



Facing Loneliness and Anxiety During the COVID-19 Isolation: The Role of Excessive Social Media Use in a Sample of Italian Adults

Valentina Boursier^{1*}, Francesca Gioia¹, Alessandro Musetti² and Adriano Schimmenti³

¹ Department of Humanities, University of Naples Federico II, Naples, Italy, ² Department of Humanities, Social Sciences and Cultural Industries, University of Parma, Parma, Italy, ³ Kore University of Enna, Faculty of Human and Social Sciences, Enna, Italy

OPEN ACCESS

Edited by:

Carlo Lai,
Sapienza University of Rome, Italy

Reviewed by:

Gabriele Sani,
Università Cattolica del Sacro
Cuore, Italy
Cinzia Di Monte,
Sapienza University of Rome, Italy

*Correspondence:

Valentina Boursier
valentina.boursier@unina.it

Specialty section:

This article was submitted to
Mood and Anxiety Disorders,
a section of the journal
Frontiers in Psychiatry

Received: 22 July 2020

Accepted: 10 November 2020

Published: 08 December 2020

Citation:

Boursier V, Gioia F, Musetti A and
Schimmenti A (2020) Facing
Loneliness and Anxiety During the
COVID-19 Isolation: The Role of
Excessive Social Media Use in a
Sample of Italian Adults.
Front. Psychiatry 11:586222.
doi: 10.3389/fpsy.2020.586222

The outbreak of coronavirus disease 2019 (COVID-19) prompted people to face a distressing and unexpected situation. Uncertainty and social distancing changed people's behaviors, impacting on their feelings, daily habits, and social relationships, which are core elements in human well-being. In particular, restrictions due to the quarantine increased feelings of loneliness and anxiety. Within this context, the use of digital technologies has been recommended to relieve stress and anxiety and to decrease loneliness, even though the overall effects of social media consumption during pandemics still need to be carefully addressed. In this regard, social media use evidence risk and opportunities. In fact, according to a compensatory model of Internet-related activities, the online environment may be used to alleviate negative feelings caused by distressing life circumstances, despite potentially leading to negative outcomes. The present study examined whether individuals who were experiencing high levels of loneliness during the forced isolation for COVID-19 pandemic were more prone to feel anxious, and whether their sense of loneliness prompted excessive social media use. Moreover, the potentially mediating effect of excessive social media use in the relationship between perceived loneliness and anxiety was tested. A sample of 715 adults (71.5% women) aged between 18 and 72 years old took part in an online survey during the period of lockdown in Italy. The survey included self-report measures to assess perceived sense of loneliness, excessive use of social media, and anxiety. Participants reported that they spent more hours/day on social media during the pandemic than before the pandemic. We found evidence that perceived feelings of loneliness predicted both excessive social media use and anxiety, with excessive social media use also increasing anxiety levels. These findings suggest that isolation probably reinforced the individuals' sense of loneliness, strengthening the need to be part of virtual communities. However, the facilitated and prolonged access to social media during the COVID-19 pandemic risked to further increase anxiety, generating a vicious cycle that in some cases may require clinical attention.

Keywords: anxiety, isolation, loneliness, excessive social media use, COVID-19

INTRODUCTION

The outbreak of coronavirus disease 2019 (COVID-19) generated a global health crisis, prompting people to face a distressing and unexpected situation. The risk of contamination and the experience of social distancing changed people's behaviors and deeply impacted individual feelings, daily habits, and relationships. Uncertainty about the timeline of the growing pandemic strengthened people's fears (1–3), stress, and confusion (4). Isolation and restrictions due to quarantine worsened feelings of anxiety and loneliness among both older and younger populations (1, 5). Since the first weeks of COVID-19 diffusion, scholars worldwide have started to investigate how the pandemic has been impacting mental health (6–12) and has been forcing individuals to cope strategically with their isolation (13). Indeed, the loss of one's usual routine and reduced social contacts may cause boredom, frustration, and a sense of isolation, which can generate high levels of distress in individuals increasing the risk of mental disorders, such as anxiety, mood, addictive, and thought disorders (14–21). In this regard, a strong participation of mental health professionals in the management of the crisis and post-crisis has been warmly recommended, in order to help people facing the stressful circumstance and its risky consequences (6, 20).

The subjective sense of loneliness describes individuals' disagreeable feeling of having a lack of meaningful social relationships (22–24), concerning both quantity and quality of social contacts (25, 26). Even though the subjective feeling of being lonely does not overlap with objective social isolation (24, 27), social isolation is undoubtedly one of the strongest predictors of loneliness and has negative effects on both health and well-being (28). Indeed, social inaction and resultant isolation frequently worsen individuals' sense of loneliness (29).

Several studies have examined sociodemographic and contextual variables related to loneliness, such as age and social status, highlighting that different life circumstances are meaningfully associated with loneliness (30–36). In particular, difficult life conditions and drastic changes in social contexts have been linked to increased social and emotional loneliness (37–39). In any case, loneliness seems to reflect an individual's unsatisfied desire to enjoy close contacts with people and to be embedded in significant relationships; thus, it represents an individual's failure in social domains of life that play a key role in human well-being (24). Indeed, perceived feelings of loneliness have been reported as a specific risk factor for anxiety and chronic stress (24, 40, 41), as well as for high engagement in unhealthy behaviors (10, 42). Additionally, social isolation and loneliness have been positively associated with anxiety in both older adults and youth (29, 43), and negatively associated with happiness, well-being, and life satisfaction (44–46). However, some research also suggests that individuals with high emotional loneliness are more prone to engage in adaptive coping behaviors, such as creating new social interactions (47).

Social relationships are core elements in people's lives. Thus, how individuals cope with loneliness during forced isolation is important to the debate (48, 49). Within this context, the use of digital technologies, and particularly social media, may serve

connective functions in helping individuals to increase their social capital (50, 51). Social media refers to producing, receiving, and sharing online content, including a wide range of Internet-related communication and social applications, such as online virtual games, blogs, e-health forums, and social networking sites.

Social restrictions during the COVID-19 pandemic have forced individuals to face a potentially terrifying reality of isolation (1); thus, people worldwide have been invited to be socially (but not physically) connected (52). Even the American Psychological Association (APA) has promoted connections via social media platforms for safety and to be informed and relieve stress during the COVID-19 pandemic (53). Indeed, social media can play a key positive role in communication by allowing people to feel that they are not alone but part of a community (1). Additionally, social media have been proposed as tools for alleviating anxiety among individuals, even though the specific effects of social media consumption need to be carefully addressed (54). For instance, analytics company Sprinklr reported nearly 20,000,000 people mentioning coronavirus-related terms on social media in the last months (55), highlighting the heavy role of COVID-19 on people's cognition and behaviors. Within this context, the World Health Organization (WHO) reported about the risks of the "infodemic" causing information overload and widespread anxiety during the pandemic (56, 57) and thus recommended calling on official information sites to avoid excess or incorrect information (58). Likewise, the risk of a "digital epidemic" has been evidenced (59), which must be stemmed by using technology creatively (54) and by moderating media exposure and consumption, to prevent people from becoming overwhelmed (53).

In this regard, social media use highlights clear—yet risky—opportunities (60), depending on its specific use or misuse, for individuals to face isolation through social connection and quench their own thirst for knowledge and communication. Indeed, excessive media consumption and steady health messaging on COVID-19's diffusion and consequences are exacerbating factors on individuals' mental health (8). Previously, negative feelings have been extensively associated with excessive social media use and digital addiction (61–70). In particular, loneliness is a risk factor related to problematic engagement in Internet-related activities (63, 71–75) and as one of the most important predictors of problematic Internet and social networking site use (76, 77). In fact, lonely individuals may see the online environment as an ideal place for increasing their opportunities for interaction and belonging (78, 79), but this use may sometimes become maladaptive and excessive.

In fact, a worrisome and vicious cycle between loneliness and excessive Internet use has been evidenced (80–84), with a bidirectional (i.e., reciprocal) relationship especially observed between loneliness and problematic social networking site use, particularly in late adolescents and adults (85). In sharp contrast, other studies have demonstrated that social media use may help people to decrease their sense of loneliness (86) while increasing their perceived social support, self-esteem, happiness, and satisfaction (87, 88). For instance, Internet use for entertainment, online communication, and social interactions may serve adolescents' and young adults' need to face their

loneliness (89, 90). Also, Sum et al. (91) reported that higher levels of emotional loneliness were associated with greater use of the Internet for social connections.

Thus, mutual connections between loneliness and individuals' responses to the COVID-19 outbreak should be better understood (8). People's levels of engagement in social media during the pandemic likely deserve attention because these levels might reflect adaptive or maladaptive responses to the distressing situation. Indeed, individuals could be highly involved in social media as a strategy to cope with their sense of loneliness, thus revealing their need to be connected with other individuals and to alleviate their negative mood. In this context, individuals' use of the online environment may alleviate negative feelings caused by distressing life circumstances, while potentially leading to problematic use and addictive-like symptoms (92). Indeed, within a compensatory model of problematic Internet-related activities, reactions to negative life circumstances are facilitated by Internet applications, which might lead to both positive (e.g., alleviating negative feelings or fulfilling the need for social contacts) and negative (e.g., reinforcing problematic engagement) outcomes (92).

The Present Study

In light of the theoretical premises and the research evidence, we hypothesized that individuals experiencing high levels of loneliness during the COVID-19 pandemic were more prone to experiencing feelings of anxiety and to be dysfunctionally involved in social media use, probably as a strategy to cope with their sense of loneliness. Consequently, we explored whether individuals experiencing high levels of loneliness during the forced isolation for COVID-19 were more prone to feel anxious and whether their sense of loneliness prompted excessive, addictive-like, use of social media. Furthermore, the mediating effect of excessive social media in the relationship between perceived loneliness and anxiety was tested.

MATERIALS AND METHODS

Participants and Procedure

A total of 715 adults responded to an online survey during the period of pandemic lockdown for COVID-19 in Italy (from the 1st to the 30th of April 2020). The sample comprised 204 men (28.5%) and 511 women (71.5%) aged between 18 and 72 years, with a mean age of 31.70 years ($SD = 10.81$). Participants were recruited through advertisements in Internet communities of Italian University students and other online groups (via social media platforms), and the groups' members were asked for dissemination in their turn. Therefore, a snowball sampling method was adopted as a recruitment strategy. The call for participation in the online study contained a website link for participants to click on to complete the questionnaire. Before filling out the survey, all of the participants were informed about the research aims and scopes and the measures to be used in generating the data. Participation was voluntary, and confidentiality and anonymity were assured. The participants could withdraw from the study at any time. No course credits or remunerative rewards were given. The study was

approved by the University Federico II (Naples, Italy). Research Ethics Committee and was conducted according to the ethical guidelines for psychological research established by the Italian Psychological Association (AIP).

Measures

Sociodemographic Information and Social Media Use Patterns

In this section, information was collected about gender, age, marital status, whether the participant was living alone during the quarantine, the most used social media, and hours per day spent on social media before and during forced isolation due to COVID-19.

Italian Loneliness Scale

The Italian Loneliness Scale (ILS) (24) is a 20-item self-report scale rated on a 4-point Likert scale (from 1 = *never* to 4 = *always*) that evaluates perceived loneliness. Eighteen items were constructed by adapting items from the widely used University of California Loneliness Scale (23) and the Dutch De Jong Gierveld Loneliness Scale (93). Additionally, two single-item criterion measures were derived *ad hoc* for the Italian scale, referring to a brief time interval (7 days), and were the last two items in the scale ("In the last 7 days, I felt unhappy or sad" and "In the last 7 days, I have seen one or more of my friends, or I heard them on the telephone"). The 20-item instrument included three subscales: (a) emotional loneliness, which comprised six items focused on emotional abandonment and missing companionship (e.g., "I experience a general sense of emptiness."); (b) social loneliness, composed of five items assessing feelings of sociability and of having significant relationships (e.g., "There are many people whom I can count on completely."); and (c) general loneliness, composed of seven items focused on feelings of isolation (e.g., "I feel isolated from others."). Due to the widespread and worsened feelings of loneliness caused by the quarantine (1, 5), for the purposes of the present study and in light of the high Pearson's r correlations among the ILS factors (0.514, $p < 0.001$ between emotional and social loneliness; 0.792, $p < 0.001$ between emotional and general loneliness; 0.642, $p < 0.001$ between social and general loneliness), a total score was generated that included emotional, social, and general loneliness, which showed an excellent Cronbach's α (0.92).

Anxiety Subscale of the Depression-Anxiety-Stress Scale-21

The Anxiety subscale of the Italian version of the Depression-Anxiety-Stress Scale-21 (DASS-21) [(94); for the original English version, see (95)] was used (e.g., "In the last 7 days, I have had breathing problems"). This subscale assesses the frequency and severity of experiencing negative emotions over the previous week on a 4-point Likert scale (from 0 = *did not apply to me at all* to 3 = *applied to me very much, or most of the time*). Cronbach's α value was good (0.86).

Bergen Social Media Addiction Scale

The Italian version of the Bergen Social Media Addiction Scale (BSMAS) [(96); original English version by (97)] was used to

evaluate problematic social media use (e.g., “How often during the last year have you spent a lot of time thinking about social media or planned use of social media?”). The BSMAS is a six-item scale rated on a 5-point Likert scale ranging from 1 (*very rarely*) to 5 (*very often*), referring to salience, mood modification, tolerance, withdrawal, conflict, and relapse. The Cronbach's α value was 0.80.

Further scales were administered to this sample, but they are not relevant for the current study and will be discussed elsewhere.

Statistical Analysis

Descriptive statistics were examined for all of the study variables. Multivariate analysis of variance (MANOVA) was used to examine the differences between men and women and between emerging adults (18–35 years) and adults (older than 35 years). Pearson's r correlations between the study variables were examined. A mediation model was tested by using Model 4 of Hayes's (98) Process Macro for SPSS, with 1,000 bias-corrected bootstrap samples to test the mediating effect of excessive social media use between participants' perceived loneliness and anxiety.

RESULTS

Descriptive Statistics

Among the participants, 55.8% were single, and only 5.9% were living alone during the quarantine. The most used social media were WhatsApp (90.2%), Instagram (64.2%), Facebook (63.6%), Facebook Messenger (16.1%), and Twitter (5.3%). Before the forced isolation due to COVID-19, 39.7% of the participants reported that they spent 1–2 h/day on social media, and only 7.4%

spent more than 4 h/day. During the quarantine, the percentage corresponding to 1–2 h/day decreased to 26.7%, and 21.2% of the participants declared that they spent more than 4 h/day on social media. The MANOVA (**Table 1**) exploring group differences (males/females, and emerging adults/adults) in relation to hours per day spent on social media, loneliness, anxiety, and excessive social media use showed significant differences between gender-based groups [Wilks' $\lambda = 0.98$; $F_{(4,708)} = 4.5$; $p = 0.001$] and age-based groups [Wilks' $\lambda = 0.94$; $F_{(4,708)} = 10.62$; $p < 0.001$]. Bivariate correlations among variables showed a significant co-occurrence of loneliness with all involved variables, especially anxiety (**Table 2**), with the only exception of gender.

Mediation Analysis

Concerning the tested mediation model (**Figure 1**), after controlling for participants' gender (females coded as 0, males coded as 1; $\beta = -0.17$; $p = 0.001$), age ($\beta = -0.004$; $p = 0.06$, ns), marital status (single coded as 0, in a relationship coded as 1; $\beta = 0.02$; $p = 0.66$, ns), living alone during the quarantine (no coded as 0, yes coded as 1; $\beta = -0.04$; $p = 0.68$, ns), and hours per day spent on social media ($\beta = 0.06$; $p < 0.001$), it confirmed the direct predictive effect of perceived loneliness on anxiety ($\beta = 0.37$; $p < 0.001$) and on excessive social media use ($\beta = 0.34$; $p < 0.001$), which in turn directly predicted anxiety ($\beta = 0.17$; $p < 0.001$). The total effect of perceived loneliness on anxiety was significant ($\beta = 0.43$; $p < 0.001$) and the bias-corrected bootstrapping mediation test indicated that loneliness predicted anxiety via excessive social media use ($\beta = 0.06$; bootstrap 95%CI [0.03, 0.09]; $p < 0.001$). The Sobel test showed that this model was

TABLE 1 | Means, standard deviations, and comparisons between male/female groups and young adult/adult groups.

	Total sample		Gender		Age		
	<i>M</i> (<i>SD</i>)	Males [<i>M</i> (<i>SD</i>)]	Females [<i>M</i> (<i>SD</i>)]	$F_{(1, 713)}$	Young adults [<i>M</i> (<i>SD</i>)]	Adults [<i>M</i> (<i>SD</i>)]	$F_{(1, 713)}$
Hours/day on social media	3.30 (1.47)	3.13 (1.51)	3.37 (1.45)	3.93*	3.51 (1.46)	2.80 (1.38)	31.45***
Loneliness	1.9 (0.58)	1.96 (0.53)	1.88 (0.60)	4.76*	1.96 (0.58)	1.76 (0.54)	9.71**
Anxiety	0.69 (0.67)	0.59 (0.60)	0.73 (0.69)	4.01*	0.76 (0.69)	0.52 (0.56)	13.01***
Excessive social media use	2.1 (0.81)	2.12 (0.86)	2.08 (0.79)	0.03 ^{ns}	2.16 (0.80)	1.94 (0.81)	10.51**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE 2 | Bivariate correlations between all variables estimated with 1,000 bootstrap sample.

	1	2	3	4	5	6	7	8
1. Gender	–							
2. Age	0.000	–						
3. Marital status	0.080*	–0.276***	–					
4. Living alone during COVID-19	0.000	0.129**	0.137***	–				
5. Hours/day on social media	–0.073	–0.220***	0.120**	0.058	–			
6. Loneliness	0.061	–0.156***	0.184***	0.082*	0.090*	–		
7. Anxiety	–0.096**	–0.162***	0.108**	0.014	0.191***	0.397***	–	
8. Excessive social media use	0.022	–0.119**	0.076*	–0.054	0.338***	0.276***	0.331***	–

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

significant ($Z = 4.52$; $SE = 0.01$; $p < 0.001$), and it explained 23% of the total variance of anxiety (Table 3).

DISCUSSION

As many recent studies on the cognitive and emotional effects of COVID-19 pandemic have suggested (2, 4, 6–13, 20), the COVID-19 emergency presents many risks to individuals' mental health. Fear of contamination has led to physical isolation as a global response, impacting on the individual responses to the health crisis (99). This isolation has probably reinforced subjective feelings of loneliness in both older and younger people (1, 5), likely strengthening the individuals' need to be part of virtual communities. In fact, the participants' preference for the use of specific social media and apps for instant messaging was in line with previous findings (100), but in our study people declared they spent more time using social media than before the forced isolation.

In the last several months, social media use has been highly recommended to obtain health and safety information and maintain social contacts in order to face the pandemic's isolation (53). Likely as a result of the distressing situation, social media use has been suggested as a temporary means of recovery from distress and as a coping strategy—which needs to be carefully managed—for facing loneliness and negative emotions (54). In this regard, social media and virtual communities allow users to interact with other people, reinforce relationships, disseminate contents, share common interests, experiences, and emotions [e.g., (101–105)], and also improve their engagement in digital platforms (103, 106, 107). However, social media involvement risks to become excessive or dysfunctional, by triggering a behavior–reward feedback loop (84, 108–110) that reinforces negative moods and supports a vicious use of social media.

In fact, in the compensatory model of problematic Internet-related activities, it is postulated that the reactions to negative life circumstances might lead to excessive Internet use and

addictive-like symptoms (92); yet, in such theoretical framework, these symptoms might represent the temporary outcome of a maladaptive and transitory solution to a distressing situation rather than an actual psychopathological condition. This consideration also explains our preference for terms, such as “excessive social media use” and “addictive-like social media use” when discussing a disproportionate engagement in social network, rather than the more common (but often incorrect on the theoretical and clinical level) “social media addiction”: the specific circumstance and reasons for an excessive media use should be carefully examined and addressed before applying the “addiction” label to it (111), and individuals should not be generally and indiscriminately pathologized for their social media use (112), especially during a pandemic isolation (113).

In this sample of Italian adults, the tested mediation model suggested that perceived loneliness during COVID-19 pandemic was positively associated, both directly and indirectly, with anxiety. Furthermore, increased feelings of loneliness and isolation predicted high levels of both anxiety and excessive social media use, in addition, when we controlled for excessive social media use, the predictive effect of loneliness on anxiety

TABLE 3 | The effect of perceived loneliness on anxiety with mediating effect of excessive social media use.

	Model 1 (anxiety)		Model 2 (excessive social media use)		Model 3 (anxiety)	
	β	t	β	t	β	t
Loneliness	0.37	9.23***	0.34	6.96***	0.43	10.8***
Excessive social media use					0.17	5.72***
R^2	0.23***					
$F_{(7,707)}$	30.96					

*** $p < 0.001$.

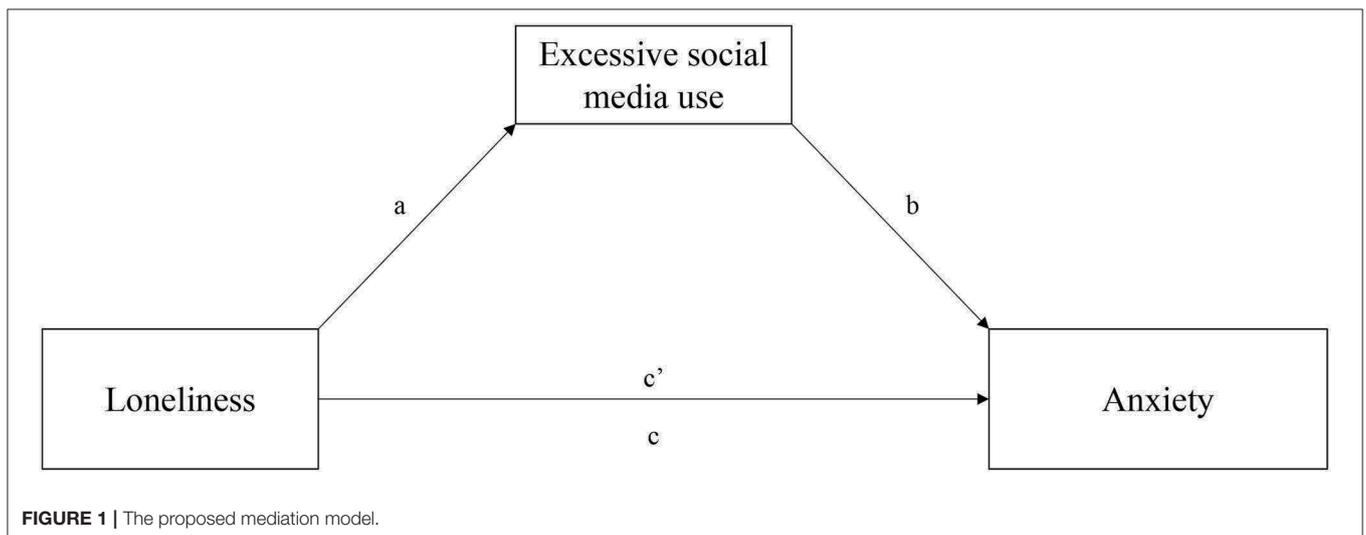


FIGURE 1 | The proposed mediation model.

further increased. Likely, the facilitated and prolonged access to social media has been a common individual response to stay connected during the quarantine, thus it is possible that people increasingly engaged in social media in an attempt to face their perceived isolation, acting as problematic users in this circumstance. However, this solution may reflect a fear of invisibility and inaction due to the pandemic (3) that has proved to be unsuccessful for lonelier people, whose feelings of anxiety increased. Likely, even though online social interactions can act as a temporary useful solution that allows individuals to keep in touch with other people, thus fostering social support (54) and allowing individuals to feel less alone (1), it seems that in the medium to long run, online social contacts cannot substitute offline social interactions in reducing feelings of loneliness and anxiety (84). Indeed, research shows that online social interactions tend to enhance well-being, social belonging, and relationship quality when used in combination with offline social interactions (85, 114, 115). Thus, in line with theory (116), online interactions do not provide a definitive solution to relieve users from their subjective sense of isolation during a prolonged absence of further social contacts outside the household. Overall, our findings suggest that exclusive and excessive use of social media has likely acted as a coping strategy for individuals' feelings of loneliness. However, in some cases, this may represent a maladaptive strategy that might foster a dysfunctional feedback loop reinforcing lonely individuals' anxiety in the specific pandemic circumstance. Accordingly, problematic social media use has already been evidenced as a dysfunctional emotional-regulation strategy (117–119), although it is frequently used to control mood (120–124). Thus, despite this excessive social media use denoting individuals' efforts to face their sense of loneliness and isolation, it might also foster more negative outcomes if forced by the situation and prolonged in time.

Evidence also showed that the increase in negative feelings was stronger among women and younger participants when examining the effects of sociodemographic variables in the mediation models, which is in line with vast amounts of literature suggesting increased internalizing symptoms in females (125), even during the pandemic crisis (12) and greater difficulties with emotional regulation among younger people (126). Moreover, according to literature, in this sample, women and younger adults seem to not only be more engaged in online social connections (71, 85) but also more exposed to negative moods. Finally, they seem to use social media more dysfunctionally for controlling their feelings of loneliness, and this might have reinforced their feelings of anxiety.

This study has some limitations that need to be addressed. First, the cross-sectional design limited the ability to formally test causative effects. Second, despite the participants coming from the entire Italian peninsula, the different geographic areas of Italy have been differently affected by the COVID-19-related health crisis, limiting the generalizability of results. Moreover, the present study explored only a small number of variables in relation to the complexity of the relationship among feelings of loneliness, excessive social media use, and anxiety during the COVID-19 pandemic. In particular, information about the

participants' general health status during the pandemic and the presence of direct or indirect contact with the virus has not been collected in our study. Furthermore, it has been demonstrated that individuals' temperament and characteristics in the psychological response to the ongoing pandemic provide insights into developing tailored intervention strategies and need to be better investigated (99). Future research may examine the role of such variables to improve our understanding of individuals' social media use during the pandemic and to further identify specific groups of people that might be more vulnerable to problematic use. Finally, this study evaluated general use of social media during the pandemic, including apps for instant messaging. Further research could explore whether the use of specific social media is related with an excessive involvement and addictive-like symptoms.

These limitations notwithstanding, our findings suggest that excessive social media use was associated with increased feelings of loneliness and anxiety during the COVID-19 pandemic. The current pandemic is not only changing priorities for the general population but it is also challenging the agenda of health professionals, including that of psychiatrists and other mental health professionals. Accordingly, clinical interventions with people who will continue to display excessive social media use after the pandemic resolution might specifically address their feelings of loneliness that may prompt such dysfunctional use and foster anxiety. Moreover, clinicians might successfully orient problem-focused coping styles toward helping people facing loneliness (127). Additionally, preventative actions need to be taken to improve literacy about media consumption among the general population, to help individuals to adequately use social media, and to avoid the risks associated with excessive social media use during pandemics.

Furthermore, mental health clinicians need to be directly involved in the management of the crisis and post-crisis also as part of policy task forces (20), since the ongoing as well as the lasting effects of the pandemic on individuals' behaviors need to be accounted for. Indeed, lonely people are already at risk of preferring online social interactions (78, 85), which displace time spent in offline social activities. The global epidemic has probably exponentially enlarged the number of lonely individuals, suggesting that their long-lasting use of social platforms must be addressed. The risky impacts of over or even exclusive involvement in online activities on people restarting their offline lives and relationships after the COVID-19 emergency deserves particular attention, considering the potential danger of prolonged psychological and socioemotional withdrawal when the pandemic ends. For this reason, longitudinal designs are greatly needed to analyze the pandemic's effects on social media use in different populations more in greater depth, and the differences and similarities between different cultural contexts should be explored. Yet, the findings of this study already suggest that clinicians should carefully assess and eventually treat feelings of loneliness and internalizing symptoms, such as fear and anxiety due to the COVID-19 in the post-pandemic world (12) and support the view that boosting literacy about social media use across the population could be critical to promote adaptive alternatives for

socialization without fostering maladaptive involvements in the digital world.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical Committee of Psychological Research Department of Humanities—University of Naples Federico II.

REFERENCES

- Banerjee D, Rai M. Social isolation in Covid-19: the impact of loneliness. *Int J Soc Psychiatry*. (2020) 66:525–7. doi: 10.1177/0020764020922269
- Casale S, Flett GL. Interpersonally-based fears during the COVID-19 pandemic: reflections on the fear of missing out and the fear of not mattering constructs. *Clin Neuropsychiatry*. (2020) 17:88–93. doi: 10.36131/CN20200211
- Schimmenti A, Billieux J, Starcevic V. The four horsemen of fear: an integrated model of understanding fear experiences during the COVID-19 pandemic. *Clin Neuropsychiatry*. (2020) 17:41–5. doi: 10.36131/CN20200202
- Brooks SK, Webster RK, Smith LE, Woodland L, Weissley S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. (2020) 395:912–20. doi: 10.1016/S0140-6736(20)30460-8
- Porcelli P. Fear, anxiety and health-related consequences after the COVID-19 epidemic. *Clin Neuropsychiatry*. (2020) 17:103–11. doi: 10.36131/CN20200215
- Fiorillo A, Gorwood P. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *Eur Psychiatry*. (2020) 63:e32. doi: 10.1192/j.eurpsy.2020.35
- Goyal K, Chauhan P, Chhikara K, Gupta P, Singh MP. Fear of COVID 2019: first suicidal case in India! *Asian J Psychiatry*. (2020) 49:101989. doi: 10.1016/j.ajp.2020.101989
- Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry*. (2020) 7:547–60. doi: 10.1016/S2215-0366(20)30168-1
- Hossain MM, Sultana A, Purohit N. Mental health outcomes of quarantine and isolation for infection prevention: a systematic umbrella review of the global evidence. *SSRN*. (2020) 42:1–11. doi: 10.21203/rs.3.rs-25647/v1
- Okruszek L, Aniszewska-Stanczuk A, Piejka A, Wiśniewska M, Zurek K. Safe but lonely? Loneliness, mental health symptoms and COVID-19. *PsyArXiv*. (2020). doi: 10.31234/osf.io/9njps
- Orgilés M, Morales A, Delvecchio E, Mazzeschi C, Espada JP. Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. *Front Psychol*. (2020) 11:579038. doi: 10.3389/fpsyg.2020.579038
- Schimmenti A, Starcevic V, Giardina A, Khazaal Y, Billieux J. Multidimensional assessment of COVID-19-related fears (MAC-RF): a theory-based instrument for the assessment of clinically relevant fears during pandemics. *Front Psychiatry*. (2020) 11:748. doi: 10.3389/fpsyg.2020.00748
- Polizzi C, Lynn SJ, Perry A. Stress and coping in the time of COVID-19: pathways to resilience and recovery. *Clin Neuropsychiatry*. (2020) 17:59–62. doi: 10.36131/CN20200204
- Blendon RJ, Benson JM, DesRoches CM, Raleigh E, Taylor-Clark K. The public's response to severe acute respiratory syndrome in Toronto and the United States. *Clin Infect Dis*. (2004) 38:925–31. doi: 10.1086/382355

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

AUTHOR CONTRIBUTIONS

VB designed the study, led the literature research, and wrote the manuscript. FG contributed to data collection and led the statistical analysis. AM conceptually contributed to the development of the work and edited the manuscript. AS critically revised the whole work for important intellectual content and edited the manuscript. All authors read and approved the final version of the paper.

- Braunack-Mayer A, Tooher R, Collins JE, Street JM, Marshall H. Understanding the school community's response to school closures during the H1N1 2009 influenza pandemic. *BMC Public Health*. (2013) 13:344. doi: 10.1186/1471-2458-13-344
- Cava MA, Fay KE, Beanlands HJ, McCay EA, Wignall R. The experience of quarantine for individuals affected by SARS in Toronto. *Public Health Nurs*. (2005) 22:398–406. doi: 10.1111/j.0737-1209.2005.220504.x
- Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styrá R. SARS control and psychological effects of quarantine, Toronto, Canada. *Emerg Infect Dis*. (2004) 10:1206–12. doi: 10.3201/eid1007.030703
- Reynolds DL, Garay JR, Deamond SL, Moran MK, Gold W, Styrá R. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiol Infect*. (2008) 136:997–1007. doi: 10.1017/S0950268807009156
- Robertson E, Hershenfield K, Grace SL, Stewart DE. The psychosocial effects of being quarantined following exposure to SARS: a qualitative study of Toronto health care workers. *Can J Psychiatry*. (2004) 49:403–7. doi: 10.1177/070674370404900612
- Sani G, Janiri D, Di Nicola M, Janiri L, Ferretti S, Chieffo D. Mental health during and after the COVID-19 emergency in Italy. *Psychiatry Clin Neurosci*. (2020) 74:372. doi: 10.1111/pcn.13004
- Wilken JA, Pordell P, Goode B, Jarth R, Miller Z, Saygar BG, et al. Knowledge, attitudes, and practices among members of households actively monitored or quarantined to prevent transmission of Ebola Virus Disease—Margibi County, Liberia: February–March 2015. *Prehosp Disast Med*. (2017) 32:673–8. doi: 10.1017/S1049023X17006720
- Hawkey LC, Cacioppo JT. Loneliness matters: a theoretical and empirical review of consequences and mechanisms. *Ann Behav Med*. (2010) 40:218–27. doi: 10.1007/s12160-010-9210-8
- Russell D, Peplau LA, Cutrona CE. The revised UCLA loneliness scale: concurrent and discriminant validity evidence. *J Pers Soc Psychol*. (1980) 39:472–80. doi: 10.1037/0022-3514.39.3.472
- Zammuner VL. Italians' social and emotional loneliness: the results of five studies. *Int J Soc Sci*. (2008) 3:108–20. doi: 10.5281/zenodo.1056172
- Vaux A. Social and emotional loneliness: the role of social and personal characteristics. *Pers Soc Psychol Bull*. (1988) 14:722–34. doi: 10.1177/0146167288144007
- Routasalo PE, Savikko N, Tilvis RS, Strandberg TE, Pitkala KH. Social contacts and their relationship to loneliness among aged people. A population-based Study. *Gerontology*. (2006) 52:181–7. doi: 10.1159/000091828
- van Baarsen B, Snijders TAB, Smit JH. Lonely but not alone: emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educ Psychol Meas*. (2001) 61:119–35. doi: 10.1177/00131640121971103
- Sanders R. *Covid-19, Social Isolation and Loneliness ESSI Outline*. (2020). Available online at: <https://www.iriss.org.uk/resources/esss-outlines/covid-19-social-isolation-and-loneliness> (accessed May 19, 2020).

29. Schultz NR, Moore D. Loneliness: correlates, attributions, and coping among older adults. *Pers Soc Psychol Bull.* (1984) 10:67–77. doi: 10.1177/0146167284101007
30. Bowling AP, Edelmann RJ, Leaver J, Hoekel T. Loneliness, mobility, wellbeing and social support in a sample of over 85 years old. *Pers Individ Differ.* (1989) 10:1189–92. doi: 10.1016/0191-8869(89)90085-8
31. Corsano P, Musetti A, Favari D. Self-concept, loneliness, and voluntary aloneness during late childhood. *Curr Psychol.* (2020). doi: 10.1007/s12144-020-00675-7
32. Fees BS, Martin P, Poon LW. A model of loneliness in older adults. *J Gerontol B Psychol Sci Soc Sci B.* (1999) 54:231–9. doi: 10.1093/geronb/54B.4.P231
33. Gow AJ, Pattie A, Whiteman MC, Whalley LJ, Deary IJ. Social support and successful aging: investigating the relationships between lifetime cognitive change and life satisfaction. *J Individ Differ.* (2007) 28:103–15. doi: 10.1027/1614-0001.28.3.103
34. Kahn JH, Hesslingb RM, Russell DW. Social support, health, and well-being among the elderly: what is the role of negative affectivity? *Pers Individ Differ.* (2003) 35:5–17. doi: 10.1016/S0191-8869(02)00135-6
35. Mahon NE, Yarcheski A, Yarcheski TJ, Cannella BL, Hanks MM. A meta-analytic study of predictors for loneliness during adolescence. *Nurs Res.* (2006) 55:308–15. doi: 10.1097/00006199-200609000-00003
36. Vandewater EA, Ostrove JM, Stewart AJ. Predicting women's well-being in midlife: The importance of personality development and social role involvements. *J Pers Soc Psychol.* (1997) 72:1147–60. doi: 10.1037/0022-3514.72.5.1147
37. Ponizovsky AM, Ritsner MS. Patterns of loneliness in an immigrant population. *Compr Psychiatry.* (2004) 45:408–14. doi: 10.1016/j.comppsy.2004.03.011
38. Prince MJ, Harwood RH, Blizard RA, Thomas A, Mann AH. Social support deficits, loneliness and life events as risk factors for depression in old age. The Gospel Oak Project VI. *Psychol Med.* (1997) 27:323–32. doi: 10.1017/S0033291796004485
39. Wang JJ, Snyder M, Kaas M. Stress, loneliness, and depression in Taiwanese rural community-dwelling elders. *Int J Nurs Stud.* (2001) 38:339–47. doi: 10.1016/S0020-7489(00)00072-9
40. McHugh JE, Lawlor BA. Perceived stress mediates the relationship between emotional loneliness and sleep quality over time in older adults. *Br J Health Psychol.* (2013) 18:546–55. doi: 10.1111/j.2044-8287.2012.02101.x
41. Wilson RS, Krueger KR, Arnold SE, Schneider JA, Kelly JF, Barnes LL, et al. Loneliness and risk of Alzheimer disease. *Archiv Gen Psychiatry.* (2007) 64:234–40. doi: 10.1001/archpsyc.64.2.234
42. Segrin C, Passalacqua SA. Functions of loneliness, social support, health behaviors, and stress in association with poor health. *Health Commun.* (2010) 25:312–22. doi: 10.1080/10410231003773334
43. Ebesutani C, Fierstein M, Viana AG, Trent L, Young J, Sprung M. The role of loneliness in the relationship between anxiety and depression in clinical and school-based youth. *Psychol Schools.* (2015) 52:223–34. doi: 10.1002/pits.21818
44. Cacioppo JT, Patrick W. *Loneliness: Human Nature and the Need for Social Connection.* New York, NY: Norton (2008).
45. Moore D, Schultz NR. Loneliness at adolescence: correlates, attributions, and coping. *J Youth Adolesc.* (1983) 12:95–100. doi: 10.1007/BF02088307
46. Salimi A. Social-emotional loneliness and life satisfaction. *Proc Soc Behav Sci.* (2011) 29:292–5. doi: 10.1016/j.sbspro.2011.11.241
47. Russell D, Cutrona C, Rose J, Yurko K. Social and emotional loneliness: an examination of Weiss's typology of loneliness. *J Pers Soc Psychol.* (1984) 46:1313–21. doi: 10.1037/0022-3514.46.6.1313
48. Mucci F, Mucci N, Diolaiuti F. Lockdown and isolation: psychological aspects of COVID-19 pandemic in the general population. *Clin Neuropsychiatry.* (2020) 17:63–4. doi: 10.36131/CN20200205
49. Sood S. Psychological effects of the Coronavirus disease-2019 pandemic. *Res Hum Med Educ.* (2020) 7:23–6. Available online at: <https://www.rhime.in/ojs/index.php/rhime/article/view/264>
50. Boursier V, Gioia F, Griffiths MD. Do selfie-expectancies and social appearance anxiety predict adolescents' problematic social media use? *Comput Hum Behav.* (2020) 110:106395. doi: 10.1016/j.chb.2020.106395
51. Nadkarni A, Hofmann SG. Why do people use Facebook? *Pers Individ Differ.* (2012) 52:243–9. doi: 10.1016/j.paid.2011.11.007
52. Courtet P, Olié E, Debien C, Vaiva G. Keep socially (but not physically) connected and carry on: preventing suicide in the age of COVID-19. *J Clin Psychiatry.* (2020) 81:e20com13370-e20com13370. doi: 10.4088/JCP.20com13370
53. American Psychological Association. *Five Ways to View Coverage of the Coronavirus.* (2020). Available online at: <https://www.apa.org/helpcenter/pandemics> (accessed March 19, 2020).
54. Wiederhold BK. Using social media to our advantage: alleviating anxiety during a pandemic. *Cyberpsychol Behav Soc Netw.* (2020) 23:197–8. doi: 10.1089/cyber.2020.29180.bkw
55. Molla R. *How Coronavirus Took Over Social Media.* (2020). Available online at: <https://www.vox.com/recode/2020/3/12/21175570/coronavirus-covid-19-social-media-twitter-facebook-google> (accessed March 19, 2020).
56. Hyvärinen J, Vos M. Communication concerning disasters and pandemics. *Handb Int Crisis Commun Res.* (2016) 43:96. doi: 10.1002/9781118516812.ch10
57. Peischel W. *Mental Health Professionals Are Preparing for an Epidemic of Anxiety Around the Coronavirus.* (2020). Available online at: <https://www.motherjones.com/politics/2020/03/mental-health-professionals-are-preparing-for-an-epidemic-of-anxiety-around-the-coronavirus/> (accessed March 22, 2020).
58. World Health Organization. *Novel Coronavirus (2019-nCoV): Situation Report—13.* (2020). Available online at: <https://www.who.int/docs/default-source/coronavirus/situation-reports/20200202-sitrep-13-ncov-v3.pdf> (accessed March 19, 2020).
59. Chiolerio A. Covid-19: a digital epidemic. *BMJ.* (2020) 368:m764. doi: 10.1136/bmj.m764
60. Livingstone S. Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media Soc.* (2008) 10:393–411. doi: 10.1177/1461444808089415
61. Bilgin O, Tas I. Effects of perceived social support and psychological resilience on social media addiction among university students. *Univ J Educ Res.* (2018) 6:751–8. doi: 10.13189/ujer.2018.060418
62. Caplan SE. Relations among loneliness, social anxiety, and problematic internet use. *Cyberpsychol Behav.* (2006) 10:234–42. doi: 10.1089/cpb.2006.9963
63. Hunt MG, Marx R, Lipson C, Young J. No more FOMO: limiting social media decreases loneliness and depression. *J Soc Clin Psychol.* (2018) 37:751–68. doi: 10.1521/jscp.2018.37.10.751
64. Musetti A, Mancini T, Corsano P, Santoro G, Cavallini MC, Schimmenti A. Maladaptive personality functioning and psychopathological symptoms in problematic video game players: a person-centered approach. *Front Psychol.* (2019) 10:2559. doi: 10.3389/fpsyg.2019.02559
65. Musetti A, Brazzi F, Folli MC, Plazzi G, Franceschini C. Childhood trauma, reflective functioning, and problematic mobile phone use among male and female adolescents. *Open Psychol J.* (2020) 13:242–52. doi: 10.2174/1874350102013010242
66. Oktan V. Problematic internet use, loneliness and perceived social support among university students. *Kastamonu Educ J.* (2015) 23:281–92.
67. Ostovar S, Allahyar N, Aminpoor H, Moafian F, Nor MBM, Griffiths MD. Internet addiction and its psychosocial risks (depression, anxiety, stress and loneliness) among Iranian adolescents and young adults: a structural equation model in a cross-sectional study. *Int J Mental Health Addict.* (2016) 14:257–67. doi: 10.1007/s11469-015-9628-0
68. Peper E, Harvey R. Digital addiction: increased loneliness, anxiety, and depression. *Neuroregulation.* (2018) 5:3–8. doi: 10.15540/nr.5.1.3
69. Skues J, Williams B, Oldmeadow J, Wise L. The effects of boredom, loneliness, and distress tolerance on problem internet use among university students. *Int J Mental Health Addict.* (2016) 14:167–80. doi: 10.1007/s11469-015-9568-8
70. Younes F, Halawi G, Jabbour H, El Osta N, Karam L, Hajj A, et al. Internet addiction and relationships with insomnia, anxiety, depression, stress and self-esteem in university students: a cross-sectional designed study. *PLoS ONE.* (2016) 11:e0161126. doi: 10.1371/journal.pone.0161126
71. Amichai-Hamburger Y, Ben-Artzi E. Loneliness and internet use. *Comput Hum Behav.* (2003) 19:71–80. doi: 10.1016/S0747-5632(02)00014-6
72. Moody EJ. Internet use and its relationship to loneliness. *Cyberpsychol Behav.* (2001) 4:393–401. doi: 10.1089/109493101300210303

73. Musetti A, Cattivelli R, Zuglian P, Terrone G, Pozzoli S, Capelli F, et al. Internet addiction disorder or internet related psychopathology? *Gior Ital Psicol.* (2017) 44:359–82. doi: 10.1421/87345
74. Musetti A, Corsano P, Boursier V, Schimmenti A. Problematic internet use in lonely adolescents: the mediating role of detachment from parents. *Clin Neuropsychiatry.* (2020) 17:3–10. doi: 10.36131/clinicalpsych20200101
75. Savci M, Aysan F. Relationship between impulsivity, social media usage and loneliness. *Educ Process Int J.* (2016) 5:106–15. doi: 10.12973/edupij.2016.5.2
76. Ceyhan AA, Ceyhan E. Loneliness, depression, and computer self-efficacy as predictors of problematic internet use. *Cyberpsychol Behav.* (2008) 11:699–701. doi: 10.1089/cpb.2007.0255
77. Dogan U, Karakuş Y. Multi-dimensional loneliness as the predictor of high school students' social network sites (SNS) use. *Sakarya Univ J Educ.* (2016) 6:57–71. doi: 10.19126/suje.40198
78. Casale S, Fioravanti G. Psychosocial correlates of internet use among Italian students. *Int J Psychol.* (2011) 46:288–98. doi: 10.1080/00207594.2010.541256
79. Morahan-Martin J, Schumacher P. Incidence and correlates of pathological internet use among college students. *Comput Hum Behav.* (2000) 16:13–29. doi: 10.1016/S0747-5632(99)00049-7
80. Bozoglan B, Demirev V, Sahin I. Loneliness, self-esteem, and life satisfaction as predictors of Internet addiction: a cross-sectional study among Turkish university students. *Scand J Psychol.* (2013) 54:313–9. doi: 10.1111/sjop.12049
81. Huan VS, Ang RP, Chye S. Loneliness and shyness in adolescent problematic internet users: the role of social anxiety. *Child Youth Care Forum.* (2014) 43:539–51. doi: 10.1007/s10566-014-9252-3
82. Kim J, LaRose R, Peng W. Loneliness as the cause and the effect of problematic Internet use: the relationship between Internet use and psychological well-being. *Cyberpsychol Behav.* (2009) 12:451–5. doi: 10.1089/cpb.2008.0327
83. Shi X, Wang J, Zou H. Family functioning and internet addiction among Chinese adolescents: the mediating roles of self-esteem and loneliness. *Comput Hum Behav.* (2017) 76:201–10. doi: 10.1016/j.chb.2017.07.028
84. Yao MZ, Zhong ZJ. Loneliness, social contacts and internet addiction: a cross-lagged panel study. *Comput Hum Behav.* (2014) 30:164–70. doi: 10.1016/j.chb.2013.08.007
85. Nowland R, Necka EA, Cacioppo JT. Loneliness and social internet use: pathways to reconnection in a digital world? *Perspect Psychol Sci.* (2018) 13:70–87. doi: 10.1177/1745691617713052
86. Pittman M. Creating, consuming, and connecting: examining the relationship between social media engagement and loneliness. *J Soc Media Soc.* (2015) 4:66–149.
87. Pittman M, Reich B. Social media and loneliness: why an Instagram picture may be worth more than a thousand Twitter words. *Comput Hum Behav.* (2016) 62:155–67. doi: 10.1016/j.chb.2016.03.084
88. Shaw LH, Gant LM. In defense of the internet: the relationship between Internet communication and depression, loneliness, self-esteem, and perceived social support. *J Obstet Gynaecol Can.* (2004) 41:157–71. doi: 10.1089/109493102753770552
89. Janta H, Peter Lugosi P, Brown L. Coping with loneliness: a netnographic study of doctoral students. *J Further High Educ.* (2014) 38:553–71. doi: 10.1080/0309877X.2012.726972
90. Seepersad S. Coping with loneliness: adolescent online and offline behavior. *Cyberpsychol Behav.* (2004) 7:35–9. doi: 10.1089/109493104322820093
91. Sum S, Mathews RM, Hughes I, Campbell A. Internet use and loneliness in older adults. *Cyberpsychol Behav.* (2008) 11:208–11. doi: 10.1089/cpb.2007.0010
92. Kardefelt-Winther D. A conceptual and methodological critique of internet addiction research: towards a model of compensatory Internet use. *Comput Hum Behav.* (2014) 31:351–4. doi: 10.1016/j.chb.2013.10.059
93. de Jong Gierveld J, Kamphuis FH. The development of a Rasch-type loneliness scale. *Appl Psychol Meas.* (1985) 9:289–99. doi: 10.1177/014662168500900307
94. Bottesi G, Ghisi M, Altoè G, Conforti E, Melli G, Sica C. The Italian version of the Depression Anxiety Stress Scales-21: factor structure and psychometric properties on community and clinical samples. *Compr Psychiatry.* (2015) 60:170–81. doi: 10.1016/j.comppsy.2015.04.005
95. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the beck depression and anxiety inventories. *Behav Res Ther.* (1995) 33:335–43. doi: 10.1016/0005-7967(94)00075-U
96. Monacis L, De Palo V, Griffiths MD, Sinatra M. Social networking addiction, attachment style, and validation of the Italian version of the Bergen Social Media Addiction Scale. *J Behav Addict.* (2017) 6:178–86. doi: 10.1556/2006.6.2017.023
97. Andreassen CS, Billieux J, Griffiths MD, Kuss DJ, Demetrovics Z, Mazzoni E, et al. The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: a large-scale cross-sectional study. *Psychol Addict Behav.* (2016) 30:252–62. doi: 10.1037/adb0000160
98. Hayes AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach.* New York, NY: Guilford Publications (2017).
99. Moccia L, Janiri D, Pepe M, Dattoli L, Molinaro M, De Martin V, et al. Affective temperament, attachment style, and the psychological impact of the COVID-19 outbreak: an early report on the Italian general population. *Brain Behav Immun.* (2020) 87:75–9. doi: 10.1016/j.bbi.2020.04.048
100. Boursier V, Gioia F, Griffiths MD. Objectified body consciousness, body image control in photos, and problematic social networking: the role of appearance control beliefs. *Front Psychol.* (2020) 11:147. doi: 10.3389/fpsyg.2020.00147
101. Boursier V, Manna V, Gioia F, Coppola F, Venosa N. Cyber-moms facing motherhood: holding functions and regressive movements in parenting websites. In: *Global Perspectives on Health Communication in the Age of Social Media.* Hershey, PA: IGI Global (2018). p. 29–58. doi: 10.4018/978-1-5225-3716-8.ch002
102. Boursier V, Gioia F, Coppola F, Schimmenti A. Digital storytellers: parents facing with children's autism in an Italian web forum. *Mediterr J Clin Psychol.* (2019) 7:1–22. doi: 10.6092/2282-1619/2019.7.2104
103. Perloff RM. Social media effects on young women's body image concerns: theoretical perspectives and an agenda for research. *Sex Roles.* (2014) 71:363–77. doi: 10.1007/s11199-014-0384-6
104. Tiggemann M, Slater A. Facebook and body image concern in adolescent girls: a prospective study. *Int J Eating Disord.* (2017) 50:80–3. doi: 10.1002/eat.22640
105. Van den Eijnden RJ, Meerkerk GJ, Vermulst AA, Spijkerman R, Engels RC. Online communication, compulsive internet use, and psychosocial well-being among adolescents: a longitudinal study. *Dev Psychol.* (2008) 44:655–65. doi: 10.1037/0012-1649.44.3.655
106. Butkowski CP, Dixon TL, Weeks K. Body surveillance on Instagram: examining the role of selfie feedback investment in young adult women's body image concerns. *Sex Roles.* (2019) 81:385–97. doi: 10.1007/s11199-018-0993-6
107. Veldhuis J, Alleva JM, Bij de Vaate AJ, Keijer M, Konijn EA. Me, my selfie, and I: the relations between selfie behaviors, body image, self-objectification, and self-esteem in young women. *Psychol Popular Media Cult.* (2020) 9:3–13. doi: 10.1037/ppm0000206
108. Boursier V, Gioia F, Griffiths MD. Selfie-engagement on social media: pathological narcissism, positive expectation, and body objectification— which is more influential? *Addict Behav Rep.* (2020) 11:1–10. doi: 10.1016/j.abrep.2020.100263
109. Guedes E, Sancassiani F, Carta MG, Campos C, Machado S, King ALS, et al. Internet addiction and excessive social networks use: what about Facebook? *Clin Pract Epidemiol Mental Health.* (2016) 12:43–8. doi: 10.2174/1745017901612010043
110. Perales JC, King DL, Navas JF, Schimmenti A, Sescousse G, Starcevic V, et al. Learning to lose control: A process-based account of behavioral addiction. *Neurosci Biobehav Rev.* (2020) 108:771–80. doi: 10.1016/j.neubiorev.2019.12.025
111. Kardefelt-Winther D, Heeren A, Schimmenti A, VanRooij A, Maurage P, Carras M, et al. How can we conceptualize behavioural addiction without pathologizing common behaviours? *Addiction.* (2017) 112:1709–15. doi: 10.1111/add.13763
112. Billieux J, Schimmenti A, Khazaal Y, Maurage P, Heeren A. Are we overpathologizing everyday life? A tenable blueprint for behavioral addiction research. *J Behav Addict.* (2015) 4:119–23. doi: 10.1556/2006.4.2015.009

113. Király O, Potenza MN, Stein DJ, King DL, Hodgins DC, Saunders JB, et al. Preventing problematic internet use during the COVID-19 pandemic: consensus guidance. *Compr Psychiatry*. (2020) 100:1–4. doi: 10.1016/j.comppsy.2020.152180
114. Sacco DF, Ismail MM. Social belongingness satisfaction as a function of interaction medium: face-to-face interactions facilitate greater social belonging and interaction enjoyment compared to instant messaging. *Comput Hum Behav*. (2014) 36:359–64. doi: 10.1016/j.chb.2014.04.004
115. Trepte S, Dienlin T, Reinecke L. Risky behaviors: how online experiences influence privacy behaviors. In: Jakob N, Quiring O, and Stark B, editors. *Von Der Gutenberg-Galaxis Zur Google-Galaxis. From the Gutenberg Galaxy to the Google Galaxy*. Konstanz: UVK (2014). p. 225–44.
116. Leung L. Net-generation attributes and seductive properties of the internet as predictors of online activities and internet addiction. *Cyberpsychol Behav*. (2004) 7:333–48. doi: 10.1089/1094931041291303
117. Schimmenti A, Passanisi A, Caretti V, La Marca L, Granieri A, Iacolino C, et al. Traumatic experiences, alexithymia, and Internet addiction symptoms among late adolescents: a moderated mediation analysis. *Addict Behav*. (2017) 64:314–20. doi: 10.1016/j.addbeh.2015.11.002
118. Schimmenti A, Caretti V. Video-terminal dissociative trance: toward a psychodynamic understanding of problematic internet use. *Clin Neuropsychiatry*. (2017) 14:64–72.
119. Schimmenti A, Musetti A, Costanzo A, Terrone G, Maganuco NR, Rinella CA, et al. The unfabulous four: Maladaptive personality functioning, insecure attachment, dissociative experiences, and problematic internet use among young adults. *Int J Ment Health Addict*. (2019) 1–15. doi: 10.1007/s11469-019-00079-0
120. Casale S, Caplan SE, Fioravanti G. Positive metacognitions about internet use: the mediating role in the relationship between emotional dysregulation and problematic use. *Addict Behav*. (2016) 59:84–8. doi: 10.1016/j.addbeh.2016.03.014
121. Ceyhan E, Boysan M, Kadak MT. Associations between online addiction attachment style, emotion regulation depression and anxiety in general population testing the proposed diagnostic criteria for internet addiction. *Sleep Hypnosis*. (2019) 21:123–39. doi: 10.5350/Sleep.Hypn.2019.21.0181
122. Estevez A, Jauregui P, Sanchez-Marcos I, Lopez-Gonzalez H, Griffiths MD. Attachment and emotion regulation in substance addictions and behavioral addictions. *J Behav Addict*. (2017) 6:534–44. doi: 10.1556/2006.6.2017.086
123. Marino C, Caselli G, Lenzi M, Monaci MG, Vieno A, Nikčević AV, et al. Emotion regulation and desire thinking as predictors of problematic Facebook use. *Psychiatr Q*. (2019) 90:405–11. doi: 10.1007/s11126-019-09628-1
124. Yildiz MA. Emotion regulation strategies as predictors of internet addiction and smartphone addiction in adolescents. *J Educ Sci Psychol*. (2017) 7:66–78.
125. Kendler KS, Myers J. The boundaries of the internalizing and externalizing genetic spectra in men and women. *Psychol Med*. (2014) 44:647–55. doi: 10.1017/S0033291713000585
126. Young KS, Sandman CF, Craske MG. Positive and negative emotion regulation in adolescence: links to anxiety and depression. *Brain Sci*. (2019) 9:76. doi: 10.3390/brainsci9040076
127. Heinrich LM, Gullone E. The clinical significance of loneliness: a literature review. *Clin Psychol Rev*. (2006) 26:695–718. doi: 10.1016/j.cpr.2006.04.002

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2020 Boursier, Gioia, Musetti and Schimmenti. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.