sustainable-development/goal5_en

as a modifiable factor of risk, protection and above all rejection of any unconsented attitude. Contributing from psychology to effective use and achievement of sexual consent, examples of the most successful actions in this area will be analyzed in this article.

STATE OF THE ART

Psychology as a discipline has contributed for decades to the research on gender, violence and someway on consent too (Walker, 1979; O'Connell and Russo, 1991; Jordan et al., 2010). From the studies of American psychologist Leonor Walker, leader in the field of domestic violence and founder of Domestic Violence Institute, analyzed psychological contributions on the social problem of men's violence against women (VAW) based on power, and a kind of socialization of men who believe they may control women by any means (Walker, 1989). In this vein, we look at the necessity of a feminist analysis in psychology during the late 1960s, when the feminist movement began examining the gender role socialization on female and male behaviors, previously considered biologic and innate (Maccoby and Jacklin, 1974). Thus, this new psychological field was created focused on women and men power and their role in society (Dilling and Claster, 1985). In this sense, the issue of consent is raised from several perspectives, from the latest research in psychology, which is includes people's ways of thinking, behavior and ways of interpreting other's actions as well as the way consent is willing to be asked and provided. In the case studies taken as examples for this review article, it is easy to see how consent need to be free, agreed, informed, during all time and legislated under the basis of communicative actions.

Known as a major pioneers in the study of women in psychology, Agnes O'Connell and Nancy Russowrote on women's life stories and heritage in the origins and development of psychology (1991). With this publication, celebrating the American Psychological Association's Centennial, the scholars recognize eminent women and feminists who serve for the transformation of traditional psychological theories, methods and practice, aiming to preserve their contributions within an appropriate historical and sociocultural context (O'Connell and Russo, 1991). One of these traditional psychological theories consisted of blaming victims, for instance questioning their way of dressing, and without even considering rape at home, or by dating partners; linking their trauma with the need for therapy (Walker, 1989). Sexually abused children were following theories proposed by psychoanalysts such as Freud also blaming them, until the moment when feminist psychologists were finally able to discredit the myth of the seductive child (Lerman, 1986; Walker, 1988).

In the same line, research on psychology has other social impacts. Using psychological research methods to approach VAW, Walker's research helped to develop programs for survivors to attend, to create new policies and change old legislation (Schneider, 1986; Walker, 1989). In terms of gender violence, psychology also conduced to point out that gender discrimination might contribute in making women vulnerable to potential mental health problems. As an expert on psychology

and psychiatry, and founding director of the Center for Research on Violence Against Women at the University of Kentucky, Jordan et al. (2010) argues that, besides considering VAW as a legal and social justice problem, research should also focus on the psychological impact of violence on victims. New scientific psychology is integrating gender analysis when considering victim's voices, case studies and basing new approaches on survivors' narratives.

As described, much psychological research has contributed to the study of gender-based violence. Drawing on previous research, our contribution pretends to approach the use and achievement of sexual consent.

MacKinnon (1979) was one of the pioneer scholars, contributing to raise awareness about the importance of legislating what is considered sexual harassment in public institutions. MacKinnon aimed to achieve gender equality in international and constitutional law, as well as in political and legal theory. She also worked toward obtaining legislation against sexual harassment in the United States and other types of GBV that violates civil rights. Title IX itself constitutes an example of this struggle for legislation. Pretending to make gender bias visible into law, she began to open a legal debate on issues such as sexual discrimination and sexual abuse. MacKinnon (2005) supported the recognition of sexual harassment, rape and abuse based on power, focusing the point on affirmative consent, which led to reformulate the debate on United States legislations and gender equality.

Along this line, in a broader understanding of communicative sexuality (MacKinnon, 1983) other feminists have explored it further. Pineau (1989) is considered one of the first women who, analyzing legislation from a feminist point of view, examined victimization toward vulnerable women. She raised the point on rape based on non-consensual sex, and thus opened the debate on a more communicative sexuality model, so that consent should be explicit and clear, objective and legislated, with a more complete model that "no means no" or "yes means yes." Similarly, Cowling (2004) also suggested a move toward teaching a communicative model of consent. Her research provides evidence that consent communication occurs most often indirectly and non-verbally.

In the European context, Wilson (2000) discusses the subjective experience of sexual harassment and assault. Based on data from university students in Scotland, Great Britain, New Zealand and North America, Wilson argues that for a correct analysis of the understanding of sexual harassment, the representation of both the complexity of thought and the behavior of someone who has suffered this harassment is necessary. These two spheres refer to the psychological impact that harassment triggers in people. Fiona Wilson claims the need to better understand individual experiences and how harassment or aggression produces some kind of labels in people's lives. This subjective world, in terms of Habermas (1987), frames a world only accessible for individuals themselves. A deep understanding connecting harassment and its psychological effects is crucial to better defend its approach and legislation. In this sense, people and survivors' narratives (Clark and Pino, 2016; Miller, 2019) have shed light on the victim's healing, peer-support affect and

a way of making their stories public. This achieves both solidarity with other survivors, an awareness raised of GBV, and the need to engage people into action.

Known as a representative of modern psychology, Bruner turned the discipline placing intersubjectivity and narrative at the center, pointing out that the future of psychological science was linked to understanding of the human mind in relation to human interaction and the cultural context (Bruner, 1996). As a social psychologist, G. Mead (1934) founded what is now called the symbolic interactionism. Mead describes a sociological perspective of interaction, how individuals interact with one another, in order to communicate and create "symbolic worlds," while these "worlds" shape each individual's behaviors. In this way, society as a whole is built through interactions in a continuous process of interpretation of people's worlds and the meanings they share and develop among them.

Social and cultural factors form not only our environment and understanding but also our brain. By shaping our way of thinking and behaving in society, understanding and applying consent becomes singularly relevant. This is true for making each person understand that they own their bodies, and above all, for making people with whom interaction is produced, understand not only the impossibility of touching another body without permission, but the severity of doing so. Thus, individuals would then avoid memories of unwanted relationships, which leave deep marks on human brains (Hirst and Rajaram, 2014) and potential problems later in life. Within the challenges for free cognitive development, psychologists begin to pay attention to violence in its broadest aspect (Racionero-Plaza, 2018).

Many authors have researched for decades to find the most beneficial ways to intervene to support survivors or position themselves in the context of GBV at universities. The multi-longitudinal study of Coker et al. (2016) already shows that programs for overcoming and acting against harassment, based on bystander intervention are the most efficient ones. From the academic field, research on this topic has been extended to other areas. Recent studies in psychology (Philpot et al., 2019) continue to affirm the success of bystander intervention. In a comparative analysis between countries of different continents, this research demonstrates that in most public conflicts, the tendency of bystanders is to intervene to help someone in an emergency. People are also more likely to intervene when accompanied by other people. Based on these findings, Philpot et al. (2019) argue the need for psychology to change the narrative of the absence of help, toward a new understanding of what makes intervention successful.

Approaching consent also involves an important link between psychology and legislation framed within the difficulty of legislating people's wills. Consent may be non-verbal and dependant on context. How the other person is willing to understand it as such, so as not to commit a crime, also depends on what is considered moral, correct, or legal and what is not. Slavery for instance, would be immoral today. Even just a few decades ago, many women did not have a say over their marriage, as consent would have been given by their parents or siblings. Since then, society has changed to give women this autonomy, and has encouraged them, with men, to continue the struggle for

more rights. It is not acceptable to touch another body without permission, being it the most precious thing that makes us human beings; and so, laws have to legislate it to protect citizens. The most essential part of a human being cannot be assumed in any other way.

Beyond Words Defining Consent and Asking for Its Regulation

According to the National Sexual Violence Resource Center (NSVRC, 2015[7]) consent is understood as "*an affirmative agreement to engage in various sexual or non-sexual activities. Consent is an enthusiastic, clearly communicated and ongoing yes. One can't rely on past sexual interactions, and should never assume consent*" (NSVRC, 2015). The student movement was pioneering in opening the debate on consent in sexual relationships. In 2004, "Understanding consent to Sexual Activity" constituted one of the first laws known in the topic, making the "No means no" a pivotal slogan in this regard. The bill cements that states of unconsciousness, alcohol, and drugs, make someone unable to give consent. In addition, fear, intimidation, power relations, and academic evaluations are situations that may inhibit the victim's capacity to say "no"; so consent should be nullified in this context.

"Affirmative consent" means *affirmative, conscious and voluntary agreement* to engage in sexual activity (according to the 2014 law). Meaning, when a person says "no" at any kind of sexual engagement, the other person must understand the "no" as such. Sexual contact with a person who has not given her/his consent constitutes a crime. The affirmative consent law "yes means yes," includes three important elements: (1) the definition of consent as "*an affirmative consent standard in the determination of whether consent was given by both parties to sexual activity. "Affirmative consent" means affirmative, conscious, and voluntary agreement to engage in sexual activity.*" (2) The configuration of the sexual crime: it is understood that when a person says "no" at any kind of sexual engagement, the other person must understand the "no" and as such, the opposite reaction constitutes a crime. (3) It also marks the responsibility of the person who has to ensure consent: "*It is the responsibility of each person involved in the sexual activity to ensure that he or she has the affirmative consent of the other or others to engage in the sexual activity.*"

The change from "no means no" to the message of "get consent" caused several scholars analyze how young adults conceptualize consent (Beres, 2014). Worried for sexual violence prevention, education, and research on sexual consent, Beres studies the understanding of consent, from a perspective based on "communication about sex" and not only "ok sex." This paradigmatic change makes the issue of consent greater than words.

Campaigns such as the one of PlannedParenthood[8] defined consent as, such act either tacit or explicit, which involves the following criteria: (1) *Freely agreed*. Consent is a choice without

pressure, manipulation or under the influence of drugs or alcohol. (2) *Reversible*. Anyone can change his or her mind about what they feel at any time; considering silence is not consent. (3) *Informed*. Anyone can only consent to something if he/she knows the full story of the facts and intentions. (4) *Enthusiast*. When it comes to sex, someone has to do what she or he wants to do, not the things that the other person might be expecting. (5) *Specific*. Saying yes to one thing does not mean a yes to other things or other people. While these definitions are essential when conssidering sexual consent understanding and training, the regulation of consent is indeed crucial.

As any other crime, sex crimes based on consent need to be considered, justified and properly formulated. But, why is consent relevant for sexual freedom? Historically, consent has been an important issue in social, economic and personal relationships. Consenting to a contract or a medical intervention is a legally recognized act based on the will of any human being. However, sexual consent would not always have the same relevance. According to Pérez Hernández (2016), a person could "formally" consent to having a sexual relationship or to sexual conduct (even saying "yes") and not "really" want to participate in it, expressing their "decision" through words or silence.

Similarly, later movements show that "silence is not consent" (Spark movement, 2013[9]). Portugal passed its consent-based rape legislation[10] following the "silence is not consent" principle. In these terms, silence is not be legally interpreted as consenting. Research also indicated some reasons that may affect someone's own will (Mead, 1934; Walker, 1997), including coercion, given in fear, or for pleasinganother, among others. In our terms, consent means actively accepting to participate in any sexual activity. Sexual activity without consent is considered rape or sexual assault and is legislated as such in some countries. However, there is still an unsolved problem, in which this article will focus: Those situations in which, even with a "yes" the real message and the real will of the person is "no." Thus, the challenge states "beyond words," to interpret the attitude, the will and possible coactions, fears or other elements of the context that might influence someone at a psychological level.

Previous Steps to Approach Consent Legally

Legislation offers legal certainty, which provides a solid foundation for the judge when making a decision. Indeed, one of the greatest impacts of legislating a reality states on achieving, through law, the legal certainty. At the point when a judge must make a decision, he or she needs to know, onboth, the facts which occurred andunder which legal category these facts have to be framed. The classification that a judge attributes to a fact (e.g., rape, sexual assault) is such according to its corresponding legal type. Thus, the better a social phenomenon is defined, the more concrete and more restricted it is, and the better interpreted it will be. This leaves less space for a judge's own interpretation. Personal

understanding of the facts can even be subjective, including separate opinions. This happened during the conviction of "La Manada" case, in which the aggressors were convicted for abuse and not for rape, based on opinion. This case constitutes an example of the need for a common legal framework. If different judges have different opinions, the lack of legal certainty may potentially lead to an ambiguous and conflicting decision, in which the collective subconscious uses to prevail, including those ideas taken for granted, as the one of "who keeps silent, grants consent" (Tomás, 2003).

The lack of consent constitutes a crime, and it is therefore aggression. Researchers have addressed the issue of informed consent, collective unconscious and tacit consent (Tomás, 2003). Here. the author reveals how the idea of consent has been harbored in our minds, from Roman law to Common law, creating what is considered a collective legal unconscious. For example, the phrase "who keeps silent, gives consent" was not included in Roman law but ended up being configured later in time until the present. In this way, Tomás argues that Civil law, unlike other systemic human rights, has led to configuring silence through principles created over time, but not through legal norms. Back in history, it was during the Canon law when silence was taken as affirmative acknowledgment, referring to fathers' lack of verbal consent, so that their daughters could become nuns without their permission. The fathers' absence of verbal consent led to consider silence as a legal act, with value given only to affirmative consent. However, in Roman law, individual silence was not considered consent anymore.

Facing the dilemma of the legal interpretation of silence, findings in psychology have already shown the existence of certain situations and mental decisions, conscious or unconscious, that can affect a person's behavior pattern (Kandel, 2018). The psychological shock may occur due to fear, panic, anxiety or other situations of power that psychology has already defined as causing the inability to speak and immobility (e.g., turn cold, freeze) (Gidycz et al., 2008). Rape is one of those situations. However, following the mere legal thought, judges who are not aware of these psychological effects, tend not to seriously consider certain situations in which the victim is simply not able to speak. The link between psychology and the law becomes crucial at this point. The dilemma about the interpretation of consent used to emerge from situations in which it cannot occur or be requested, for instance, harassment and violence (often arisen under coercion, under the influence of alcohol or other substances or in sporadic relationships). These are certainly the kind of situations in which consent and its regulation are most necessary.

The contradictory outcome in a sentence, as happened in the case of "La Manada," provide serious consequences, not only for the survivor's victimization, but also for the emergence of "other Manada's." Even in many Spanish schools, boys under 16 years old have created "mini-Manadas" to attack their female classmates. Thus, the reality of gang rapes, many of them produced in hook-up situations (Puigvert et al., 2019), require the need to build a legal type, basing crimes on the lack of consent for any sexual act. This would contribute to social impact in the following terms: (1) by providing legal certainty; (2)

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[9]For more information, see: http://www.sparkmovement.org/2013/03/15/silence-is-not-consent-silence-is-the-problem/

[10]For more information, see: https://www.reuters.com/article/us-portugal-rights-rape/portugal-approves-law-widening-definition-of-rape-idUSKCN1P51MQ

reducing judges' subjectivity when sentencing; (3) contributing to transforming the collective legal subconscious; (4) leading to increase the number of complaints for sexual harassment (which is positive in terms of victims' coming forward); and this, (5) driving to reduce the emergence of "new Manadas." Interpretations must be based on standard legislation.

Current Legislation on Consent

The Istanbul Convention, article 36, states that parties shall take the necessary measures to ensure *the following intentional conducts are criminalized: engaging in non-consensual vaginal, anal or oral penetration of a sexual nature of the body of another person with any bodily part or object; engaging in other non-consensual acts of a sexual nature with a person; causing another person to engage in non-consensual acts of a sexual nature with a third person*[11]. In this sense, the Convention includes that "*Consent must be given voluntarily as the result of the person's free will assessed in the context of the surrounding circumstances*".

How should legislation approach consent? How have other legislations done so? Starting with considering the difficulty to legislate non-verbal interactions, there are some laws that have made little approximations. The "no means no" legislation (2004) pioneered. Years later, the positive consent emerged from below. Campus student movement claimed that saying "no" is not enough, since there are situations in which a person cannot say "no"; but even then, she or he might not be consenting. Thus, the need for affirmative consent raised and the struggle for a law claiming "anything less than yes is no"; also known as the "Yes means yes" law, passed in 2014 in the State of California. One year later, in 2015, the State of New York passed it consent law, as "Enough is enough," stating: "*New York State has the most aggressive policy in the nation to fight against sexual assault on college campuses. By standing up and saying "Enough is Enough," we made a clear and bold statement that sexual violence is a crime, and students can be assured they have a right to have it investigated and prosecuted as one.*"

Considering the United States legislation trajectory regarding consent, another key factor in this sense, occurred in 2013, when the Campus Sexual Violence Elimination Act (SaVE Act) was a bill whose components incorporated as an amendment to the Clery act. The Campus SaVE Act updated the Clery Act by expanding the scope of this law in terms of transparency, accountability and education. In other words, encouraging reporting, response and prevention education requirements on rape, acquaintance rape, domestic violence, dating violence, sexual assault and stalking.

Other approximations, in New Zealand and Canada, include for instance situations of intoxication, sleeping or death meaning that the person does not have the capacity to consent (Crimes Amendment Act, 2005[12]; House of Commons Bill C-49,1992[13]). In the European Union, currently only 9 of the 28 EU member states include in their jurisdictions rape as sex without consent, either tacit or explicit: Ireland, United Kingdom, Belgium, Cyprus, Germany, Iceland, Luxembourg, Sweden and Portugal. Some others, including Spain, embrace consent under the concept of sexual assault and only recognize it when physical violence or intimidation takes place.

The German Criminal Code, section 179, considers sexual offense as *situations in which the victim does not suspect an attack, is defenseless, or makes a refusal to consent to the sexual act known either verbally or through his or her behavior* (e.g., by crying or stiffening). This is a communicative act providing important information for other legislation to include consent. The Luxemburg Criminal Code, article 375 defines the lack of consent as a rape crime. It states: *Any act of sexual penetration, of whatever nature, by any means whatsoever, committed on a person who does not consent, including using violence or serious threats by ruse or artifice, or abusing a person incapable of giving consent or free to oppose resistance, constitutes rape and shall be punished by imprisonment of five to ten years*. In 2018, Iceland's Parliament[14] passed a landmark bill which makes *sexual relations with someone illegal, unless you have their explicit consent. Under the new law, consent must be clearly and voluntarily expressed.*

The Belgian Criminal Code (Act 375) defines rape as: *any act of sexual penetration committed on a person who does not consent. Consent is deemed to be absent when the act is imposed by means of violence, force or by a trick, or if the victim is suffering from a physical or mental disability*. The United Kingdom law considers informed consent as *freely, by both partners, enthusiastically, every time and for every sexual act. An intoxicated person is legally unable to consent to sex and having sex with a person who is very drunk is rape or sexual assault*. Swedish law includes the requirement of consent regardless of whether there has been violence or threats, or has violated the situation of vulnerability of the victim. It included the concept of "negligent rape" and "negligent sexual abuse." In 2017 Ireland[15] include in its Criminal Law Act, the sexual offense as *an act which if done without consent would constitute a sexual assault*; considering situations when a person lacks the capacity to consent to a sexual act if he or she is, by reason of a mental or intellectual disability or a mental illness incapable of consenting (specifying concrete situations). The Cyprus Criminal Code, Section 144 includes consent by stating: *Any person who has unlawful carnal knowledge of a female, without her consent, or with her consent, if the consent is obtained by force or fear of bodily harm, or, in the case of a married woman, by impersonating her husband, is guilty of the felony termed rape*.

The Spanish Criminal Code defines rape under the presumption of aggression. It defines sexual abuse, sexual harassment and sexual assault as follows: sexual abuse (article 181): *who without violence or intimidation and without consent, performs acts that attempt against the freedom or sexual indemnity of another person*; sexual harassment (article 184), *as the one*

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[11]For more information, see: https://rm.coe.int/168008482e

[12]For more information, see: http://www.legislation.govt.nz/act/public/2005/0041/latest/DLM346175.html

[13]For more information, see: http://publications.gc.ca/site/eng/115148/publication.html

[14]For more information, see: https://www.thejournal.ie/iceland-consent-3943673-Apr2018/

[15]For more information, see: http://www.irishstatutebook.ie/eli/2017/act/2/enacted/en/print

requesting favors of a sexual nature, for himself or for a third party, within the scope of an employment, teaching or service provision, continued or habitual, and with such behavior will provoke the victim an objective and seriously intimidating situation, hostile or humiliating; sexual assault (article 178) as *the one that attempts against the sexual freedom of another person, with violence or intimidation*. Article 179 specifies: *when the sexual assault consists of sexual intercourse by vaginal, anal or oral route, or introduction of objects by one of the first two routes, the person responsible will be punished as a criminal of rape.*

Gender and law are academic disciplines both linked to social concerns. People ask now for legislation on gender issues. While attempting the legal involvement seems something of extreme gravity that requires immediate solution, it is also true that laws make us free and prevent many undesired social behaviors. That is why when the law fails, it sends a warning message to society, to not be compliant or trustful. Legislation changes people's morality, and we have changed laws accordingly. Human consciousness and laws have to go hand in hand. In ancient Rome, the to rape the daughter of a tax-paying citizen was an offense because it was his property; only the father could consent for the daughter, showing the crime was against the father, not against the woman, regardless of her consent (Ted Talk, Joyce Short[16]).

In German law, acts such as crying and screaming are included, and some legislative developments do include non-verbal language in an attempt to legislate consent. However, the psychological perspective is crucial, as it is necessary for the other person to interpret the message as such. The case that Joyce Short explains demonstrates the interactive power, since the boy is the connoisseur of the information and therefore the one who has to ensure the free and equal dialogic interaction. The same video shows how, similar realities differ in different states of the United States, according to their rape or consent legislation. That is why it is necessary to go beyond current legislations.

In short, taking into consideration all the previous arguments and definitions on consent for any sexual relationship, it should be affirmative, agreed, free, informed, without coercion, based on the lack of interactive power and institutional power, extended from the beginning until the end of each sexual engagement, based on the non-verbal communicative acts. In this line, crimes on rape, sexual aggression and abuse should be treated based on consent or the lack of it.

CONSENT FROM SPEECH ACTS TO COMMUNICATIVE ACTS

How can we be certain when someone consents or not? Language is one of the channels. In a normal way of communication, people "tell" their will. Verbal language is key, but so is how it is understood and how it is applied. In this space, the role of psychology intervenes, the willingness to interpret, understand what the other person wants to tell and pretends to communicate,

even without saying a word. Thus, the complexity of defining consent is not so much its definition, but its applicability (Katz et al., 2019). While there is a quiet widespread agreement on the way consent is defined, the debate is driven to know exactly what consent does involve and the context surrounding it (Muehlenhard et al., 2016). States of unconsciousness, alcohol, and drugs make a person unable to provide consent. In addition, fear, intimidation, power relationships, evaluations from professors to students, letters of recommendation, are example situations that restrict the "no" of the victim and even cancel it. Thus, positive consent arises, which also can be nullified at some point.

By accepting a "no" is to understand that the other person does not belong to us, even if even if he/she had consented at the beginning with a yes; even consenting without wanting to be there. The psychological debate used to be focused on the victim, in showing resistance, running, being afraid or calling out. On the other hand, the social debate must focus the aggressor, it must be clear that consent is a requirement for any kind of intimate act. In this vein, other existing research helps us to advance in the knowledge and the application of consent. Thus, the communicative acts and the researches on this topic, so far are key to be applied to the study and achievement of sexual consent.

In his theory on "Speech Acts," Austin (1955) discussed *How to do things with words*, giving examples of how words create realities. For instance, by saying yes, a marriage is created. Austin also realized that language depends on some conditions. Illocutionary and perlocutionary speech acts focus on the intentionality of the speaker. John Searle, constituted his linguistic phenomenology in this vein. For Searle (1969), intentionality in context is key for any speech act. Thus, the "construction of social reality" for Searle (1995) is based on intentionality too, which is not only for the individual but also collective society. Its speakers share this collective intentionality. For example, a five-Euro bill is a five-Euro bill because people have agreed so.

Along these lines, Habermas (1987) published his "Theory of communicative action," in which he used the concept of communicative action. Searle and Soler (2004) talk about "dialogic communicative acts," in which, both the context and the consequences of our communicative action are important in the development of the action, due to its influence in the construction of a wide range of social phenomena (Searle and Soler, 2004). Soler Gallart (2017) introduced and analyzed the relevance of non-verbal communication (gestures, easy expressions, tone of voice, etc.). That is, not only do "we do things with words" but also with non-verbal symbols, which can communicate by themselves, or be accompanied by words. In this way, body language also "says" a lot and so, communication is not just about talking, but inquiring about the context in which communicative acts take place.

From the social psychology perspective, Mead (1934) developed the symbolic interactionism proposing the external world as the place where the subjective world is constructed. The external and the internal worlds are both interacting and shared by people in the social world. Meaning is creating through language, in this process of intersubjectivity. Thus, the Habermas

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[16]For more information, see: https://www.youtube.com/watch?v=imr5ZiAY_ao&t=636s

approach of communicative action focuses on social interaction for people understanding, beyond language communication. The act of speech is based on interactions. Among the different types of actions defined by Habermas, communicative action arises as an ideal type because language functions as a means to achieve an essential understanding to reach consensus and to take action among people.

MATERIALS AND METHODS

This article is based on a theoretical reflection and the transferability criteria, framed in line with communicative acts and their link to gender-based violence. The authors have been developing their research on this for years. This review presents evidence that have been found under the framework of communicative action and the prevention of GBV in light of consent and how legislation on consent can be enabled. We put all this knowledge at the service of two aspects: those situations in which consent may happen and conversely those situations in which consent does not exist. New steps focus on contributing to create a legislative framework able to build future legislation.

We also analyze, first, the definition and theoretical advances made so far on the issue of consent., and then, different existing legislations on consent in both the United States and Europe to present here. Beyond these studies, the article involves an analysis of cases recently occurred and published in different media: (1) the case of La Manada[17]; (2) the gang rape case of Manresa (Barcelona)[18]; (3) a case raised by Joyce Short during her Ted Talk[19]; and (4) a case presented in the section of the "New York Times Opinion"[20]. Research in social psychology provides the necessary framework for analyzing communicative acts based on symbolic interaction, that is, on Mead's theory (1934) describing the link between self and society, which leads to a constant dialogue between the person and her or his self, as responsible for the self-consciousness.

Assuming that none of the girls whose cases are analyzed here consented to what occurred, this article studies which situation, intervention, legislation and/or measure would have improved the consequences of their situations. Based on the criteria of transferability, among actions and interactions, we will focus on those cases which are transferable to other contexts. In this way, several verbal and non-verbal communicative acts that lead someone to raise awareness of others' response regarding consent or the lack of it, will be enumerated. Here the will of the other person to interpret the communicative act and their psychological disposition to the facts are raised (Mead, 1934).

Therefore, one of our goals is collecting these transformative communicative acts (eye looking, criteria to act, ways of

responding to third parties' coercion, etc.) and explain them with examples of cases on the Internet and the media in Spain and in the United States. These actions may not only transform someone's present, but they could also change their future by aiding the reconstruction of people's autobiographical memories of their worst life episodes in healthy directions (Racionero-Plaza et al., 2018).

This kind of methodology, analyzing data and cases by considering people's voices (Puigvert et al., 2017) have already being used by several research projects and published in respected journals showing social impact and transformation (Gómez González, 2019). The whole idea of the need for training in any specific area, such as the need for bystander training, has also led us to appreciate the importance and the requirement to educate into consent, to raise awareness about it, all in all to contribute to the overcoming of gender-based violence. Data of this research will be analyzed twofold, on one hand based on the *Social Impact Open Repository* (SIOR[21]) and on the other, based on the European Commission study *Monitoring the Impact of EU Framework Programmes*[22].

SIOR was created as one of the outcomes of the IMPACT-EV framework project of research, constituting a tool that enables researchers to share the social impact of their own research projects with other researchers as well as with stakeholders (Flecha et al., 2015). SIOR established five criteria for evaluating political and social impact: (1) connection to United Nations Sustainable Development Goals, EU2020 targets or other similar official social targets; (2) percentage of improvement achieved in relation to the starting situation; (3) replicability of the impact: the actions based on the project findings have been successfully implemented in more than one context; (4) publication by/in scientific journals (with a recognized impact) or by governmental or non-governmental official bodies; (5) sustainability: the impact achieved by the action based on project findings has showed to be sustainable throughout time.

Drawn on the societal impact, the report on monitoring the impact of the European Framework Program for research and innovation, elaborated by experts, established a set of indicators, divided into short-term, medium-term and long-term indicators, following four key impact factors: (1) addressing global challenges; (2) achieving Research and Innovation mission; (3) engaging EU citizens; (4) supporting policy-making. In this line, the following set of indicators for the societal and policy key impact pathways includes considering: the difference between outputs and results; the estimated cost necessary for their collection; the knowledge and transference concepts to determine social impacts; the level of reporting burden for beneficiaries; and the impact timeframes.

NEW APPROACH TO CONSENT

Current advances in the study of communicative action point out to the issue of linguistics, involved in symbolic interaction

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[17] For more information, see: https://www.bbc.com/news/world-europe-44569918

[18] For more information, see: https://elpais.com/elpais/2019/07/08/inenglish/1562585604_503153.html

[19] For more information, see: https://www.youtube.com/watch?v=imr5ZiAY_ao&t=636s

[20] For more information, see: NYT opinion section: https://www.nytimes.com/2019/07/09/opinion/sexual-assault-students-campus.html?action=click&module=Opinion&pgtype=Homepage

[21] For more information, see: https://crea.ub.edu/fecyt_sior/acerca-de-fecyt-sior/

[22] For more information, see: https://publications.europa.eu/en/publication-detail/-/publication/cbb7ce39-d66d-11e8-9424-01aa75ed71a1

and the creation of the worlds around us, which can be strongly connected through analyzing the predominance of dialogic relationships regarding power interactions, based on the following four points: (1) institutional power; (2) interactive power; (3) consequences and intentions; (4) regulation vs. prohibition.

Institutional Power

Institutional power refers to that which usually exists within institutions influencing their organigram and hierarchy. In the context of universities, it may be embodied by professors who have, at least, symbolic power over students, in some vulnerable situations such as, grades, the ability to decide on their academic future, recommendation letters. In this case, consent could not be asked nor given, since institutional power might limit or prevent the student's freedom to reject or to say "no" to his or her professor. To name another situation, institutional power may exist in a company context. Companies also have power structures that characterize the way they function. There are high, low and medium managerial positions. To the extent that some managerial positions rule over others, it attributes more power to highest charges. In this way, for example, if a boss asks a secretary to have a beer after work, the freedom of that person in a lower position can be diminished by the power of the other person. If harassment occurs while having that beer, consent cannot be given nor requested, since the difficulties for ensuring that it is actually voluntary and free.

Interactive Power

Interactive power refers to that power provided by the interactions established among people. For instance, one classmate could threaten a girl with sextortion (Patchin and Hinduja, 2018) if she does not say "yes" to having sexual relationships with him. Another example: five boys with a girl in a small doorway, besides the normal interaction being spoiled, there is an additional kind of power established by the interaction itself. In relation to consent, the group of five men or just one must know that, in that interaction, they have more power, because of the context. Considering the desire to have a sexual relationship with the girl, they have to be very sure about getting consent; as otherwise, if the girl would complain at some point, society will stand on her side. That is, the most vulnerable person in the relationship would get the social support. Under this scenario, interactive power is determined by context, which provides more power to one person over another. For instance, if two friends decide to have dinner in the house of one of them, the host has more power that the guest, just because of the context. If a blurry line surrounds consent, position has to accompany consent, because of its weaker position.

Consequences/Intentions

Weber (1930:1905) defined the ethics of responsibility referring to the consequences and not the intention of any action committed. In this case, following the ethics of consequences involves considering whether the consequence of the action conducted between two or more people has been the desired one, or the contrary of what happened. Although the intention might have been a good one, a male boss inviting a woman candidate to go to a pub, during the selection of unemployed people for a job, the consequence of that fact could be that she feels pressed to say "yes." In this sense, "good intentions" do not justify "bad consequences" or the outcome desired by all the people involved. Regarding consent, ensuring the best-intended outcome continuously is the duty of all people involved into action. Providing another example, let us imagine someone convicted for aggression, declaring something that, "I didn't want to harm her" at the beginning of the dispute. In that case, the fact to be judged is the consequence of the matter, not the initial intention, but the final consequence. In this scenario, consent needs to be assured until the end, in other words, the consequence is crucial to determine if consent occurred or not.

Regulation vs. Prohibition

This model involves both situations, the regulation and the prohibition of any potential sexual-affective relationship under a context based on institutional power, as for instance, the academia. It does not necessarily mean that relationships between professors and students are not allowed, or between five boys and a girl should be considered a crime; as a power relationship, even when conducted between adults, they are under the power system. To find solutions to this dilemma, some of the highest ranking universities have decided to prohibit and condemn all and any kind of sexual relationships between a professor and his/her students. Other high-ranking universities have taken the option to allow those potential relationships while they are freely consented, and both members inform the university. However, if the most vulnerable later complaints, the university will take his/her side. This scenario contributes to the field of consent by considering situations in which, even current legislation allows consent in a sexual relationship (because of age), there are situations under which that relationship may not be free. However, in order for it to be so and for no one to be harmed, situations where interactive power and institutional power have to be regulated; also in order to allow, and not necessarily prohibit, a relationship between a student and a professor or between an employee and a boss; while also believing the most vulnerable person.

ANALYSIS

The results of this study are configured based on four cases already mentioned above: (1) the so-called gang rape, La Manada; (2) the case of Manresa; (3) the rape described in the Joyce Short's Ted Talk; and (4) the situation explained in the opinion section of The New York Times, in which consent seems to be given but the lack of both sides sharing the same information, convicted him for rape[23]. They all are different stories with common elements. The public information released about these cases included episodes of young women who did not give their verbal consent, as well as cases of girls whose lack of negation

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[23]For more information, see: NYT opinion section: https://www.nytimes.com/2019/07/09/opinion/sexual-assault-students-campus.html?action=click&module=Opinion&pgtype=Homepage

may have been understood as consent, but they did not want to participate on any of the acts occurred. Above all, these examples highlight the need to address consent also from a non-verbal perspective, beyond words, the essential for training on non-verbal communication, as well as to raise awareness on others' influence on decisions., Mead described this through his theory on social interaction creating ways of being, thinking and acting. University needs to consider prevention, not just punishing the issue of consent and its consequences, but being aware that this problem constitutes a public health issue.

The Case of La Manada

For the last 2 years, the Spanish people have watched the most controversial trial for a rape case. Five men started talking to a girl, who was sitting alone on a city bench. Subsequently, they put her in a doorway, and all began to rape her in different ways, one after another. In the end, they stole her cell phone and left her there alone. This happened in July 2016 during the celebration of the Pamplona's regional party, San Fermín. In April 2018, the five aggressors were sentenced for sexual abuse and not for rape. The issue was consent: the 18-year-old victim did not say "no." Rape is not configured based on consent, under the Spanish Penal Code, and one of the judges had a particular vote. That same day thousands of people were demonstrating in the streets in favor of the survivor. Social pressure was necessary, both to demonstrate a step forward as a society, supporting survivors and a way of pressing for the change of current legislations. We all took her side, we believed her, and mostly citizens defended her right to not show negation; we understood her fear to be killed in case she dared to say no. In June 2019, the Supreme Court sentenced La Manada for rape, and raised the punishment to 15 years in jail. This ruling established doctrine on intimidation, and considered this enough reason to break victim's will. Nevertheless, the criminal reform is still incomplete, and concepts such as harassment, aggression and violence need to be adjusted, to provide legal certainty to the legislator and prevent particular opinions.

The Manresa Case

At the beginning of July 2019, the trial against six men began. Five men directly raped a young woman aged 14 years old in 2016, including intercourse and sexual acts while she was unconscious. A sixth man already knew the victim, according to the public prosecutor report. He was completely aware of her age, and saw that she was barely conscious, after drinking alcohol and smoking marijuana. He took her to a nearby location and allegedly raped her. After that, he encouraged his friends to do the same while the girl was unconscious. They have been accused of raping the minor in an old factory of Manresa, in Barcelona. The victim, who is now 17, reported that she was raped in a building that night. The men were arrested and convicted by the public prosecutor with the lowest charges for sexual abuse, which could be raised to sexual aggression. Again, the issue for the judicial debate is consent. The victim testified her fear while observing a gun during the aggression. Her horror to be killed, justifies her lack of negation. This case should be link to a similar crime in Spain. We all remembered Nagore, a 20-year-old woman who was killed during

the Pamplona festival in July 2008. She had accepted –coerced by her friends– to go to a boy's apartment, but she said no to sex and was killed.

Joyce Short's Ted Talk

Universities are also spaces where sexual harassment occurs. After much research and much progress in relation to harassment based on power relationships, it turns out that harassment also occurs among peers, and that is where consent covers a crucial relevance. However, some examples demonstrate how the consent line is blurry and how getting consent needs to take into account contextual situations and minor nuances. In this sense, Joyce explains in this Ted Talk the case of a young man who entered, late at night, into a young woman's room in their university dormitory. Though asleep, she felt someone get into her bed. Thinking itwas her boyfriend, engaged in sex with him. The act could have beeen consensual at some point, but it was not here because she did not have the full information. Thus, the police analyzed the case and arrested him for rape. The issue of informed consent is raised here, as only he had all the information. For these additional contextual reasons, it is necessary to delve into this problem in order to expand its circumstances, as well as to clearly delimit those situations under which consent cannot be agreed or requested.

The New York Times Opinion Case

Hanna Stotland argues that simply expelling college students accused of sexual assault is a misguided response to what is a public health problem. In her video, Stotland describes very different cases surrounding consent and the difficulties to get it right, with different degrees of what is considered sexual assault while she is asking to name each action by a different term. During the video she explains a case of a man and woman who both agreed to have a sexual relationship. After a while she filed a complaint against him based on the lack of consent. She recognized that she said yes at the beginning, but later, said she did not mean it at that time, but just agreed to have sex in order to leave the room more gracefully. The man was accused for rape and was suspended from the university for 2.5 years. According to Stotland, this example make us aware that there are confusing moments when yes might actually mean no, so consent is a murky process and universities should look for justice while training students to navigate this gray zone for prevention of raped, and not being accused of rape.

RESULTS: TRANSFORMATIVE COMMUNICATIVE ACTS

There is a broad agreement on the definition of consent, which has to be affirmative, voluntary, enthusiastic, conscious, and repeated. The issue is of how to get it in the right way, and how to punish someone when he or she did not get consent. Communicative acts and dialogic interaction are a contribution to this regard. Lidia Puigvert (El Diario Feminista, 2019) already describes some prerequisites for a consenting relationship. For example, the turn from relationships based on

speech acts to the ones of communicative acts, which include all types of communication not just the verbal. It means to base the relationship on dialogic interactions and not on power interactions, some of which may come through power manifested by institutions, for instance a boss over his female worker. However, considering that power interactions may exist in the absence of institutional power, interactive power should be considered. For example, five boys with one girl in a doorway.

Referring to the cases of La Manada or the Manresa gang rape, it is proven that there was a sexual act in which women recognized being coerced. When a group of men is alone with a woman, they should know that she might not feel free. So, they only can try to have any kind of sexual contact if they are sure that it is a totally free relationship; knowing that they are taking the risk if they are wrong. There is much concern about educating in consent. Consent education involves creating collective awareness, both about the severity of violence and the importance of society taking position against this problem. The consequences of GBV can become unbearable psychologically. This human grief needs to be addressed from a scientific perspective, even when research is still wondering how, each new step leads to a new reality, still unsolved. GBV is an emerging and urgent issue for scientists who, from psychology, seek ways to impact it.

Drawn from our research, based on SIOR and Monitoring impact criteria, the following set of actions point out as being transformative in order to add to sexual consented relationships, while contributing to the social impact of physiological research. The concept of consent needs to include:

(1) **Ethics of responsibility.** Accounting for power interactions in an unequal social structure. Limitation of the idea of consensus proposed by Habermas based only on validity claims and orientation toward understanding.
(2) **Non-verbal body language.** This is crucial, as it does makes little sense to to ask at every moment "do you want to keep doing this?"
(3) **Provide conditions free of coercion.** Conditions that enable consent means ensuring spaces and interactions in which consent is freely given, clear, continuous, specific and unambiguous. Situations of duress, power relationships, unconsciousness, fear and threat, cannot ensure consent.
(4) **Solidarity with survivors.** In any situation when someone fills a complaint for sexual harassment, everybody's duty is to believe survivors and be in solidarity with them. In the same way, this action involves empower and protect active bystanders.
(5) **Consent training.** The need for asking for and getting consent should be trained, speaking about its challenges but also its benefits.
(6) **Communicative acts, beyond words**, need to be considered for ensuring consent for any sexual activity. Nobody should ever judge a victim for the way she or he reacted once sexually assaulted.
(7) **Common sense.** Some legislations are based on tradition, jurisprudence and common sense. In a moment when legislations on consent are being built, situations in which

the meaning of consent is not clear (verbally and non-verbally), common sense may be used.
(8) **Overcome barriers and resistances.** While achievement of consent for any free sexual relationship is not easy, local and structural barriers should be considered and overcome.

DISCUSSION

Evidences of Social Impact of Psychology

In May 2019, at the Oñati International Institute for the Sociology of Law, took place the Workshop[24] on GBV including a roundtable discussion on the issue of consent, of which the authors have taken part discussing with members of the police, the issue of gender violence, its link to consent, and the need to add this approach to their cases. Additionally, we shared this contribution with lawyers, scholars, representatives of women lawyers' associations, gender experts, policy makers and social workers as well as with survivors and educators. They all could appreciate the social impact of this research to the reality they are facing each day.

Based on current approaches to consent, there are two clear scenarios, so far. The "no means no" and the "yes means yes," following the principle "anything less than yes is no." However, there is a third situation, to which this article aims to contribute, considering occasions when "yes," a potential "yes" or even a silence, actually means "no," referring to those situations in which a specific context pushes the person to have no choice but to say yes (or to agree). Following this line, to approach specific contexts, we build knowledge along analytical elements in two veins: (1) the communicative acts and the will for understanding them from a psychological perspective; (2) the interactive power and the institutional power, which frame specific contexts. Consequently, new realities create on us, as researchers, the duty to provide scientific elements both for the analysis of cases as well as for legislating them. Some of these realities are described in section 6, such as the case of "La Manada," The "Manresa case, The Joyce Short's Ted Talk, and The New York Times" Opinion Case. These cases show the need to consider consent in a conscious manner, from the begging of the engagement until the end, and informing at every moment the partner about the intentions. In the same line, the way consent has been taken into account from a legislative perspective; it shows the importance of analyzing these realities as a pressing moment for the creation of new legislations in relation to consent. This section presents below, three cases that influenced legislation in their own countries of origin. Usually, legislation need reality first in order to be created and changed.

Three Cases That Impacted Legislation

Previous studies have already shown the importance of the gang rape analysis and it trials in terms of what is considered social

opportunity, that social moment necessary to raise awareness and contribute to make possible translating a social claim into a law with the aim of legislating on affirmative "yes" (Vidu and Tomás Martínez, 2019). As for instance, without the struggle for women's rights, we would not have legislation about it. Laws shape our morality; we need new laws on sexual assault to change the way people think and act regarding to them.

(1) As history show us, specific cases have promoted legislations on sexual harassment. *Clery Act* or the *Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act* is a federal law passed in 1990 as a consequence of the Jeanne Clery rape and murder in 1986 by another student, at her campus university residence hall. At that moment, it was discovered that 37 other cases involving violent crimes occurred at that university during the last 3 years. This is how the **Clery Act law** requires institutions to disclose, publish and distribute their data and statistics on violent episodes.

(2) The Portuguese legislation on consent was passed in January 2019, once the Third Criminal Section of Lisbon has confirmed a 6 years and 6 months prison sentence for aggravated rape to a man aged 35 who in September 2016 took a girl aged 14, without her consent and raped her without her resisting. According to the judicial sentence, the judge considers that the absence of physical resistance of the victim cannot be considered a form of consent, but a tool to survive the attack.

(3) The Chanel Miller's rape case (known as Emily Doe during the legal process of the complaint) also changed the California law. She was raped while unconscious at her campus in 2015. One year later, Chanel was reading the victim-impact statement in a courtroom in California. The statement was later published on BuzzFeed[25] and had more than 18 million views. The Chanel case triggered a change in the California law, which at that moment did not consider her case as rape. Currently, the definition of rape into law includes any kind of penetration and there is a mandatory 3-year minimum prison sentence for penetrating an unconscious or an intoxicated person[26].

The three cases presented above are clear examples of the issues of responsibility, body-language interpretation, providing situations free of coercion, solidarity with survivors, common sense and training on consent. Linking these points with the four cases presented in section 6, highlighting the impact of psychology in any and each of them. For instance, in "La Manada" case, once the men knew she is helpless, they are five, she is alone and feared, they even did not ask her about consent as they do not want to know her will. The psychological point is skipped from acting in accordance with the will of others, in line with what Mead says. In the case of Manresa, the men were aware that she is unconscious, they really want to rape her, and they

do not want her consent. Psychologically, the men are aware of what they do. In the case of the Ted Talk, at the time he knew that she is not his boyfriend, he knew that he is cheating on her. In the same line, for the New York Times' Opinion case, she said yes at the begging but actually meaning "no," so interpretation beyond words is needed, and communicative acts arises in order to better understand her willing.

Increasing Movement of Supporting Survivors

All these cases share the need and the difficulty to define and legislate sexual consent. The cases of La Manada and the Manresa case were also in the media and were deeply rejected by the feminist movement after the provisional request of the Prosecutor's Office which accused them of sexual abuse instead of sexual assault awaiting the victim's testimony. Under the slogan *We do believe you,* massive support for both victims and rejection of harassers was publicly shown. In this sense, La Manada as a case study for this article, shaped the proper legal opportunity to build new legislation on the issue of consent, including context of the action and its features. This is a historical moment for lawmaking on sexual harassment and consent. Through legislating different contexts and situations which may occur, it will be possible to better prevent GBV and harassment. The social impact serves to raise a debate in the social and legal field, feasible to overcome victimization and contribute to the effective use and achievement of sexual consent. It is necessary to advance, beyond words, into the interpretation of silence, considering the interactive power as well as the institutional power.

Along the same lines, there are already programs that have led people to act differently. The *It's on* United States campaign[27], says: *non-consensual sex is sexual assault.* Here it becomes necessary to stablish situations which make consent ineffective, as power, force, duress or deception. However, we still need to establish how actually consent is implemented. Some campaigns define it as: *freely given, knowledgeable and informed agreement.* In her web page[28] on consent awareness, Joyce Short makes a difference between *assent* and *consent.* Permission is a form of assent, but consent has a different meaning according to the law. This legal distinction makes some sexual conduct, even those containing assent but not consent, to be criminal. According to the Anti-Violence project[29], the "no means no" messages of the 1990s have been replaced with "yes means yes" and "consent is sexy" messages particularly for use in poster campaigns and slogans used in "slut walks" as examples. There is also increased focus on consent in a range of anti-sexual violence education programming. "Consent it's as simple as tea"[30] is a campaign consisting on describing what consent is for all ages; being specially based on the idea that consent can be given and ungiven during the same sexual conduct. In her Ted Talk video[31],

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[25] For more information, see: https://www.buzzfeednews.com/article/katiejmbaker/heres-the-powerful-letter-the-stanford-victim-read-to-her-ra

[26] For more information, see: https://www.latimes.com/politics/la-pol-sac-stanford-rape-prison-sentences-20160806-snap-story.html

[27] For more information, see: https://www.itsonus.org/

[28] For more information, see: https://consentawareness.net/2016/01/31/assent-vs-consent-theyre-not-one-and-the-same/

[29] For more information, see: https://avp.org/

[30] For more information, see: https://www.youtube.com/watch?v=oQbei5JGiT8

[31] For more information, see: https://www.youtube.com/watch?v=LdDRv2f2dFc

Amy Adele Hasinoff, talks about what "sexting" teaches us about consent. While digital communication has positive effects, affirmative consent needs to be simple. She discusses mutual communication and the simple and clear response when someone asks for consent from the other person, really gets it. Most importantly, she agrees that speaking about consent for decades now, makes people more aware on the fact of asking and getting consent, but specially, on the consequences of not getting consent.

Considering the findings of psychology, legislating consent will provide juridical information for legal certainty, contributing to right interpretation of unconsented sexual encounters. Severe legal basis, including psychological reactions disabling consent, will increase victim protection and complaints, while contributing to reduce the emergence of gang rape cases.

CONCLUSION

While rape is not always a problem of miscommunication, and consent is still complicated to be defined under the law spectrum, the contribution of communicative acts and dialogic interactions is unprecedented in the research in psychology and its impact for society. Psychology has already contributed to impact this issue from its previous research, highlighting Mead's symbolic interactionism and the communication among people based on consensual dialogue.

In the same line, considering communicative actions and egalitarian dialogue for consenting sexual affective engagement is certainly apioneer important contribution. Indeed, interactive power beyond structural power opens a new channel to understand situations for which the current definitions of consent have shown not to be broad enough to respond to current realities. The dialogic sessions we have had with relevant lawyers, police officers, gender specialists, educators, social

workers and victims have outlined the clear social impact of this line of research.

Day by day society is more demanding and needs more answers to current problems. It is time to eradicate GBV. In our duty to provide scientific knowledge to this claim and achieve the goal of contributing to preventing aggressive sexual contacts from early ages, we suggest people's relationships might be based on communicative acts and consent established as a space in which dialogic interactions can be freely asked and given.

AUTHOR CONTRIBUTIONS

All authors equally contributed to conceived the presented idea and discuss it with members of others fields of study, gender specialists, policemen responsible of gender violence cases, and policy-makers implementing prevention and response mechanisms and directly working with survivors and have deeply debated on the psychological perspective of consent, on categorizing its legal frameworks and analyzing concrete contextual situations. RF contributed to the conceptualization of the reality of sexual consent and to gestate the interactive and institutional power in analyzing the context. GT contributed to develop thoughts on the legal analysis and the social and legal advancement of the consent notion. AV contributed to the formal analysis and discussion and the writing of that part of the manuscript.

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Social Impact of Psychological Research on Well-Being Shared in Social Media

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The purpose of this article is to demonstrate how the Social Impact in Social Media (SISM, hereinafter) methodology applied in psychological research provides evidence for the visibility of the social impact of the research. This article helps researchers become aware of whether and how their improvements are capturing the interest of citizens and how citizens are applying such evidence and obtaining better outcomes, in this case, in relation to well-being. In addition, citizens can access the latest evidence on social media and act as channels of communication between science and social or personal networks and, in doing so, they can improve the living conditions of others. This methodology is also useful for agencies that support researchers in psychology with financial assistance, which can use it to evaluate the social impact of the funds that they invest in research. In this article, the 10 studies on well-being were selected for analysis using the following criteria: their research results led to demonstrable improvement in well-being, and these improvements are presented on social media. We applied the social impact coverage ratio to identify the percentage of the social impact shared in social media in relation to the total amount of social media data collected. Finally, examples of quantitative and qualitative evidence of the social impact of the research on well-being are presented.

Keywords: social impact, social media, well-being, psychological research, SISM methodology

INTRODUCTION

One of the current trends in research evaluation is to measure the social benefits of the research results by considering the social impact achieved through the implementation of evidence that guarantees improvements in different areas, which increase the quality of people's lives (Reale et al., 2018). Psychological research is one of the disciplines that can contribute to different societal goals. It is one of the research areas that must be taken into consideration because the potential impact can improve people's living conditions. This study shows how this discipline contributes to social impact through the analysis of one of its specific fields, well-being research, measured through the SISM methodology.

The roots of well-being research are anchored in ancient Greece, where philosophers focused on how to achieve "the good life," which we currently call well-being (Stoll, 2014). Since then, the search for happiness or the meaning of life has been a constant topic handled by different disciplines; today, we have diverse scientific evidence demonstrating that "well-being" has a direct impact on people's health (Hajek and Helmut König, 2019; Van de Cauter et al., 2019). Some authors

even include happiness as a closely adjacent factor to well-being, and we have added this concept when papers refer directly to it or when the social media data analyzed include it too. This paper aims at corroborating how the application of the SISM methodology can identify evidence of the social impact of well-being research. SISM collects and analyses social media data that mentions the evidence of research that improves people's lives and health and is capturing the interest of citizens.

Thus, this paper first reviews some key contributions of well-being research from the psychological perspective that are in line with one of the Sustainable Development Goals – SDG3: ensure healthy lives and promote well-being for all at all ages (World Health Organization [WHO], 2015; UNDP, 2017) and examines how social media plays a crucial role in capturing the interest of citizens with regard to the improvements that science is delivering to society. The second part presents the results extracted through the application of the SISM methodology to identify the sharing in social media of social impact evidence that has captured citizens' interest. We selected 10 competitive projects on well-being research or related aspects that are present in social media. Next, we analyzed all the social media data shared to identify evidence of real or potential social impact. The results show that the research projects analyzed shared social impact evidence on social media and some of them achieved a high level of citizen interest, among other results. Future research lines are proposed in the final section of this article.

Psychological Research on Health and Well-Being in Line With SDG3

Researchers from around the world need to pay attention to how their research projects contribute to societal goals. One of the ways to ensure that your research is answering these challenges is to review the priorities of the funding institutions, such as the European Commission in the case of Europe, or to review the priority goals of other international institutions, such as the United Nations (UN). In this last case, the list of Sustainable Development Goals (UNDP, 2017) represents a common agenda for researchers from different disciplines and countries. In this sense, there is a prominent field of psychological research focused on well-being that addresses a specific aim of SDG3: ensure healthy lives and promote well-being for all at all ages. This global goal contains one specific target (3.4): "(.) promote mental health and well-being" (World Health Organization [WHO], 2015). Considering this goal, the focus of this study is on well-being and not on subjective well-being. The literature differentiates between objective well-being, which depends on goods and values that go beyond the individual's endorsement, and subjective well-being, where individuals decide what is good for their own lives (Bloodworth and McNamee, 2007). Consequently, subjective well-being includes (Diener et al., 1999), "people's emotional responses, domain satisfactions, and global judgments of life satisfaction" (277). More broadly, well-being is a multidimensional phenomenon that integrates biological, psychological, social, and spiritual dimensions (Moreira et al., 2014).

Research on well-being has focused on identifying the aspects that contribute to individual life satisfaction and the relation

established with the social environment. Therefore, research from other disciplines, such as sociology, can also contribute to this area, for instance, by looking at how trust in institutions (Barbalet, 2019) affects individuals' well-being. A step forward was the discovery that those elements that guarantee well-being are understood as life expectation and satisfaction, but another advancement in recent years has been the demonstration that well-being directly influences individuals' health. Well-being is not merely an aspect of happiness or a meaningful life; whether or not people find happiness, their well-being directly affects their mental and physical health (Jans-Beken et al., 2019). Moreover, well-being also has consequences for people's quality of life and even their life expectancy (Evans and Soliman, 2019). Additionally, the impact of well-being affects other psychological factors, such as self-esteem and self-efficacy, that have a direct impact on self-confidence (Jaaffar et al., 2019).

In this regard, well-being research is crucial for improving individuals' lives, and the identification of social impact evidence is necessary to understand what contributes to improving people's lives and what does not. In fact, there is a constant denunciation of the existence of pseudoscience books about well-being that could promote negative impacts on people's health. One example of this fact was described in a piece for the American Psychological Association's Good Company blog, where authors reported that internet searches for the word "Happiness" on Amazon produced more than 92,000 hits, and this number is constantly increasing. Furthermore, a quick look at the best-sellers among these books shows that they are not evidence-based (Grawicht and Ballard, 2019). Therefore, the need to identify and disseminate evidence of the social impact of well-being research is not only a scientific need for the advancement of knowledge. It is also necessary to provide evidence to people that truly contributes to improving their well-being and even their physical and mental health and reducing risks to their health or well-being. Thus, health psychologists are bringing to light contributions to well-being research, examining the biological, social, and psychological factors that influence health and illness. These researchers build knowledge about how to achieve well-being according to the standards of the American Psychological Association. In this line, the World Health Organization, which defined health as "a state of complete physical, mental, and social well-being, not merely the absence of the illness," developed two instruments for measuring quality of life (the WHOQOL-100 and the WHOQOL BREF) by considering individuals' perceptions of their position in life and by taking into account the social context in which they live. These instruments have been used by different researchers for measuring the well-being aspects of health impact. This is an example of health and psychology researchers working together to advance this area of research.

For instance, more than 300 million people of all ages suffer from depression according to the data delivered by the World Health of Organization (World Health Organization [WHO], 2018). Some of the data collected include information about how well-being has a direct impact on the reduction of the risks faced when suffering from depression, which is a common mental disorder. One research finding highlights that engagement in productive activities, such as volunteering, in persons with a physical disability increases well-being, which directly impacts

risks related to being depressed (Fekete et al., 2019). At the same time, this result indicates that it is important to "promote targeted interventions considering all the factors personal and psychological resources, reducing environmental barriers, and creating access to outside home activities" (Fekete et al., 2019, p. 7). Other results provide evidence of the direct impact of being engaged in meaningful activities on psychological well-being (Hooker et al., 2019). In this sense, it is relevant to identify the evidence that guarantees well-being to give people the opportunity to apply that particular evidence to promote better physical and mental health.

Well-Being Research Through the Collection of Social Media Data

According to recent data, 3.499 billion people, of the approximately 7.697 billion people in the world, are active social media users (Hootsuite, 2019). Because of its massive spread, social media presents new issues but also opportunities for research in different areas and with different actors using technology. Thus, the internet offers the possibility for user-generated content that helps to organize and simplify the amount of available information (Kapoor et al., 2018) and thus increases the potential impact of a specific piece of information.

The internet presents many advantages for psychological research due to its continuous expansion and technological advancement. Some of these advances help scientists reach more diverse and larger samples, reducing the costs and time of fieldwork and the enabling development of novel research tools (Gosling and Mason, 2015). These two authors made an extensive study of the main types of research done using the internet, and they came up with three categories: translational, phenomenological, and novel. The translational studies are those that implement traditional methods in psychology through the internet, and the phenomenological study phenomena generated or disseminated by the internet. In contrast, innovative studies are those that allow the study of psychological topics from new perspectives offered by the internet (Gosling and Mason, 2015).

The amount of critical data that researchers can obtain from social media is huge. The use of data collection and analysis techniques that can extract useful results for different scientific purposes from social media has increased lately, with many new studies published in recent years. The use of social media as a dataset for different research purposes has increased in the last decade (Kapoor et al., 2018). Using a systematic review of the literature, Kapoor et al. (2018) highlight that among the most common topics investigated by the academic community are emotional, social, and health concerns, which are all connected with the focus on well-being research. Finally, most of the studies in their sample used social exchange, network, and organization theories, and they deal with the behavioral side of social media, reviews, and the incorporation of social media for marketing and organizational purposes. The bulk of the most recent psychological research on well-being in social media has been quantitative and used one or more scales via online questionnaires, which means that they are mostly transitional studies, in terms of Gosling and Mason

(2015). Nonetheless, these studies present specific features of the other two types of studies, like considering the role of social media in generating and disseminating certain phenomena (e.g., addiction) or offering new perspectives, like an eye-tracking methodology (Hussain et al., 2019).

Atroszko et al. (2018) used one scale to study the relationship between Facebook addiction and psychosocial functioning and different dimensions of well-being in undergraduate students in Poland through the validation of the Bergen Facebook Addiction Scale (BFAS). Results showed a relation between Facebook addiction and impoverished well-being in terms of impaired general health, decreased sleep quality, or higher perceived stress (Atroszko et al., 2018). Calvo and Carbonell (2018) designed an experimental and longitudinal study aimed at increasing the well-being of individuals experiencing homelessness. Their starting point was the use of information and communication technologies, more specifically, the use of social networking sites by homeless people, and they used Facebook and four scales measured at different points. The findings of this study indicate that Facebook as an essential element that can improve the psychological well-being and socialization of the homeless (Calvo and Carbonell, 2018).

Hussain et al. (2019) used four questionnaires and an eye-tracking methodology to study social networking site (Facebook) use and its relation to different indicators of well-being (mental well-being, depression, anxiety, stress, and self-esteem). The study of the interactions with the areas of interest of the interface of this social network found that Facebook addiction, personality variables, and the Facebook features that individuals interact with are determinant in the individual outcomes related to well-being variables. Kim and Stavrositu (2018) used one online questionnaire in the United States and South Korea to study the role of culture in the relationship between feelings on Facebook and their correlates with psychological well-being. Their results suggest that "experiencing culturally fit emotions stemming from social interactions on Facebook appear to make users fulfill central cultural mandates" (Kim and Stavrositu, 2018, p. 86). Park and Min Baek (2018) used one national survey dataset to study how social comparison (SC)-based emotions shared in Facebook affect individuals' psychological well-being. They found that "psychological well-being was indirectly influenced by users' ability-based or opinion-based SC orientations via four types of SC-based emotions [optimism, inspiration, depression, and envy]" (Park and Min Baek, 2018, p. 90).

Marino et al. (2018) used a systematic review of the literature and meta-analysis to study associations among problematic Facebook use, psychological distress, and well-being among teenagers and young adults. The authors could not establish directionality between Facebook use and psychological distress and well-being due to the cross-sectional design of the studies in their sample. Plunz et al. (2019) used a method that allows the capture of geolocated tweets and identifying users who tweeted in parks. The objective was to compare whether tweets made by the same group of Twitter users when inside parks showed more positive sentiments than when they were outside parks (Plunz et al., 2019). The study found that "in-park tweets express less positive sentiment as compared to tweets outside of parks, but

park visitors in the other boroughs of New York City [other than Manhattan] generate more positive in-park tweets as compared to those outside of parks" (Plunz et al., 2019, p. 235).

Chen and Ren Huang (2019) analyzed the relationship between religion and the happiness indicator of well-being in Christianity and Buddhism through Twitter by analyzing the proportion of words related to social, cognitive, and affective processes. These authors found psychological differences between Christians and Buddhists through the word analysis, with Christians found to be more social and positive, while Buddhists were more cognitive and negative. Morry et al. (2018) used Facebook to design an experiment regarding the way people construe relationship judgments when exposed to a friend's or colleague's Facebook profile in contrast with their relationship and well-being. The authors started from the relationship between social comparisons and personal well-being theories. They found that "individuals may react more strongly to comparisons with close others as opposed to distant others" (Morry et al., 2018, p. 140), which places the focus on the role of Facebook as a key factor. On a different note, but still concerning quantitative methodology, Penchalaiah et al. (2019) proposed applying probability theory to tweets generated by users for the early detection of suicide intentions. Authors used experiments for early detection of suicide warning signs through Twitter's streaming API, and they managed to "capture warning signs in text compared to traditional machine learning classifiers" (Penchalaiah et al., 2019, p. 1).

We also found a qualitative study that analyzed tweets related to leading brands of wearables in the US to explore perceptions and reactions toward wearable devices that improve health and well-being (El-Gayar et al., 2019). More specifically, the authors used supervised learning, sentiment analysis, and automated content analysis, which demonstrated "the relevance of persuasive design features such as dialogue, credibility, and social support, through to various degrees," among other uses (El-Gayar et al., 2019, p. 3858).

The evidence in these articles presents the impact of the use of technology in people's lives. This study aims to offer a methodology that contributes to measuring the social impact of well-being research in people's lives. For this purpose, we build on a previous study in the area of the social impact of research in social media (Pulido et al., 2018). More specifically, we placed our attention on two social media platforms that attract numerous studies and users worldwide (Facebook and Twitter) to extract those pieces of evidence of the social impact of the research on well-being shared in social media using the SISM methodology.

Conceptual Framework of the Social Impact in Well-Being Research Applied

This study is inspired by the perspective of the social impact of research (Reale et al., 2018). In doing so, this article is a pioneer in the study of the social impact of well-being research on individuals, and it is the first to apply a specific methodology to measure this social impact of well-being research in psychology. According to Reale et al. (2018), social impact of research takes place "whether researchers generate interventions based

on research findings and provide evidence on resulting social improvements, or whether researchers identify actions that have a positive impact on society and analyse their features to create possibilities for transferability" (305). Moreover, to achieve social impact, researchers must create spaces for dialogue with and for the participation of other researchers, stakeholders, and the public, as this is the best way to ensure that they respond to societal needs in their research (Reale et al., 2018). This concept of social impact applied to social media research led to the development of the SISM methodology (Pulido et al., 2018), and this SISM methodology guides the present study on the social impact of psychological research on well-being in social media.

The social impact of research is fundamental and desirable in all scientific disciplines. In psychology, where research is directly conducted on individuals, social impact is even more important because of the immediate effect that it has of either improving the lives of many people or, on the contrary, harming them. For this reason, we chose to study how the SISM methodology applied in psychological research enhances the visibility of the evidence of the social impact of research on well-being.

Thus far, we have seen that the emerging literature on social media has an enormous potential to change people's lives for better or for worse, and that is why social media research is needed even more. From the researchers' perspective, social media offers new possibilities for the dissemination of scientific research, and for its meaning dissemination through social networks, which is also known as altmetrics (Ortega, 2018). The fact that the public has access to this information that is ready to use increases the chances of achieving a social impact from research. This possibility, coupled with big data analysis, data mining, and other related techniques, offers the possibility of measuring and evaluating the scientific and social impact of research. Therefore, altmetrics have opened an avenue for measuring the impact of research on society, and in the future, altmetrics could help us study research interactions and communications (Erdt et al., 2016). From the perspective of individuals, social media is a source of collective opinion from which they can learn and make informed decisions in all areas, especially with regard to health and well-being; thus, the information provided in social media can greatly affect an individual's health (Li and Sakamoto, 2014). According to Li and Sakamoto (2014), collective opinion may act as a filter for deterring the spread of false information and may create a new socially accepted norm that individuals follow even if it contradicts their strong belief.

Making visible the social impact of the research on well-being through the analysis of the social media data available is a step forward in how to measure this impact. Carey et al. (2019) call for the use of metamethods in psychology that can focus on the strengths and weaknesses of different programs or interventions to design better programs and interventions that serve individuals' needs. The Thrive at Work well-being program has designed a trial to assess the relationship among fiscal incentives, awareness, and the increase in health and well-being offerings at SMEs in the United Kingdom (Thrive at Work Wellbeing Programme Collaboration, 2019). McGhee et al. (2015) propose the use of a longitudinal survey of children

in state care to better understand children's pathways in the system and improve the response of public policy, evaluation, and research on the multi-professional interventions required by this vulnerable group. Espinosa-Montero et al. (2016) developed an instrument to measure the relationship between water consumption and well-being using empirical data from a low-income adult population in an urban area, which can be useful in other contexts. Finally, Robinson et al. (2019) found a positive impact of engaging with books on the well-being of children and young adults with severe and profound learning disabilities, which is in line with what the Children and Families Act of 2014 required in England. What all these examples have in common is the fact that they are oriented to responding to societal needs, sometimes by including stakeholders' knowledge about their daily life experience. The contribution of our article is to demonstrate that the SISM methodology provides an additional method to make visible the social impact of well-being research.

Considering these previous contributions and the goal of this study, the research questions we raise are: is there any evidence of social impact from well-being research shared on social media? If so, are these examples of potential or real social impact? What are the main contributions identified?

MATERIALS AND METHODS

Social Impact in Social Media is a novel methodology in social media analytics for the evaluation of the social impact of research (Pulido et al., 2018) developed under IMPACT-EV, a research project funded under the Framework Program FP7 of the Directorate-General for Research and Innovation of the European Commission. One of the contributions of this methodology is to distinguish those messages published in social media profiles that are classified as dissemination messages from those messages that constitute evidence of the real or potential social impact of research. This contribution is significant, because we are moving toward the evaluation of research efforts that are measured by the social impact achieved, which ultimately refers to how well we are contributing to improving people's living conditions. This methodology could be applied in any scientific area. In the present case, we have applied it to psychology, specifically in the field of well-being research.

Data Collection

The data collection, analysis, and dataset created applies the ethical recommendations concerning social media data research of the European Commission (2018). The first step in the data collection was to select the research projects aimed at studying well-being or related areas to be analyzed. In the selection of these research projects, we applied the following criteria:

Criterion 1. Selection of 10 competitive research projects on well-being that publicly display their data on social media. We selected eight research projects funded by the FP7 (7th Framework Programme) and H2020 of the European Commission. Two research projects were selected from two universities from the United States due to their contribution to well-being research. Most of the H2020 projects selected

are ongoing projects, but they have already presented research findings in the field of well-being research that are relevant for this study.

Criterion 2. The period of the selection of the social media data is the period from when the first message was published, and the data was available in their profile until August 2019.

Criterion 3. The social media data collected are from Twitter and Facebook. In this study, we applied the criterion that the research project must be present in one of these two social media platforms. In the case of Facebook, we selected Facebook pages with public posts.

The second step was to define strategies for capturing the tweets and Facebook posts of the research project. In this research, we applied two different strategies. The first one was to collect, through NVivo software, the corresponding social media data of the official research project accounts on Twitter and Facebook. The second strategy was to collect those tweets that mention the keyword that defines the research project selected. It is necessary to combine these two strategies to collect the maximum of social media data published in relation to the research project; to choose only one limits the results. **Table 1** summarizes the number of tweets and Facebook posts that we collected from each research project using the different social media platforms and strategies previously defined.

The total amount of the data collected through strategy 1 and strategy 2 is 1,559 messages (1,402 tweets and 157 Facebook posts).

Data Analysis

We analyzed all the tweets and Facebook posts collected (1402 tweets and 157 Facebook posts) to first calculate the ratio of evidence of social impact to the total amount of data collected. To do so, the first step was to apply a content analysis of the tweets and Facebook posts selected, and the second step was to calculate the corresponding ratio, which is called the SICOR – social impact coverage ratio (Pulido et al., 2018). The result is expressed as a percentage. In this paper, we use the following

TABLE 1 | Number of tweets and Facebook posts collected for each search strategy.

| Project | Program/zone | Strategy 1 | | Strategy 2 |
		N. Tweets – profile account	N. Facebook page – project	N. Tweets/ keyword
P1	H2020/Europe	–	–	91
P2	FP7/Europe	58	–	36
P3	United States	202	19	141
P4	H2020/Europe	51	–	–
P5	H2020/Europe	–	105	14
P6	H2020/Europe	90	–	–
P7	United States	–	33	392
P8	H2020/Europe	55	–	29
P9	H2020/Europe	220	–	–
P10	H2020/Europe	23	–	–
	Total	699	157	703

SICOR for Twitter and Facebook.

$$SICOR = \frac{\sum_{i=1}^{n} \gamma_i}{\sum_{i=1}^{n} T_i} = \frac{\gamma_1 + \gamma_2 + \cdots + \gamma_n}{T_1 + T_2 + \cdots + T_n}$$

where:

- γi is the total number of messages obtained about project i with evidence of social impact on social media (in this case, Twitter and Facebook);
- $T i$ is the total number of messages from project i in social media (in this case Twitter, Facebook);
- n is the number of projects selected.

The third step carried out in this analysis was to identify whether the social impact evidence selected was of real or potential impact and whether there was quantitative or qualitative evidence. The main contributions were identified under the criterion of having captured a lot of interest from citizens on social media. This interest is measured by considering the following criteria: the research captured the attention of people who are not directly involved in the research, and these people have published the social impact evidence or have retweeted, liked, shared, or commented on it.

Analytical Categories and Codebook

The research team that conducted this analysis has expertise in the evaluation of the social impact of research in social media. The analytical categories were previously defined and tested in the current sample. The unit of analysis is the full complement of information available in the message analyzed (tweet or Facebook post). Therefore, the links provided were also examined. Sometimes the evidence of social impact is provided in the message, but at other times, the message that is posted is an introduction, and the evidence is presented in an attached link. The analysis of the user profiles has some limitations. The information in the bio is the unit of analysis of the profile, but some of the bios are empty, and access to others is restricted for privacy reasons. In this sense, we considered in our study only those profiles that are entirely public to measure citizen interest, and for privacy and ethical reasons, we cannot show the profiles. The codebook used in the analysis can be seen in **Table 2**.

Inter-Rater Reliability (Kappa)

The analysis of the sample selected was conducted following a content analysis method in which reliability was based on a peer-review process. Each tweet and Facebook post were analyzed to identify whether it contained evidence of social impact (ESISM) or was another type of communication (DI – Dissemination, OT – Other) according to the codebook defined previously. A second level of the analysis was to perform a qualitative analysis of those messages coded as ESISM to detect qualitative and quantitative evidence and identify whether they present real or potential social impact. Once this step was completed, the researchers selected the main pieces of evidence considering the interactions received (likes, shares, comments, retweets), and after that, they analyzed those public user profiles that were involved in the interactions. The first step was to deliver the

TABLE 2 | Codebook SISM used in this research.

Code	Description
DI	Tweet or Facebook post of which the main goal is to disseminate the research.
OT	Tweet or Facebook post that contains types of messages other than dissemination and not evidence of social impact, sometimes congratulations, jobs offers, personal interactions, etc.
ESISM	Evidence of social impact is a research result that contributes to the achievement of an objective of society defined by the corresponding institution, for instance, the UN sustainable development goal 3 – Good health and Wellbeing. Evidence can be of potential impact or social impact already achieved.
QUANESISM	Quantitative evidence of social impact. The evidence provided gives quantitative information about improvements obtained through the implementation of the research results. Evidence can be of potential impact or social impact already achieved.
QUALESISM	Qualitative evidence of social impact. The evidence provided gives quantitative information about improvements obtained through the implementation of the research results. Evidence can be of potential impact or social impact already achieved.
POTENTIAL SI	Potential social impact means that research findings have a potential social impact because of the type of evidence the research team aims at identifying and links with societal goals.
REAL SI	Real social impact means that there is already evidence for the social impact of the research findings.

codebook *a priori* to the researchers in charge of the analysis. To calculate the reliability of the analysis, we used inter-rater reliability in examining the level of agreement between the two raters with regard to the assignment of the categories defined through Cohen's kappa. We used Cohen's kappa calculator to calculate this coefficient. The research team analyzed the coding agreement and further classified the sample with regard to dissemination (DI = 1), evidence of social impact (ESISM = 2), or other type of message (OT = 3). There were 16 messages coded with different values, and they were excluded from the final sample analyzed. The result obtained is 0.89%. By interpreting this number according to the Cohen's kappa coefficient (see **Supplementary Table S2**), our level of agreement is reliable. Once this review was complete, the final sample was composed of 1543 tweets and Facebook posts.

In this paper, we show the results of the sample classification in the three categories. Also, we provide the results of a second analysis focused on the potential and real social impact, with an example of qualitative and quantitative evidence in the last section that illustrates the selected contributions.

RESULTS

To answer the research questions defined previously, in this section, we divide the results into three parts. The first focuses on the question of whether there is any evidence of social impact from well-being research being shared in social media. The second focuses on the question of whether the evidence shared contains information about real or potential social impact, and the third focuses on the main contributions identified based on the results regarding the detection of real social impact.

Evidence of the Social Impact of Well-Being Research Shared in Social Media

With the analysis complete, we can confirm that there is evidence of the social impact of well-being research shared in social media (15.7%). We found a higher percentage of the presence of ESISM (evidence of social impact) in this study than in a previous study, where the highest percentage of ESISM for a project was 4.98% (Pulido et al., 2018). In the current study, the project with the highest percentage had 27.5%.

Next, the results are explained in global and detailed ways. **Table 3** illustrates the coverage percentage of messages coded based on the codebook (DI, ESISM, OT).

The type of message (tweet or Facebook post) with the highest percentage is dissemination (56.9%), while the percentage of ESISM (15.7%) is lower. This result is in line with previous research results that indicated that tweets and posts are mostly linked to dissemination goals.

Table 4 illustrates the result of the SICOR considering the results of the sum of the ESISM based on the 10 research projects in relation to the total number of tweets and Facebook posts collected, classified by the type of strategy and type of social media platform.

The results extracted by the strategy indicate that the SICOR is slightly higher in strategy 2 than in strategy 1. With regard to the type of social media platform, although we collected more tweets than Facebook posts, the posts have higher SICOR than the tweets. This result indicates that the number of tweets or Facebook posts that are collected is not relevant to finding evidence of social impact, which is in line with the previous research conducted under the SISM methodology.

Table 5 illustrates in detail the SICOR results extracted for each research project selected. As shown in the table, there are three projects with more than 20% evidence of social impact (P4, P5, and P7). Two of these projects are recent research projects funded by the H2020 Framework Programme, while P7, which has the second-highest percentage, belongs to one of the United States research projects that is one of the most relevant

TABLE 3 | Percentage of types of coded message.

Type of message	Number of references	Percentage
DI	880	56.9
ESISM	244	15.7
OT	429	27.5

TABLE 4 | Global SICOR results.

Type of strategy	SICOR – Social Impact Coverage Ratio
Strategy 1 – Profile	13.8%
Strategy 2 – Keyword	17.9%
Type of social media platform	
Twitter	15%
Facebook	21.7%

TABLE 5 | SICOR results for each project.

Project	Program/zone	SICOR
P1	H2020/Europe	9.9%
P2	FP7/Europe	14.9%
P3	United States	10.8%
P4	H2020/Europe	27.5%
P5	H2020/Europe	23.5%
P6	H2020/Europe	12.2%
P7	United States	26.4%
P8	H2020/Europe	8.3%
P9	H2020/Europe	3.6%
P10	H2020/Europe	8.7%

TABLE 6 | Percentage of real and potential social impact identified in the ESISM sample.

Code	Number of Tweets and Fb/posts found	Percentage
ESISM	244	100
POTENTIAL SI	42	17
REAL SI	202	83

studies in well-being research. Regarding the other projects, we found that three of them have more than 10% evidence of social impact (P2, P3, and P6), three of them more than 5% (P1, P8, and P10), and one has less than 5% (P9).

More Real Social Impact Than Potential Social Impact Found in Selected Projects

We have identified 244 tweets and Facebook posts that contain evidence of social impact. When we analyzed the content of these messages in depth, the result was that there were more detailing real social impact (83%) than potential social impact (17%). This result confirms the idea that applying SISM (see **Supplementary Table S1**) to identify evidence of social impact is a quick way to capture relevant pieces of evidence of social impact that researchers and citizens are sharing in the online public space. **Table 6** shows the number of tweets and Facebook posts collected and the corresponding percentages in relation to the total number of ESISMs collected.

We elaborated **Table 7** to display which projects have more real social impact than potential social impact and to specify the results classified in both categories. In this way, we can detect which project results it would be interesting to analyze in depth to demonstrate the evidence of social impact. The percentage indicated corresponds to the total amount of social media data collected for the project.

Considering these results, we can detect which of the projects has the greatest percentage of real social impact (P7), with 45.9%. The second-highest (P3) is considerably lower than the first, with a result of 11.5%, while the third one (P5) is close to the second, with 9%. The fourth (P6) is half of the third, with 4.5%, and the last one (P2) is close to the fourth, with 4.1%. In the next section, we analyze the evidence of the social impact of the five projects with the highest percentage of real social impact.

TABLE 7 | Results of real and potential social impact for each project in relation to the total amount of the ESISM sample.

Project	Code	N. Tweets and Fb/posts	Percentage
P1	POTENTIAL SI	7	2.9
	REAL SI	2	0.8
P2	POTENTIAL SI	4	1.6
	REAL SI	10	4.1
P3	POTENTIAL SI	11	4.5
	REAL SI	28	11.5
P4	POTENTIAL SI	5	2.0
	REAL SI	9	3.7
P5	POTENTIAL SI	6	2.5
	REAL SI	22	9.0
P6	POTENTIAL SI	0	0.0
	REAL SI	11	4.5
P7	POTENTIAL SI	0	0
	REAL SI	112	45.9
P8	POTENTIAL SI	4	1.6
	REAL SI	3	1.2
P9	POTENTIAL SI	4	1.6
	REAL SI	4	1.6
P10	POTENTIAL SI	1	0.4
	REAL SI	1	0.4

Main Contributions Identified

Before beginning to explain the different examples collected from these projects, we would like to mention that the evidence of social impact that we will deliver could be in the same tweet or Fb/post or in a link delivered with that tweet or Fb/post, as we explained in the prior study (Pulido et al., 2018). Considering the results explained in the previous section, we selected the following examples:

The Quality of Relationships Directly Influences Health

The first project (P7) belongs to the longest study of adult development, led by researchers of Harvard University. This study has been in place for more than 80 years, and there are results available from the first part of the study focused on people who began the study in the 1940s. Now, the researchers are leading a second part of the study that is focused on the second generation, the children of the participants of the first cohort. Evidence of the social impact of this study is the most tweeted and shared by citizens of all the samples collected in this study. As we have shown in **Table 7**, this project has the highest percentage of real social impact because there are more tweets shared directly by citizens than in the other projects. Citizens that tweet this evidence have been impressed to find out that health depends more on strong and meaningful relationships than on fame, money, or social class. There is no doubt that this evidence has captured much citizen attention. Here are some examples of the messages related to this project.

The first two examples epitomize this qualitative evidence:

"Harvard Study of Adult Development has tracked the lives of 724 men for 79 years and found that flourishing in life is a function of close ties with family, friends, and community. It had nothing to do with fame, wealth, social class, IQ, genes, etc." (REAL SI, P7, REF 87).

"'Close relationships, more than money or fame, are what keep people happy throughout their lives. and are better predictors of long and happy lives than social class, IQ, or even genes,' concludes the 80 Year Harvard Study of Adult Development." (REAL SI, P7, REF 3).

The following quote is also an example of how being aware of this qualitative evidence of social impact can encourage one to apply the study results in one's own life:

"Watched a video today that said a Harvard study on Adult Development conducted over 75 years shows that what keeps people living longer and happier is the quality of their social relationships. Put the electronic gadgets down and actually engage in meaningful interactions. #HealthyLiving." (REAL SI, P7, REF 20).

Another finding highlighted how loneliness negatively affects health and the relevance of applying the evidence of improving health through strong relationships:

"Loneliness kills. The big finding from the Harvard Study of Adult Development. If you want to live a happy and healthy life, you have to prioritize having strong social connections and relationships." (REAL SI, P7, REF 9).

Finally, this example highlights one of the pieces of evidence regarding the quality of connections. Similarly, the example encourages the application of this evidence in daily life:

"It is never a question of IF there are connections in life, it is only a question of the quality of those connections. This study shows us that the better that quality, the better our life and our health long term. What more do we need to know?!? Check out my podcast for more about happiness too!" (REAL SI, P7, REF 7).

Early Detection of Depression Symptoms Through the Analysis of Language in Social Media Improves Prevention

P3 belongs to the World Well-Being Project (WWBP), led by researchers from the University of Pennsylvania. These researchers are leading a pioneering research study of scientific techniques for measuring psychological well-being and physical health based on the analysis of language in social media. The focus of their research is on those psychosocial processes that affect health and happiness and how to improve them. In this case, the examples provided links to explore the evidence identified. Some of the examples selected present evidence of how the analysis of social media predicts earlier symptoms of depression that could be used to help prevent depression before these symptoms worsen:

"Researchers from the WWBP analyzed social media with an AI algorithm to pick out linguistic cues that might predict depression. This may lead to early detection and treatment for many. bit.ly/2E205OL." (REAL SI, P3, REF 1).

"We show that Facebook statuses can be used as a (rough) screening technology for depression as recorded in medical records – AUC.69 – article is open access. #depression #BigData @WWBProject https://t.co/sLQpCTfPaC." (REAL SI, P3, REF 7).

Engaging With Meaningful Social and Intellectual Interactions Impacts Brain Health

The third research project is LIFEBRAIN, funded by the H2020 program of the European Commission. The aim of this project, according to its webpage, is "to identify determinants of brain, cognitive and mental health at different stages of life and establish a solid foundation of knowledge for understanding how brain, cognitive and mental health can be optimized through the lifespan." This research is an ongoing project that will end in 2021, but the researchers have already identified evidence of social impact. Some of this evidence comes from researchers who belong to their own network, and the rest comes from other colleagues who are contributing to this research field. The projects' research team uses a newsletter to share the evidence, quoting the studies referenced and using good science communication language to reach more people. These posts have more interaction than in the other cases. The examples selected are from the project's Facebook page. Some of the Fb/posts contain this evidence; for instance, the relevance of being involved in social, physical and intellectual activities in middle age has a direct impact on brain health in old age:

"Lifebrain researcher Professor Rik Henson at the University of Cambridge presented the recent results obtained within the CamCan study cohort to the Lifebrain research group at the University of Barcelona this week. One interesting finding is that middle-aged people who participated in higher levels of social, physical and intellectual activities had better thinking ability in old age than those who undertook fewer of these midlife activities, despite age-related reduction in their brain sizes. Read more about the results of the Cambridge cohorts here: https://www.lifebrain.uio.no/publications/e-newsletters/midlife.html."

The quantitative evidence could be explored inside the link attached, which includes a reference to the research publication where the results are available.

Meaningful leisure-time interactions also have an impact on brain health:

"Leisure activities count for your brain health! Frequently engaging in social and intellectually stimulating activities, such as meeting friends or family, playing board games, and reading, are linked to better brain health in old age. This is a finding from a current review performed by Lifebrain researchers at the Department of Psychiatry, University of Oxford. Read more about the impact of leisure activities on brain health in the latest Lifebrain e-newsletter: https://www.lifebrain.uio.no/publications/e-newsletters/leisure.html."

For women, there is an interesting piece of evidence reported by this project. Researchers found that women have healthier brains in gender-equal countries; thus, equality affects their well-being as well:

"Women have healthier brains in gender equal countries. In countries that promote women's equality and participation in society, women have a better chance of keeping their brains healthy in later life, according to new research from the Norwegian Institute of Public Health. Read our monthly e-newsletter here: http://mailchi.mp/95211d178033/lifebrain-horizon2020-project-e-newsletter."

Positive Mental Health Self-Ratings Improve Future Mental Health

The fourth project is CAPICE, funded under the H2020 project by the European Commission. This is an ongoing project that will also end in 2021, but the researchers have already shared evidence of social impact on the well-being and mental health of children and adolescents in Europe. One of the pieces of evidence shared relates to an advance in improving the treatment and prevention of mental health: that the positive self-rating of one's own mental health has a positive impact on future mental health:

"Self-rating mental health as 'good' predicts positive future mental health https://t.co/G4YzTkNnfl #mental-illness #depression #psychologicaldistress #InvestEUresearch @GamianE @capice_project @EU_H2O20, https://t.co/vKqdElsgrA."

If we follow the link, we find more information about the findings of this study published in the Journal of Health and Social Behavior. Researchers found that for 62% of people with a mental health problem, if they rated themselves in a positive way, they faced their health issues better. Besides, the researchers found that individuals who evaluated their mental health as good had 30% lower probabilities of having a mental health problem, being an example of quantitative evidence. According to the researchers (McAlpine et al., 2018), "even without treatment, persons with a mental health problem did better if they perceived their mental health positively" (1). In fact, researchers involved in this study show that self-rated mental health had an independent positive influence on future mental health and highlight other elements that agree with previous evidence quoted in this section, for instance, the benefits of meaningful relationships and maintaining a sense of purpose and belonging in life.

The Use of Machine Learning Algorithms Improves the Accuracy of Mental Health Predictions

The last project selected is PRONIA, funded by the FP7 project of the European Commission, which focused on research on personalized prognostic tools for early psychosis management. One of the aspects of well-being research is to prevent mental illness and promote people's well-being. In this sense, this research team shows how well-trained machine learning algorithms better predict mental health outcomes because the data offered are based on evidence. The following example of quantitative evidence reveals this type of accuracy:

"PRONIA Project @PRONIA_EU · 14 Nov 2018 #PRONIA managed to show in a #MultinationalStudy that #MachineLearning algorithms perform better than doctors at predicting #MentalHealth outcomes, with up to 82% accuracy. Listen to the radio interview with @koutsouleris & @StephenWood8 on @abcnews! ~ https://www.abc.net.au/radio/programs."

This last example shows how effective early treatment of youths can prevent mental health problems later in life:

"Exactly!! Choosing where & when to invest precious dollars in #mentalhealth care is not a zero-sum game. Effective treatment for #youth can bend the life curve positively AND prevent #disability when older. It pays off in multiple ways! #onhealth #cdnhealth https://t.co/Gxdq22BGzA."

DISCUSSION

The European research projects selected are mostly ongoing projects, but since their very beginning, they have been sharing evidence of social impact in their social media channels. This result could be due to the current evaluation system of the European Framework Programme (van den Besselaar et al., 2018), where social impact is one of the crucial criteria for being funded and evaluated. The other two research projects selected that contain a lot of evidence of social impact are research projects with a long trajectory of conducting research in the same field, and this is one of the reasons that they have more evidence. However, one of the common criteria is that all the projects selected have research goals related to societal goals. Therefore, all the projects address, for instance, priorities defined by the SDG3 Health and Wellbeing for All (UNDP, 2017), one of the sustainable development goals defined by the United Nations. The topics covered are in line with the most common issues investigated by the academic community, according to Kapoor et al. (2018). The difference with this previous study is that we have focused on that evidence that contributes to improving people's lives. Thus, merely descriptive research results are out of the scope of this paper.

Another detail observed in this study is critical for the improvement of the living conditions of citizens. We observed in some tweets and Fb/posts by citizens that they highlight the evidence of social impact that guarantees an improvement in their life and encourage others at the same time to implement changes supported by the evidence in their daily lives. This finding could be related to the evidence founded by Park and Min Baek (2018), where users' abilities and emotions indirectly influenced psychological well-being. But this finding also needs other contributions to understand why users encourage others when they find evidence for improving their lives. For instance, Hooker et al. (2019) provide evidence of the direct impact of being engaged in meaningful activities on psychological well-being. One possible explanation is that social media users that have interacted with evidence of social impact created a meaningful understanding that needs to be shared with others.

This is an important finding, since fake news affects the health of many people, according to Merchant and Asch (2018). Spreading evidence of how to improve well-being, which directly affects health, is crucial for guaranteeing the achievement of SDG3: Health and Well-being for All. This approach is particularly significant with regard to the evidence found in P7. When citizens get to know that science contributes to improving their lives, they tweet, post, like, share, and comment. This result is an indicator that researchers have connected with citizens due to the relevance of their findings, which guarantees an improvement in people's lives.

The research projects analyzed show the relevance of well-being research in our times. Nonetheless, the projects face one large obstacle. This obstacle is the fact that in this field, there are many non-evidence-based assertions. One way to deal with them is to share evidence of social impact in social media to reach out to more people who are not normally familiar with the academic environment.

The limitations of this study are mainly due to the data restrictions, which were updated by the General Data Protection Regulation (EU) 2016/679 (GDPR). Twitter and Facebook have correctly updated their data protection under this law. Programs such as the one used by NVivo respect these updates. The information extracted respects this legal framework because it derives from the public data that users have consented to share, and any private data remains private according to the ethical guidelines in social media data research. Therefore, our dataset collects permissible public information, and anonymity is guaranteed. It is important to note that some tweets and Fb/posts are not collected because they are not provided by the platforms due to privacy reasons. In this sense, we are aware that there are more tweets and Fb/posts, although the dataset collected already displays evidence that social impact is shared in social media despite these limitations. Another limitation included in the study is that the data collected should be contrasted to avoid the possibility of manipulation or misuse. For this reason, all evidence of social impact found is checked for a reference of scientific evidence that guarantees that is not false information.

Finally, we would like to highlight one finding that was not mentioned before. Some of the social media channels of the research projects not only shared their own evidence of social impact but also shared evidence from the research of other colleagues who are also providing key contributions in the same field. This detail is of note because when scientists prioritize bringing together findings that can improve the well-being of the people, science can advance faster and better.

CONCLUSION

Considering the research questions elaborated in this study, we can conclude with the following results. The application of SISM in the analysis of 10 competitive research projects on well-being research confirms that this type of research produces evidence of social impact that is shared in social media. We have obtained more real social impact evidence than potential evidence; this fact implies that the research selected is already contributing to improving people's lives. The main contributions identified are those on how the quality of relationships has a direct impact on the quality of health over a lifetime and that engagement in meaningful social and intellectual interactions supports brain health. Moreover, the positive self-rating of one's own mental health promotes future mental health, so this is an important variable for the treatments in this field. Technology is used to prevent mental health problems, such as through early depression detection and more accurate detection of mental problems. Both improve treatment and prevention, which promotes well-being and better health. These results relate to SDG 3, Health and Wellbeing for All, which is one of the priorities of the Sustainable Development Goals of the United Nations, and have already achieved social impact. Regarding the methodology proposed, we have demonstrated that SISM contributes to focusing on extracting the evidence of the social impact of well-being research and makes more

visible how the research results provided improve people's lives, obtaining social impact. Knowing these results allows advances on how to define future research proposals and on how to collect data on the social impact of current research. Besides, one future line could be to explore how the citizens that know about the evidence of social impact through social media channels applied this evidence in their daily lives and to collect results of this implementation.

DATA AVAILABILITY STATEMENT

All datasets generated for this study are included in the article/**Supplementary Material**.

AUTHOR CONTRIBUTIONS

TS-M and CP contributed to the conception and design of the study. L-CM selected the literature review. VI and CP selected and analyzed the social media data sample collected and reviewed the data analysis and results sections. L-CM and CP wrote the first draft of the manuscript. TS-M reviewed the final version of the manuscript and the contributions.

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The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00135/full#supplementary-material

TABLE S1 | SISM-SICOR calculation.

TABLE S2 | Kappa coefficient.

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Communicative Methodology: Contributions to Social Impact Assessment in Psychological Research

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Recent advancements in the social impact assessment of science have shown the diverse methodologies being developed to monitor and evaluate the improvements for society as a result of research. These assessment methods include indicators to gather both quantitative and qualitative evidence of the social impact of science achieved in the short, medium, and long terms. In psychology, the impact of research has been mainly analyzed in relation to scientific publications in journals, but less is known about the methods for the social impact assessment of psychological research. Impact assessment in the domains of educational psychology and organizational psychology presents synergies with bottom-up approaches that include the voices of citizens and stakeholders in their analyses. Along these lines, the communicative methodology (CM) emerges as a methodology useful for the communicative evaluation of the social impact of research. Although the CM has widely demonstrated social impact in the social sciences, less is known about how it has been used and the impact achieved in psychological research. This article unpacks how to achieve social impact in psychology through the CM. In particular, it focuses on the theoretical underpinnings of the CM, the postulates linked to psychological research and some key actions for the implementation of the CM in relation to the design of Advisory Committees, working groups, and plenary meetings in research. Furthermore, it shows how the CM has been implemented in illustrative cases in psychological research. The article finishes with a conclusion and recommendations to further explore the ways in which the CM enables the social impact of research in psychology.

Keywords: impact assessment, communicative methodology, psychological research, social impact, methods

INTRODUCTION

The social impact assessment of science is becoming crucial in the debates over research evaluation, influencing the way in which scientists conceptualize and develop their studies (Reale et al., 2017). The growing concern among researchers, funding agencies, universities, policy makers, stakeholders, and the general public regarding how science can result in concrete improvements for society, contributes to establishing research impact agendas in all scientific disciplines. The field of psychology has not been indifferent to this newly international trend. The Strategic Plan of the

American Psychological Association, adopted in February 2019, has the mission "To promote the advancement, communication, and application of psychological science and knowledge to benefit society and improve lives" (APA, n.d., p. 5). In this context, there is a need to advance knowledge about the research methodologies that enable social impacts and the concrete ways to develop them.

The communicative methodology (CM) has been demonstrated to achieve social impacts in different fields of knowledge since it was conceptualized with the aim of being useful to society, contributing to improving individuals and collectivities under study and the society as a whole (Gómez et al., 2011). The CM addresses social demands for dialogue in research, including reflections and the providing of critical views of the social contexts (Gómez et al., 2006). The CM has the recognition of the European Commission (European Commission, 2010; Flecha and Soler, 2014) because of relevant research in the framework programs based on this methodology. It is important to consider that, in science, power claims and research dynamics can cause researchers to prioritize their status or benefits over improving people's lives even if scientists are concerned with the improvement of lives. This approach can lead to cultural, gender, age or class biases and to exclusionary science and output. The CM contributes to transforming this concern in science, engaging the subjects in an intersubjective dialogue with researchers by means of which (with such engagement) it is possible "to develop new knowledge that can transform local conditions, as they shift from diagnosing social exclusion to identifying the approaches that work best to reduce it" (Flecha, 2014).

The improvement of lives and societies underscores the definition of social impact, which differs regarding the concepts of scientific and political impact. In an accurate review of the literature on the evaluation of impacts of research in the social sciences and humanities, Reale et al. (2017) related scientific impact to the capacity to found new schools of thought and influence future research, and they related political impact to the use of scientific knowledge by decision makers and/or social actors as the basis for policies and/or action (p. 300). Impact is also connected to broader societal goals, aiming at the improvement of the living conditions of individuals. Flecha defined social impact as the improvement of society and citizens in relation to their own goals, democratically settled as in the United Nations Sustainable Development Goals, for instance (European Commission, 2018).

On the basis of an extensive literature review and lessons learned from practices worldwide, Flecha articulated a set of quantitative and qualitative indicators, data sources and methodologies to measure social impact achievement in the short, medium, and long terms, drawing on the following key impact pathways: achieving R&I missions, addressing global challenges and engaging EU citizens. Flecha (2000) claimed that "social impact measurement will benefit from databases and repositories that collect evidence of social impact, which will play a similar role as the databases of scientific impact" (p. 56). Repositories and databases displaying evidence of social impact have emerged in recent years, including the Social Impact Open Repository (SIOR), the

first one worldwide to store evidence of social impacts in all scientific fields on a free basis (Flecha et al., 2015). That SIOR is currently linked to Wikipedia and ORCID, two major international databases incorporating (and disseminating) scientific knowledge, is an indication of the growing importance that social impact has worldwide. SIOR (with Wikipedia and ORCID) includes a set of indicators to calculate the social impact of research projects. The definition of indicators is related to advancements in the development of methodologies to measure the impact of research and the assessment of the relevance of research priorities and topics for citizenship (European Commission, 2017).

The methodologies addressed to measure the impact of research activity have increased worldwide, but evaluation prevails in terms of scientific impact (Ravenscroft et al., 2017). However, the methods for assessing social impact are a major concern across scientific societies, funding research agencies, universities, etc. Most of the efforts to advance knowledge in this field, particularly in the social sciences and humanities, can be found in Europe (e.g., Framework Programme of the European Commission, Research Excellence Framework in the United Kingdom), North America (e.g., National Science Foundation), and the BRICS countries (e.g., Financer of Studies and Projects in Brazil, Department of Science and Technology in India). In the European context, it is important to emphasize the contributions led by the European Commission through the appointment in 2016 of the Expert Group on evaluation methodologies for the interim and ex-post evaluations of Horizon 2020, chaired by Flecha, and the subsequent publication of the report entitled "Applying relevance-assessing methodologies to Horizon 2020" (European Commission, 2017), which developed four methodologies to assess the relevance of European funding in framework programs: expert exploratory approaches using computer-based content analysis; expert exploratory approaches using human content analysis; text mining approaches, and social media approaches (top-down and bottom-up). This approach to measuring the social impact of research relies on the involvement of citizenship within the process of creating the criteria to define social impact. Flecha and his team (European Commission, 2017) drew on communicative methodology to create inclusive dialogic spaces for discussion, which is a remarkable contribution to the field of research assessment in the social sciences and humanities (including psychology). The guiding questions for the development of the four aforementioned methodologies were based on the institutional perspective, the citizen's perspective, and the scientific and technological perspectives. With regard to the citizen's perspective the question underlying the analysis was whether Horizon 2020 was in line with the needs of EU citizens.

The citizen's perspective sets peoples' needs and voices at the core of the dialogue between science and society. In psychology, similar to other fields in the social sciences and humanities, we can find similar trends in engaging target populations within the process of research [design, interpretation of the results, and/or validation and reliability (Radstake et al., 2009; Davies et al., 2008)]. These studies look forward advancing toward a more responsible interaction of psychology with society,

including dialogue with vulnerable populations, for instance, indigenous people (Davidson et al., 2000), or patients with acute decompensation of psychiatric pathology (Moreno-Poyato et al., 2019). Furthermore, Bromme and Goldman (2014) explored the public understanding of science, analyzing the way in which people make decisions linked to psychology without a deep comprehension of research. In a similar vein, the research program *Science with and for Society* (Swafs) of the European Commission includes projects attempting to bridge the gap between the scientific community and society at large, with the presence of psychological research in case studies selected in the Ex-post Evaluation of Science in Society in FP7 (European Commission, 2015).

This international trend of including people's voices (demands, needs, etc.) within the process of research assessment (and the design of new research framework programs) tends to be built from top-down approaches and therefore from the researcher's point of view, instead of citizens' views (bottom-up) (Rau et al., 2018). Complementary to the use of top-down approaches, the methodologies linked to bottom-up could contribute to articulating a comprehensive understanding of the social impact of research in psychology. For instance, the use of methodologies to assess social impact in social media capture citizens' opinions about the improvement of daily lives after the implementation of research (Cabré-Olivé et al., 2017; Pulido et al., 2018). In the light of this relationship, the CM becomes very useful as a methodological approach that include people's voices from a bottom-up approach (Gómez, 2015).

In this article, we discuss how using the communicative methodological approach to research conducted in the field of psychology could reach remarkable levels of social impact. We aim to unpack how to achieve a social impact in psychological research through the CM. Communicative impact assessment of the research is used as a method to discuss the aforementioned goal. We first present the advancements in the social impact assessment of psychological research, including the methodologies used to evaluate programs, research projects, and evidence-based interventions in psychology research that have achieved impact. Then, we explain the theoretical underpinnings of the CM and the postulates linked to psychological research to clarify how can we use the CM approach as a methodological instrument to conduct the discussion. Then, we analyze communicative research in psychology in order to address the aims stated above. Finally, we present the article's conclusion and limitations to further explore the methodologies linked to the social impact of research in psychology.

THE COMMUNICATIVE METHODOLOGY AS A METHODOLOGICAL APPROACH TO ASSESS SOCIAL IMPACT IN PSYCHOLOGICAL RESEARCH

The CM is widely recognized as a useful methodology to achieve social impact through research since it allows for study not only of the exclusionary elements that reproduce

inequalities but also of those elements contributing to overcome them (European Commission, 2011; Gómez et al., 2011; Gómez, 2017; Díez-Palomar et al., 2018). It is implemented in diverse disciplines in the social sciences, including sociology (Flecha and Soler, 2014), gender studies (Puigvert, 2014), and physical education (Castanedo and Capllonch, 2018), among others. This methodology "implies a continuous and egalitarian dialogue among researchers and the people involved in the communities and realities being studied" (Gómez et al., 2011). The role of the researchers is to bring scientific knowledge to the discussion, while the subjects contribute with their knowledge from their *lifeworlds* [in Schütz's (1967) terms]. On the basis of this dialogical process, it is common for new understandings of social realities to flourish, informing potential answers to social problems. The dialogue and inclusion of people's voices throughout the research process create transformative synergies in the field of psychology, as reported by Racionero and Padrós (2010).

The CM draws on the ontological assumption that "reality" is somehow "communicative." That is, it is a human construction in which the meanings associated with "things" are built in a communicative manner through the interactions between individuals. In epistemological terms, the CM is dialogical in nature since the scientific statements employed in the discussion of the evidence are the result of a dialogue based on the intersubjectivity (Stolorow et al., 1994; Gómez et al., 2006) of the participants in the research. The social orientation of the CM is to transform the social context through communicative action (Habermas, 1984; Soler and Flecha, 2010), applying quantitative and qualitative techniques. The CM draws on seven postulates (Gómez et al., 2006, 2019):

- Universality of language and action;
- Individuals as transformative social agents;
- Communicative rationality;
- Common sense;
- Disappearance of the premise of an interpretative hierarchy;
- Equal epistemological levels; and
- Dialogic knowledge.

In this article, we use illustrative cases in psychological research to discuss how they have used communicative research methods to assess social impact. **Table 1** summarizes the underlying postulates to discuss the advancements in the impact assessment methods among the illustrative cases chosen. As far as we know, the CM in psychological research was used in these cases. Codes are aligned with the seven postulates of the CM, as explained above.

TOWARD THE IMPLEMENTATION OF THE COMMUNICATIVE METHODOLOGY WITH REGARD TO SOCIAL IMPACT

The CM includes in the research organization key procedures for the design, implementation, and analysis of data. The

Postulate	Definition	Code	Use in psychological research
Universality of language and action	Language and action are inherent capacities of all human beings (Habermas, 1984; Chomsky, 1996). There is no hierarchy between cultures, ages or genders to develop cognitive and communicative capacities that allow them to interpret the world.	ULA	This postulate implies that professionals in psychology, patients, therapists, counselors, caregivers, families of patients, patients' associations, and other members linked to psychology have the capacity to interact with others to express their views, including the evaluation of an intervention or program.
Individuals as transformative social agents	Individuals have the capacity to interpret the world and undertake actions addressed to its transformation and change.	ITA	Vygotsky (1978) argued that language is the symbolic tool that aids cognitive development, allowing individuals to interact toward change. In this vein, Bruner (2012) posited that transformation addresses human nature, instead of biological adaptation.
Communicative rationality	According to Habermas (1984): "the concept of communicative rationality has to be analyzed in connection with achieving understanding in language. The concept of reaching an understanding suggests a rationally motivated agreement among participants that is measured against criticizable validity claims" (p. 75).	CR	The postulate of communicative rationality in psychology suggests that researchers or other members enter into a scaffolding dialogue to improve the assessment processes and methods. The ultimate aim is to benefit the whole impact evaluation community.
Common sense	Individuals acquire diversity of knowledge and beliefs that influence their comprehension of the world and common sense (Schütz, 1967). This background influences the interpretation of reality, and the cultural contexts provide meaning to thoughts and actions (Rogoff, 2003).	CS	The link between the CM and social impact evaluation on the basis of the postulate of common sense includes open channels of dialogue and interactions that embrace different views and background knowledge of very diverse agents, from practitioners to researchers or patients.
Disappearance of the premise of an interpretative hierarchy	Beck addresses how the desmonopolization of experts' knowledge occurs in the context of a risk society, paying special attention to the role of reflexivity (Beck et al., 1994). In the analysis by Lash of Beck's conception of reflexivity, the author states that "reflexivity and modernity entail a growing freedom from and critique of expert-systems. Structural reflexivity thus involves freedom from the expert-systems of dominant science. Self-reflexivity involves a freedom from and critique of various psychotherapies. Reflexivity is based not in trust but in distrust of expert-systems" (Beck et al., 1994, p. 116).	DIH	The interpretations of academic and non-academic audiences have the same value. Therefore, in the evaluation of social impact framed by the CM, the best arguments from users or scientists can improve the assessment processes.
Equal epistemological level	Participants and researchers are at an equal epistemological level to understand the social reality and participate in a research process. The contributions that researchers and non-academic make to research are different since the knowledge that they have is also diverse. The knowledge coming from the individuals is experience and daily life learning, while researchers provide scientific knowledge.	EEL	The equal epistemological level of the CM implies a more precise analysis and understanding of psychological and social problems. In the field of social impact assessment in relation to this postulate, the evaluative arguments from non-academic audiences are equally valid and useful for developing and improving them.
Dialogic knowledge	The CM of research includes the objectivity and subjectivity perspectives to advance toward a dual perspective of the world that recognizes at the same level the structures (systems) and the life world. The intersubjective perspective underlines the interpretation of reality and generation of new knowledge, which are influenced by the people's environments and meanings of reality (Flecha, 2000; Mercer, 2000). The construction of evaluation knowledge is grounded in dialogue since individuals accumulate knowledge using dialogue (Howe and Abedin, 2013).	DK	Impact assessment methods linked to the CM can achieve more accurate results in the evaluation processes since dialogue includes diverse views, reflections, voices, needs, and perspectives from different agents.

communicative organization of research is a concrete methodological dimension that allows for social impact assessment on short-, medium-, and long-term bases. There are three actions related to the communicative organization of research that are particularly relevant in terms of social impact assessment: the creation of the Advisory Committee; the definition of working groups; and the planning of plenary meetings. These actions are foreseen since the beginning of a

research project, and they play the common role of following up the social impact of research results and guiding potential corrections during the research process. It is important to emphasize that egalitarian dialogue underpins the three actions and works as a cross-feature. The research team has the responsibility of ensuring that the functioning procedures and protocols of the Advisory Committee, working groups, and plenary meetings are transparent. Furthermore, there

are mechanisms to ensure that they can be improved during the research project, taking advantage of the contributions of the users' views. Diversity is crucial to developing these actions successfully.

Designing the Creation of the Advisory Committee

The Advisory Committee of a research project implies the creation of a group of individuals who represent the communities studied. For instance, if a study focuses on the psychological effects of consuming alcohol during adolescence, the Advisory Committee should include young people with this problem to better approach the reality and to attain understanding and potential solutions. These committees usually have two representatives of the study group who interact with researchers on the basis of an equalitarian dialogue, accomplishing the postulates of the CM. The representatives bring their knowledge to the research process, and they can review the research guides and reports, questionnaires for the fieldwork, and other materials. It is important to emphasize that they actively contribute to transforming and improving the initial situation of the vulnerable group. The role of the Advisory Committee in the evaluation process is crucial to achieving a social impact since it is composed of representatives of the study groups, and it can play a role in *ex ante*, *in itinere*, or *ex post* stages of research. The methodologies for collecting their views about social impact evaluation can be quantitative and qualitative.

Defining Working Groups

Science requires a research background from several fields to advance knowledge. Interdisciplinarity has grown worldwide, and it is common to collaborate between disciplines at the international, national, or regional level. In the case of the CM, research can include operational subgroups o focus on particular topics or tasks. For example, in a research project approaching the psychological impact of the use of technologies in adulthood, the working groups could include the fields of psychology, communication, sociology, and/or adult education. Each of the subgroups works fluently and can have diverse responsibilities during the research process. Volunteers who are experts in specific domains can participate in them. The Advisory Committee and coordination research team discuss the advancements and/or proposals of the working groups. The role of the working groups in the social impact assessment is mainly *in itinere* since they are operative mainly during the research process. The communication flow with the Advisory Committee is one of the most important aspects for reviewing and mitigating potential problems that can reduce social impact of research. As in the case of the Advisory Committee, the methods to capture insights regarding social impact evaluation can be quantitative and qualitative.

Planning Plenary Meetings

The plenary meetings include all research members in a forum that can be addressed in ways to achieve social impact, evaluate the utility of research methods or design dissemination strategies,

among other issues. The Advisory Committee receives the results of the plenary meetings to assess them and evaluate whether they require further improvements. Furthermore, at the end of the project the research team organizes a final conference addressed to stakeholders and end users. The aim is to engage all of the agents in a dialogue that includes the social impact assessment of the research results. In the case of psychological research, the final conference can have patients as speakers, presenting the benefits of a study together with researchers. Sometimes, these speakers are members of the Advisory Committee, and as occurs in the case of the working groups, the flow between the members of the plenary meetings and the Advisory Committee is a very relevant dimension of the communicative organization of research. The timing, planning, and flexibility of the organization of the plenary meetings depend on the identification of emerging needs during the research process.

ILLUSTRATIVE CASES OF THE CM USED IN PSYCHOLOGICAL RESEARCH ACHIEVING SOCIAL IMPACT

There are three moments at which social impact assessment occurs (*ex ante*, *in itinere*, and *ex post*), and the actions of the CM can play different roles in each of them. *Ex ante* evaluation of social impact is when potential (not real) social impact is evaluated, and it is the most challenging one. During the implementation of research, that is, *in itinere*, it is possible to identify possible mistakes with regard to social impact and to mitigate them. Once the research finishes, social impact evaluation can also be undertaken on an *ex post* basis. In this section, we illustrate through two selected cases (Denzin and Lincoln, 2011) how CM reaches remarkable levels of social impact in psychological research. These cases provide relevant details to inspire other researchers develop studies applying MC to achieve social impact in psychological research.

Illustrative Case 1: The CHIPE Project

The EU-funded research project "Children's Personal Epistemologies: Capitalizing Children's and Families' Knowledge in Schools Towards Effective Teaching and Learning" (García-Carrión, 2013-2015) provided relevant results for improving children's cognitive and social development, and the use of the CM was particularly important to evaluating the social impact *in itinere*. The project part of actions help citizens to succeed in education for subsequent access to the labor market and full participation in society. On the one hand, it focuses on a better understanding of the role of personal epistemology in schools that contributes to developing and consolidating innovative educational practices in education systems. On the other hand, the enhancement of effective teaching and learning in dialogic learning environments lays the foundation for providing people with more and better skills and competencies.

The researchers planned and designed the interventions in dialogue with the teachers, students, and family members from the beginning to the end of the project (codes *ULA* and *EEL*, **Table 1**). Furthermore, they were involved in regular meetings

conducted at the university, as well as in their homes and communities. Sharing these dialogues enabled the researchers to "find ways of producing meaningful, accessible, and evocative research to understand people's experience intersubjectively" (García-Carrión, 2015, p. 918). That illustrated the impact of CM drawing on the *DIH* postulate, in order to generate *dialogic knowledge* (**Table 1**). Ultimately, children engaged in higher order interactions (Hargreaves and García-Carrión, 2016) and developed solidarity-based relationships in classrooms where they felt valued and included (Villardón-Gallego et al., 2018). The implementation of the CM allowed for assessing the social impact during the whole research process, enabling improvements to expand it. This is also a remarkable example of how CM enables individuals to show their nature as transformative social agents (code *ITA*, **Table 1**).

The CM was used with different techniques, for instance, participant observations in the classrooms that evaluated successful educational performances, as well as interviews with students, families, teachers, and other community members. The use of those techniques are aligned with the CM assumptions summarized in **Table 1** (in particular, *CR*, *CS*, *DIH*, and *DK*). The research team participated actively in classroom activities. At the end of each session, the researcher discussed the observations with the teacher and the volunteers – whenever it was possible – to also include their perspectives and impressions; that is, the participants played an active part in the entire research process. The results of their participation and of being involved in the transformation and educational impact that the execution of Successful Educational Actions had for the students are evidenced through the project, families, and volunteers becoming active members of the school and taking responsibility for the children's education; for example, one of them played an active role as a governor as a direct result of participating in interactive groups after the research.

According to the European Commission summary publication of results, the "CHIPE outcomes included improved academic achievement, especially in economically deprived areas," and "The project team concluded that a pupil-focused dialogic environment improves academic achievement, produces complex linguistic constructs and encourages students to draw upon their knowledge. Furthermore, the technique was seen to produce discussion about moral, taboo and/or difficult topics, and yielded positive social relationships."

Illustrative Case 2: MEMO4LOVE Project

The incorporation of participants' voices throughout the process, which is characteristic of the CM, is innovative in psychological studies of memory since, in studies related to memory quality, it is common for participants to write their memories but exceptional that the participants themselves create a dialogue of their written memories. The written record of dialogue provides a finer interpretation of the interpretation itself. On the one hand, it allows the researcher to better understand the quality of memory, which means more details. On the other hand, the participant is more aware of the meaning and impact of the intervention in question.

The CM starts from the premise that participants in research are transforming agents since, through reflection, we produce our own practices, and we are able to intervene and transform social structures (**Table 1**). In this sense, MEMO4LOVE involved families, teachers, and students from the beginning of the research, providing contact with researchers through informative sessions, at which they could ask questions of the researchers. Similarly, following the CM, an advisory council was created with expert researchers who were not part of the research team, distinguished people at the international level of NGOs, and people from the administration and education fields, all of whom had participated since the beginning of the investigation.

In the project, questionnaires were designed that were validated by the adolescents themselves. That is, the principle of equal dialogue is present in all phases of the project. The project details that the relevance of the inclusion of the voices had two causes: first, because this interpretive approach is scarce in the area when assessing the impact of prevention programs; and second, because existing scales measuring gender-based violence victimization and gender violence attitudes do not contemplate the most common types of first sexual-affective relationships among adolescents, which are sporadic, and in which much violence occurs (Puigvert et al., 2019).

The project has been consolidated with the participants, results have been jointly developed, and proposals for interventions have been modeled. Similarly, the issue of consent in sex-affective relationships was incorporated into the project – a topic that was in the public debate – and due to the agents' concerns, it was decided to add this concept to the study. That is, the principles of the CM in allowing the addressing of social problems and detailing the transforming factors caused the topics addressed in the research to have very much in mind the social context of the moment, and together with the participants, they adapted to the new realities, as the MEMO4LOVE project also did. From active participation in the research, agents knew the actions and could disseminate them in their contexts. That is, there was greater dialogue and greater interpretation, creating a greater sense and meaning of research in their lives.

One of the results of this line of research was the contribution entitled "Reconstruction of Autobiographical Memories of Violent Sexual-Affective Relationships through Scientific Reading on Love. A Psycho-Educational Intervention to Prevent Gender Violence" (Racionero-Plaza et al., 2018). With regard to the CM, it is explained that, before participants were involved in the study, the researchers informed them about the research, and they completed written informed consent forms. Research participants had time to read the consent form and to ask questions of the researchers. Explanations were provided by the researchers when necessary. The information provided on the consent form explained the objective of the study, the voluntary nature of participation, the possibility of withdrawing from the study at any time, the procedure to collect the data, the materials and measures to be used, and the anonymity and privacy statements. Since the article describes the methodological perspective of the research, it allows for adapting the focus to the needs of the participants, as well as bringing research closer to social reality.

The reading of the book generated such an impact among the participants that, once they read the book and engaged in dialogic relationships with the researchers, they asked to hold a meeting to deepen their understanding of the topic. Following the principle of the CM of responding to the social needs that arose, a focus group was conducted at the same time, and to adapt the research to the needs of the participants, the ethical codes of the research are very present. The same article reflects how the participants reflected on the relationship with or without violence, and as a result of this dialogue, a participant decided to end a current relationship.

CONCLUSION

The aim of this article has been to provide an overview of the impact assessment methods in psychological research and the relevance that the CM has in this field.

The analysis demonstrates that, although scientific impact has played a key role in the impact assessment of psychological research, the concerns and contributions regarding how to measure social impact have increased over the years. To this end, the following points are crucial. First, it is important to consider the diversity of voices that can participate in impact evaluation processes, in an effort to advance toward the co-creation or co-production of psychological knowledge. Second, CM emerges as a useful methodology to contribute to social impact assessments in psychological research. Third, the underlying postulates and the concrete strategies of the CM create a research environment that facilitates the serving of society. The illustrative cases in psychological research provide evidence of the implementation of the CM in this field. Psychological research plays a crucial role in the improvement of societies, and the use of the CM has the potential to increase the social impact of psychology. In doing so, not only can the gap between science and society can be reduced, but it also is possible to open new horizons to achieve more and better psychological research that continues to improve people's lives.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

AUTHOR CONTRIBUTIONS

GR-S, JD-P, RC, and TM-F made substantial contributions to the conception of the work or the acquisition, analysis, or interpretation of the data for the work, drafted the work or revised it critically for important intellectual content, provided approval for publication of the content, and agreed to be accountable for all of the aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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How the Psychology of Education Contributes to Research With a Social Impact on the Education of Students With Special Needs: The Case of Successful Educational Actions

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One current challenge in the psychology of education is identifying the teaching strategies and learning contexts that best contribute to the learning of all students, especially those whose individual characteristics make their learning process more difficult, as is the case for students with special needs. One main theory in the psychology of education is the sociocultural approach to learning, which highlights the key role of interaction in children's learning. In the case of students with disabilities, this interactive understanding of learning is aligned with a social model of disability, which looks beyond individual students' limitations or potentialities and focuses on contextual aspects that can enhance their learning experience and results. In recent years, the interactive view of learning based on this theory has led to the development of educational actions, such as interactive groups and dialogic literary gatherings, that have improved the learning results of diverse children, including those with disabilities. The aim of this paper is to analyze the social impact achieved by a line of research that has explored the benefits of such successful educational actions for the education of students with special needs. National and European research projects based on the communicative methodology of research have been conducted. This methodology entails drawing on egalitarian dialogue with the end-users of research – including teachers, students with and without disabilities, students' relatives and other community members – to allow an intersubjective creation of knowledge that enables a deeper and more accurate understanding of the studied reality and its transformative potential. This line of research first allowed the identification of the benefits of interactive learning environments for students with disabilities educated in mainstream schools; later, it allowed the spreading of these actions to a greater number of mainstream schools; and more recently, it made it possible to transfer these actions to special schools and

use these actions to create shared learning spaces between mainstream and special schools. The improvement of the educational opportunities for a greater number and greater diversity of students with special needs evidences the social impact of research based on key contributions of the psychology of education.

INTRODUCTION

Access to mainstream, inclusive and quality education for children with disabilities has not yet been fully achieved. Children with disabilities are still being educated in special schools in most countries, with varying percentages depending on the country, and therefore these schools attend diverse special needs (World Health Organization, 2011). In addition, students with disabilities and special needs tend to leave school without adequate qualifications (European Agency for Special Needs and Inclusive Education, 2017). Therefore, the appropriate inclusion of children with disabilities into the general education system is part of the European Disability Strategy 2010–2020 (European Commission, 2010). In this context, one current challenge of the psychology of education is to identify the teaching strategies and learning contexts that best contribute to the education of students with special needs. In this endeavor, research in the psychology of education is focused on the strategies, actions and practices that enhance the learning of these students, taking into account their individual characteristics, however, importantly, research is also focused on the strategies, actions and programs that benefit the learning of all students, including those whose individual characteristics make the learning process more difficult, so that shared learning environments that promote successful learning for all can be created.

Instrumental learning, especially in regards to difficulties in reading and literacy, is one of the main concerns of research on the psychology of education (Lloyd et al., 2009; Alanazi, 2017; Alenizi, 2019; Auphan et al., 2019; Hughes et al., 2018). Numerous programs for improving reading and/or reading difficulty prevention have emerged from research on reading and literacy from the perspective of the psychology of education, and their impact on improving children's learning has been analyzed (Vellutino and Scanlon, 2002; Papadopoulos et al., 2004; Hatcher et al., 2006). There are also specific studies about reading and literacy programs and their success with students with special needs (Holliman and Hurry, 2013) and/or with students at risk for reading disabilities (Lovett et al., 2017). Strategies to promote the learning of mathematics in children with special educational needs and disabilities have also been studied (Pitchford et al., 2018), and programs based on these strategies have been developed (Montague et al., 2014).

Research has also explored the association between learning difficulties and behavior problems (Roberts et al., 2019), showing that lower academic achievement is a risk factor for developing behavior difficulties among students with special educational needs and disabilities (Oldfield et al., 2017). The study of the learning context and the school environment, which facilitates or hinders learning, has shown that the expectations from teachers and their attitudes toward children with special needs are some of the most influential elements (Anderson et al., 2014; Wilson et al., 2016; Bowles et al., 2018). Research has also found that teachers can have an important influence on the social acceptance of peers with special needs (Schwab et al., 2016), which is important because the social exclusion of children can affect their learning difficulties and behavior problems (Krull et al., 2018). The efficacy of peer network interventions for improving the social connections of students with severe disabilities has been highlighted (Asmus et al., 2017), and programs and educational actions based on peer interaction, such as cooperative learning (Velázquez Callado, 2012), have been developed to improve the school climate. Importantly, there are effective programs for improving peer acceptance and a positive coexistence related to curricular learning (Law et al., 2017; Vuorinen et al., 2019), which is a key issue in facilitating inclusive education.

This body of research on effective actions and programs to enhance the learning and inclusion of students with disabilities and special needs shows the capacity that research in the psychology of education has for improving the education of these students. It also shows the importance that the learning context has, regarding both instruction and social relations, on the academic and social performance of students with special needs. This resonates with the social model of disability, an approach that has been claimed, from the perspective of human rights, to shift the focus from non-disabled centrism and to transcend the traditional and individualistic perspective of disabilities to focus on the improvement of educational experiences for these students (Chun Sik Min, 2010; Park, 2015). This perspective assumes not only that children with disabilities should be included in mainstream education but also that inclusive education can be more effective (Lindsay, 2007). This interactive understanding of learning allows seeing beyond individual students' limitations or potentialities and focusing on contextual aspects that can enhance their learning experience and results (Goodley, 2001; Haegele and Hodge, 2016).

The classical psychology of education already emphasized the importance of the social context for children's learning. In particular, the sociocultural approach of learning developed by Vygotsky and Bruner highlighted the key role of interaction in children's learning and development. Both authors agreed that what a child learns has been shared with other persons first, emphasizing the social construction of knowledge. While Vygotsky (1980) stated that in children's development, higher psychological functions appear first on the interpsychological level and then on the intrapsychological level, Bruner (1996)

refers to a social moment where there is interaction and then an individual moment when interiorization occurs.

Bruner evolved from a more cognitivist perspective of learning centered on individuals' information processing (Bruner, 1973) to a more sociocultural and interactive perspective (Bruner, 1996) within the framework of which he conceptualized the idea of "scaffolding," which enables novice learning in interaction with an expert, and "subcommunities of mutual learners," where "learners help each other learn" and "scaffold for each other" (Bruner, 1996, p. 21). For Bruner, "It is principally through interacting with others that children find out what the culture is about and how it conceives of the world" (1996, p. 20); therefore, learning occurs through interaction within a community.

Vygotsky stated that learning precedes development, not the other way around, and he conceptualized the zone of proximal development (ZPD), which represents the opportunity that learning interactions with adults and more capable peers have to advance children's development (Vygotsky, 1980); beyond the actual level of development, the ZPD emphasizes the importance of interactions with others to solve problems and learn. He emphasized that this interaction is especially important for children with disabilities: "Precisely because retarded children, when left to themselves, will never achieve well elaborated forms of abstract thought, the school should make every effort to push them in that direction and to develop in them what is intrinsically lacking in their own development" (Vygotsky, 1980, p. 89). In this regard, he warned of the risks of working with children with disabilities from a perspective centered on biological processes and basic dysfunctions instead of working with higher psychological functions (Vygotsky, 2018). Vygotsky's focus on interaction provides new opportunities for learning and development for children with special needs to develop these higher psychological processes.

The sociocultural approach of learning developed by Vygotsky and Bruner has continued inspiring theory and research in the psychology of education to today. According to Dainez and Smolka (2014), Vygotsky's concept of compensation in relation to children with disabilities implies a social formation of mind and therefore the social responsibility of organizing an appropriate educational environment for these children. Vygotsky's approach has been taken into account in studies about how peer mediation increases learning, especially when peers have different cognitive levels (Tzuriel and Shamir, 2007), and research on children with disabilities, for instance, cerebral palsy, has been conducted based on Vygotsky's contributions and showed improvements in these children's spatial abilities, social interaction, autonomy, and participation in class activities (Akhutina et al., 2003; Heidrich and Bassani, 2012).

In recent years, the interactive view of learning has led to the development of educational actions that have improved the learning results of diverse children, including those with disabilities. INCLUD-ED (Flecha, 2006-2011) was an integrated project funded by the European Union under its 6th Framework Programme with the main objective of achieving both academic success and social cohesion for all children and communities in Europe, regardless of their socioeconomic status and/or ethnic background. INCLUD-ED identified successful

educational actions (SEAs), that is, actions that can improve school success and contribute to social cohesion in every context where they are implemented (Flecha, 2015). Some of the SEAs that have demonstrated improvements in reading, mathematics and peer relationships include interactive groups (IG) and dialogic literary gatherings (DLG). IG (Valls and Kyriakides, 2013) consists of organizing classrooms in small heterogeneous groups that work on instrumental learning activities drawing on mutual support and dynamized by adult volunteers from the community; DLG (Soler, 2015; Lopez de Aguileta, 2019) consists of reading and discussing classical works of literature based on the principles of dialogic learning, reaching deeper understanding of the texts as a result of sharing the participants' interpretations and meanings. In both actions, learning interactions, as the main tool to promote learning, are facilitated among diverse persons in accordance with the contributions of the sociocultural theory of learning. In this regard, previous research has identified that Vygotsky's and Bruner's contributions are at the basis of these SEAs (Elboj and Niemelä, 2010; Garcia et al., 2010).

MATERIALS AND METHODS

The objective of this paper is to analyze the social impact achieved by a line of research that has explored the benefits of SEAs on the improvement of the education of students with special needs. For this purpose, the following data collection methods were used. First, existing data from case studies conducted within the four projects that compose this line of research have been analyzed to identify the impact of SEAs on students with special needs. These projects studied the benefits of SEAs for diverse students at different specific levels (i.e., school and classroom organization, community participation, interactions). In this paper, we aim to go beyond these specific aspects to understand in a more integrated and comprehensive manner how these different levels contribute to the impact that SEAs have, specifically on students with special needs. Second, new data were collected through in-depth interviews with teachers involved in the implementation of these actions in their schools as a consequence of this line of research. These interviews allowed the analysis of the subsequent impacts achieved as a result of conducting research on this topic from the perspective of the agents involved in the implementation of the results of this line of research.

All participants (teachers, volunteers, families, and children) agreed to provide researchers access to relevant data for the purpose of the study. Prior to data collection, they were informed of the nature of the research, and written informed consent was obtained. In the case of minors, informed consent was obtained from their parents or guardians. All participants were informed that their participation was anonymous and voluntary and that data would be treated confidentially and used solely for research purposes. Ethical requirements were addressed following the Ethics Review Procedure established by the European Commission (2013) for EU research, the Data Protection Directive 95/46/EC and the Charter of Fundamental Rights of the European Union (2000/C 364/01). The study

was fully approved by the Ethics Board of the Community of Researchers on Excellence for All (CREA)[1].

Case Studies

The line of research that we analyze in terms of social impact is composed of four national and European research projects in which the authors have participated in the last 15 years. In these projects, a total of 36 case studies were conducted. Of these cases, 10 included data on the participation of students with special needs in SEAs (see **Table 1**), and these were analyzed for the purposes of this paper. These cases fulfilled two criteria: (1) the schools were implementing SEAs and (2) students with special needs participated in SEAs with their classmates. Overall, 60 data collection techniques were used in the 10 case studies. These included 36 interviews, 14 with class teachers (3 of them were also special education teachers), 4 with special education teachers, 3 with volunteers, 8 with students, and 7 with students' relatives; 13 focus groups, 5 with teachers, 8 with students, and 1 with students' relatives; and 10 observations, 9 in classrooms and 1 in a teachers' meeting (see more details in **Table 1**).

The different projects focused on different aspects of the SEAs and therefore entailed different layers of analysis throughout this line of research, which has allowed a comprehensive view of the benefits of SEAs for diverse students and specifically for students with special needs.

The doctoral project funded by the Catalan Government (Molina, 2003-2007) was the first research to specifically focus on the inclusion of students with special needs in SEAs, and particularly analyzed the type of classroom interactions that facilitate students' inclusion when classrooms are organized in IG. The project's main objective was to analyze the influence that students' participation in IG has on their educational inclusion. The main categories of analysis were *peer interactions* and *community participation* as components of IG and *learning, participation and social inclusion* as components of educational inclusion.

INCLUD-ED (Flecha, 2006-2011) aimed to identify educational actions that contributed to overcoming segregation and promoted the inclusion of all students in schools across Europe, with a special focus on vulnerable groups of students. INCLUD-ED clarified the distinction between mixture, streaming and inclusion (INCLUD-ED Consortium, 2009)

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[1] The Ethics Board was composed of Dr. Marta Soler (president), who has expertise in the evaluation of projects from the European Framework Programme of Research of the European Union and of European projects in the area of ethics; Dr. Teresa Sordé, who has expertise in the evaluation of projects from the European Framework Programme of Research and is researcher in the area of Roma studies; Dr. Patricia Melgar, a founding member of the Catalan Platform Against Gender Violence and a researcher in the area of gender and gender violence; Dr. Sandra Racionero, a former secretary and member of the Ethics Board at Loyola University Andalusia (2016-2018) and a review panel member for COST action proposals in the area of health; Dr. Cristina Pulido, an expert in data protection policies and child protection in research and communication and a researcher in communication studies; Dr. Oriol Ríos, a founding member of the "Men in Dialogue" association, a researcher in the area of masculinities, and the editor of "Masculinities and Social Change," a journal indexed in WoS and Scopus; and Dr. Esther Oliver, who has expertise in the evaluation of projects from the European Framework Programme of Research and is a researcher in the area of gender violence.

as different ways of organizing student diversity and human resources with different consequences on students; distinguished different forms of family and community participation; identified educative, decisive, and evaluative forms of participation as those that had more impact on students' success; and identified successful educational actions. The contribution of this project to this line of research was an analysis of SEAs at the level of school organization, resource management and community engagement. The main objective of the case studies within this project was to analyze components from educational practices that decrease the rates of school failure and those of the practices that increase them. The main categories of analysis were *inclusive practices* and *community participation*.

MIXSTRIN (Valls, 2008-2011), as a continuation of the INCLUD-ED research in the Spanish context, deepened the analysis of the different forms and consequences of mixture, streaming and inclusion from a mixed methods approach. Thus, this project focused on analyzing SEAs at the level of classroom organization. The main objective of the case studies was to identify how different ways of grouping students are related to students' learning results. The main categories of analysis were practices of *mixture, streaming,* and *inclusion*.

Finally, INTER-ACT (Garcia-Carrion, 2018-2020) analyzes how SEAs are being implemented with students with disabilities in both mainstream schools and special schools, with the aim of transferring these actions and their benefits to new schools. The project's focus of analysis is the interactions that occur in IG and DLG in both types of schools. The main objective of the case study conducted was to analyze in depth successful cases of schools implementing IG and DLG with students with disabilities to identify the best conditions for increasing the impact on the improvement of learning, development and relationships. The main categories of analysis were *characteristics of the interactive learning environment* and *improvements achieved*.

Within the different research projects, using the case study as a methodological approach has allowed understanding the reality of the object of study in context. Following Stake (2006), case studies were selected based on what information they could provide about the issue explored, in this case, the increase in the educational quality provided to students in SEAs, especially to those with special needs. In this regard, case studies were instrumental in providing insight into this issue. As a sum of individual research projects, the line of research presented here constitutes multicase research (Stake, 2006), where cases share similarities – e.g., data collection techniques, the population object of study and purpose – and allow understanding from the singularity of each case of the broader phenomenon that all of them are part of.

In-Depth Interviews

Five interviews were conducted with teachers who fulfilled two criteria: (1) they were implementing SEAs with their students, including students with special needs, and (2) they had started to implement these actions as a consequence of the research line on SEAs and special needs, that is, after becoming aware of the evidence obtained on the benefits of SEAs for these students. Two of the interviewees were teachers at one school where one

TABLE 1 | Summary of the data collection instruments and participants in the project case studies.

Case studies	Instruments	Projects and timing
5 case studies of students with special needs participating in interactive groups with typically developing peers in primary education. Special needs included cerebral palsy, global developmental delay, visual impairment, and dyslexia (Catalonia and the Basque Country, Spain).	– Interviews with class teachers (3), special education teachers (3), volunteers (3) – Focus groups with teachers (2), students (5) – Structured observations (5)	*Interactive groups: a practice of learning communities for the inclusion of students with disabilities.* Agency for Management of University and Research Grants of the Catalan Government. (2003-2007)
1 case study of 1 primary school implementing successful educational actions, with students with and without special needs, including cerebral palsy, sensory impairments, brain injury, developmental disharmony, eating disorders, depression, and ADHD (Catalonia, Spain).	– Interviews with students (5), students' relatives (5), class teachers (2), special education teachers (1) – Focus group with teachers (1) – Observations in classrooms (4), teachers' meetings (1)	*INCLUD-ED. Strategies for inclusion and social cohesion in Europe from education* European Commission, 6th Framework Programme. (2006-2011)
3 case studies of 1 primary school and 2 secondary schools implementing successful educational actions, with students with and without special needs (Castilla-La Mancha, Basque Country and Andalusia, Spain).	– Interviews with teachers (6), students (3), students' relatives (2) – Focus groups with teachers (1), students (1), relatives (1).	*MIXTRIN. Ways of grouping students together and how this is related to success at school: Mixture, Streaming and Inclusion.* R + D Plan. Spanish Ministry of Science. (2008-2011)
1 exploratory case study of a special school implementing successful educational actions for 2 years with students in primary and secondary education with disabilities including intellectual disability, autism spectrum disorder, and cerebral palsy (Valencian Community, Spain).	– Interviews with teachers (3) – Focus groups with teachers (1), students (2)	INTER-ACT. *Interactive learning environments for the inclusion of students with and without disabilities: improving learning, development and relationships.* R + D Plan. Spanish Ministry of Science. (2018-2020)

of the case studies was conducted while the other interviews were not related to the case studies. The interviews were conducted by one of the researchers at the end of the 2018–2019 school year, and at that time, the participants had been implementing SEAs for a period of 4–6 years (see **Table 2**). The interviews lasted between 20 and 55 min and were conducted at times and in places that were convenient for the participants. We introduced the interviews as follows: "In the last 15 years, a line of research has been conducted on the educational inclusion of students with special needs through SEAs. We are interested in gathering information on the social impact of this line of research." Sample questions were as follows: "Can you identify some of those impacts (e.g., improvements in the learning of students with special needs or improvements in the schools' approach to responding to students' diversity)?"; "How has the line of research led/contributed to such impacts?"; "Have these impacts been transferred to different contexts or students with different characteristics?"; and "Have the impacts been sustained over time?" All interviews were audio-recorded and transcribed verbatim for subsequent analysis.

Communicative Methodology

This line of research has been conducted based on the communicative methodology (Gómez et al., 2011). The data collection and analysis of the social impact achieved has also been conducted based on this methodology. The communicative methodology entails drawing on egalitarian dialogue with the end-users of the research – including teachers, students with and without disabilities, students' relatives and other community members – to allow an intersubjective creation of knowledge that enables a deeper and more accurate understanding of the studied reality and its transformative

potential (Gómez et al., 2012), therefore enabling greater social impact. Different studies have demonstrated the suitability of this methodology when researching vulnerable groups (Puigvert et al., 2012; Gómez et al., 2019), as well as the social impact that this methodology produces.

Following the communicative methodology, in this line of research, data collection techniques were aimed not only at gathering the individuals' experiences and perceptions but also to discussing these experiences and perceptions with them in light of previous scientific knowledge on the issue and with the purpose of identifying both the exclusionary and transformative components of the reality studied. While exclusionary components refer to the barriers

TABLE 2 | Profiles of the participants in the in-depth interviews.

Person[a]	Profile	Topic of the interview
Sandra	Principal of a mainstream school. 6 years implementing SEAs	Impact of the research on SEAs and special needs on students with special needs in mainstream schools and on the school's approach to educating special needs students.
Irene	Principal of a mainstream school. 6 years implementing SEAs	
Carmen	Teacher of a mainstream school. 6 years implementing SEAs	
Marta	Principal of a special school. 4 years implementing SEAs	Impact of the research on SEAs and students with special needs in special schools and on the school's approach to educating special needs students.
Ana	Teacher of a special school. 4 years implementing SEAs	

[a]*Real names have been changed to pseudonyms.*

encountered by certain persons or collectives, for instance, educational barriers encountered by persons with disabilities, transformative components are those elements that contribute to overcoming these barriers, for instance, certain types of classroom organization or learning interactions. The objective of the dialogues held with end-users and other stakeholders in the research process is to agree upon these exclusionary and transformative components, which strengthens the validity of the research results and its potential social impact.

Data Analysis

For this paper, the different case studies have been analyzed together to understand in an integrated manner how the different layers analyzed previously (school and classroom organization, community participation, interactions) contribute to the social impact of the implementation of SEAs with students with special needs. For this purpose, the existing data of the case studies were analyzed with a new set of categories that was created to examine this social impact. Taking into account that the main challenges in the education of children with special needs are their limited participation in normalized learning environments (World Health Organization, 2011), their lower educational levels achieved (European Agency for Special Needs and Inclusive Education, 2017) and their higher risk of being socially marginalized and bullied (UNESCO, 2017), the improvements in these domains constitute the social impact of the educational intervention aimed at students with special needs; therefore, the following were the basis for creating the categories for the analysis of the social impact of SEAs:

(1) Impact on students' participation: characteristics of the successful educational actions that enable the participation of students with special needs.
(2) Impact on the cognitive dimension: improvements achieved in instrumental learning and cognitive development.
(3) Impact on the socioemotional dimension: improvements achieved in social cohesion and emotional/affective development.

The newly conducted interviews on the social impact of the line of research were analyzed with categories that take into account the social impact criteria identified by IMPACT-EV (European Commission FP7, 2014-2017) and used in SIOR (Flecha et al., 2015) regarding improvements, sustainability and transference. The fourth category emerged inductively from the data:

(1) Impact on students with special needs: improvements and sustainability,
(2) Impact on schools: improvements and sustainability,
(3) Transference to new contexts, and
(4) Factors supporting social impact.

The themes present in the transcripts were coded by the researchers on a line-by-line basis. A deductive, flexible approach was used for the coding to identify subthemes within the categories. Categories of analysis were applied to the transcripts

by two independent coders to enhance the validity of the results. Consensus for the coding was achieved through discussion.

RESULTS

In the following, the social impact of the line of research is presented, which includes evidence on the benefits of SEAs for students with special needs and how such SEAs led to a new social impact on different schools, students, teachers and contexts. Three types of social impact are presented: (1) impact on students with special needs and their opportunities to participate, learn and have positive relationships in SEAs; (2) impact on schools' and teachers' approaches to meeting students' special needs; and (3) the replicability of SEAs to new types of educational contexts and student populations. The factors that have enabled the achievement of these impacts are also reported.

Social Impact 1: Enhanced Participation, Learning Opportunities, and Group Cohesion for Students With Special Needs in Successful Educational Actions

The Social Impact of SEAs

Previous analyses of the case studies showed that SEAs entail a more efficient organization of classrooms and schools, allowing a more inclusive education for a diverse student body, including students with special needs, who can benefit from enhanced access to the content of the general curriculum in a shared learning environment (Christou and Molina, 2009; Molina and Ríos, 2010). A key feature of the inclusive learning environments promoted in the SEAs is the diverse interactions promoted around learning among, on the one hand, students, as they are organized in heterogeneous groups and, on the other hand, relatives and other members of the community, who are welcome to participate in the students' learning activities. These interactions are key components of the SEAs that have created new learning opportunities for students with special needs in mainstream schools and, more recently, in special schools (García-Carrión et al., 2016, 2018).

The analysis of the social impact of SEAs on students with special needs shows positive impacts in terms of the participation, learning and social inclusion of these students. Regarding student participation, the supportive peer interactions promoted within the SEAs and the participation of volunteers from the community, who ensured that these supportive interactions were implemented and provided assistance themselves when necessary, facilitated normalized and active participation in learning activities and natural support within the student group, which progressively made specific, individualized support less necessary (Molina, 2003-2007). For this to occur, the case studies showed the importance of the activities that students worked on in the IG being the same for all of them and of students with special needs not being given different activities in any case. The same occurred with DLG: all students participating in the gathering read the same book. The analysis showed that

this was important because both IG and DLG work based on interactions and, if one student was given an activity or a book that was different than that of the other students, interaction of this student with the group would be easily broken. In some cases, adaptations were made regarding the way students accessed the material, interacted with it or produced an output or regarding the level of complexity required. However, the learning content was always the same to allow the maximum benefit from interaction and the highest possible level of attainment. Across the case studies, teachers reported that supportive interactions within heterogeneous groups in successful educational actions had been more effective than differentiated individual attention separated from the class, even in the cases when additional human resources were used. Therefore, SEAs have prevented reducing learning opportunities related to the segregation and individualization of educational measures often aimed at these students (Valls, 2008-2011; Flecha, 2015).

In terms of learning and cognitive development, the possibility of asking questions when necessary and constantly seeing and listening to peers working on the activity and talking about it helped students with special needs stay connected to the activity, understand it and do it (Molina, 2003-2007; Valls, 2008-2011). Learning progress was more evident in instrumental learning subjects (literacy, math), which are prioritized in IG and DLG. Specifically, due to the interactive and dialogical nature of both IG and DLG, communicative ability is one learning and development area in which students show a clear improvement. In this regard, for these children, DLG have meant the opportunity to broaden their vocabulary and gain a better understanding of the language structure, as they are able to listen more proficient children and adults, who also model language and help the students with special needs express themselves better (Garcia-Carrion, 2018-2020).

Regarding the social impact of SEAs on the social inclusion of students with special needs and group cohesion, it was observed that the participation of these students in regular class activities that IG and DLG facilitated contributed to considering these students as "one of the class" and not a "part-time student" who only shares part of their time and activities with their classmates. Beyond participation, SEAs gave students opportunities to interact with their peers and therefore to come to know better each other, ultimately building new friendships. Peer support and friendship that were learned in IG and DLG often extended beyond the class and beyond the context of school, creating new opportunities for both cognitive and social development, for instance, when students with special needs had the opportunity to share their doubts with their classmates when doing homework via telephone or social networks or to meet them at birthday parties (Valls, 2008-2011; Garcia-Carrion, 2018-2020).

Extending Improvements to More Schools and Students

The case studies showed ways in which the education of students with special needs improved in SEAs, as well as key components of these actions that explained the results. Both findings were crucial to extend these actions and their benefits to more children with special needs and thus for the social impact of the research.

The first time that primary schools were transformed into learning communities and implemented SEAs was in 1995 in Spain. There were five schools at that time. Ten years later, in 2005, there were 22 schools. After 10 more years, in 2015, the number reached 120 schools in different countries (Flecha, 2015). Today, 225 schools in Spain[2], 49 schools in other European countries[3], and 411 schools in Latin America[4], each with diverse populations, have become learning communities through the application of successful educational actions. These data show that the INCLUD-ED project (2006–2011) was a turning point in the spread of SEAs in schools. The spread of the project also meant that these actions could reach more diverse students with special needs. The applicability of the SEAs with these students was usually a topic of debate among the teachers that incorporated these actions in their schools. When the knowledge of the evidence provided by the line of research reached the new schools, both teachers and the rest of community became more confident when including students with disabilities in IG, DLG, and other shared learning activities in the school. The different teachers interviewed explained that the implementation of SEAs in their schools has increased over time and so has the participation of students with special needs, which reaches 100% in some cases. As one teacher explained, the participation in SEAs prevents the need for individual support outside the classroom: "Out of all the classes, there is not any child that gets out of the classroom [to receive individual support] when they work on SEAs" (Sandra). The implementation of SEAs with students with special needs – as well as with the general population of students – has not only been sustained but has increased, as, for teachers, it is an efficient way to respond to these – and other – students' needs:

In the school, almost all students with special needs participate in SEAs (.) From my experience I can tell you that I used to do an SEA session per week, then I did two, this year I have done three, and now I cannot imagine less than three, every time I need to do it more and more. (Carmen)

The benefits observed by research in the case studies then started to spread to more children in other schools. Two examples can illustrate these improvements. First, the case of a child with a severe neurological deficit, for whom participating in SEAs made it possible to transform the expectations that were imposed on his learning possibilities:

The neurologist said that he could not learn almost anything. literacy and all the learning, they saw it as impossible. but he has learnt to read (. . .) if we hadn't known about it, that evidence about interactions. . . Last year we did 6 sessions [of IG] per week, plus

DLG, we did as much as we could, and it is amazing what he has learnt. (Sandra)

Research has already shown that being able to participate and learn in IG and DLG changes the self-concept and learning expectations of the children with special needs as well as the concept and expectations their peers and adults have of them. In these interactive learning environments, students were often able to solve tasks that they could not solve alone or read books that could not read alone, going beyond teachers' and families' expectations for their learning (Flecha, 2015). When SEAs reached new schools and students, these higher expectations, which create new learning opportunities, were created there too.

The second example is of a child with Down syndrome who could benefit from a more normalized learning environment where he could make progress in both learning and group belonging; this shows how the benefits that research had identified in group cohesion were replicated in other cases like this:

We had another child with a disability who was very isolated from the group, he did not have an emotional bond either, and the attention he received was too individualized; with the special education teacher, the speech therapist, he did not feel he belonged to the group. And when we started implementing SEAs, work in IG, DLG, the group changed very much, (. . .) and the child, who had Down syndrome, started to belong to the group: worked on the same activities as the others, and the others counted on that child. It was a huge change. (. . .) We achieved a lot of things. (Carmen)

Both teachers, Sandra and Carmen, clearly attributed the improvements observed to the students' participation in IG and DLG. In some cases, looking for the participation of these children in SEAs has made teachers look for adaptations that enabled their participation. This was the case for a child in Irene's school. He had not developed oral language, which made it difficult to participate in DLG, but the teachers adapted the book to pictograms and facilitated him in using a tablet with the pictograms and synthesized voice software installed so that he could communicate in the group. This had several impacts: first, the child could follow the reading, think of an idea to share and structure the idea; second, he could share the idea with the group and contribute to the gathering; third, the other children could realize that their classmate wanted and was able to communicate with the others, and even "heard his voice" for the first time; fourth: new opportunities for communication and the sharing of knowledge, experiences and thoughts appeared in the group. These changes did not occur until the teachers considered how they could improve the child's participation in DLG, so it was the SEA that encouraged teachers to mobilize the resources that enabled the child's participation and made these changes possible.

Importantly, the improvements achieved have been sustained and even increased through time as the implementation of SEAs also increased. Awareness of improvements has spread in their communities and that has led, in some cases, to an increased demand to enroll students with special needs in these schools, as Sandra explains in the quote below; this is another way in which the participation and learning opportunities of students with special needs in SEAs have been enhanced:

More families are coming with children with special needs that attended other schools. (. . .) Here, in the town, all the families know each other. (. . .) They talk and explain their experiences. . . and therefore many are requesting a change of school. (Sandra)

Social Impact 2: Transforming Schools' Approaches to Meeting Students' Diversity in Terms of Special Needs

The education of students with special needs has changed not only because of increased opportunities to participate in SEAs but also because the dialogic, interactive and transformative approach behind the SEAs has been assumed by the teachers and the entire community to change the way they approach the education of these students at every moment – within and outside SEAs – now being more dialogic, interactive and transformative as well.

Before implementing SEAs, schools tended to respond to students' special needs through individual attention, often outside the classroom and based on low expectations; they understood the students' disabilities as an indicator of what the students could achieve. The participation of students with special needs in SEAs has meant a turning point in the schools' approach to diversity.

A Focus on Interactions to Enhance Students' Learning Opportunities

Knowing SEAs and their scientific and theoretical bases, especially the relevance of interactions for learning, has meant that teachers who have incorporated SEAs in their schools focus on the interactions they promote. In mainstream schools, the more diverse and rich interactions students found in SEAs was an element that convinced teachers to include the participation of students with special needs and to do the necessary material adaptations to allow that interaction. They could observe improvements in typically developing children, both in learning and coexistence, as a consequence of participating in SEAs, which also encouraged them to include students with special needs and extend these benefits to them, overcoming previous ideas about special education, as Irene explained:

We were intoxicated with the idea that [mainstream] students make progress, but those with special needs need different things, need that we adapt to their learning level. . . But we have advanced in inclusion as we have been implementing SEAs, because we realized that children with special needs can participate too, and interactions with peers are positive for them to progress, besides self-esteem, seeing they are capable, and that they can improve. (Irene)

In the context of special schools, interactions are also a topic of discussion now, which helps teachers focus on providing their students with the best learning environment possible. For the professionals working there, this has meant an opportunity to give their students richer learning opportunities within their segregated placement:

In our school program, we include what the students will learn, but we also consider and talk very much about the interactions they will have, which is a topic we had never discussed before knowing about SEAs. We focus on the type of interactions they have, if they

are quality interactions, if they can have more quality, how we can promote them through SEAs, IG, DLG. . . (Marta)

Evidence, the SEAs, which explain what is best for our students, give us confidence in our work. We know our way to advance in giving the best results to our students. Therefore, we think of interactions; since they are segregated, we consider which type of interactions we should offer to them. (Ana)

Development of Scientific Thinking About Education

Another consequence of being aware of the benefits of SEAs for students with special needs, as demonstrated by research, has been the development of a more scientific way of thinking among the teaching staff. The teachers interviewed, as well as other teachers in their schools, read scientific publications emerging from or related to this line of research and discussed them in dialogic pedagogical gatherings. This helped them become familiar with research and scientific evidence, and they now look for this evidence when they must make decisions on their students' education:

Now we say: "But is there evidence for it? Let's see who has written about that" (. . .) for instance, when we are working on autism, [we want to know] if what we implement is based on scientific evidence or not, and what the most recent research about autism says. It has emerged from having implemented evidence and talking about evidence. (Marta)

Once the teachers learned that there is scientific evidence behind the success achieved by SEAs, they looked for evidence-based actions, practices or programs in any aspect of their professional activity, which increased their chances of enhancing students' education, not only when the students participate in SEAs but at any moment they are at school. SEA participation therefore increases the potential social impact that other research in education and psychology of education can have, as these teachers look for the evidence of previous improvements achieved and reported by this research to transfer them to their own context and achieve similar improvements.

Changing Teachers' Minds and Talk About Students With Special Needs

In relation to the scientific view of education, teachers have changed the way they think and talk about their students, focusing not on the students' disabilities but on what the teachers can do to transform the educational context and improve the education of such students. These teachers do not ask whether students with special needs can participate in SEAs; they start from the premise they can, and they think on the way they can facilitate their students' participation through, for instance, necessary adaptations. These teachers believe that this way of thinking about their students has made them improve as teachers, as their professional performance is permeated by language of possibilities:

We realize that we have a different approach, I mean, [we think about] how are we going to include these students or how are we going to promote interactions with them. And we did not have this perspective before. As a school, having had scientific evidence

within reach made us improve our teaching practice, reconsider many things, and find meaning. (Marta)

At the personal level, we have improved our dialogues about what is best for our students. We are advancing in this direction, always putting the focus on the students, on what we will achieve, on the fact that this is the best for them. (Ana)

Rethinking and Reorganizing Specialized Support Within and Beyond SEAs

Implementing SEAs with students with special needs entailed rethinking the role of special education teachers, speech therapists and other specialized support. While these professionals used to work outside the class to provide individualized support to students with special needs, usually based on different curricular material of lower academic level, when SEAs started to be implemented, teachers agreed with these specialists that students with special needs would not leave the classroom. Instead, these professionals started to enter the classroom to support students in IG. When the class was not organized in IG, teachers kept the criteria of organizing heterogeneous groups of students to facilitate the inclusion of students with special needs, and specialists also provided support there. Speech therapists, who, in some cases, were more reluctant to change their role into a more inclusive role, also agreed to participate in SEAs by preparing activities for IG or supporting students in DLG.

One of the first things we were clear about was that these students would not leave the classroom and would be distributed within the classroom in heterogeneous groups, and at the same time, we started working in IG and DLG. (. . .) In my school, all of them used to leave the classroom and had different curricular materials. Objectives were set with very low expectations, low academic objectives, and then we engaged in debates and there were several changes. (. . .) On the one hand, the role of the speech therapist changed, and this was difficult to achieve because they felt they had lost their identity, their role, (. . .) but now we work and plan children's learning together. (Sandra)

In some cases, reading and discussing research publications, such as INCLUD-ED results (INCLUD-ED Consortium, 2009), helped in organizing students and supporting them in a more inclusive way when working in SEAs and beyond, which supported the decision to maintain students with special needs in the class when SEAs were implemented:

Little by little, we saw that all students improved, and we started to do pedagogic gatherings. For instance, I remember that we discussed INCLUD-ED "Actions for success in schools in Europe," and we emphasized the topic of groupings with the teaching staff because the special education teachers had the idea that they had to take the students with special needs out of the classroom. So, we agreed that when we worked in SEAs, these students would stay in the classroom so that they could participate in the same activities as everyone else. (Ines)

Higher Expectations and Enhanced Learning: Teachers Recovering Meaning in Their Profession

Being aware of SEAs and the improvements promoted and having the opportunity to discuss them and implement them in their

school facilitated teachers' enhanced belief about their students' potential and, at the same time, gave them the tools to make that potential real; as teachers' expectations were raised, students' performances also raised and even surpassing these expectations. This has had an impact on students but also teachers, as some of the teachers reported rediscovering meaning in their profession as a result of being better able to facilitate the learning of students with more difficulties:

I think that the teachers who implement SEAs with our students have found more meaning in teaching, because we see that they learn. We have had high expectations, and even with these high expectations, many times, they have surprised us. We've said "I never imagined it could but it happened", even if we always had high expectations. Sometimes, unintentionally, working with disabilities, we think, "well, we have high expectations, but we will get there one day", and we are already there. (Marta)

The higher expectations and the possibilities enabled by them has meant a shift, especially in the context of special education, where low expectations and low educational levels predominate, as Ana reflected:

I think that in special schools we can easily find the "happiness curriculum", that is to say, "poor kids, they have enough with their disability, instead of trying to learn more [let's make them happier]". I have worked in several special schools, and I always found colleagues with this attitude. Then, I think that implementing SEAs, and now with the line of research, I think we have realized that we have to change our minds, through dialogue: Why expect less? Let's go for high expectations, for the best of each student, and see what we can achieve. I think it has been something that has spread in the school, as a result of starting to work in this way with students and other colleagues seeing the results. (Ana)

Importantly, the higher expectations supported by the previous evidence of improvement achieved through SEAs have made it possible for teachers to take on challenges that they would not have taken on before. For instance, Carmen explained that once she learned about the SEAs and their impact at a conference, she decided to implement these actions with the most challenging group at her school. The groups with most challenging students are often those that teachers do not choose to work with and are assigned to the least experienced teachers or those who arrived most recently at the school; however, SEAs make teachers more confident in their ability to improve these students' educations and, as occurred in the case of Carmen, make them wish to teach precisely the most difficult groups because they know they can make a difference in the education of those students:

I could not understand how it was possible to respond to the diversity we had in the classrooms. I remember that when I arrived at the school I couldn't, I was overwhelmed, and I remember going at the international conference and seeing it crystal clear. I saw it so clear that I remember we had a class in the school with much diversity, a very special group, and I went to the principal's office and said, "I need to take this group and implement what I know, what the evidence says that works, to ascertain that it works, and to transform this group". (. . .) And the change was amazing. (. . .) Now I cannot see it in any other way, because now, I feel that any challenge I face, I will succeed. And now, I feel very much like taking

the group most in need, the most vulnerable one. For me, it has been awesome working like this. (Carmen)

Social Impact 3: From Mainstream to Special Education Settings: The Transference of SEAs

The expansion of SEAs to new schools has entailed SEAs reaching new educational contexts, some of which are specific contexts in special education. Reaching these new contexts has entailed the opportunity for more inclusive, quality education.

SEAs as a Way to Include Students Segregated in Special Education Classes in the Mainstream Class

As the teachers reported, the inclusion of all students with special needs in SEAs has sometimes been a process, especially when the school serves students with severe disabilities, which directly affects areas of curricular learning. Irene's school contains a specific classroom for students with language and communication disorders (a communication and language classroom) related to the autism spectrum disorder, which serves students from different municipalities. These students have little or no development of oral language, which makes it difficult for them to participate in actions such as IG and DLG, as such methods are based on dialogue and interaction. Teachers relied from the beginning on research evidence for including in SEAs other students with special needs who attended the mainstream classes. Subsequently, guided by the evidence of the improvements achieved with these students in the school, the students from the communication and language classroom also started to be included in the SEAs.

The students of mainstream classrooms started to participate first. (. . .) At the beginning, the students with autism, who had many difficulties, who could not speak, did not participate in SEAs; we had not thought about that yet. (. . .) We still had to break with the idea that we had to teach students with special needs outside the classroom. Then, when we started to include them in the classroom, especially by participating in SEAs, and we saw that the students with difficulties – but who could speak – improved, then we said, "And the other students? The most difficult ones? Let's see if it is possible". And it is possible. (Irene)

In this case, the teacher highlighted the importance of adapting some aspects of the development of the activity to facilitate the progressive participation of these students. In the case of students with autism and little language development, the readings for the DLG were prepared with pictograms so that the children could follow the story and express themselves. The teachers prepared the reading and the contribution for the gathering with their families ahead of time. In IG, the students started participating in only one activity, with additional support if necessary, and progressively participated in two or more activities of the IG session.

IG and DLG have made the participation of students who previously shared little learning time with their peers possible in the mainstream classroom, which means that SEAs have had an impact on their educational inclusion and learning opportunities. Furthermore, some of these students have left the communication

and language classroom and are now enrolled full time in the mainstream classroom. SEAs have helped to make the possibilities for these students to learn in mainstream inclusive settings more visible and, as a consequence, some students have left open places in the communication and language classroom that can be occupied by students who are now attending special schools. Therefore, in this case, SEAs not only promote the inclusion of students within that school but also open possibilities for more inclusive trajectories for students in other schools.

Pau is a child who came to the communication and language classroom as a child with autism. Today, after having worked with him in the mainstream classroom of peers of the same age, participating in SEAs with interactions has improved his performance at the social level, and now this child is in the mainstream classroom and has left an available place in the communication and language classroom for other children with language difficulties at special schools. That is, we have achieved students who were schooled in the communication and language classroom now being in the mainstream classroom. (Ines)

Transference of SEAs in Special Schools

In the context of Spain, where the research was conducted, 17% of students with special needs are enrolled in special schools (World Health Organization, 2011). According to national law[5], these are students with disabilities whose special educational needs cannot be met in mainstream schools, the most frequent types of disabilities including intellectual disabilities (36%), multiple disabilities (24%) and pervasive developmental disorder (19%)[6]. Some special schools concerned with providing the best education to their students have also wondered about the possibility of bringing to their schools the educational actions that transformed the education of students with disabilities in mainstream schools. Today, there are 4 special schools that implement SEAs. In Marta and Ana's school, when the teaching staff started to implement SEAs, no one there had previous experience with implementing SEAs in special schools, so they had to recreate the SEAs in the new context. To ensure proper implementation to achieve the benefits that had already been observed in mainstream schools, they implemented the SEAs progressively and assessed the ongoing results:

In our school, we started with one classroom, and little by little, the number of classrooms that implemented DLG increased. Today, not only has this implementation been sustained, but the number of participants has increased, both in DLG and IG. (...) The results are very positive, because in primary education, at the beginning, only one classroom participated and now 5 entire classrooms participate. (Ana)

The transference of SEAs in their special school was not only sustained but, in time, also increased: similarly to what occurred with mainstream schools, more SEAs have been implemented in more groups and with more diverse children: "We included

first children with more speech ability, and little by little we included students with less speech ability to see how we could manage to guarantee that all of them could participate in the SEA" (Marta). "Now, when you look at the timetable for the next school year, you can see that it is full of SEAs" (Ana). This extension in the implementation of SEAs in the school cannot be separated from the students' progress: it is the improvements such work has achieved that encourages teachers to extend IG and DLG to new groups, students and learning content.

In some cases, preparing the activity with the children ahead of time facilitated their incorporation into the SEA. According to the teachers, using such strategies has made it possible for approximately 80% of the students of preprimary and primary education to participate in IG, and approximately 40% of the students to participate in DLG. In this context of special education and with this group of students, SEAs have also demonstrated improved learning. Language is an area in which most of these students present difficulties, and it is the area of improvement that the teachers have highlighted most, along with an improved coexistence between students:

With the SEAs, new language structures appeared in the students that we never imagined before that they could develop, reasoning, argumentation, first with much help and modeling, but finally, it appeared spontaneously. Then, reading books, which we did not foresee either (...). Expanding their vocabulary. (...) With the SEAs they gain richer vocabulary too. (Marta)

The main results we have seen are improvements in language competence and the quality of their contributions, sentence structures of greater complexity, improvement in explaining their opinions, improved coherence of discourse, taking into account the topic of the debate. (...) Then, an increase in the number of participants in the DLG, better knowledge of the other participants, the creation of new bonds and friendships, and the reduction of coexistence problems. (Ana)

This evidence suggests that SEAs are not limited to a particular type of school or student population but can be effective with very different types of student diversity and educational contexts. According to the teachers, the research on SEAs and special needs had an influence on these improvements achieved in their school:

I think that we could not have achieved it if we would not have this line of research and impact. I mean, it has given us much robustness, a great deal of science to say, "Okay, it has been studied, it works," and this robustness helped us to transfer, sometimes we say "to recreate," the SEAs. (Marta)

Building Collaboration Between Special and Mainstream Schools

The replicability of SEAs in special schools was accompanied by the previously mentioned transformation of teachers' understanding of the education of students with special needs. The focus on learning interactions that both IG and DLG have led teachers in these schools not only to ensure maximum diversity in the interactions within the school by, for instance, grouping students with different disabilities and with different capabilities together, but also to look for interactions with

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[5] Ley Orgánica de Educación [Organic Law of Education] (LOE), of 2006, amended by the Ley Orgánica para la Mejora de la Calidad Educativa [Organic Law for the Improvement of Quality of Education] (LOMCE), of 2013.

[6] Spanish Ministry of Education and Vocational Training. Statistics on Education. School year 2017-2018. https://www.educacionyfp.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/2017-2018-rd.html

typically developing peers who are educated in mainstream schools. Sharing learning activities with these children in an inclusive learning context entailed new learning opportunities for the special school students in a more normalized environment that could eventually help them prepare for a transition from special education to combined (special-mainstream) education. As Ana explained, in her school, the idea of collaborating with mainstream schools emerged from the high expectations developed and the will to pursue more ambitious objectives for their students. Now, the teachers want to establish this beneficial experience as a regular collaboration and extend it from DLG to IG.

> Since we started to work with DLG with our students, we have seen that our objectives in DLG are changing, the same way they are progressing and improving, there is an evolution. They start to structure sentences, ask questions, talk about the topic; then, we see the need to look for higher expectations, that is, there is always a bit more. Then, we thought that as we wanted a bit more, and the ones who could provide it as role models were students of their same age. We wanted them to participate in DLG in the most normalized way possible. (...) When we did it with the [mainstream] school it was a spectacular experience, because new dialogues emerged, our students participated very much spontaneously. (...) Then, the need to create these DLG as something periodical and systematic for the next years emerged, starting with DLG, and then we will continue with IG. Each time a bit more, more inclusion, more interactions, more communication, and more learning. (Ana)

According to the teachers' experience, the students of both regular and mainstream schools benefited from this experience. The special education students could improve their language and academic learning and find new contexts where they could be accepted and respected, and the mainstream school students had the opportunity to learn more about people with disabilities, including their difficulties and capabilities and how to interact with them, which is learning for life. In one of the mainstream schools that had less experience in implementing DLG, students could even learn from the greater experience students from the special school had with DLG. For both groups of students, many of whom lived in the same town, this collaboration entailed the possibility of coming to know each other and creating bonds beyond the school context:

> For the children of the mainstream school, it has brought the opportunity to know students with disabilities and learn how to interact with them; for instance, they live in the same municipality, and maybe they met in the street and they did not interact, they did not know how to talk to each other. The gatherings are above all respect, humanity, a climate of total acceptance, that many times we do not find in society. And our students were able to demonstrate what they knew and had no problem raising their hands and sharing what they knew. Although they needed help, they asked questions to their peers at the mainstream school. I mean, their concerns, their language improvement, I think that apart from the academic and the language improvement, regarding human values it is helping both the mainstream and the special school. (Ana)

The fact that SEAs have been replicated in special schools and there are therefore mainstream and special schools that implement SEAs in the same geographical context has made these collaborations and new learning opportunities for both groups of students possible.

Reaching Other Educational Contexts in the Community

The research on SEAs and students with special needs has also had an impact in other places of the community beyond the school context. An illustrative example explained by Sandra is an association dedicated to people with disabilities that offers activities for children with disabilities. The fact that SEAs are open to the community facilitated the president of the association participating in IG in Sandra's school, showing how both learning and coexistence improve in IG. In addition, the mother of a child with special needs at Sandra's school is an active member of the association. These connections with members of this association have caused a change in the association, which is now more oriented toward promoting academic learning among the children and is more impregnated with high expectations, creating new contexts where learning and inclusion can be enhanced:

> This summer, the association is promoting instrumental learning for the first time; they are doing homework, which they had done never before, and they are very satisfied. And also, the issue of the evidence (...) she told me the other day that a girl with autism had come, the family explained that she had behaviors such as pulling hair, pushing, and she told them, "Don't worry, we are changing it", and the mother was very happy, and she was happy too (...) They are learning to read and write since preprimary, and the families are really satisfied... This has been a big change, because they did not think like this before. (Sandra)

Factors Supporting Social Impact

The interviews held with teachers about the impacts achieved have also shown several factors that contributed to these impacts, mainly via supporting the sustainability and replicability of the actions and the promoted improvements. It is important to summarize these factors here because taking them into account may contribute to an enhanced social impact of the research.

Teachers' Permanent Training Based on Scientific Evidence

As mentioned above, a more scientific approach to education was one of the impacts achieved for teachers. This was translated into the practice of regularly reading scientific texts related to their profession, which, in turn, reinforced this scientific view. Some schools organized seminars in which the teaching staff debated these texts, and in other cases, teachers attended seminars or meetings with teachers from other schools. The texts that they read and debated included articles, books and reports resulting from this line of research and other scientific publications related to teaching and learning that could help them solve problems they encountered and improve their practice. According to the interviewed teachers, sharing this space of learning and debate has been a help in replicating the SEAs in new classes or schools and in bringing the SEAs to more students; it has also been a source of sustainability when the

barriers found in the implementation of SEAs were shared and discussed:

> Training is essential. As we read about the evidence and debated it, if we had a preconceived idea, we said, "No, this is true, it is as you say, this girl may be able to do that". I think that training has been and still is essential for all this, because theory gives us a clue to put everything into practice. If we know the theory, then it is very easy. (...) We have to know first, we have to learn first. And then we see it very clearly. (Carmen)

Gaining confidence and feeling empowered to implement the actions that are supported by research has also been an effect of the teachers having access to scientific knowledge:

> We emphasized very much that evidence says that children improve more with inclusion, that is, not taking them out of the classroom, if you do not group them separately... Then, you get empowered, and say, "This is really what we have to do; every time, if we could do that it would be ideal". Then, you change your outlook a bit. (...) Because we came from another paradigm, we had another trajectory, and with the training we started to see things more clearly; we got empowered and said, "It has to be done this way, it is demonstrated that it is best, so let's do it". (Ines)

Teamwork and Networks of Support

Another facilitator of social impact highlighted by the teachers was the availability of a network of support among teachers and schools. The previously mentioned seminars are one place where some of these networks have been created. The previous experiences of other colleagues that are shared in these spaces have encouraged new teachers to implement SEAs and have also helped solve doubts and difficulties in the implementation of SEAs. These networks of support have made possible, for instance, collaborations between special and mainstream schools in sharing SEAs. Irene explained that this was an important factor in her case; the same way that special schools took the progress achieved in mainstream schools as a reference to replicate the SEAs in their context, Irene's school took one special school as evidence of the possibilities for successfully implementing SEAs in her school:

> The more positive, inclusive, rich, high expectations and interactions you have in more contexts with other professionals that are implementing SEAs in other schools and see that it is possible, that a special school is doing it and it is possible, and they improve... the more things like that you listen to throughout your professional life, and the more people you can share these spaces with, the more you empower yourself... and finally, you do it, because you believe it is true that it is possible and that you are going to make it. (Irene)

Recording Results and Being Aware of the Improvements Achieved

For teachers, it was also important to have a record of the students' results related to the SEAs so that they could register progress and be fully aware of the improvements achieved. Some schools had more systematic records than others, and some of them were aware that they had to improve their recordkeeping, but all of them agreed on the importance of gathering this

evidence, as it demonstrates teachers they are doing well and encourages the continuance of their work:

> Results, because in daily life the inertia doesn't let us see progress, but it is very important to talk about it with colleagues: "Look at what we have achieved," "Look, this child could not do that and now he does". When we verbalize it, we realize all we are achieving. (Carmen)

Sharing the Impact of SEAs With Families

When schools share the development and outcomes of SEAs not only among teachers but also with students' families, the latter also become active supporters of these actions. This information can be shared in the schools' seminars or assemblies that are open to families, in individual meetings with the family of a particular student, or while developing the SEAs if families participate, for example, as volunteers in IG. This information has led, for instance, to families not authorizing their children with special needs to receive support outside the classroom – because they know their children can progress further by participating in SEAs in their classroom—or agreeing that their child can stay in the school one more year so as to continue taking advantage of learning in SEAs.

DISCUSSION

> Within education, I think that special education is the great forgotten area, and, with this research, I really believe that now is our time. I think that special education is starting to be visible and show that with them [students with disabilities], it is also possible. (...) I believe that it is our moment and I hope that this research helps all students and that finally, inclusion becomes a reality that we achieve between all. (Ana, teacher at a special school)

Ana, with these words, tried to synthesize what the actual and potential social impact of the line of research was for teachers such as her. Research conducted on SEAs and students with disabilities and other special educational needs allowed the identification of benefits that these educational actions entailed for these children in the schools that were already implementing them. Subsequently, this evidence has reached new schools, bringing these improvements to new student populations and improving teachers' professional experiences, thus achieving a social impact that, as Ana said, is contributing to transforming special education.

This line of research is an example of the body of research in the psychology of education that studies several aspects of the education of students with special needs, creating interventions that improve their learning and coexistence with peers or bringing forth scientific evidence on which effective educational programs can be based. As interaction and dialogue are key components of SEAs, we argue that the evidence collected on the impact of SEAs on students with special needs shows the transformative potential of the sociocultural approach of learning (Vygotsky, 1980; Bruner, 1996) for the education of these students. Because evidence on the social impact of this line of research was obtained from a limited number of interviews, conclusions must be

cautiously made. However, there is evidence supporting the achievement of social impact. The criteria defined by SIOR[7], the Social Impact Open Repository that aims at monitoring, evaluating and improving the impact of research, enables the analysis of how social impact is approached, as well as the limitations that can be addressed to further enhance social impact achievements.

(1) *Connection of research with the social priority goals of sustainable development.* The line of research responds to *UN Sustainable Development Goal 4 on Quality Education:* Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Therefore, the research is aligned with one of the social priorities.

(2) *Percentage of improvement achieved regarding the departure situation.* The interviews conducted allowed the collection of evidence on the improvements achieved in terms of the students' learning and improved coexistence and the schools' more efficient response to student diversity. However, an accurate and quantified record of the academic and/or social improvements of these students has not been systematized. Therefore, evidence of the social impact would be enhanced with a more systematic procedure to collect and quantify the improvements.

(3) *Transferability of the impact: the actions based on the project's results have been successfully applied in more than one context.* Transferability has been achieved in different directions: first, replicating the SEAs in mainstream schools with the participation of students with special needs in these schools; second, recreating the SEAs in special schools, thus transferring the actions to a new student population; and third, transferring the SEAs to other out-of-school educational contexts in the community.

(4) *Scientific, political, and social dissemination.* The benefits of SEAs for students with disabilities and other special needs have been disseminated through scientific publications, conferences and training for teachers and schools. Importantly, this dissemination has been a key component for the transferability and sustainability of the impact, according to the evidence collected and is associated with the scientific training of teachers, who used such publications to learn from and discuss the evidence and transform their own professional practice.

(5) *Sustainability of the impact achieved.* According to the evidence collected, in all the new contexts and new populations of students where SEAs have been transferred, the intensity of the implementation has not only been sustained but also increased, and the same occurred with the improvements achieved. Although an accurate quantification of the improvement is not yet available, the experience of the sample of teachers who were involved in the transference of the SEAs and still implement them in their own context points in this direction.

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[7]https://sior.ub.edu/indicators

Taking this into account, further research on SEAs and students with special needs with social impact could cover four aspects. First, to analyze how SEAs put into practice contributions from theory in the psychology of education to support the learning and development of children with special needs more in depth. Second, to define a procedure to collect and quantify the improvements achieved by the students as a result of participating in SEAs. The INTER-ACT project, which is currently advancing this line of research, will contribute to quantifying this improvement and strengthening the evidence of the research's social impact. Third, to support the transference of the SEAs and the improvements associated with them to new schools. Additional impact is foreseen in this regard, as the ongoing INTER-ACT project will transfer SEAs to new mainstream and special schools and will add further evidence on the key elements for the transferability of SEAs to new contexts with students with special needs and those without. Finally, to extend the interactive understanding of learning and development beyond schools and the teaching and learning contexts, reaching other related professionals and activities, such as evaluation, attention and counseling related to special needs; these areas of intervention are still very much impregnated with an individualistic perspective more aligned with the medical model than with the social model of disability, and students and schools would benefit from coordinated work based on the evidence of the benefits of the interactive approach of SEAs.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The study was fully approved by the Ethics Board of the Community of Researchers on Excellence for All (CREA). The participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

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Becoming in STEM: Developing a Culture of Criticality in the Space Between Person and Institution

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In this article we present a study of a youth, Fall, tracing her STEM engagement from grade 5 through high school, across STEM spaces both formal and informal, utilizing critical, longitudinal ethnography. Drawing from social practice and critical justice theories, we present how Fall's STEM history-in-person collided with the history-in-institutional-struggles, as a White girl growing up in multi-generational poverty who eagerly engaged in what she calls "science that matters." We present how Fall enacted commitments-in-practice, in conjunction with three related, local contentious practices, leading to the emergence of a culture of criticality. We theorize how the space between person and institution became and functioned as an incubating space, supporting Fall's authoring of a new chapter in her STEM history-in-person.

Keywords: critical longitudinal ethnography, criticality, history-in-person, STEM, social practice theories, justice

INTRODUCTION

No one ever really thought I could do much, and so I don't think people care whether I become a hairdresser or not. But, I'm good at it. I do my friends' hair all of the time. I can do white hair and black hair. I have been in (my STEM community club) longer than anyone! I have been in it since 5th grade. That is like six years. I could do things there. I made a PSA (public service announcement) about water efficiency with my friends. I showed it at school, and people saw what I knew. I taught them something. It got me thinking more about how I want to be a green hairdresser. Fall[1], High School Sophomore

At the time we conducted this study, Fall was a White girl growing up in multi-generational poverty in an economically challenged Midwestern city. She has attended public schools which serve significant populations living in poverty, replete with overcrowded classrooms, high teacher turnover, out-of-field teaching, and limited STEM resources. Fall also struggled academically in school, repeating levels in elementary school twice, making her 2 years older than her peers by the time she graduated high school. Her sixth grade teacher described her as a "struggling reader and writer." Her seventh grade teacher labeled her "a kind but quiet girl in the background." When she was 14, her mother told us that "if she would just get D's, I would be happy."

Despite these circumstances, Fall authored a STEM-empowered life against the dominant sociohistorical narrative in American society. As the opening quote indicates, Fall noticed that the adults in her life "don't care" *what* or *how* she becomes in life. Yet, Fall sees her experiences as valuable and worthy in both STEM and the world. We followed Fall for 7 years, from 5th grade through high school, in school, afterschool, and amongst family and friends. During this time, Fall shifted from wanting to be a hair designer (5th grade) to owning a "green" (environmentally

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[1] All proper names in this manuscript are pseudonyms. Youth pseudonyms were self-selected.

friendly) hair salon (8th grade), to considering geological engineering as a possible career (10th grade). During high school, she spent 2 to 3 days after school, nearly every week, in a makerspace housed in her local community center, building things to solve people's problems and mentoring newcomers to the space. During this time, Fall built a Little Free STEM Library, led workshops on energy efficiency tools, authored educational movies for her community on sustainability, and served as the chief blogger for her afterschool STEM club.

Fall's journey has been complex and riddled with tension. She not only bumped up against the structural barriers imposed by schooling and society as a girl growing up in poverty, but also, enacted a way of becoming in STEM that differed from legitimized forms of participation. She cultivated her expertise among friends, and in her afterschool club, as she also built a strong alliance amongst her Black friends. She also sought to use her knowledge and experience to engage with her local communities on addressing shared challenges and needs. This stands in contrast to cultivating an individualistic school knowledge for the purposes of good grades and college trajectories. For Fall, becoming in STEM is less an individual – "I" – process of becoming in relation to the other, but rather a humanizing, critical and collective endeavor – "I/We" (Urrieta, 2019) – to transform the practice of becoming for herself and her community. Becoming in STEM was also Fall's primary experience of authoring a personally meaningful "I/We" collective in her life thus far.

We are interested in Fall's engagement with others and STEM over time and space as central to learning, and how this has shaped her becoming. The overarching question that guides this manuscript is: What are the interactional forces operating across space and time that influence Fall's *becoming* in STEM, as a White girl, growing up in multi-generational poverty in a Midwestern city? How do the locally contentious practices Fall authors support transformative learning?

Using Holland and Lave (2009) two forms of history – "history-in-person" and "history-in-institutionalized struggles" – we examined several pivotal events, and the micro-dynamics at play, identified by Fall with respect to becoming in STEM for herself and her community. We sought to make sense of the ways in which Fall's STEM experiences were carried out in local practice but also enacted against the broader background of sociocultural/historical narratives. In this process we traced Fall's *core commitment-in-practice* in STEM and Community. We also examined how this core commitment-in-practice led to *conflict* and new forms of "contentious local practice" as her commitment-in-practice, in its varying forms, pushed back against particular local, historical and sociocultural contexts.

BECOMING IN PRACTICE

A Critical Justice Stance

Recent work on studies of girls' identities and learning in STEM in low-income communities points to the importance of the intersecting role of structural and curricular inequalities in spaces intended to increase access and opportunities such as STEM

schools (e.g., Weis et al., 2015). However, few studies in STEM education examine deeply how these intersectional geometries of power shape opportunities to learn and become. The 2018 science and engineering indicators reported by the National Science Board (2018) showed that women made up 28% of employees in science and engineering occupations, with White women employees at 64.9% of that total. However, the study does not offer an intersectional look at White women, with the socio-economic backgrounds of the women unreported. We thus sought to advance what we know by delving into the experiences of a White girl growing up in multi-generational poverty.

Our study is grounded in a critical justice view of equity (Balibar et al., 2012) and a social practice view of learning (Holland et al., 1998; Holland and Lave, 2009). Equity, in STEM education has centered on the importance of access and opportunity to high quality instruction and to discipline-specific activities. Attention has also been paid to how such learning opportunities mediate outcomes, defined through the development of disciplinary knowledge and practice, identities, interest, and future pursuits (Horn, 2018).

However, how children experience these opportunities, are mediated by forms of structural inequalities perpetuated through systemic sexism, racism, and classism. Such structural inequities are experienced daily, in local practice, through traditional patterns of participation in science (or any discipline) to expand upon who and what areas of expertise are recognized and valued, disrupting participation boundaries and knowledge hierarchies (Jurow and Shea, 2015). A critical justice stance on equity challenges the conceptual and political underpinnings of equity in science education by putting attention on the need to re-shift relations of power and position within science education and its intersections with historicized injustice (Bang et al., 2016). This stance foregrounds attention to making visible and upending injustices located in current practice but grounded in historical, social, and geographic histories (Balibar et al., 2012).

Social Practice Theory: Becoming in Practice

Social practice theory frames becoming through one's on-going social existence in the world. As people move through time and space they are exposed to, positioned by, and react to a range of people as well as institutional and cultural structures and forces (Holland et al., 1998). Quite different from the psychological framing of identity as an internal attribute, social practice theory frames becoming through how people come to be in social context; where people figure themselves and are figured by others as they "adapt to author themselves in the moment" (Holland and Lave, 2009, p. 4).

We chose this theory due to our interest in "understanding and explaining real, everyday, situated activity in its concrete, material detail" (Roth, 2006, p. 608), especially in light of how these processes transpire through the historical, cultural practices of everyday life. Who youth are and seek to become are influenced both by how they are positioned by others as well as how they position themselves within the valued cultural practices of their communities (Allen and Eisenhart, 2017). By

emphasizing the historical production of persons-in-practice, social practice theory calls attention to the "differences among participants" and "the ongoing struggles that develop across activities around those differences" (Holland and Lave, 2009, p. 5). A person's becoming, made visible through interactions and taking up new practices, is not separate from their personal histories nor broader sociohistorical narratives.

Urrieta and Noblit (2018) point out that processes of becoming are always about power because they are about who counts as somebody who belongs. Power-mediated relationships and interactions shape youth's becoming in powerful ways. Fall was not only labeled a "struggling reader" but also placed in special education courses where her access to STEM was truncated. Her progress was measured by her disabilities (e.g., struggling reader). Opportunities to be recognized for her STEM curiosity and activism were structurally limited for her, at least in school settings.

Fall's opening quote illustrates how she encountered but also became a part of the powerful narratives, traditions, and histories that demarcate what it means to be a particular kind of person in science. Fall, like all learners, encountered broader disciplinary, school-based and cultural narratives around what it means to be scientific, a good student, or a girl growing up in poverty. These broader narratives play out through the relationships and activities that students engage in at any given moment.

Acts of becoming are thus always tension-filled, for how one is recognized within communities of practice is an artifact of the power dynamics that operate there (Nasir, 2011). The processes of becoming, which always take place in-the-moment, in local activity, also happens within and against local norms and expectations and as a part of longer standing sociocultural and historical narratives. Social practice theory provides a lens to examine the ongoing struggle between personal and historical narratives influencing participation with science by integrating "the study of persons, local practice and long term historically institutionalized struggles" (Holland and Lave, 2009, p. 1). The relations between history-in-person and history-in-institutionalized struggles, erupt primarily because local practice(s) comes about in the encounters between "people as they address and respond to each other while enacting cultural activities under conditions of political-economic and cultural-historical conjecture" (p. 3). Local contentious practice can be thought of as the *critical stuff* of becoming.

Local Contentious Practice: Critical Justice and Becoming

Juxtaposing social practice theory with critical justice allows us to make sense of how two forms of history – "history-in-person" and "history-in-institutionalized struggle" (Holland and Lave, 2009) – yield pivotal interactional practices, and how the micro-dynamics at play, create (and foreclose) opportunities for transformational agency (Bang et al., 2016). Personal experiences carried out in local practice are enacted against the broader background of cultural and historical narratives. We want to delve into the kinds of contestations that make up local contentious practice in order to unpack how Fall's commitment-in-practice takes shape over

time, maintaining and transforming both person-in-history and enduring struggle. This approach "demands relentless attention to how material economic practices, power relations, and the production of meaning and difference constantly play upon one another" (Hart, 2002).

We see this in Fall's story as she encounters societal narratives about what it means to learn and do science as a young, female, from a low-income background juxtaposed with her personal narratives of doing science in and for her local community. This often plays out in struggles between the ways in which schools value Western ways of knowing and doing science and the cultural meaning making practices youth bring with them from personal experiences. The intersection of these histories impact conceptions of what it means to be scientific, who can do science and where science is meaningful.

The struggle between the two forms of history also influences individuals' actions in local practices. The institutional and personal narratives experienced or brought into the classroom hold specific meanings for the actors in this space. Holland and Lave (2001) argue "cultural genres" that "rule in social life" are:

associated with particular persons or groups of people identified in social space and historical time. Practices and discourses become markers of their owners and evoke their social image. They carry with them the aura or, to use more sensuous metaphors, the images and the odors of particular others, particular professions, particular social groups, particular individuals with which they are associated (p. 16).

In our work presented herein, we sought to make sense of the ways in which Fall's developing STEM knowledge and practice were carried out in local practice but also enacted against the broader background of cultural/historical narratives. We traced how Fall sought to take action with her developing science knowledge, and how she bridged or positioned it alongside or against community knowledge and practice. We also examined how these differing epistemological groundings, at times, gave way to conflict ("contentious local practice") as Fall pushed back against particular local, historical/sociocultural context.

METHOD

Critical, longitudinal, participatory ethnography was our selected methodology because of its explicit focus on participatory critique, transformation, and social justice. This hybrid form of ethnography is grounded in the idea that researchers and participants can use the tools of ethnography (embedding ourselves in context), to conduct empirical research in an unjust world in ways that examine and transform inequalities from multiple perspectives, leveraging both emic and etic perspectives (Trueba, 1999). The work is critical in the sense that we pay attention to and seek to challenge the powered interaction between actors and the social structures through which they act, given that these relationships are never neutral. Lastly, this work is participatory in the sense that the youth in our study were active contributors to the questions we asked, to the data we generated – in its forms and in the roles such data played – as well in the construction of the narratives we tell about the data.

We collaboratively decided with Fall to tell her story as a single case study in order to delve into how the local manifestations of intersectional geometries of power shape Fall's opportunities to learn and become. As noted in the introduction, Fall, a White girl, growing up in intergenerational poverty. When we first met her, she lived with her parents, and two siblings (an older sister and younger brother). Over the course the years we knew her, her father passed away unexpectedly, her brother moved to a state far away to re-start his life as openly gay, something he felt, and Fall concurred, was not permitted in his family, and Fall herself moved in with her best friend, who is Black when she became estranged from her mother. We mention that her best friend is Black, in part to note that part of Fall's experiences growing in a predominantly Black community shaped her most powerful social alliances. In a notably segregated city, this was not the norm.

The economic stressors on Fall throughout this time were profound, and took form in food insecurity and sometimes bullying for lacking things she could not afford (e.g., up-to-date stylish clothing and other material items). In tenth grade, she began working at a fast food restaurant to earn an income, and relied on her school, the club, and her fast food job to provide her with access to free food.

Despite these challenges, Fall nearly always held a cheerful and caring demeanor. She consistently leveraged the resources she had access to help those around her. For example, one afternoon, she brought enough "mini-frosties" to her afterschool STEM club for everyone, including the adult teachers, to enjoy. On another occasion, when one youth was distraught that the umbrella they were using was torn, on her own initiative she located the sewing kit and patched it back together.

Her experiences in schooling reflect the historicized experiences faced by many youth growing up in extreme poverty. She attended under-resourced schools where literacy and mathematics dominated instructional time. She was held back twice for reading below grade level. Her remedial reading support pulled her out of the classes she enjoyed most, such as science, which was only offered once or twice a week.

However, at the same time, Fall's afterschool club – a vibrant community center serving over 350 low-income youth daily – was a key resource. She spent most days after school at the club, even as she got older, if it did not conflict with her work schedule. Her club provided snacks, homework help, and a range of activities and programs. Fall participated in the STEM programs from 5th grade through high school. It was in these STEM programs that we got to know Fall, as we served as educators, mentors and researchers in many of them. For example, Fall was a core member of her Green Club, and as noted earlier, the chief blogger for the club. Green Club, open to any middle school youth interested, was offered twice a week, year-round, with full time summer camps. The core philosophy of Green Club was to support youth in naming, investigating and taking action on science-related issues that matter to youth and their communities. She also participated in her "Innovators" Makerspace at her community center during her high school years. This program also met 2 days a week, with a third day for "open make." This program leveraged upon pedagogies of community ethnography to support youth in putting their making efforts in dialogue with community members. Like Green Club, the authors of this article served as educators, mentors, and researchers.

By telling Fall's narrative we seek to build deeper understandings of how new local contentious practice can emerge in ways that re-enact, reform and refine opportunities to learn and become. In particular, this single case study is meant to leverage upon a nuanced examination of Fall's experience, across setting and time, to build new theoretical knowledge of how intersecting inequities shape opportunities to learn and become (e.g., Weis et al., 2015). We take a transgressive approach to validity in this work, acknowledging that the uses of the theoretical insights generated herein are oriented toward challenge traditional authorizing criteria for what it means to develop understandings of becoming in STEM.

Written and informed consent was obtained initially from Fall's parent for all data generated prior to her 18th birthday, and then from Fall, herself, as a legal adult, for all data generated thereafter. Consent includes the publication of indirectly identifiable data as well as verbatim quotes.

To collaboratively tell Fall's story, we draw from three data sets.

First, Fall co-constructed a portfolio of her learning and participation in STEM across the spaces of home, school and community, pulling in events and experiences from the 5th through the 12th grade. During a 10-week period though spring/summer 2017, Fall worked with us to create a collection of artifacts together representing her pathway through life with and in STEM learning and practice. This collection included a multimodal slideshow presentation featuring photos, videos, screenshots of blog posts she had authored, and text she produced to introduce a chronological storytelling of her life's work so far to various stakeholders of interest (e.g., her current teachers, professors at her local state university, science education researchers at national conferences where she presented, and future employers). Fall was able to access these artifacts through a folder we generated of materials we had collected over the years that we knew her. However, she also created new artifacts for the purpose of this portfolio, such as video reflections and images of science in her home and community. It also included a written complementary artifact, a co-constructed narrative of her efforts to be and become in STEM prominently featuring a transcribed "Q and A" style narrative interview between Fall and an adult mentor.

Second, the researchers kept ethnographic data files on Fall's experiences over the same time period. These data also included Fall's participation in weekly conversation groups during the Spring semesters 2010–2012, that were part of her afterschool STEM club. Videos of afterschool and community participation in STEM captured as part of regular records of practice documentation (twice a week, Fall and Spring semester, 2010–2017, and weeklong summer camp experiences), twice yearly interviews each of the years that Fall participated in our afterschool STEM programs (2010–2017), and photos of artifacts she produced during these times, such as her on-going work on the little free library. We also collated all of her blog posts produced between 2015–2018. These data are comprehensive

and reflect Fall's experiences in STEM as she progressed from elementary to middle and through high school. Fall also culled through these to help with her portfolio construction.

Third, we conducted extensive portfolio dialogues with Fall. These conversations were held to make sense of her portfolio and why she constructed it as she did (e.g., what the different events, people, resources, power dynamics named mean to her), as well as how she describes the importance and impact of these events. Conversations took place once a week, after school, during the fall 2017 and spring 2018 semester. These conversations include co-construction of Google slides summarizing key ideas and insights, and involved an-going production of a timeline of events and experiences. For example, one key theme that emerged in these conversations was what we eventually refer to as "commitments-in-practice." We worked to describe the commitments and practices she felt made up the pivotal moments in her portfolio. In another example, we also sought to identify and name the tensions that emerged, in particular, as she enacted her commitments-in-practice in STEM.

We examined data for continuities and contradictions using critical inquiry/grounded theory approaches consistent with relational ethnography to "puncture deeply held methodological preconceptions" as we seek greater political clarity in the analysis process itself (Charmaz, 2017, p. 1).

The first phase of analysis took place during the portfolio conversations noted above. During these dialogues we collaboratively open coded the portfolio. This processes produced an initial set of categories of ideas that we eventually named commitments-in-practice. We also generated a list of critical moments and tensions. In addition, we thoroughly perused all generated data (e.g., transcribed interviews, observation fieldnotes) to further surface additional insights on the ideas emergent from the dialogues, but also to surface new codes. We sought to deepen our understanding of the critical episodes of STEM engagement that Fall leveraged in some way for STEM engagement (e.g., group activities in science class or informal science spaces that featured particularly salient performances, in talk and actions) especially vis-a-vis the commitments named by Fall. This included new codes on how Fall positioned herself during critical episodes; how she responded to how others positioned her within these episodes; and the importance, meaning and roles of the artifacts Fall highlighted as most representative of her commitments-in-practice. Weekly conversations were held between the authors as a way to work toward a more expansive consensus. Differences in views were debated until new meaning was generated. A detailed list of emergent open codes were kept with analytic memos which we then brought to bear on the second pass at axial coding.

During this second phase of coding, we paired the critical moments with the commitments-in-practice to deepen our insight into how and why Fall enacted her named commitments-in-practice. We made note of when these commitments-in-practice created new opportunities and spaces for becoming in STEM (especially when these were previously denied), and what this looked like for fall. We also noted when they did not. With the help of our theoretical framework, we then worked to make sense of what it meant for Fall to

enact her commitment-in-practice through history-in-person and history-in-institutionalized struggle as we further sought to establish relationships between these commitments-in-practice and emergent tensions. This axial phase of coding was used to uncover relationships and connections between the Fall's STEM engagement and the tensions/conflicts that emerged. We took these data points as markers of new local contentious practices and sought to connect these back to Fall's commitment-in-practice. Embedding ourselves longitudinally in contexts with Fall helped us to make sense of the relationships and relevant background happenings that shed crucial light on these "snapshots" across time that we share below.
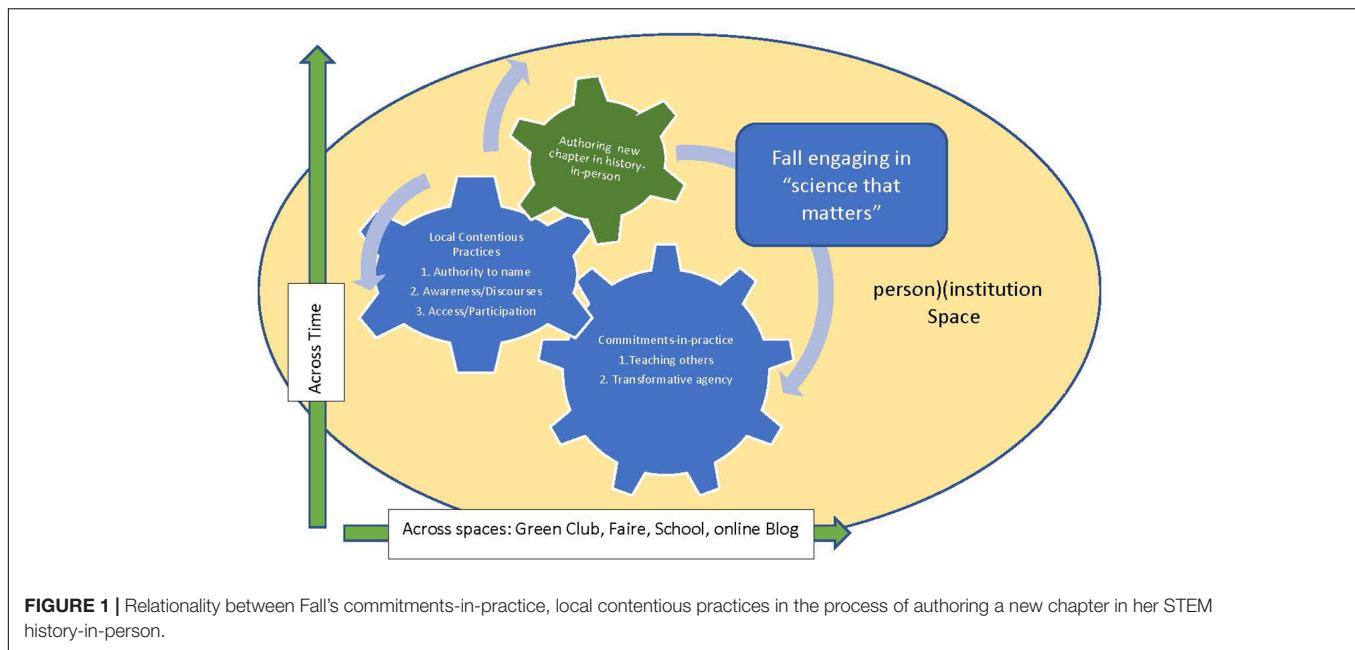
FINDINGS

Below we trace Fall's *core commitment-in-practice* – a commitment to community and *in* community – and how this commitment took shape as she moved across the spaces of home, school, and afterschool during the middle and high school years. We use the phrase *commitment-in-practice* to indicate that this commitment took shape through social interaction, where people and contexts exerted significant influence, both supportive and otherwise, on how Fall adopted or authored her commitment. In elaborating on how Fall enacted her commitment-in-practice through history-in-person we describe key events, which Fall indicated reflected her embodied commitments. In describing these events, we draw attention to how Fall's commitment-in-practice emerged, in part, from her having a space or platform for her to try out and refine these commitments with and against the enduring struggles she experienced in STEM and schooling.

We also examined how Fall's commitment-in-practice to community and in community led to *conflict* ("contentious local practice") as these commitments challenged particular local, historical/sociocultural norms. Three particular contentious local practices that Fall enacted are also described, related to: (1) authority to name what counts as STEM; (2) awareness/discourses of STEM; (3) access/participation in STEM. In this second part of these findings we trace these events longitudinally, as they intersected and built on/with each other, and in different contexts. By telling Fall's narrative this way, we draw attention to how Fall's enactments of her commitment-in-practice clashed, at times, with history-in-institutionalized struggle, leading Fall to engage in forms of local contentious practice that became re-enactments, revisions and refinements of her commitments over time (either individually or in combination, **Figure 1**).

Commitment-in-Practice: A Commitment to Community and in Community
A Commitment to Community and in Community

Fall engaged a commitment to community and in community as integral to becoming in STEM as she navigated home, school, and after school. By a commitment to community we suggest that Fall worked to understand, connect with and critically care for the people in her community, especially as

FIGURE 1 | Relationality between Fall's commitments-in-practice, local contentious practices in the process of authoring a new chapter in her STEM history-in-person.

she built multi-generational and cross-cultural alliances, and her role in actively disrupting the historical, hegemonic structures and practices that oppress members of her community. Fall's community is largely comprised of low-income families, most of whom are Black, and nearly all of whom, like Fall, have experienced multi-generational poverty. The unemployment rates in her part of the city are nearly double that of the state average, despite the slow economic growth recently experienced across her state. During the height of the economic recession (about the time Fall entered middle school), her family and her friends' families were all out of work.

Fall's commitment to community and in community centered a collective struggle to imagine and build a more just world. This commitment enacted in practice, in part, by Fall's efforts to leverage upon her interest and knowledge in STEM to identify and take action on the problems her community faced, such as high energy bills, limited access to resources, and poor air quality. As a White girl with a predominantly Black network of friends and supports, her views were tempered by her understanding that scientific inquiry is, itself a political project, shaped by and giving shape to the power-mediated boundaries of race, class, and gender, that influence one's experiences and understandings in/of the world. She ardently supported the rights of her peers to have opportunities for STEM learning, contributing to efforts to lobby her school to deploy energy efficient technologies in their school to save money for afterschool STEM programming. She also blogged about her peers' accomplishments, celebrating their STEM achievements with special attention to how those achievements *made a different in their community*. This is evident in her blog post about her peers' efforts to prototype a functional light-up, heated boot for people in need in her community.

Fall also enacted her commitment to community and in community by collaborating with her peers and community educators to create STEM learning opportunities for her community. These workshops, led by youth, and offered in interactive and inclusive ways for her Black community, challenged who has the right to provide access to STEM, how and why. Further, these learning opportunities centered youths' cultural practices and community networks of support, making these "STEM by us and for us" as she described her participation in a large Green Carnival she and her peers put on to share free resources and information about energy efficient tools and resources in support of her community both saving money and the environment. She noted, "That was literally like the first real time I knew I could make a change. We got everyone at the club. And there was hundreds of people. We had to do it. We got everyone food and materials to take home and they had fun as they tried our experiments and danced and stuff." She referenced how important it was to engage her community in joyful ways around serious issues that made a difference in everyday life.

Along with peers and allies, Fall leveraged upon the knowledge and practice of STEM, alongside the wisdom of her community, to cultivate a kind of transformative agency elemental to community-centered inquiries. We take up both points below.

Creating Spaces of Learning and Engagement in STEM for Those in her Community

Fall explained that one of the most important enactments of her commitment was, "teaching others . . . kids, teachers, my family and people in the community." For Fall, teaching others was about "bringing people together" in considering "how (science) matters here." Instead of science presented as decontextualized from *where* people live and *who* they care about, science with a commitment to community involved using the knowledge and practices of science to make a difference through taking action upon community-related concerns, as the Green Carnival example earlier illustrates. This was more than grounding an investigation in an area of interest to youth. According to Fall, it

meant youths' experiences in their community were central to the investigation because they engaged community members toward real and consequential action taking on issues mired in injustice.

Fall's commitment-in-practice is attuned to the power of leveraging developing knowledge of "community STEM expertise" to teach others – across settings – (a) science content in accessible ways, (b) what one can do with science other than science class, which include investigations to save money and the environment, (c) how to use science to make a difference at school, and at home, (d) how teachers can do more to attend to their students' diverse learning needs and interests, through her active efforts to model more equitable and youth-centered teaching practices ("Because, you know, nobody wants to just sit down and read paragraphs from a book and write down the questions and answer them"). This commitment-in-practice matters to Fall because "in school we don't really do real science." "we just learn things," "we don't do anything with it."

Fall cited her experiences in her afterschool Green Club, Girl Scouts, and at home, as places where she has "done things" with science that carry meaning for her or her friends and family. Teaching, for Fall, meant offering practice-based access to STEM in ways that integrate her desires for and agency to make a difference. Importantly, she distinguishes her definition of teaching from a more lecture-based, authoritative repertoire of practices she has observed and experienced in formal education.

A "Most Powerful" Enactment

In her STEM pathways portfolio, Fall indicated that the most powerful example of enacting her commitment to community and in community was when she taught her 6th grade science class about water and energy efficiency toward environmental and economic sustainability. This was a lesson she created with two friends that used a video and an investigation she created and perfected in her afterschool club. In her portfolio, she included 5 min and 42 s video clip of this moment in her classroom. As she stated about this portfolio entry: "teaching my classmate about the projects that I did because some of them liked it was helpful to my classmates and teacher, and so they would know there are other things besides science class that you can do with science."

In this episode, Fall along with two friends, took what they had learned about energy efficient technologies and behaviors from their STEM after-school community club, to younger students and peers at her school. Fall wished to do this because she wanted her peers, who attended a school stressed for resources, with limited time for science, to be able to "know what I know." Fall's afterschool teachers helped she and her peers to organize and practice their lesson, and worked with Fall's classroom teacher to create space for them to do this. Fall and her friends prepared a PowerPoint and led the class through a hands-on, interactive experiment looking at the difference between CFL and incandescent light bulbs. Their goal was to help students to experience how and why energy efficient light bulbs were both good for the environment and for their energy bills.

The lesson began by Fall surveying the students in her class about what types of light bulbs they use at home before asking them to predict the efficiency of three different kinds of light bulbs presented (incandescent, CFL, and LED). Fall began the

lesson by saying, "Let's compare light bulbs to see if CFL light bulbs and LED light bulbs can save energy. Like, this is the CFL and that is the incandescent." After her partner informed students that they would be measuring energy using a watt meter, Fall asked for volunteers to predict how many watts each bulb used. Fall called on students as her friend noted students' predictions by repeating each guess. But then her friend, who was a "star student" and was supposed to lead the next part of the lesson, suddenly froze, unable to facilitate the next part of the lesson. After a brief pause, Fall jumped in and took over the rest of the lesson. Fall focused the class on collecting data by saying, "OK, let's measure how much energy each light bulb uses." She called on students to read the watt meter for the different bulbs. Fall then asked, "What did you notice about the amount of energy used between a CFL, LED, and incandescent light bulb?" The video clip ended with students discussing what they noticed and what that means for the amount of energy they use at home. She then guided the students to brainstorm the ways they could use these ideas in their own homes to save money and the environment, praising each students' ideas as "great" and "will make a difference."

In this particular classroom, the teacher had previously described Fall as a student who is just "lost in the background." In his words:

> There are no expectations on Fall at all. Mom and Dad don't even like to talk about Fall at school. They just say that she has problems. She is in the special ed room and she has problems. If she could just get D's we would be very happy with that. So, she doesn't have a whole lot of expectation on her as far as school goes which is sad. When you talk about Peter (her brother), their whole world lights up. So that is just who she is at home, she is that kid. So that is a little background on our friend Fall here, but a really nice kid.

In this vignette, we see how Fall was becoming through commitment to her peers and their families by transforming what science learning and engagement could be in ways that translated into home practices that mattered specifically in her community – a community where many families were out of work – as she unexpectedly stepped up to the plate and taught the lesson because a peer unexpectedly could not. The teaching act made Fall a teacher, and started to draw from her a deeper commitment to teach that became consistently evident in her future engagements with STEM.

Fall noted that teaching helped her classmates become "more active in science class" and "learn more science" in ways that were "fun" and "actually matter." Fall said that by "teaching my class I am also helping my community because, well like, when we were doing the CFL light bulbs that was teaching my community that if you are using incandescent you are using more energy and spending more money than if you were using CFLs."

Orienting Toward Transformative Agency

While related to teaching others, Fall separated out the importance of "doing something" – or what we call transformative agency – as critical to her commitment to community and in community. For Fall, helping others, apart from teaching them about something, also involved using what

she has learned and done with science to "take action." She noted that "lots of kids don't have things" and "have alot of unfair things happen." Here she was referencing both the economic challenges faced by her community, as well as the entrenched racism she witnessed her peers experienced daily. She reflected upon her own situation, where she felt she did not have the experiences at home or at school she needed to help her learn to read or write better at an earlier age, even though she had an Individual Education Plan. She reflected on the time she worked on a water efficiency video with two friends – "they are smarter than me" – but who made a welcoming space for her in their group project. She described how they helped her with the "hard parts" of the video such as describing water efficiency and calculating how efficient devices translate into money and carbon savings. She also said she helped them because she helped to choreograph the "water dance" and ideas for how the movie could go. She also said she was a good collaborator.

For Fall, transformative agency involves (a) figuring out what other people's concerns are and how to address their concerns, and (b) being patient and open to what people need or care about. For Fall, this critical and caring form of action taking involved working on large and/or long-term projects, such as the Little Free STEM Library (detailed below). However, it also involved smaller actions, such being a mentor in her maker club. As she noted, "Instead of me doing my own project I wanted to help other people with their projects."

Why Transformative Agency Matters

Fall says that the best example of transformative agency is her work on the Little Free STEM Library. In 10th grade, Fall conceptualized, designed and built a Little Free STEM Library at her local community club. She felt that access to STEM books would help others learn to read and engage with science, aspects limited in her own schooling. She included mini-maker kits so that others could "make the things that (she) had a chance to make (at the club)." She added an eye-catching LED lighting system powered by a handcrank generator, which would be "good for the environment," and "get (kids) curious." She describes the project as one that she "worked on the hardest ever."

Fall was concerned that children in her community have time to read while also having the chance to "make things" – concerns she felt were not adequately addressed at school, concerns also central in her own life.

Over several months, with help from her after school teachers, she researched the need for a library, and possible styles and wood types. She drew up blue prints by hand, then in a three-dimensional sketching program. She cut and assembled the wood. With feedback from peers, she added a door and a lighting system powered initially by a handcrank generator. She continued to work on the project the following year making it more accessible, changing the lighting system, and expanding the materials shared inside.

She notes of the Little Free STEM Library: "The Little Free Library shows that I want younger kids to learn to read and learn different science books and stuff." Furthermore, Fall believed that the Library's impact went beyond the artifact itself in how it inspired others to take action, too. She explained:

Some teachers make you feel that you can't be accomplished in life. With the Little Free STEM Library I felt accomplished. The Library helps kids practice reading and learn more about science. If kids live in a library desert like us it really matters more. If we were over in the south side where I live, people would be like "that is cool!" If we go to the east side and they could learn too and make a difference too! Then they would reach out to other communities, and it would just keep growing and growing.

When reflecting on the importance of transformative agency in her commitment to community, Fall selected the following blogpost (January 2016) to illustrate these points. She wrote:

Today I worked on the little free library that we are putting in the Boys & Girls Club. I got A LOT done so far. It looks amazing! Just like our blueprints! I wouldn't (have) gotten as far as I did if Danny and K wasn't helping me put it all together. We still have A LOT of work to do, but once we get it done. It's gonna be the first thing I have done in a while! I can't wait to see what it turns out to look like. I can't wait for the kids to get books to read. Thanks so much for helping me work on it Danny, and thanks for getting all of the materials for me Angie, Y'all are the best!

Fall said this post showed how hard she worked with the help of mentors and peers, and how important the library was for other kids to learn to read. She said that she knows how hard it is to learn how to read, given that she has been in special education and labeled a "struggling reader" but she always felt that she never had a chance to just practice with books at home or school.

Fall also liked that the blog post showed her working with her afterschool STEM club mentor because that "was a big part of it." She used the photo from this blogpost as the screen saver on her laptop she earned for being a mentor in her makerspace. Fall pointed out how important the comment was that she received on this post, which stated:

What a great post, thank you for sharing. Your point about kids needing to feel accomplished is such an important one, and that it is by working hard and for a long time at something, like electric art, that kids can feel that they know and can teach others these skills. Your LFL project with Samuel is so inspiring to the other youth here when I shared with them what you and Stephan built. Keep up the good work! You rock!

She thought the blog comment was "a good one" because that person knew how important that "lots of books" would be.

Fall emphasized the importance of STEM knowledge in imagining the library, constructing it with an alternative energy source, and designing the paper circuit kits to be placed alongside the books. She pointed to knowledge of community as crucial, in knowing *what* to put in the library to help kids to "get to where I've gotten." Her actions to expand the library point to her desire to make a difference in her world. For example, she pointed to a Facebook post of a friend who delighted in learning about paper circuits. This friend had posted a video of himself completing a paper circuit with obvious delight, saying out loud as he did so, "Guys look how smart I am!" For Fall, her friend's articulation resonated with her own deeply meaningful affirmation of "feeling accomplished" when doing STEM. When Fall invited her classroom science teachers to come to the afterschool STEM club to see what she had made in this

setting, it was a significant marker of who and how she was becoming in STEM.

Local Contentious Practices

The above-described commitment-in-practice, and how it was enacted and developed/transformed over time by Fall, also speaks to the ways in which local contentious practices implicate "broader historical forces at work, locally, in multiple ways" (Holland and Lave, 2009, p. 12). For example, as Fall argued, school science is not usually fun, accessible, or connected to action and/or consequence that brings deeper meaning and urgency to the learning process. Fall's commitment to community that she and her friends' at after-school STEM club have termed "science that matters," opened up spaces to explore, question, and critique systems of power that have zapped the life force out of science learning in formal spaces and places of education.

We also think that the specific kinds of local contentious practices which arose shaped how Fall responded in practice, giving new forms of depth and texture to her commitment-in-practice over time. How she recognized, understood, navigated, and negotiated/rejected/re-worked multiple levels of the situations that have populated her pathway over time framed and influenced how she thought about herself, her actions, and her abilities to make an impact in the world. Thus, her experiences of being and becoming in STEM have acted on her as she has acted in and with the systems of power that affect her life, her community, and others.

We note at least three forms of local contentious STEM practices. First, there is conflict over the *authority to name what counts as doing STEM*, for whom, where, when, and why, e.g., Whose knowledge? Whose agenda? For what reasons? ("Authority to Name").

A second local contentious practice relates to *awareness* around how intersectional geometries of power operate and how responses to such powered dynamics can challenge or maintain inequality. Embedded within this contentious practice are both differences in discourses/narratives that relate to people, context, science and alongside race, gender, and social class, in how science-related problems/solutions are named/framed. ("Awareness/Discourses").

A third form of local contentious practice is centered around the very distribution of *access, participation and resources* in science. Who has access to science knowledge and practice and how so, to the tools to learn and do science for oneself or one's community, or to the financial and social resources to do science? ("Access/Participation").

We discuss how these three local contentious practices together take shape across Fall's experiences in STEM through expanding upon a series of events related to the initial examples described above. To do so, we trace the above described events and commitment-in-practice longitudinally, as they intersect and build with each other, and in different contexts. By further narrating Fall's experiences this way, we draw attention to how Fall's enactments of her commitment-in-practice clash with history-in-institutionalized struggle, leading Fall to engage in forms of local contentious practice that become re-enactments, revisions, and refinements of her commitments over time.

Local Contentious Practice: An Argument for Actuality With Engineering Design ("Authority to Name")

"I want to help kids learn to read 'cuz lots of kids might not get it at school or at home [like me]."

In January of 2016, Fall and Samuel wanted to enter their Little Free STEM Library project in a local entrepreneurial faire for teens. The Great Lakes Entrepreneurial Faire [the Faire] is an annual event in the state for youth to showcase their entrepreneurial projects, with monetary awards. To enter the annual Faire, youth were required to submit a two-page business plan, addressing categories such as the problem and solution, target audience, financial summary, and competition. Fall and her friend Samuel worked on their business plan over several weeks, with help from two different mentors. They found the categories (e.g., marketing, competition) difficult because they did not match their vision of their "Little Free STEM Library business." They decided to enter their project in 2016 as a *not-for-profit* business, with the encouragement of their mentors even though no such category existed in the submission process. As they explained in their plan:

> *Our project is meant to be "non-profit." We do not want to make money from it. What we want to do is provide opportunities to the kids in our community, where there are no other opportunities. We know what it is like to not be able to get to the library and not be able to make the kind of inventions that we think up in our heads. Some of us are lucky to have (Green Club) where we can get these materials to do these things. But not everyone can get to (Green Club) either. We want to bring (Green Club) and other STEM experiences home to kids, who, like us, know that they can use STEM to make a difference in their communities.*

Fall's afterschool teacher noted that "Fall was adamant that the library materials be free. While she worked on the project she told stories of how it was unfair that many kids, like herself, did not have access to books to read, and that put them in an unfair position in school." Her mentor further noted that Fall wanted others to "feel the successes"; she felt she had and "not fall victim to the challenges she experienced. Making the business for-profit actively worked against these goals."

Fall was excited for the Faire because she felt that she and her friend had developed a business model that would "actually make a real difference" in her city. Her argument for actuality was a reaction to what she perceived as business ideas that had been supported in her city traditionally, judging by what businesses she saw in town and what ideas she believed were glaringly missing. It was equally a reaction to what she and her peers perceived upon entering the building of the Faire. Walking past table after table of food and glamor-based business proposals/prototypes, Fall arrived at her designated spot in the room with a newly added layer of purpose and urgency to frame her commitment-in-practice with her Library. Standing amongst her competition, she remarked in defiance of the overwhelming tide she witnessed around her that her project would actually matter. It had a purpose she could respect, grounded in her commitment to help her community by understanding their concerns and helping

others. She added, "no one needs another wedding planner or cupcake business." To Fall, her engineering design project had real substance, real consequences, and real impact.

Furthermore, as Fall and her peers negotiated to have their projects located side-by-side at the Faire (they were assigned spaces distributed throughout the room), she recalled that her Black peers were upset that nearly everyone in the room was White. While Fall, too, was White, she allied with her Black friends, as she then too complained that the space felt exclusive. In fieldnotes from the event, she noted everyone else "seem to know" how the judges wanted their "projects to look," pointing out how "fancy" the other project displays were, even if the substance of the display she thought might be lacking quality. She and her peers complained they were not a part of that insider knowledge. These social-spatial arrangements symbolically and physically positioned the youth as out-of-place. At the same time, she felt their projects were more substantive, and actually "made a difference" even though their presentation format were not elaborate with extra materials "none of us could afford." Further, Fall, backed up her peers when they expressed disbelief when, mid-day, judges announced that there would be prize categories for food-related and fashion-related ideas, but not for non-profit, eco-design, or high-tech ideas. As noted earlier in reference to her blog posts, she promoted and applauded her peers' projects to the world through her posts.

The atmosphere at the Faire, which she later described as standing in contrast to her commitments, did not come as a complete surprise to her, however, given that she had understood the world of business to be about profit, not helping. As observed in the quote above, a large part of the language she and her partner Samuel included in their business plan was in direct response to what they had observed was wrong with business, where the primary goal was to make profits. In the plan, Fall (and Samuel) demonstrated a commitment to expanding the library system to help others in her community, and in procuring donated and re-used materials to lessen the economic and environmental burden of producing their libraries.

On the day of the Faire, they brought their fully functioning library with them to the convention center, filled with donated science books and several mini-maker kits they assembled. Her mentor noted how hard she and Samuel worked in the days leading up to the Faire as they put finishing touches on their project, including hours fiddling with the circuitry of the lights ensuring they would all light up. They felt they had a real chance at winning an award. However, despite her high hopes, her project failed to win anything. Instead, Fall noted "cupcake" and "wedding" projects won "all the awards."

Fall was angry. During a debriefing conversation with other afterschool maker club youth after the event, she stated, "I was really mad." "They only cared about projects that made money." And, "the projects didn't really help people because they just did things that were already out there."

> "(The Faire) kind of shut me down because they were giving the same groups money for doing things that are done every year anyway. Some of the projects matter but most of the projects are just about making money. . ."

The event was unsettling in many ways for Fall, and for her peers and mentors. She felt that the judges did not understand or care that her project addressed a "real" need in her community. They completely missed, or at least dismissed, the actuality of her work. She felt that her business plan was dismissed because her goal was not to make money but rather to help others have access to science books and mini-maker kits so that kids in her community could have opportunities to "get to where I've gotten" by having greater opportunities for reading and doing science. Her commitments came up against dominant narratives around entrepreneurship and how these narratives are embedded within institutions – the Faire which Fall and her fellow youth presenters observed and described as being structured to uphold, reproduce, and honor framings of innovation and engineering design as a purely capitalist and individualistic pursuit, a for-profit model of business as opposed to a collaborative, community effort for the collective good.

She was further upset that the detailed efforts that she and Samuel put into ensuring that the Little Free STEM Library helped others went unrecognized. They had put a handcrank powered LED light-up system around the library to get kids curious about how it worked and what was inside it. They included mini-maker kits so that kids had access to resources to make, when they likely do not have such resources at home. The books were mainly STEM books, that reflected a range of reading levels, from picture books to high school books, so that anyone could practice their reading and learn some science in the process. All these items in the Library were carefully curated by Fall and Samuel and reflected Fall's own milestones in her path to becoming somebody in STEM. These milestones were authentic to who she was, and reflected how doing "science that matters" met her needs (e.g., honing her reading skills through STEM activities) while challenging her, with support, to do things she had not done before, so she felt accomplished.

Despite her frustrations with the Faire event, Fall was still proud of her project and her efforts. As she wrote in a blog post the day of the Faire:

> Today we all went to the (convention) center for the (Faire) event to show our projects! Samuel and I showed our library. We all did amazing! My group got alot of good comments about our little free library. It was the hardest I ever worked. The library will help the kids read and also make things!

Fall affirmed her commitments to helping others and to keep doing "science that mattered" in the above quote. She further enacted these commitment-in-practice by deciding to enter the even more improved Little Free STEM Library in the Faire the following year.

Local Contentious Practice: New Discourses Toward Inclusivity and Criticality in Science and Engineering Participation ("Awareness/Discourses")

> "I kept working on the project for another year with Samuel and we improved it."

During the next school year, Fall and her friend wanted to improve their Library so that it had better reach and accessibility.

At the suggestion and help of one of their mentors, they used GIS technology to determine actual locations and operational times of public libraries, bus routes/time from their homes, schools, and afterschool club, requirements for library cards (e.g., proof of residence) and fee structures associated with late books. They determined that they lived in a "library desert" and needed to create multiple Little Free STEM Libraries to serve their community well. They added wheels to the bottom of their Library so that they could change its location. They switched from handcrank to a solar power system to light up in the inside of the library as the larger concern was helping people see what was inside the library from a distance. They added more kits and refined the directions available in the kits.

Fall insisted in participation in the Faire again that next year. She worked with other peers and her mentors to organize communication to event leaders about the need for entrepreneurial categories that supported non-profit and high-tech work (Calabrese Barton and Tan, 2019).

As she prepared for the event, she blogged about the changes they made to how they teach others about how and why their Little Free STEM Library matters – clear expressions to her commitment-in-practice. She noted the GIS mapping research she did (science that matters), having fun coming up with new ideas to improve it (learning more science), and how all kids deserved to read (helping others and teaching others). She also made an explicit argument for having a "social justice business" – as an important descriptor for why her business is to remain not-for-profit – "it shouldn't cost them any money."

Fall also brought her school science teacher to the community center to see her library, and her presentation. She felt her teacher would have an opportunity to see a side of her that is "hidden" in school. Fall did not think that her science teacher did not care – indeed, she felt her teacher was a very caring person, one who would make a visit to the community center. Rather, she thought that no one asked science teachers to care about the *community* and it was "just not a part of school."

Further, she noted that having had to "deal" with the Faire "made me start to think about how I can get more people to care. some people don't really care." Dealing with the Faire for Fall meant that she responded to the historical institutional narrative of profit and elitism business codes by subverting the practices of that institution (the polished business-normed 5 min speech) toward her local contentious practices for re-naming what counts (caring and serving community beyond profits) and raising awareness on inequities in youth STEM engagement opportunities.

Fall was successful in enacting her contentious practices. She and Samuel were recognized by the panel of business judges. As she reflected: "I won $125 and I think it's 'cuz I really helped people see how it was a social justice business. I also talked about how the library would help kids just like me. It was not supposed to make money. It was supposed to just help."

The ways in which Fall worked to improve the Library informed by more research were ways in which she further enacted her commitments to teach others, specifically the Faire stakeholders about the value of the Library and her commitment to help others (children with no access to reading and making materials related to STEM). Through the process, Fall had to draw from her commitments to work very hard and do science that matters to her. In this way, her commitment-in-practice functioned in effect in a positive feedback loop as they were further sharpened and deepened as she engaged in local contentious practices (see **Figure 1**).

Local Contentious Practice: *"Now I'm a Mentor and the Chief Blogger"* ("Access/Participation")

Fall blogged more than usual during the time she worked on the library. While she presented posts on projects and activities of others, she posted many blog posts about the library itself. Blogging about her work and her peer's projects was one way in which she sought to further her commitment-in-practice, to learn more about herself, more about science, practice her written communication skills and to engage in science that matters. Fall becoming Green Club's chief blogger is also a direct push back on how she had been labeled and judged wanting by teachers in reading and writing, as a D student.

Since she began work on the Little Free STEM Library in the 10th grade, Fall penned 42 blog posts (October 2015–May 2018). Of the 42 posts, she mentions the Little Free STEM Library in 18 posts, and in 10 posts the focus was exclusively the Little Free STEM Library.

These blog posts, kept across two and a half years, reminded the world (open readership) of: (a) how hard she has worked, (b) how important access to STEM is, (c) how important the library is, and (d) how much others appreciated her work. She points to the importance of STEM knowledge in imagining the library, constructing it with an alternative energy source, and designing the paper circuit kits. She points to knowledge of community as crucial in knowing what to put in the library to help kids to "get to where I've gotten."

She highlighted the following blogpost written by a younger maker club peer, Jasmine, who she mentored into blogging, which illustrates how, with Fall's help, she fixed the broken wheels on the Library. Fall felt it was important that the Library was something that everyone shares and owns, "*Our* Little Free STEM Library wheels broke. . .," suggesting that this is a really good example of how teaching others helps them to develop their own commitments, too.

DISCUSSION

We have shown how Fall's commitment to community and in community took shape over time and across spaces, as her person-in-history interacted with history-in-institutionalized struggle. Her resulting contentious practices reflected and challenged the intersectional geometries of power she experienced as a White girl growing up in multi-generational poverty, and shaped her engagement within a Black social network (Holland and Lave, 2009). These local contentious practices also worked to further deepen Fall's commitment-in-practice, as in concert, both her commitment-in-practice *and* the emergent local contentious practices authored a new chapter forward in Fall's history-in-person, in STEM.

With Fall's story, we argue that by examining how local contentious practice takes shape over time and across spaces, we can better understand how a *culture of criticality develops in the space between person and institution*. This view builds on and advances how the field understands local contentious practice because it foregrounds the importance of tension in how individuals participate in cultural activity toward new social futures. Unpacking the relationality between Fall's commitment-in-practice with her local contentious practices makes visible how the space between person and institution, which we denote as *person)(institution*, both becomes and functions as a "space of refusal," and a "space of resistance" (Hooks, 1990). Here the backward parentheses denotes the dialogic directionality of becoming – both for Fall in authoring a new chapter in her history-as-person and for the institutions to structurally re-orient toward radical change. This person)(institution space, for Fall and for many of her peers, is one of purposeful marginality where power resides in the margins, in the forms of solidarity and collective resistance (Hooks, 1990; see also Nasir, 2011). We think of this *person)(institution* space as the margins from which Fall pivoted into/out of the spaces of school, afterschool STEM club, the Faire, and the blogosphere From the *person)(institution* margins, Fall, with her community of allies, incubated a culture of criticality, as this space became "a radical space of possibility, a space of resistance" (Hooks, 1990, p. 149).

A culture of criticality supported Fall, and those with whom she interacted in activity (e.g., mentors, peers, allies) in collectively forming and navigating new relationalities that disrupted how intersectional geometries of power manifested in her life. Her alliances with her Black peers supported her in naming and critiquing the marginality she felt at the Faire. Together, they critiqued the experience and built new local practices for disrupting the norms of the Faire the following year. As she took up the role of mentor of younger peers in the club, which often took the form of collaborating on projects rather than helper/teacher, she introduced practices which helped to further flatten hierarchies of knowledge and practice in STEM. As she solicited the ideas, experiences and opinions of community members in her efforts to care for others through making, she enacted practices that allowed new discourse threads to become legitimized in both her school classroom and after school space, along with the associated hybrid forms of knowledge/expertise that aligned with these discourses. Each of these made possible new modes of access to new resources, spaces, and representatives of STEM, making STEM more accessible, visible, and doable in those around her.

Through these interactions and negotiations, Fall authored a new chapter in her STEM history-in-person, even as the structural spaces of STEM (including school, online, afterschool, and the Faire) were structurally reoriented, through such social forces in which Fall was centered, toward radical change (hence the ")(" in *person)(institution*) to denote such dialogic directionality).

By radical, we refer to the norms of these spaces to shift away from what is *normed*. These social forces result from Fall's commitment-in-practice in dialogue with her contentious local practices, affording her lenses to imagine new possibilities.

The particular institutional narratives (which are often limitations) are what shaped Fall's developing commitment-in-practice. Through that process, she developed a criticality lens that she used to inform how she enacts her commitment-in-practice. For example, with the initial foray into the Faire with her Library, the capitalistic, middle class life-style (e.g., wedding planners, cupcake bakers) institutional narrative produced tensions, and her justice-oriented entrepreneurial practices were framed as contentious. This experience informed how Fall re-evaluated her commitment-in-practice and how she then layered on a critical lens to what she did next as she sought to transform what the Faire valued.

Her commitment-in-practice led to experience that brought those around her into this cultural space – seeding, sustaining, and continually shaping an I/We community STEM collective anchored in solidarity (Urrieta, 2019). This can be seen by how she co-planned, co-taught and then stepped up to take over the teaching, her classmates about energy demands in light bulbs. Fall brought along not only her peer teacher who was seized with stage-fright, but also her classmates to explore new epistemic ideas. She also embodied a new arc of participation for students labeled as struggling, such as herself as here she was the struggling reader and quiet student leading the class in science (Nasir, 2011).

Likewise, the culture of criticality impacted her mentors. They engaged in new investigations alongside her, and sought out Faire leaders to question exclusionary practices. These are actions that grew out of conversations with Fall's experience at the Faire. That translated into Fall and her community doing more research on library deserts, adding more technical features on the Library, sharing her Library in more venues, and activity seeking out prize money to expand her Library system.

Fall positioned her transformative agency as a political practice centralizing what it meant to do STEM with a commitment to community and in community. This is arguably in opposition to the ways in which powerful adults in her life have positioned "helping" as secondary to other more individualistic-framed qualities, and have positioned her as "helpful" and a "team player" as a lesser compliment to their descriptions of others as special, smart, and leaders. But, over time, Fall – with her teacher and peer allies – re-mediated these discourses, showing those around her, and the important adults close to her in her life, that her qualities as a helper also make her a transformational leader in her community – and a respected leader in STEM and literacy. Being "helpful" from a culture of criticality demanded hard work on oneself, which Fall admirably demonstrated. It was not merely an act of convenience simply because one happens to be around "to help." Equally, being helpful from a culture of criticality was highly intentional, rather than serendipitous (again, because one happened to be around). Fall's helpfulness – an enactment of transformative agency – was contingent on rigorous research, learning challenging new skills that, in addition to requiring enormous effort on her part to do a range of hard work across breadth and depth, it also necessitated confronting (and re-authoring, through engagement in *person)(institution* margins) deficit-oriented labels attached to her person that has shadowed her identity as a STEM-doer and innovative creator. When Fall, through her commitment-in-practice and

contentious local practices incited structural and social change across the spaces, re-orienting these spaces toward a greater possibility of supporting "science that matters." Fall's occupying of such spaces, her "appropriation and use of (such) spaces, are political acts" (Parma, as quoted in Hooks, 1990, p. 152), a reflection of a culture of criticality.

We see a culture of criticality developing when the person – in this case Fall – retooled the enactment of her commitment-in-practice in savvy ways that foregrounded criticality, as a result of her shaping her commitments as a response to institutional narratives.

A shift in Fall's local contentious practices took place, reflecting her own developing criticality. She critiqued the normative view of (1) what counted as helping others; (2) what she needed to do to help others, and (3) how to communicate to others. This developing sense of criticality impacted how Fall shifted in her practices as related to discourse, access, awareness and authority. She articulated an increasingly nuanced awareness of how inequality in STEM participation operates through how non-dominant communities are mislabeled as having no value to dominant society. Through her blogging and renaming terms such as "science that matters," Fall introduced and promoted new discourses to distinguish her work and commitments, her definitions and actions that constitute helping others in her community, with social-justice oriented business models and "communicating to the world" what kids in her community who practice "science that matters" are doing. Fall also challenged authority through her practices. She questioned how school authority decided that students learn about science instead of doing science. She critiqued the Faire organizers for their profits-biased criteria toward youth entrepreneurship. She advocated for her role as a chief blogger with the STEM club teachers and administrator as a key way for her to continue learning science and engage in "science that matters." In shifting her practices, Fall reflected on her own becoming, making a commitment to be more vocal and open with her own story and to be willing to call explicit attention to the equity issues she herself faces, alongside members of her community.

CONCLUSION AND IMPLICATIONS

Fall's story is a hopeful story of how one girl growing up in multi-generational poverty, deemed an unsuccessful student, challenged normative structures and practices in her efforts to embark on a different path toward becoming somebody in STEM. It would, however, be unethical and unjust to frame Fall's story as an exemplar of one who "pulled themselves up by their bootstraps and succeeded through sheer determination." While Fall is admirably resilient, she embodied processes of becoming in relation to the other, as a humanizing, critical, and collective endeavor. As she engaged in this I/We work, she built and supported allies in her community as her core commitment-in-practice and resulting contentious local practices developed dialectically in her growing understandings of their needs and strengths. Fall's story also sheds light on spaces of refusal and resistance between *person)(institution*, that can nurture a culture of criticality toward radical possibilities. While Fall and her allies relished the small wins along her becoming in STEM, they nonetheless kept a firm eye toward transforming systemic inequities as an ultimate goal. Fall's story points to both the kind and degree of marginalization minoritized youth experience in their STEM engagement and raises questions for how science teachers, researchers, and educators across formal and informal spaces should consider what empowering, authentic and connected STEM experiences for all students should entail.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Michigan State University Institutional Review Board. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written and informed consent was obtained initially from Fall's parent for all data generated prior to her 18th birthday, and then from Fall, herself, as a legal adult, for all data generated thereafter. Consent includes the publication of indirectly identifiable data as well as verbatim quotes.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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Influence of Mothers/Grandmothers Coviewing Cartoons With Children on Children's Viewing Experience

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Watching cartoons is one important event in children's early lives. This activity is highly influential on many factors, such as children's cognitive and behavioral development. Some researchers believe that parents should coview cartoons with children to help them filter and distinguish useful content. However, intergenerational education is already common in China, and the influence of grandparents cannot be ignored. Because they are in different stages of life, the members of these two generations manifest great differences in parenting style, which may lead to differences in child development. Does this generational difference have differential effects on the children's cartoon-viewing experience? We recruited 89 parents and grandparents and their kindergarten-aged children (approximately 5 years old) to participate in the study. The mothers or grandmothers were asked to coview a cartoon for approximately 7 min with their child, after which the child was asked questions about the cartoon-viewing experience. The results show the following: (1) compared with grandmothers, mothers generally think that cartoons have a very high influence on children's physical and mental health ($\chi^2 = 8.83$, $p < 0.05$), (2) mothers place more restrictions on the content of cartoons that their children view, whereas grandmothers' attitudes are characterized by greater tolerance ($\chi^2 = 11.94$, $p < 0.01$), and (3) in the case of coviewing with mothers, when the children are asked "why" questions about the cartoon-viewing experience questionnaire, they use more experience proofs to explain their answers than when they coview with grandmothers ($\chi^2 = 16.69$, $p < 0.01$; $\chi^2 = 10.44$, $p < 0.05$).

Keywords: cartoon, children, viewing experience, coviewing, mothers and grandmothers

INTRODUCTION

Cartoons are very popular among children today because of their unique style and expression. Moreover, they exert great influence on children's cognitive and behavioral development, as well as many other factors (Klein and Shiffman, 2006; Jiang, 2013; Habib and Soliman, 2015). In China, cartoons are diverse, and many are of high quality. High-quality cartoons convey

positive information and useful knowledge, which is very helpful for children's speech, logical thinking, positive emotions, and the formation of good values. Cartoons may even promote progress in childhood disease treatment (Schmidt and Vandewater, 2008; Stevenson, 2012; Frémont et al., 2018). Habib and Soliman (2015) have indicated that some prosocial plots in cartoons will help children learn social skills and practical life skills. For example, in classic cartoons from three different countries, *Dora the Explorer, The Smurfs*, and *Peppa Pig* (Carter, 2008; Chen, 2018), Dora's active adventure seeking, the Smurfs' bravery and wisdom, and Peppa's family's pleasant relationship are very effective demonstrations and hold positive educational significance for children, which in turn has a positive social impact. However, the overall quality of cartoons is mixed, and a few cartoons are laced with violence, foul language, and misguided behaviors. For example, many such qualities are evident in the plots of the Japanese cartoon *Ultraman*, the American cartoon *Happy Tree Friends*, and the Chinese cartoon *Boonie Bears*. *People's Daily Online* reported that during the Spring Festival of 2016, a 10-year-old girl imitated the violent behavior of Logger Vick in *Boonie Bears* by sawing her sister's nose with a chainsaw ("The chainsaw girl is impressed by the *Boonie Bears*, a cartoon grading system is imminent," *People's Daily Online*, March 10, 2016). According to George Gerbner's definition, the harm behind this kind of media violence is not completely limited to behavior; it also causes psychological and emotional damage to people—especially to children, who are not fully developed.

Regardless of the type of cartoon watched, it will inevitably lead to an intuitive viewing experience for children. The viewing experience is a dynamic artistic experience involving emotional reactions and thoughts generated by children watching and enjoying art forms that express culture in visual formats, such as cartoons, television (TV) dramas, and movies, combined with their previous knowledge reserves (Eckhoff and Guberman, 2006). The cartoon-viewing experience includes several dimensions of individual cognitive development: identity, emotion, aggressive, fantasy, and reality (Bjorkqvist and Lagerspetz, 1985). Studies have shown that long-term watching of cartoons with negative content (violent, uncivilized behavior, etc.,) can lead to negative viewing experiences for children, such as generating more negative behaviors and emotions, increasing aggressive illusions, and thinking in ways that more easily diverge from reality. Finally, watching such cartoons affects development throughout one's entire childhood (Bandura, et al., 1963; Hapkiewicz and Roden, 1971; Osborn and Endsley, 1971; Gunter and Harrison, 1991; Huesmann et al., 2003; Huang, 2016). A study by Prescott et al. (2018) supports this claim through a meta-analysis of 24 studies. The investigators note that playing violent video games can exacerbate children's physical attacks over time. A longitudinal study by Huesmann et al. (2003) from 1977 to 1992 shows that excessive exposure to media violence during childhood can even predict early adult aggression. When children grow up, their increased negative behaviors will inevitably have a certain

degree of bad influence on society. A meta-analytic study by Greitemeyer and Mugge (2014) also supports this conclusion.

In these viewing experiences, the study of children's sense of reality is particularly important. Cartoons contain many illusory events, but young children cannot completely distinguish the illusory events in cartoons from real-life events (Nurşen, 2004). Children may learn illusory behaviors, make mistakes, and even engage in life-threatening behaviors; news reports on such behaviors are not uncommon. For example, *People's Daily* reported that an 8-year-old girl in Chengdu learned rock climbing because she was imitating Briar and Bramble in the *Boonie Bears* ("*Boonie Bears* blamed for 8-year-old girl's death? What should be blamed?", China Youth Daily, August 01, 2018). Because of such potential for danger, distinguishing illusory from real events is an important cognitive task for preschoolers and a basic skill for daily activities. According to Woolley (1997), "reality" refers to things or phenomena that exist in our daily lives or are consistent with our real-life laws, such as airplanes, birthdays, going to the supermarket to buy things, etc., In contrast, "fantasy" refers to things or phenomena that do not exist in daily life or are inconsistent with our real-life laws—for example, a plot in *Tom and Jerry* in which, when Jerry was chased by Tom, his body was blown into a ball by the wind. Piaget posited that until the age of 12, children do not have the ability to distinguish between reality and unreality. A study by Harris and Koenig (2006) found that children aged 4–5 could not accurately judge illusory events and objects. Other researchers also believe that younger children often mistakenly judge real events as illusory; the ability to distinguish the two will gradually increase as children move into primary school (Martarelli and Mast, 2013; Li et al., 2015; Martarelli et al., 2015; Maftei and Măirean, 2017). Moreover, this kind of ability is also related to children's judgment and logical thinking. Some previous studies have found that children's ability to distinguish illusory events from real-life events is likely to be shaken by what they have seen (Chandler and Lalonde, 1994; Rosengren and Hickling, 1994; Subbotsky, 2004). In such studies, even though the children believed at first that an event was an illusory event and would not happen in real life, more than half of the children changed their original judgment and logical thinking when they saw the magical illusory event happening in front of their eyes. Some children used factual information such as experience proofs to explain the reason for their change in judgment, for example, "This is not a scam, because I saw it with my own eyes." Other children explained with simple information, such as redundant proofs, for example, "It just happened." Others rationalized their explanations with "if" clauses such as hypothesis proofs, for example, "If I don't see this, I may not believe it" (Chandler and Lalonde, 1994; Shtulman and Carey, 2007). This easy change in judgment also illustrates the instability of preschool children's distinctions between illusory events and real-life events as well as the development of judgmental thinking. Piaget noted that this confusion can hinder children's cognitive development; thus, consumption of too much illusory content is not recommended for children.

Based on this consideration, the American Academy of Pediatrics Committee on Public Education (2001) suggested that parents should accompany their children when watching cartoons, guiding their children and explaining the cartoon content. This approach can effectively reduce the negative impact of cartoons' bad content on children. Although individual researchers have proposed opposing views (Dorr et al., 1989; Skouteris and Kelly, 2006; Collier, et al., 2016), many previous studies have shown that parental coviewing can not only reduce the emergence of children's negative emotions caused by panicky, suspenseful, and other TV footage (Wilson and Weiss, 1993; Nathanson and Cantor, 2000; Linder and Werner, 2012) but also promote preschoolers' learning (Rice et al., 1990; Sims and Colunga, 2013; Strouse et al., 2018) and improve their understanding of TV content (Morgenlander, 2010). According to İvrendi and Özdemir (2010), when a mother and a child watch TV together, the child's thinking is more easily diverted from reality, such that the child confuses the real and illusory worlds in the cartoons. Therefore, for children's development, reducing the time that children spend watching TV programs and supervised viewing are usually advocated.

To date, intergenerational education is very common in China. Therefore, the influence of grandparents on children should not be ignored. Many studies have found that mothers and grandmothers' parenting status is an important indicator of children's well-being and physical and mental health (Dolev and Habib, 1997; Socolar, 1997). However, mothers and grandmothers exhibit great differences in their parenting styles and how they interact with children (Staples and Smith, 1954; Stevens, 1984; Smith, 1991; Chase-Lansdale et al., 1994; Ruiz and Silverstein, 2007). For instance, Xing et al. (2012) found several intergenerational differences between Chinese mothers' and grandmothers' parenting behaviors: for example, mothers provide more advice, guidance, explanation and reasoning, positivity, and evaluation to achieve specific parenting goals in the process of raising children than do grandmothers. Mothers also place more emphasis on the development of children's independent socialization goals than do grandmothers. In the process of getting along with children, mothers show more emotional support and school involvement, while grandmothers are mainly concerned with the child's life and physical health (Coyl-Shepherd and Newland, 2013; Xing et al., 2016). This difference may lead to variations in the level of their participation in children's daily lives and have a major impact on the children's social development (Xing et al., 2016). In addition to myriad demographic variables, children's personality factors, etc., this difference may also be caused by children's different behavior patterns learned in the contexts of the two generations. Compared with grandmothers, mothers may pay more attention to children's education and quality of life, and thus, they are willing to spend more time with children to learn or participate in parent-child interactions. According to the observational learning theory, through such role modeling, positive behavior can be quickly and directly learned by children to minimize the negative impact of harmful external information. In contrast, parents' bad behavior and negative parent-child relationship

patterns will also quickly be absorbed by the child, which is not conducive to children's social development.

In summary, previous studies, domestic and abroad, have analyzed and explained cartoons from different perspectives. However, some studies have simply discussed the impact of cartoons or media use on children without considering the roles and influences of parents (Bandura et al., 1963; Hapkiewicz and Roden, 1971; Osborn and Endsley, 1971; Gunter and Harrison, 1991; Huesmann et al., 2003; Carter, 2008; Schmidt and Vandewater, 2008; Stevenson, 2012; Huang, 2016; Frémont et al., 2018). Some studies explore the impact of parents on child growth but do not compare the influence of grandparents (Dorr et al., 1989; Rice et al., 1990; Wilson and Weiss, 1993; Nathanson and Cantor, 2000; Skouteris and Kelly, 2006; İvrendi and Özdemir, 2010; Morgenlander, 2010; Linder and Werner, 2012; Sims and Colunga, 2013; Collier et al., 2016; Strouse et al., 2018). Some studies compare the effects of intergenerational differences on children's education and growth but have not considered whether such differences also have differential effects on children's daily entertainment activities (Staples and Smith, 1954; Stevens, 1984; Smith, 1991; Chase-Lansdale, et al., 1994; Ruiz and Silverstein, 2007; Xing et al., 2012, 2016; Coyl-Shepherd and Newland, 2013). Therefore, the aims of this study are to explore the attitudes of mothers and grandmothers toward children watching cartoons and further explore the impact of intergenerational differences on children's viewing experiences. The study of intergenerational differences is necessary in China, because, given the rapid development of Chinese society; there are an increasing number of families in which elder members usually take care of the children. Generally, women (mothers and grandmothers) put more energy into raising children. The two generations inevitably have different opinions in this regard. Thus, improving ways of educating and raising children have become a topic of immense concern to parents and have also become a primary issue that is closely connected with social development. After all, children's healthy growth is the foundation of social development, and family education is undoubtedly an indispensable element of this foundation.

The results of this study are derived from the professional perspective of psychology. Parents can obtain reference value from the results, change their parenting style and companionship modes, and re-examine their parent-child relationship. In addition, parents can learn to better screen cartoons that are helpful to children and learn how to view the cartoons with them. It is better to accompany children when they are watching cartoons. In addition, the results of the study may also affect the teaching mode of some kindergarten teachers, who may communicate their knowledge by watching cartoons with the children and explaining the patterns that occur. Parents and teachers who feel that this change is effective will personally recommend it to other parents and teachers. This spontaneous transmission may have a certain social impact in the education sector. In addition, this study may also play a role in the establishment of a normative grading system of domestic animation content and enrich the research in related fields in China.

Hence, we propose the following hypotheses:

1. Mothers and grandmothers may have significant differences in their attitudes toward viewing cartoons.
2. Mothers and grandmothers have significantly different effects on children's cartoon-viewing experience.

MATERIALS AND METHODS

Participants

In this study, 89 children (including 49 boys) and their parents/grandparents (including 49 mothers) were selected from three different classes of two public kindergartens in Beijing. The average age of children was 70.55 ± 4.94 years. The average age of the mothers was 36.53 ± 3.25 years; the average age of the grandmothers was 63.58 ± 5.16 years. Among participants, 46 mothers and 16 grandmothers were educated at the university level; 33 mothers had annual incomes of more than 100,000 yuan, as did two grandmothers. We recruited the mothers (grandmothers) of children in a senior kindergarten class because children in this age group are at the preschool stage, which is an important learning stage prior to elementary school. We were particularly eager to learn whether the overall attitudes of mothers and grandmothers affected their children.

Experimental Design

This study used a single-factor (mothers vs. grandmothers) between-subjects design to explore whether there would be a difference between the influence of mothers and grandmothers coviewing cartoons with their children/grandchildren on the children's cartoon-viewing experience. We adopted the design concept of a natural experiment method. After strict control of the variables, we used this more socially oriented experimental design to improve the ecological validity of the experiment and to ensure that it would be consistent with the real living environment. This approach is more authentic, universal, and applicable than laboratory experiments.

Procedure

Adult participants were recruited through telephone calls and flyers posted at the kindergarten. Child participants were also recruited at the same kindergarten and were selected based on adult participants. Before the experiment began, we asked mothers/grandmothers to provide written informed consent to ensure that they knew what they were doing and what their children/grandchildren were going to do. We also informed them of the voluntary and confidential nature of the study. The process of data collection was approved by the Ethics Committee of the Psychology Department of Capital Normal University.

First, the mothers/grandmothers were asked to enter an empty classroom with their children/grandchildren. Next, they were instructed to watch a cartoon clip for approximately 7 min in a relaxed state with only the children present. After the mothers/grandmothers explicitly requested to adjust their seated position and the computer, the experimenter clicked the "start video" button and left the classroom, leaving only one mother/grandmother and child. After approximately 10 min (or less than 10 min if the participants took the initiative to tell the experimenters that they had finished coviewing), the experimenter returned. Then, the experimenter asked the mothers/grandmothers to leave and sat next to the child. To ensure objectivity, the experimenter used a computer to play the recording of the questions in turn and asked children to answer. The whole process was recorded using a mobile phone.

Experimental Materials

Demographic Questionnaire

With the help of each kindergarten teacher, the experimenter who was involved issued a demographic questionnaire to all adult participants, and the objectives as well as the questionnaires were briefly explained to all parents. All of the mothers had normal vision; grandmothers with vision problems were helped by an investigator when answering the questionnaire. The questionnaire included children's names, ages, and genders; parents' ages, levels of education, and annual income were also included. We added the following three questions to the end of the questionnaire: "Do you think that your child's cartoon viewing significantly influences him or her?", "Do you limit your child's cartoon-viewing time?", and "Do you monitor the content of the cartoons that your child views?" (see the full questionnaire in **Appendix 1**).

Boonie Bears Video Clip

Boonie Bears is a Chinese cartoon created specifically for children. This cartoon tells the story of two bear brothers (Briar and Bramble) who work together to deal with a bald lumberjack (Logger Vick) and protect the virgin forest. The reason for choosing this cartoon was that it was broadcast on CCTV and various online media after its release in 2013, and its ratings exceeded those of the famous Chinese cartoon Pleasant Goat and Big Wolf. The clip was selected from the fourth episode of *The Big Adventures of the Bears*. The total length of the episode was 13 min. The end credits and parts of the episode not relevant to the plot were removed, with 7 min and 30 s remaining.

Cartoon Playback Device

A computer with a 24-inch screen was used to play the cartoon video clip.

Children's Cartoon-Viewing Experience Questionnaire

With reference to the research of Bjorkqvist and Lagerspetz (1985) on measuring children's cartoon-viewing experience, we compiled a questionnaire. The questionnaire included a total of 16 questions representing the following five dimensions: understanding, identity, emotion, reality, and aggression. Regarding the coding of the "why" questions in the "reality" dimension, we refer to the coding system of Shtulman and Carey (2007) and divide the children's reasoning types into four categories: (A) *Experience proofs*, (B) *Hypothesis proofs*, (C) *Redundant proofs*, and (D) *Do not know*. *Experience proofs* referenced facts

about the world that would preclude an event's occurrence (e.g., "There are no wooden ladders in the world, only iron ladders"; "Normal people are not so heavy, they wouldn't break the ladder"). *Hypothesis proofs* referenced hypothetical events that could occur, or would occur, in place of the actual event under consideration (e.g., "If you want to eat honey, you can go to the supermarket to buy it"; "People don't run on rockets unless they have poor eyesight"). *Redundant proofs* provided no information beyond what was already mentioned in the story or what was already discernible from a participant's initial judgment (e.g., "that's not possible," "that's not real," "it can only happen in stories"). Some examples of the questions in the questionnaire and coding scheme are shown in **Table 1** (see the full questionnaire in **Appendix 2**).

Data Processing

For the data from the demographic questionnaire, SPSS 22.0 version was used for statistical analysis processing. To record the questionnaire's answers, we first compiled the records and then developed the coding table. We first selected the appropriate

questionnaires and measurement dimensions according to the selected cartoons and the research of Bjorkqvist and Lagerspetz (1985). Then, we adjusted the questions according to the content of the cartoons and, finally, set the scoring criteria. After we determined the code list (see **Appendix 2**), 30 of the recordings were independently coded by two psychology graduates familiar with the coding rules. The scorer consistency coefficient (kappa coefficient) was 0.84.

RESULTS

Analysis of the Differences Between Mothers' and Grandmothers' Attitudes Toward Children Viewing Cartoons

Taking the mothers/grandmothers as independent variables and their attitude toward children viewing cartoons (see **Appendix 1**) as a dependent variable, we used the chi-square test to analyze the data. The results showed significant differences between attitudes toward viewing cartoons ($\chi^2 = 8.83$, $p < 0.05$) and between limitations on the content of cartoons ($\chi^2 = 11.94$, $p < 0.01$). A belief that cartoons have a very high influence on children's physical and mental health was endorsed by 85.7% of the mothers. In addition, 79.6% of the mothers reported frequently and strictly limiting the content of their children's cartoon viewing. However, 87.1% of grandmothers thought that the cartoons had little effect on the children. Almost half of the grandmothers had stricter limitations on the content of cartoons that their grandchildren view; the other half held the opposite attitude (see **Table 2**).

Analysis of the Differences in the Influence of Mothers and Grandmothers on Children's Cartoon-Viewing Experience

A binomial distribution test was performed to determine "whether the children think the event in the cartoon could

TABLE 1 | Examples the children's cartoon-viewing experience questionnaire.

Dimension	Question	Coding scheme
Reality	8. To eat honey, Briar and Bramble went to climb the tree and set the fire. Do you think this could happen in real life? Why?	**Do you think this could happen in real life?** **A**. Yes (1 point) **B**. No (2 points) **C**. "I do not know" or "I am not sure" (3 points) **Why?** **A**. Experience proof (1 point) **B**. Hypothesis proof (2 points) **C**. Redundant proof (3 points) **D**. Do not know (4 points)

TABLE 2 | Chi-square test of mothers'/grandmothers' attitudes toward the children's cartoon-viewing experience (χ^2).

Parents' identity	Questions	P5[a]				P6[b]				P7[c]			
	Answer type	a[1]	b[2]	c[3]	d[4]	e[5]	f[6]	g[7]	h[8]	e[5]	f[6]	g[7]	h[8]
Mothers		0	7	32	10	14	28	7	0	17	22	9	1
Grandmothers		2	13	21	3	16	22	1	1	9	11	11	9
χ^2			8.83*				5.50				11.94**		

[a]*Do you think viewing cartoons has an influence on children's physical and mental health?*
[b]*Do you limit your child's cartoon-viewing time?*
[c]*Do you monitor the content of the cartoons that your child views?*
[1]*No influence.*
[2]*Little influence.*
[3]*More influence.*
[4]*Very high influence.*
[5]*Strict limit.*
[6]*Often limit.*
[7]*Low limit.*
[8]*No limit.*
**df = 3; p < 0.05; ***df = 3; p < 0.01.

occur or not," with the "reality" dimension serving as an independent variable (Q8-1, Q9-1, and Q10-1). According to the results, more than 80% of children believed that these three types of illusory events in a cartoon would not happen in real life. The probability of children's responses was significantly different from the expected probability ($p < 0.001$), indicating that the child's answer probability did not conform to the binomial distribution and was not a random guess (see **Table 3**).

The mothers/grandmothers were taken as independent variables, the question-answer type of the four dimensions in the children's cartoon-viewing questionnaire was the dependent variable, and the chi-square test was used to analyze the data. The results showed that mothers and grandmothers had significantly different influences on the children's answer types for Q8-2 ($\chi^2 = 16.69$, $p < 0.01$) and Q10-2 ($\chi^2 = 10.44$, $p < 0.05$) in the reality dimension. In the case of mothers and children coviewing the cartoon, the number of children who answered Q8-2 using the *Experience Proof* answer type was highest, accounting for 75.6% of the children. The number of children who answered Q8-2 using the *Hypothesis Proof, Redundant Proof*, and *Do not Know* answer types was small. In the case of grandmothers and children coviewing the cartoon, the percentages of children who answered Q8-2 using the *Experience Proof*, *Hypothesis Proof*, and *Redundant Proof* answer types were approximately 34.4, 31.3, and 34.4%,

respectively. In the case of mothers and children coviewing the cartoon, the percentage of children who answered Q10-2 using the *Experience Proof* answer type was highest, and the percentage of children using the *Redundant Proof* answer type was second highest, at 54.3 and 41.3%, respectively. The number of children who answered Q10-2 using the *Hypothesis Proof* and *Do not Know* answer types represented the minimums. In the case of grandmothers and children coviewing cartoons, the number of children who answered Q10-2 using the *Experience Proof* answer type was greatest, accounting for 54.3% of the variance, followed by children who used the *Hypothesis Proof* and *Redundant Proof* answer types (see **Table 4**). There was no significant difference between mothers and grandmothers with respect to the impact of children's responses on other dimensions.

DISCUSSION

Differences Between Mothers' and Grandmothers' Attitudes Toward Children Viewing Cartoons

The significant differences in attitudes between mothers and grandmothers toward the children's cartoon viewing are consistent with the results of previous studies. Barkin et al. (2006) argued that parents are more restrictive and more cautious about children's cartoons than other caregivers because parents have a stronger sense of prevention against the negative effects of violence or other undesirable cartoon content. This discrepancy may be because the mothers and grandmothers had different styles of thought for their parenting methods. Because they held an important role in disciplining their children, the mothers were more concerned with whether viewing cartoons helped their children's learning and physical and mental development. They believed that excessive viewing of cartoons would affect their children's vision and physical exercise as well as the quality of their parent-child relationships (Silje et al., 2018; Webster et al., 2019). Therefore, most mothers had very strict restrictions on the content of TV programs (İvrendi and Özdemir, 2010). However, the grandmothers believed that they

TABLE 3 | Probability test of whether children think that illusory events will occur (p).

Answer type	Questions		
	Q8-1[***a]	Q9-1[***b]	Q10-1[***c]
Yes	0.84	0.82	0.94
No	0.16	0.18	0.06

[a]*To eat honey, Briar and Bramble went to climb the tree and set the fire. Do you think this could happen in real life?*
[b]*When Bramble was chased by a bee, he ran away on a ladder that had been broken into two. Do you think this could happen in real life?*
[c]*Logger Vick used a rocket to shoot Warren into the sky. Do you think this kind of thing could happen in real life?*
[***]*p < 0.01.*

TABLE 4 | Chi-square test of the different influences of mothers/grandmothers on children's cartoon-viewing experience (χ^2).

Parents' identity	Items	Q8-2[a]				Q9-2[b]				Q10-2[c]			
	Reason type	A[1]	B[2]	C[3]	D[4]	A[1]	B[2]	C[3]	D[4]	A[1]	B[2]	C[3]	D[4]
Mothers		31	3	5	2	30	11	5	2	19	1	25	1
Grandmothers		11	10	11	0	13	15	7	0	8	8	19	0
χ^2			16.69*				7.83				10.44*		

[a]*"Why" did you give your answer to Q8-1?*
[b]*"Why" did you give your answer to Q9-1?*
[c]*"Why" did you give your answer to Q10-1?*
[1]*Experience proof.*
[2]*Hypothesis proof.*
[3]*Redundant proof.*
[4]*Do not know.*
[*]*df = 3; p < 0.05.*

used to watch TV in the past and did not encounter any bad influences. Soumya et al. (2014) reported that some grandparents use TV as a "temporary babysitter," and children watch TV when their grandparents are busy with other household chores. In contrast to parents, grandparents feel that children's cartoon viewing can help them reduce the burden of caring for the children and bring the children joy. Second, studies by Thomas (1986) and Fuller-Thomson and Minkler (2001) have found that younger grandparents (40–60 years old) are more willing to participate in the daily life of grandchildren than older ones (70–80 years old). Furthermore, they are more willing to make useful recommendations for parenting. This difference may indicate that our results could be related to the age of the caregivers. The gradual aging of the grandparents' physical functions, along with the various physiological and psychological illnesses that they may have, could mean they have too little energy to guide and participate in children's daily activities (Kong and Wang, 2013). However, this possibility should be explored, specifically in our study.

Differences in the Influences of the Mothers and Grandmothers on the Children's Cartoon-Viewing Experiences

For more than 80% of the children, the illusory events portrayed in the cartoons were not expected to occur in real life, consistent with findings from previous studies. As Shtulman and Carey (2007) mentioned in their research, if children cannot imagine how an illusory event happened beyond their cognitive domain, then they will inevitably judge that illusory event could not occur in real life because there are two criteria by which children judge illusory and real events: whether events comply with the laws of physics and whether they comply with social rules (Nicholls and Thorkildsen, 1988). Events such as "some object floats in the air" in cartoons do not conform to the laws of physics. Therefore, this finding may be related to the criteria for child judgment. Second, many previous studies have found that children can accurately distinguish illusory events from real-life events at the age of 5–6 and that this ability generally improves with age and can even reach an adult level by the age of 7–8 (Harris et al., 1991; Johnson and Harris, 1994; Martarelli and Mast, 2013; Li et al., 2015; Martarelli et al., 2015; Maftei and Măirean, 2017). The child participants in this study were approximately 5 years old, and their cognitive development was transitioning from the previous stage of operation to the specific stage of operation. Their ability to observe and judge things is constantly changing, which is why they could more accurately judge that illusory events will not occur in real life. Third, Prentice et al. (1978) and Woolley et al. (2004) found that most preschoolers are more willing to believe that the beautiful and positive illusory characters, and illusory plots in cartoons will exist or occur than normal plots. The illusory events of cartoons in this study were relatively negative; thus, the children may have thought that they would not happen based on their subjective emotional experience. This result may be related to the type of illusory event in the cartoon.

When the children coviewed the cartoon with their mothers, they more commonly used the experience proof type to answer the "Why" question (Q8-2, Q9-2, and Q10-2) for the answers to Q8-1, Q9-1, and Q10-1. This result is consistent with that of previous research. Research has shown that adults have more mature logical thinking and reasoning skills due to their richer experience and knowledge. When children ask for reasons, parents generally use experience proofs to explain their reasoning more often than do children (Li et al., 2015). Under the influence of this thinking mode, parents can effectively impart their own past experience and knowledge when coviewing TV shows with their children, helping children distinguish illusory events from real-life events (Logan and Moody, 1979; Morgenlander, 2010). In this study, the greatest use of the experience proof type occurred for the children who coviewed with their mothers, indicating that the mother's time spent on the child's daily activities was being used efficiently. Mothers are good at teaching and learning, and they can find appropriate opportunities to educate children while viewing cartoons. This educational method includes how to distinguish between reality and illusory events in cartoons. Children are obsessed with their mother's experience, their daily experiences, and accumulated knowledge; thus, mothers' greater levels of experience can be used to explain the children's questions. This finding shows that the children's own experience and the knowledge provided by their mothers are both indispensable, which coincides with Vygotsky's sociocultural cognitive theory (Vygotsky, 1978). He believed that the individual's prior knowledge experience (e.g., that which their mothers imparted) acts as an intermediary, enabling individuals to establish new connections when viewing works of art (e.g., cartoons), thereby generating new understanding and thinking. The sociocultural and external educational environments will promote the cognitive development of individuals and eventually form a sound cognitive system. In addition, the average age of the children in this study was 5–6 years, and their theory of mind development was appropriate. The "Theory of Mind" (ToM) refers to an individual's reasoning or cognition of the psychological state of oneself and others, as well as the individual's relationship with others (Gopnik and Astington, 1988). Children's ToM begins to form at 4 years of age (Freeman and Lacohee, 1995; Carlson et al., 1998). Once this ToM is formed, children can "pretend" that they are others and think differently, can see the motives and results of others' behaviors, and distinguish between appearances and facts. Therefore, the children in this study could correctly distinguish the illusory and real events in the cartoon and use their daily learned experiences and the experiences taught by their mothers to give reasonable explanations.

When the children coviewed cartoons with their grandmothers, the numbers of children using experience proof, hypothesis proof, and redundant proof explanations were similar, consistent with the findings of previous studies. Some researchers believe that grandmothers are more willing to use simple and rude instructions, rewards, and cold treatments to raise children than mothers (Stevens, 1984; Smith, 1991) and do not pay much attention to communication and education with children. Moreover, most of the Chinese grandmothers' disciplinary style

in this study tended to be nanny-related, in which they were more concerned about the safety, food, and clothing problems of their grandchildren at home. This type of discipline will reduce the possibility of spreading useful knowledge and experience (Soumya et al., 2014; Xing et al., 2016). As a result, the grandmothers in this study did not pay as much attention to the content of cartoons when accompanying their grandchildren but directed more energy to the children's needs and providing them with services. Even if the grandmothers participated in the interactive process of viewing cartoons, they reminded their grandchildren to pay attention *via* sight only. For other aspects of viewing, they did not care very much, nor did they offer any experiential education. The children in this study had developed an age-appropriate ToM, and they could essentially distinguish between real and illusory events. However, these children did not gain much experience from their grandmothers. Coupled with the lack of accumulation of children's own daily experience, this experience may have led to a diversified thinking pattern. Furthermore, as mentioned above, there are two main methods for judging the likelihood of an event in addition to the method taught by adult experience. First, children may try to identify the conditions that allow the event to occur, and if they cannot, they will judge the event as impossible. We call this type the "hypothesis proof." Second, children may not have tried to model each event but instead rely solely on their experience. We call this type the "redundant proof" (Li, 2014). Therefore, it is easy to understand that when the grandmother's experiences were not adequately taught, the types of responses the child would offer as answers were diversified.

Educational Advice

Based on the above findings, we found that the mothers were more rigorous about the children watching cartoons than were the grandmothers. Additionally, when watching cartoons with a mother, the child's thinking in his or her answers became more divergent and also cited experience as evidence. These results should cause widespread concern in the education industry and cause parents to pay attention to their children's education. Correspondingly, the division of responsibilities for caring for children in many Chinese families can also be appropriately changed. Due to the important influence of parents on children (Dolev and Habib, 1997; Socolar, 1997), we can appeal to parents to spend more time with their children at home and to participate in parent-child activities as much as possible to train their children's cognitive development. Parents should be primarily responsible for educating their children and spreading knowledge (Mccarthy et al., 2003). They should not be so busy with work that they neglect to communicate with their children or push the task of educating their children to grandparents. An educational model in which parents are responsible for their children's education will help children's thinking development and experiential learning. In addition, grandparents should learn from this result. The interaction between grandparents and children should not always be like that of a babysitter (Hank and Buber, 2009). Grandparents should pay more attention to educating the children. In cases where their educational abilities do not allow such participation, they can take care of their grandchildren's diets

while their parents are busy (Hayslip et al., 2003). However, they should not live with their grandchildren for a long time because of their own needs. Instead, they should let the parents take primary responsibility for early education (Finch and Mason, 1991). In addition, teachers' teaching methods can also be adjusted appropriately. Teachers cannot simply rely on the knowledge of books but must also spread knowledge through animation, video, etc., (Wang, 2008). Perhaps this approach will help children understand knowledge faster and better and help them generate their own new thinking and more angles from which to answer questions. If all the above suggestions can be implemented, cartoons will become a good assistant with which to help children learn and grow together with their parents.

LIMITATIONS

This study revealed interesting results; however, certain limitations remain.

First, the sample size was small, which might lead to poor generalization of the results and negatively affect external validity.

Second, this design of this study was cross-sequential. In the future, a longitudinal study can be conducted to track the impact of children's age development trends on the results of the study, starting with children in junior classes.

CONCLUSION

Compared with grandmothers, mothers pay more attention to the influence of cartoons on their children's physical and mental health, so the limitations that mothers place on cartoon content are stricter. In general, mothers have more influence on their children's cartoon-viewing experience than do grandmothers. In the case of coviewing cartoons with their mothers, children are more likely to use their accumulated knowledge and experience to think and answer questions.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The study was reviewed and approved by the Ethics Committee of the Psychology Department of Capital Normal University. Written informed consent was obtained from all adult participants and from the parents/legal guardians of all non-adult participants.

AUTHOR CONTRIBUTIONS

YW and ZS designed the experiments. JZ collected and analyzed the data. QM wrote the manuscript. XS and QM revised the manuscript.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01232/full#supplementary-material.

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Characteristics and Influencing Factors of Real-Life Violence Exposure Among Chinese College Students

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This study aimed to explore the characteristics and influencing factors of violence exposure in real life among Chinese college students. A sample of 375 college students was randomly selected to complete three questionnaires. The results indicated that participants had higher scores as victims and witnesses on violence exposure in community than they did in family. Male students had higher scores than females in both family and community violence exposure. Subjects with lower father's education level scored significantly higher than others in family violence exposure by victimization and community violence exposure by witnessing and victimization. Participants growing up in rural areas had significantly higher scores than others in family violence exposure by victimization and community violence exposure by witnessing. Finally, those subjects with siblings reported higher scores than those from only child families in family violence exposure by witnessing. Multiple regression analysis showed that deviant behaviors of peers, gender, and single-child status were significant influencing factors of respondent violence exposure. More efforts should be taken to effectively cope with existing violence exposure in college students and minimize the potential of future exposure.

Keywords: characteristics, influential factors, violence exposure, family violence, community violence, college students

INTRODUCTION

Violence refers to "the intentional use of physical force or power, threatened or actual, against oneself, another person, or a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development, or deprivation" and was officially announced as a crucial risk factor for public health (World Health Organization, 1996). More than 1.3 million people worldwide die from various types of violence each year, accounting for about 2.5% of total mortality (World Health Organization et al., 2014). In addition to causing death, violence can cause physical problems, such as injury, disability, depression, drug abuse, and high-risk sexual behavior (World Health Organization, 2015), resulting in heavy burdens on the health, welfare, and justice sectors.

Children and adolescents who have been victims of violence are a major societal concern. Studies revealed that children and adolescents suffer higher rates of exposure to violence than adults (Hashima and Finkelhor, 1999; Finkelhor, 2008). About half of high school youth reported being threatened, slapped, hit, or punched in the home, school, or neighborhood, and up to a third

of high school youth indicated being beaten or mugged in the school or neighborhood, attacked with a knife or stabbed, or shot at by another person (Singer et al., 1995). Marcus and Reio (2002) reported that physical altercations resulting from violence among college students reached a rate of 63%, of which 9.1% suffered injuries and required medical care. The situation seems more serious in China. According to one study, the prevalence of only campus violence among college students in Guangzhou city was 69.9% (Wang et al., 2012), calling public attention about college student violence exposure in China.

Exposure to violence also has strong negative impacts on children and adolescents. High exposure in daily life explains a large amount of behavioral and mental problems (Fergusson et al., 2008; Gilbert et al., 2009). Prospective longitudinal studies consistently showed that maltreated children have lower educational achievement than their peers and are more likely to receive special education (Jonson-Reid et al., 2004; Boden et al., 2007). Adolescent violence exposure also increased the risk of behavior problems including intrinsic (anxiety, depression, anger) and extrinsic (aggression, acting out) behavior, post-traumatic stress disorder, and even the likelihood of illegal and criminal activities (Singer et al., 1995; Banyard et al., 2001; Manly et al., 2001; Whiffen and Macintosh, 2005; Herrenkohl and Herrenkohl, 2007; Fergusson et al., 2008). Furthermore, violence in the living environment can lead to suicidal behavior of college students with irreversible consequences (Chen, 2007).

The entire society suffers from the high occurrence of violence and its adverse impacts on children and adolescents. Exposure to violence can increase the risk of injuries, infectious diseases, such as reproductive health problems and AIDS, and non-communicable diseases, such as heart disease and cancer (Meyers et al., 2018). Apart from the huge increases in medical expenses, national and local economies are indirectly affected by eroded human capital. Social inequality and discrimination would also be exacerbated, further hindering social development and increasing uncertainty (World Health Organization, 2008). The cost of violence is enormous, and effective measures to prevent violence are essential and urgent to ensure long-term societal stability.

Unfortunately, there are several limitations of existing studies. Firstly, most researches on violence exposure focused on children and adolescents but overlooked the population of college students aged at 18–22 (Geiger and Castellino, 2011). Previous studies have shown that college students experience more violence exposure than other age groups (Singer et al., 1995; Chen, 2007; Finkelhor et al., 2009), underscoring the need for investigations of this population. Secondly, although studies suggested that direct violent victimization should have significant negative impacts on development in youth, the potential negative influences of witnessing violence should not be dismissed. It is urgent and crucial to conduct more studies to identify factors associated with both victimization and witnessing violence among college students. Thirdly, due to the influence of traditional Chinese culture, people may display

higher acceptance and tolerance for violence. For example, unlike Western countries, parents and teachers in China usually consider beating children as a normal and acceptable way to educate them. Adolescents in China seem much more likely to be exposed to violence. Additionally, most Chinese adolescents experience the transition stage to adulthood during their college years when they first leave family and face the world by themselves, which is an essential period for the development of psychological maturity. Away from their parents, college students have more opportunities to be exposed to violence in their daily life as they are eager to explore and have more access to information, which can have negative effects on their physical and mental health.

Most domestic research on violence has been qualitative, mainly to investigate the incidence, type, and risk factors of violence. This study applies quantitative research methods and adopts international definitions and measurement tools to systematically and objectively study the characteristics and influencing factors of violence exposure among Chinese college students. With the approach, the results can be easily compared with other existing and future studies at home and abroad.

In this quantitative study, we aimed (1) to investigate the victimization and witnessed violence exposure in both the family and community and (2) to explore the influences of sociodemographic variables and peer factors on violence exposure in Chinese college students. We assumed that growing up in a rural area, lower parental education level, having siblings, and having peers with more deviant behaviors were risk factors for violent exposure among college students.

MATERIALS AND METHODS

Procedure

A total of 410 college students were selected from Xi'an Jiaotong University, Shaanxi Normal University, Northwestern Polytechnic University, and Northwest University, which are "211" universities ranking in the top 100 in China and located in Xi'an, Shaanxi Province. The Research Ethics Committee of Xi'an Jiaotong University approved this study protocol. After being fully informed of the study purpose, 385 college students agreed to complete the surveys and sign written consent letters. Before the start of the research, researchers explained the definition of community and domestic violence to all participants. Community violence is interpersonal violence between individuals and people who are not closely related in the community in various formats including sexual assault, burglary, youth gangs, drug abuse, and ethnic and racial segregation (Krug et al., 2002). Domestic violence refers to physical, mental, and other violations committed by family members by means of beating, restricting personal freedom, and frequent insulting and threatening (United Nations, 2017). We used a convenience sampling method for this research project. During a mental health class, under the supervision of a researcher and a teacher, 385 participants anonymously finished the general questionnaire, Community Experience Questionnaire (CEQ), and Peer Group Questionnaire (PGQ) in about 30 min. Ten

participants did not finish at least one item of the surveys, leaving 375 college students as the effective sample. The participation rate of this survey was 93.90%, and the effective response rate was 97.40%.

Participants

A total of 375 college students completely finished the surveys. The mean age of the subjects was 20.03 years (SD = 1.410, range = 15–24). More than half (59.2%) of the subjects were male. The mean years of their parents' education were 12.88 and 12.09 years for the father and mother, respectively (corresponding SDs of 3.41 and 3.07). Most subjects (94.7%) came from a two-parent family and others from a single-parent family. More than half (53.3%) lived in a nuclear family (family members include only parents and children), and others lived in a non-nuclear family (above family members plus grandparents or others). Around three-fifths of the subjects (58.1%) grew up in urban areas, and the others in rural areas. More than half (56.8%) of participants were singletons (only child), and others were non-singletons (one or more siblings). The percentages for Grade 1, Grade 2, and Grade 3 students were 40.3, 26.4, and 33.3%, respectively. **Table 1** presents more details about the sample.

TABLE 1 | Sociodemographic characteristics of participating college students.

Characteristics		n (375)	%
Age	≤17	11	2.9
	18	44	11.7
	19	78	20.8
	20	97	25.9
	21	88	23.5
	22	48	12.8
	≥23	9	2.4
Gender	Male	222	59.2
	Female	153	40.8
Family structure	Single-parent family	20	5.3
	Two-parent family	355	94.7
Father's years of schooling	≤9	118	31.5
	10–12	112	29.9
	13–16	119	31.7
	≥17	26	6.9
Mother's years of schooling	≤9	148	39.5
	10–12	117	31.2
	13–16	101	26.9
	≥17	9	2.4
Family type	Nuclear family	200	53.3
	Non-nuclear family	175	46.7
Place of birth	Urban	218	58.1
	Rural	157	41.9
Single-child status	Only child	213	56.8
	Not only child	162	43.2
Grade	Grade 1	151	40.3
	Grade 2	99	26.4
	Grade 3	125	33.3

Measures

General Questionnaire

The general questionnaire asked about sociodemographic information including age, gender, place of growing up, family members they lived with, parental education level, siblings, and family history of mental illness.

Community Experience Questionnaire (CEQ)

The CEQ (Schwartz and Proctor, 2000) was used to test the violence exposure of students in their real-life family and community environments. It was developed by Schwartz and Proctor in 2000 on the basis of the Community Violence Questionnaire designed by Richters and Saltzman (1990). The CEQ contains 26 items with 12 and 14 items evaluating violence exposure by direct victimization and witnessing, respectively. Each item had four questions. The first two were related to a certain family violence exposure and the exact time of its occurrence, and the latter two were associated with a certain community violence exposure and its time of occurrence. There were four subscales: family violence exposure by victimization (FVEV), community violence exposure by victimization (CVEV), family violence exposure by witnessing (FVEW), and community violence exposure by witnessing (CVEW). Each item referred to a certain type of violence exposure and scored from 0 (never) to 3 (many times). The subscale result was calculated by summing up all the scores of the questions in the subscale. The possible total scores of FVEV and CVEV ranged from 0 to 36, and those of FVEW and CVEW ranged from 0 to 42. The higher the total score, the higher the violence exposure (Schwartz and Proctor, 2000). In the current study, Cronbach's alpha values for the four subscales (FVEV, FVEW, CVEV, CVEW) were 0.69, 0.77, 0.75, and 0.85 respectively, while that for the whole scale was 0.89.

Peer Group Questionnaire (PGQ)

We used the PGQ designed by Metzler et al. (1994) to assess the deviant behaviors of peers of college students. The PGQ consists of 13 items (e.g., "how many of your friends vandalize property?" and "how many of your friends get into fights?") rated from 0 (none) to 4 (almost all of them). The total scores of deviant behaviors were determined by summing up the ratings they indicated in the questionnaire. Higher scores on an item implied more deviant behaviors by their peers (Metzler et al., 1994). The internal consistency reliability of the PGQ in this study was 0.729.

Statistical Analysis

Descriptive analyses, paired sample t-tests, independent sample t-tests, analyses of variance (ANOVAs), and correlation analyses were performed in this study using SPSS software (IBM SPSS Statistics Version 23.0, Armonk, NY, United States). Paired sample t-tests were conducted to evaluate differences in violence exposure between family and community. Independent sample t-tests were used to assess differences in family violence exposure by victimization, community violence exposure by victimization, family violence exposure by witnessing, and community violence exposure by witnessing with regard to the variables including

gender, parents' years of schooling, types of family, family structure, place of birth, and single-child status. ANOVAs were performed to examine differences among the three age groups for the four violence exposure types. Correlation analyses were applied to investigate the correlation between violence exposure and deviant behaviors of peers. Multiple regression analysis was used to predict the main influencing factors of violence exposure among college students. The means and standard deviations (SDs) are reported. The standard 5% level of significance was applied for all statistical analyses.

RESULTS

Characteristics of College Student Violence Exposure

The mean score of violence exposure by direct victimization at home was 3.75 (SD = 3.71), and 81.33% (n = 305) of the subjects reported that they were exposed to family violence by direct victimization at least once in their lifetime. More than four-fifths (n = 323, 86.13%) reported that they witnessed family violence at least once in their lifetime, with a mean score of 4.30 (SD = 4.27). In community violence exposure, 89.06% (n = 334) of college students experienced direct violence as victims at least once in their lifetime with a mean score of 5.09 (SD = 4.30), and almost all the participants (n = 374, 99.73%) were exposed to community violence by witnessing at least once in their lifetime with a mean score of 10.58 (SD = 6.86).

Paired sample t-tests revealed that subjects obtained higher scores on violence exposure both by victimization in community (t = −6.45, df = 374, p = 0.000, 95% confidence interval [CI] [−1.75, −0.93], Cohen's d = −0.33) and witnessing in community (t = −18.25, df = 375, p = 0.000, 95% CI [−6.96, −18.25], Cohen's d = -1.1) than they did at home.

Comparisons of Violence Exposure With Sociodemographic Variables

The comparison results of family violence exposure and community violence exposure on college students with sociodemographic variables are presented in **Tables 2**, **3**, respectively.

For family violence exposure by witnessing, an independent sample t-test showed that subjects with siblings had a significantly higher score than those who were the only child in the family (t = −2.51, df = 317, p = 0.013, 95% CI [−2.03, −0.24], Cohen's d = −0.26).

For family violence exposure by victimization, the results of independent sample t-tests showed that male students scored significantly higher than female students (t = 2.0, df = 373 p = 0.047, 95% CI [0.01, 1.54], Cohen's d = 0.21); subjects with father's years of schooling ≤ 12 scored significantly higher than those with fathers having ≥13 years of education (t = 2.25, df = 373, p = 0.025, 95% CI [0.11, 1.65], Cohen's d = 0.24); and college students who grew up in rural areas had significantly higher scores than those in urban areas (t = −2.14, df = 373, p = 0.033, 95% CI [−1.93, −0.84], Cohen's d = −0.28).

For community violence exposure by witnessing, the significant statistical results were similar to those for family violence exposure by victimization. The results of independent sample t-test indicated that male students had higher score than female students (t = 5.44, df = 372, p = 0.000, 95% CI [2.28, 4.87], Cohen's d = 0.53); subjects with father's years of schooling ≤ 12 scored significantly higher than those with father having ≥13 years of education (t = 2.15, df = 373, p = 0.032, 95% CI [0.13, 2.98], Cohen's d = 0.23); and college students who grew up in rural areas obtained significantly higher scores than those in urban areas (t = −2.26, df = 373, p = 0.024, 95% CI [−3.67, −0.26], Cohen's d = −0.30).

For community violence exposure by victimization, independent sample t-tests showed that male students scored significantly higher than female students (t = 6.40, df = 369 p = 0.000, 95% CI [1.76, 3.33], Cohen's d = 0.65) and subjects with father's years of schooling ≤12 scored significantly higher than those with fathers having ≥13 years of education (t = 2.45, df = 373, p = 0.015, 95% CI [0.22, 2.0], Cohen's d = 0.26).

There were no significant differences for other sociodemographic factors.

Correlations Between Deviant Behaviors of Peers and Violence Exposure of College Students

Table 4 lists the correlation analysis results between deviant behaviors of peers and violence exposure of college students. Deviant behaviors of peers were significantly related to total family violence exposure (r = 0.312, df = 373 p < 0.01) and family violence exposure by witnessing (r = 0.229, df = 373 p < 0.01) and by victimization (r = 0.292, df = 373, p < 0.01).

Deviant behaviors of peers were also significantly associated with total community violence exposure (r = 0.500, df = 373, p < 0.05) and community violence exposure by witnessing (r = 0.472, df = 373, p < 0.01) and by victimization (r = 0.406, df = 373, p < 0.01).

Multiple Regression Analysis of Factors Related to Violence Exposure

The dependent variable was total score on the violence exposure. There were 10 independent variables including deviant behaviors of peers and 9 sociodemographic variables, such as age, gender, family structure, types of family, location of growing up, single-child status, length of stay with family members, and years of parental education. Five were binary variables: gender (male = 1, female = 0), family structure (single-parent family = 1, two-parent family = 0), types of family (nuclear family = 1, non-nuclear family = 0), location of growing up (urban = 1, rural = 0), single-child status (only child = 1, siblings = 0). Stepwise multiple regression was performed, and the results are shown in **Table 5**. The top three factors related to violence exposure were deviant behaviors of peers, gender, and single-child status, explaining 29.1% of the variance. The remaining seven variables (age, family structure, types of family, places of growing up, length of stay with family members, the

TABLE 2 | Family violence exposure in college students: sociodemographic comparison.

Sociodemographic variables		Family violence exposure by witnessing						Family violence exposure by victimization					
	n (375)	M ± SD	t or F	df	p-value	95% CI	Effect size Cohen's d or f	M ± SD	t or F	df	p-value	95% CI	Effect size Cohen's d or f
Age	≤19 (133)	4.34 ± 4.71	F = 0.016	374	0.984	–	f = 0.01	3.80 ± 3.80	F = 0.027	374	0.974	–	f = 0.01
	20 (97)	4.24 ± 4.48						3.73 ± 3.74					
	≥21 (145)	4.30 ± 3.71						3.70 ± 3.63					
Gender	Male (222)	4.25 ± 4.64	t = −0.26	373	0.793	[-1, 0.77]	d = −0.03	4.06 ± 3.76	t = 2.0*	373	0.047	[0.01, 1.54]	d = 0.21
	Female (153)	4.37 ± 3.69						3.29 ± 3.60					
Family structure	Single-parent family (18)	4.83 ± 4.15	t = 0.55	373	0.585	[−1.47, 2.60]	d = 0.13	5.33 ± 5.99	t = 1.17	18	0.258	[−1.33, 4.66]	d = 0.34
	Two-parent family (357)	4.27 ± 4.28						3.67 ± 3.55					
Father's years of schooling	≤12 (230)	4.63 ± 4.28	t = 1.89	373	0.59	[−0.34, 1.74]	d = 0.20	4.09 ± 3.78	t = 2.25*	373	0.025	[0.11, 1.65]	d = 0.24
	≥13 (145)	3.77 ± 4.23						3.21 ± 3.55					
Mother's years of schooling	≤12 (265)	4.35 ± 3.87	t = 0.36	373	0.719	[−0.78, 1.13]	d = 0.04	3.97 ± 3.70	t = 1.84	373	0.066	[−0.51, 1.6]	d = 0.21
	≥13 (110)	4.17 ± 5.12						3.20 ± 3.69					
Types of family	Nuclear family	3.94 ± 4.18	t = −1.75	373	0.080	[−1.64, 0.10]	d = −0.18	3.48 ± 3.48	t = −1.51	350	0.133	[−1.34, 0.18]	d = −0.16
	Non-nuclear family	4.71 ± 4.35						4.06 ± 3.94					
Place to grow up	Urban area (78)	4.00 ± 4.83	t = 0−0.69	373	0.492	[−1.44, 0.70]	d = −0.08	2.95 ± 3.34	t = −2.14*	373	0.033	[−1.93,-0.84]	d = −0.28
	Rural area (297)	4.37 ± 4.12						3.96 ± 3.78					
Single-child status	Only child (212)	3.82 ± 3.98	t = −2.51*	317	0.013	[−2.03,-0.24]	d = −0.26	3.54 ± 3.70	t = −1.34	371	0.181	[−1.28, 0.24]	d = −0.14
	Not only child (161)	4.95 ± 4.58						4.06 ± 3.71					

Variance "age" used the analysis of variance, and the rest using independent sample T-test. 95% CI = 95% confidence interval. *p < 0.05.

TABLE 3 | Community violence exposure in college students: sociodemographic comparison.

Sociodemographic variables		Community violence exposure by witnessing						Community violence exposure by victimization					
	n (375)	M ± SD	t or F	df	p-value	95% CI	Effect size Cohen's d or f	M ± SD	t or F	df	p-value	95% CI	Effect size Cohen's d or f
Age	≤19 (133)	10.17 ± 6.74	F = 0.427	374	0.653	–	f = 0.05	5.10 ± 4.45	F = 0.944	374	0.390	–	f = 0.07
	20 (97)	10.98 ± 7.94						5.55 ± 4.47					
	≥21 (145)	10.70 ± 6.18						4.77 ± 4.03					
Gender	Male (222)	12.04 ± 7.41	t = 5.44***	372	0.000	[2.28, 4.87]	d = 0.53	6.13 ± 4.76	t = 6.4***	369	0.000	[1.76, 3.33]	d = 0.65
	Female (153)	8.46 ± 5.33						3.58 ± 2.93					
Family structure	Single-parent family (18)	10.22 ± 5.28	t = −0.23	373	0.820	[−3.64, 2.89]	d = −0.06	4.33 ± 3.66	t = −0.76	373	0.446	[−2.83, 1.25]	d = −0.20
	Two-parent family (357)	10.60 ± 6.94						5.13 ± 4.33					
Father's years of schooling	≤12 (230)	11.18 ± 7.12	t = 2.15*	373	0.032	[0.13, 2.98]	d = 0.23	5.52 ± 4.41	t = 2.45*	373	0.015	[0.22, 2.0]	d = 0.26
	≥13 (145)	9.63 ± 6.33						4.41 ± 4.03					
Mother's years of schooling	≤12 (265)	10.92 ± 6.77	t = 1.51	373	0.133	[−0.36, 2.7]	d = 0.17	5.32 ± 4.36	t = 1.63	373	0.103	[−0.16, 1.75]	d = 0.19
	≥13 (110)	9.75 ± 7.03						4.53 ± 4.11					
Types of family	Nuclear family	10.03 ± 6.51	t = −1.67	373	0.096	[−2.57, 0.21]	d = −0.17	5.01 ± 4.42	t = −0.40	373	0.690	[1.05, 0.70]	d = −0.04
	Non-nuclear family	11.21 ± 7.21						5.18 ± 4.16					
Place to grow up	Urban area (78)	9.03 ± 6.27	t = −2.26*	373	0.024	[−3.67,-0.26]	d = −0.30	4.27 ± 4.10	t = −1.90	373	0.058	[−2.10, 0.037]	d = −0.24
	Rural area (297)	10.99 ± 6.96						5.30 ± 4.33					
Single-child status	Only child (212)	10.06 ± 6.48	t = −1.72	371	0.086	[−2.64, 0.18]	d = −0.18	5.24 ± 4.62	t = 0.72	368	0.473	[−0.55, 1.18]	d = 0.07
	Not only child (161)	11.29 ± 7.29						4.93 ± 3.85					

*95% CI = 95% confidence interval. Variance "age" used the analysis of variance, and the rest using independent sample t-test. Because there is no significant difference in variance analysis among the three groups of variable age, there are no post-hoc multiple comparisons, and so no 95% confidence interval values. *p < 0.05, ***p < 0.001.*

TABLE 4 | Correlations between peers' deviant behaviors and college students' violence exposure (r, n = 375).

	M ± SD	Peers' deviant behaviors
Domestic violence exposure by witnessing	4.30 ± 4.27	0.229**
Domestic violence exposure by victimization	3.75 ± 3.71	0.292**
Total domestic violence exposure	8.04 ± 6.60	0.312**
Community violence exposure by witnessing	10.58 ± 6.86	0.472**
Community violence exposure by victimization	5.09 ± 4.30	0.406**
Total community violence exposure	15.67 ± 9.97	0.500**
Deviant behaviors of peers	0.55 ± 0.32	

**p < 0.01.

length of years that their parents receive education) were not significant (p < 0.05).

DISCUSSION

Exposure to violence is considered a pervasive public problem among children and adolescents (Stein et al., 2003; Gellman and Delucia-Waack, 2006; Brady et al., 2008; Finkelhor et al., 2009). However, there is a lack of research focusing on violence exposure in late adolescents and young adults, including in China. This research addressed this gap, evaluating both family and community violence exposure by victimization and witnessing among college students. In America, prevalence rates of violent victimization during adolescence are estimated to be 50–68% (Menard, 2002; Macmillan and Hagan, 2004). In Finkelhor et al.'s study (2009), 41.2% of children and youth reported they had experienced direct physical assault in their lifetime. The current research estimated the prevalence of violence exposure more concretely and found that more than four-fifths of the participants were exposed to family violence and almost 9 in 10 were exposed to community violence as direct victims at least once in their lifetime, values that were slightly higher than in western countries. This finding indicated that family and community violence exposure of college students cannot be ignored given its high occurrence rate and serious adverse consequences.

One group reported that ∼90% of youth were exposed to violence in school (Flannery et al., 2004) and another stated that almost 80% have been exposed to violence in community (Weist et al., 2001). Although violence exposure in families is more difficult to estimate, rates of 17–25% have been reported (O'Brien et al., 1994; Hotton, 2003). In this research, the percentages of adolescents exposed to community violence by witnessing and victimization were quite similar to the studies above (Weist et al., 2001), but the rate of family violence exposure was much higher than existing studies (O'Brien et al., 1994; Hotton, 2003). We also found that participants obtained higher scores on community violence exposure than they did in family, both by victimization and witnessing.

Our results show that individuals with different sociodemographic backgrounds had different scores in family and community violence exposure by victimization

and witnessing. Firstly, male students were exposed more to family and community violence than female students were. This is consistent with previous study results describing that males experienced significantly more witnessed violence and physical assaults than did females in their lifetime (Coie and Dodge, 1997; Xie et al., 2011). Second, college students with less-educated fathers had higher scores as victims of family violence exposure and as victims and witnesses of community violence exposure than those whose fathers had more education. The results of some studies also found that the parents of young violent offenders had lower education levels and graduated from elementary or junior high school (Huesmann et al., 2002; Song et al., 2003; Chang et al., 2014). Thirdly, college students from urban areas had lower exposure rates to family and community violence than those from rural areas. The families of adolescents with violent behavior usually had poor economic conditions and lived in rural areas since childhood (Chang et al., 2014). Fourthly, subjects with siblings were more likely to be exposed to family violence than were those who were the only child in the family. Conflicts often occurred in families with many children, and their parents usually ridiculed, scolded, and imposed corporal punishment to solve the problems (Chan, 1994; Song et al., 2003; Gibson, 2012; Yoo and Huang, 2012).

The majority of domestic violence victims were female, while perpetrators were usually male. Men who committed violence against women were often less educated (Envuladu et al., 2012; Kunnuji, 2014). Another study concluded that having more children can increase the risk of child abuse by the parent (Chan, 1994; Gibson, 2012; Yoo and Huang, 2012). However, scientific consensus on this issue has not been reached. The studies of Widom (2000) and Zhao et al. (2008) found that children who were abused and neglected during their childhood did not commit violent crimes or conduct bad behavior during their adulthood, which was inconsistent with the results of our study. Further research should be conducted in this area to clarify these discrepancies.

Apart from family environment, the three variables of father's years of schooling, location of growing up, and single-child status are closely interrelated in our results. This is consistent with Chang et al.'s study results (2014). A male with less education is more likely to live in rural areas and have more than one child due to the influence of Chinese Family Planning policy (Chang et al., 2014). In rural areas of China, educational resources are usually scarce compared with urban cities (Gan and Huang, 2006). Those who receive less education are highly likely to form their family in rural areas and maintain the vicious circle for generations (Gan and Huang, 2006). They would have little knowledge of modern education theory, and their concepts and parenting styles are often unscientific and crude (Chang et al., 2014). Especially when there is more than one child in a family and parents need to divide their time and attention, they may neglect a certain child or to treat them rudely (Chan, 1994; Song et al., 2003; Gibson, 2012; Yoo and Huang, 2012). Therefore, improving parental style and creating a warm family atmosphere could be essential points to reduce family violence exposure and prevent violent behaviors in adolescents (Bu et al., 2017; Lan et al., 2019).

TABLE 5 | Multiple regression analysis of the factors related to violence exposure in college students.

Variable	Unstandardized		Standardized	t	P	95% confidence interval	
	B	SE	BETA			Lower bound	Upper bound
Constant	29.006	11.561		2.509	0.013	6.271	51.742
Gender	3.298	1.333	0.115	2.475	0.014	0.678	5.918
Age	−0.713	0.476	−0.071	−1.497	0.135	−1.650	0.223
Family structure	−3.045	2.968	−0.046	−1.026	0.306	−8.881	2.791
Father's years of schooling	−0.888	0.991	−0.059	−0.896	0.371	−2.837	1.061
Mother's years of schooling	0.177	1.158	0.011	0.153	0.878	−2.100	2.455
Length of stay with family	−0.066	0.247	−0.014	−0.269	0.788	−0.551	0.419
Family type	−1.384	0.822	−0.102	−1.685	0.093	−3.000	0.231
Place of growing up	0.953	1.139	0.051	0.837	0.403	−1.287	3.193
Single-child status	4.426	1.864	0.158	2.375	0.018	0.761	8.091
Deviant behaviors of peers	21.121	2.012	0.484	10.498	0.000	17.164	25.077

Adjusted R^2 = 0.291.

Being in the "weaning period," adolescents are attempting to be independent and prefer to spending more time with their friends than with their family. Peer groups therefore have profound effects on the socialization process of this age group (Ryan, 2000; Iervolino et al., 2002). We found that deviant behaviors of peers were significantly associated with exposure to family and community violence by both witnessing and victimization. More peer deviant behaviors were associated with higher levels of violence. As the main form of adolescents' social interaction, deviant behaviors by peers can deeply impact the violence exposure of adolescents, which is linked to multiple levels of behavioral and psychosocial development (Schwartz et al., 2003; Mrug et al., 2008).

Multiple regression analysis indicated that deviant behaviors of peers and sociodemographic variables were the primary factors associated with college student violence exposure. We found that male respondents were more likely to be exposed to violence, and those who have peers with more deviant behaviors and are not the only child in their families had higher violence exposure.

Spending most of their time in schools, adolescents are easily influenced by their peers, and it is difficult to stop them from spending time with their peers after they become friends. The theory of social connection (Hirschi, 1969) posits that parental supervision of adolescents can significantly influence the interpersonal relationships of their children. Those supervised by parents would be less likely to have friends with problematic behaviors, thus reducing the possibility of bad behavior in their own life. Considering the characteristics of students of different ages, the school would regularly provide distinguishing training and guidance on parent supervision methods, such as holding lectures or workshops, to help parents enrich supervision knowledge and learn from each other through discussions. At the same time, schools may provide courses to train young people to resolve conflicts when they face violence.

Generally speaking, adolescent boys are often more impulsive and like to experience adventure, making it easier for them to engage in violence than girls (Zhang et al., 2004). Other studies indicated that there is more tolerance of male violence in the social culture (Yang and Ye, 2006). To improve the situation, parents and teachers should pay special attention and give timely guidance to young boys to encourage them to express and vent negative emotions in an appropriate way, such as doing exercise and improving self-control (Zhang et al., 2004; Li, 2016).

Additionally, universities should play a role in preventing violence. University security departments may regularly provide training sessions for faculty and students to help them identify and respond to violence properly and reduce the spread of violence (O'Neill, 2008; Yavuzer and Gundogdu, 2012). Timely and professional psychological counseling should also be easily accessible to those who have emotional problems and help them to deal with impulsive violent outbursts. It is essential to build a healthy, harmonious, and safe campus environment for students, and all parties should take relevant actions.

This research is subject to several limitations. The first is that the sample was only selected from college students in the Shaanxi Province, so the results may not be generalized nationwide. The second concerns the retrospective method used to collect data. The results may therefore be affected by recall bias. The third limitation is the small sample size due to time and resource constraints. In future research, we need to increase the sample size and adopt more methods to study this issue.

In addition to the above-listed variables, the effects of other social environment factors should also be considered, such as media violence information on the internet. As the use of internet spreads widely and plays an increasingly important role in daily life, future research should assess violence exposure on the Internet to obtain a more comprehensive understanding of violence exposure and its influence on adolescents.

Given the high level of violence exposure among Chinese college students, more in-depth investigations into victimization and witnessing should be conducted across multiple contexts (in the family, community, and on the internet) for adolescents in China or even around the world. This will lead to more effective methods of preventing violence exposure.

CONCLUSION

Due to the high levels of family and community violence exposure among Chinese college students by both victimization and witnessing, researchers, doctors, and government officials should take their responsibilities and make more effort to improve the situation. Family environments (including child abuse and intimate partner violence) and social environments (especially deviant behaviors of peers) are closely related to real-life violence exposure to adolescents. Parents and teachers should provide timely and appropriate guides to avoid possible violence exposure and propose suggestions to cope with the existing violence exposure in teenagers' daily lives. More patience and understanding should also be shown to adolescents in a stage with changing cognition and emotion to protect their mental and psychological health.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation, to any qualified researcher.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Biomedical Ethics Committee of Medical Department of Xi'an Jiaotong University. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

WW participated in the design of the study and drafted the manuscript. YW also participated in the design of the study. YQ performed the statistical analysis. YY was involved in the data collection. All authors approved the final manuscript.

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