THE ROLE OF MEDIA IN SUICIDE AND SELF-HARM: CROSS-DISCIPLINARY PERSPECTIVES

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THE ROLE OF MEDIA IN SUICIDE AND SELF-HARM: CROSS-DISCIPLINARY PERSPECTIVES

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EDITORIAL
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Editorial: The Role of Media in Suicide and Self-Harm: Cross-Disciplinary Perspectives

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Keywords: suicide, self-harm, mass media, social media, prevention

Editorial on the Research Topic

The Role of Media in Suicide and Self-Harm: Cross-Disciplinary Perspectives

Suicide and self-harm are complex, multifaceted, and simultaneously personal and social phenomena. While what motivates a person to engage in these acts cannot be reduced to a single factor, the media's role as a shaper and conduit of meanings has attracted considerable scholarly and practitioner attention. Although the mass media has been, and will doubtlessly continue to play a key role in shaping public attitudes and behaviors toward suicide and self-harm, the user-generated media has dramatically diversified our opportunities to encounter and interact with media content featuring these behaviors.

The nine articles in this Research Topic together provide a contemporary snapshot of this rapidly changing field. The articles cut across disciplinary boundaries, representing a wide range of perspectives from public health, psychiatry, psychology, cultural studies, communication studies, and computer science. The cross-disciplinary efforts demonstrate how researchers and practitioners across the world tackle the intricate role of the media in suicide and self-harm through their unique epistemological lens.

The media has long been viewed as a double-edged sword that can ameliorate or exacerbate suicide and self-harm. Mounting evidence suggests a considerable correlation between incautious media coverage—particularly the reporting of celebrity suicides—and perceived increase in suicidal behaviors (Niederkrotenthaler et al., 2020). Although guidelines for reporting suicide help media professionals improve in some areas of suicide coverage [e.g., World Health Organization (WHO), 2017], the old habit still clings. In this Research Topic, Ng et al. illuminate a shared concern among Malaysian stakeholders about unsafe suicide reporting. Media practitioners, mental health professionals, and people with lived experience of suicidal behaviors commonly concerned with sensational and emotionally provoking media coverage that presents suicide content as "newsworthy."

In response to the persistent need for sensible suicide reporting, three articles in this collection explored educational interventions for key stakeholders. The safe reporting training for Malaysian media professionals examined by Lim et al. showed promising effects on trainees with no lived experience of suicidal behavior. Similarly, Walter et al. found their Mini Media training for French psychiatrists effective in improving psychiatrists' ability to guide journalists toward a more responsible reporting of suicide. Braun and Niederkrotenthaler conducted a randomized controlled trial to investigate if educative media material would influence Austrian physicians' attitudes to initiate life-saving procedures after a suicide attempt. Results showed little impact of the media-based education, as physicians tended to make a procedural decision based on their

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own opinions on suicide and specific patient case. Altogether, these articles indicate an expanding horizon of educational intervention from targeting solely on media professionals to including healthcare providers who advise journalists or support suicidal people. Future studies of this kind should take into account intervention targets' prior knowledge and attitude toward suicide.

Meanwhile, the expansion of social media requires suicide and self-harm research to extend its reach to this emergent field. Bell and Westoby argue that in our current "polymediated age" where anyone can participate in media communication as producers, consumers, audiences, and critics, exposure to suicide-related content has become much more complicated. Within the emergent "communicative ecology of exposure" (Bell and Westoby), social media are taking on vital roles and reproducing both benefits and harms of traditional media. Seong et al.'s study on Korean young adolescents with a history of self-harm highlighted the potential risk of social media use. They found that youth who have posted content about one's self-harm showed an increased risk of lifetime suicidality and suicide attempt.

In this regard, there is a growing excitement around Artificial Intelligence (AI) and machine learning technologies as a potential game changer in suicide prevention. Yang et al. reported on their AI-based "Tree Hole Action" program that monitors Chinese social media posts, detects individuals at risk for suicide, and then deploys trained volunteers to proactively offer interventions. However, while the study found promising results, some users may not feel comfortable being monitored or to have their family and friends alerted about what they posted on social media. The possibility of monitoring, predicting, and intervening in suicidal behaviors of social media users poses serious ethical questions (Ophir et al., 2021). Is the protection of life more important than any potential invasion of privacy? Future suicide and self-harm research should discuss further ethical dilemmas pertinent to digital health surveillance.

Finally, two contributions from communication and cultural scholars spur a focal shift from individual behaviors to group, community, and (sub)culture wherein meanings of suicide and self-harm are co-constructed and performed. Seko and Kikuchi's conceptual paper describes a cross-platform promulgation of "*menhera*" girl characters across Japanese popular culture (i.e., *manga,* game, fashion) that portray self-harm as a self-sufficient signifier of female "madness." The authors argue that this gendered caricature, which simultaneously reproduces and disrupts traditional gender norms and stigma associated with self-harm, may provide people who self-harm with a convenient frame of reference to understand and describe their experiences beyond pathological interpretation. In studying an online pro-recovery suicide forum, Alvarez similarly contends that forum members ascribe alternative meanings to their suicidal self. For them, staying alive—or continuing to *be* in Heideggerian sense—depends not on reconstitution of a holistic (thus "normal") self, but on active and ongoing reconciliation of fractured identities. The author suggests that clinical practice can benefit from recognizing the agency of suicidal people and involving them as active participants in their own recovery.

As we conclude this editorial, new and unprecedented issues continue to rise around the media's relationship to suicide and self-harm. Our intent has been to inspire cross-disciplinary dialogues that deepen our understanding of these two interrelated phenomena, challenge assumptions, and inspire new questions and interventions. It is our hope that researchers and practitioners working in suicide and self-harm would benefit from insights from different disciplines than their own and promote novel approaches to this expanding field of research and practice.

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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REFERENCES

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., et al. (2020). Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 8, 368:m575. doi: 10.1136/bmj.m575

Ophir, Y., Tikochinski, R., Brunstein Klomek, A., and Reichart, R. (2021). The hitchhiker's guide to computational linguistics in suicide prevention. *Clin. Psychol. Sci.* 10, 212–235. doi: 10.1177/21677026211022013

World Health Organization (WHO). (2017). *Preventing suicide: a resource for media professionals - update 2017*. Available online at: https://apps.who.int/iris/handle/10665/258814 (accessed April 29, 2022).

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ORIGINAL RESEARCH
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Malaysian Stakeholder Perspectives on Suicide-Related Reporting: Findings From Focus Group Discussions

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Media guidelines on safe suicide-related reporting are within the suicide prevention armamentarium. However, implementation issues beleaguer real-world practice. This study evaluated the perspectives of the Malaysian media community, persons with lived experience of suicidal behavior (PLE), and mental health professionals (MHP) on suicide-related reporting in terms of the impact, strategies, challenges, and the implementation of guidelines on safe reporting. Three focus group discussions of purposively sampled Malaysian media practitioners (n = 8), PLE (n = 6), and MHP (n = 7) were audio-recorded, transcribed, coded and thematically analyzed. Inclusion criteria were: English fluency, no clinical depression or suicidal ideation (current), no recent previous suicide attempts or suicide bereavement. Three major themes emerged: (1) Unsafe Reporting; (2) Impact; and (3) Safe Reporting. Most described current reporting as unsafe by being potentially triggering to media users and may contribute to contagion effect. Positive impacts identified included raised awareness toward suicide and its prevention. Unsafe reporting was attributed to inadequate awareness, knowledge, and guidance, lack of empathy and accountability, job-related factors, popularity-seeking, lack of monitoring and governance, and information source(s) with unsafe content. Majority agreed on how suicide stories should be framed to produce a safe report. The media community diverged on how detailed a suicide story should be. Safe reporting challenges included difficulties in balancing beneficial versus harmful details, social media ubiquity and its citizen reporters. Participants suggested these safe reporting strategies: stakeholder engagement, educational approaches, improving governance and surveillance, and guidelines revision. Most acknowledged the relevance of guidelines but were unaware of the existence of local guidelines. Implementation challenges included the dilemma in balancing media industry needs vis-à-vis safe reporting requirements, stakeholder engagement difficulties and social media regulation. There is poor awareness regarding safe suicide-related reporting across all groups. PLE and MHP were negatively impacted by current unsafe messaging which aggravated trauma and grief reactions. Postvention

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support gaps for mental health professionals were highlighted. Safe reporting promotion strategies should include stakeholder engagement to increase awareness on minimizing Werther and maximizing Papageno effects. Strategic re-examination and dissemination of local media guidelines to address new media issues, and effective surveillance mechanisms, are crucial in sustainable improvement of safe reporting practices.

Keywords: suicide prevention, focus group discussion (FGD), safe reporting, media, stakeholders, suicide, media guidelines

INTRODUCTION

The reporting and portrayal of suicide in the media has significant societal and public health implications (Ng et al., 2021). The risk of suicide contagion from media reports of suicide, more commonly known as copy-cat suicide, or the Werther effect, has been documented and debated in over 150 published studies to date (Niederkrotenthaler et al., 2020). More recently, suicide preventive elements of media reports related to suicide events have been described as the Papageno effect, whereby the media portrayal of how a person successfully overcomes a suicidal crisis has been associated with a reduction of suicide rates at the population level (Niederkrotenthaler et al., 2010). In view of the potentially harmful and protective effects of suicide-reporting, media guidelines have been developed based on the World Health Organization (WHO)'s recommendations as a reference point for safe and responsible reporting of suicide (Beautrais et al., 2008). Such guidelines have been implemented worldwide with varying degrees of success in terms of acceptance and enforcement (Bohanna and Wang, 2012). In Malaysia, guidelines for media reporting on suicide were developed in 2004 by the Ministry of Health with the input of mental health practitioners and representatives from the media (Malaysia Ministry of Health, 2004). However, more than a decade later, suicide reporting practices in Malaysia remain largely incongruent to recommendations in the guidelines (Johari et al., 2017; Chan et al., 2018; Victor et al., 2019).

Beyond the population effects of media reporting on suicide rates, the level and quality of stakeholders' collaborative engagement on the ground is crucial for successful and sustainable implementation of media guidelines for suicide prevention (Cheng et al., 2014). Media guidelines on safe suicide reporting should ideally be informed by the expertise and knowledge of parties who have to deal with the ramifications of inappropriate coverage (Tully and Elsaka, 2004; Norris et al., 2006; Bohanna and Wang, 2012; Duncan and Luce, 2020). On this front, studies have explored journalists' experiences and perspectives on suicide reporting. In (Cheng et al., 2014) 's study, media practitioners provided the following factors as rationale for the intensive suicide-reporting in Hong Kong: (i) economic competitiveness, (ii) audience appetite, and (iii) the media's perceived role as the voice of public consciousnesses in relation to social issues. In New Zealand, in addition to a similar ethos of "promoting the public good", (Collings and Kemp, 2010)'s qualitative study among media practitioners provided insights on other journalistic experiences such as media framing of suicide, professional practice and restricted reporting, and how professionalism buffered the psychological distress of suicide-reporting via emotional distancing. What is less understood is the impact on the suicide-bereaved of reporting and editorial decisions of suicide-related events in the media.

Existing literature on media reporting of suicide highlighted the diversity of suicide bereaved experiences in terms of what is constituted as acceptable in responsible media suicide reporting (Chapple et al., 2013)'s UK study found a difference in emphasis between media guidance on suicide reporting, and the perspectives and needs of persons bereaved by suicide. The delicate balance between preventing future suicides and protecting the interests of those bereaved by suicide was acknowledged by Gregory et al. (2020). A suicide prevention-focused style of reporting was highlighted as potentially positive in terms of the impact on suicide bereavement (Skehan et al., 2013).

There is a paucity of published data on the qualitative experiences of vulnerable populations such as people with lived experience of suicidal behavior with regards to the impact of suicide-reporting and the role of media guidelines. Mental health professionals are also significant, albeit under-studied, stakeholders in the area of suicide-reporting and the content of media guidelines. Notwithstanding their professional role as suicide prevention clinicians, mental health professionals are not immune to the negative impact of suicide-reporting in view of their high exposure to client suicide (Seguin et al., 2014).

Knowledge gaps exist with regard to the need for insights from key understudied stakeholders on the reporting and portrayal of suicide-related events in the media. This has important implications on the ecosystem of stakeholder engagement for the strategic implementation of safe suicide-reporting media guidelines. Therefore, the objective of this study is to explore the perspectives of culturally diverse Malaysian media practitioners, persons with lived experience of suicidal behavior and mental health professionals on the current state of suicide reporting, challenges and strategies for safe reporting, and media guideline use.

MATERIALS AND METHODS

Study Design

This study employed thematic analysis (Braun and Clarke, 2006) which used an inductive approach. The study was conducted in November 2018 within a media safe-messaging advocacy event at a patient support group organization venue.

Recruitment and Sampling

Participants were recruited prior to the media safe-messaging advocacy event. Recruitment by purposive and snowball sampling was communicated through networks of the research team via email, social media (e.g., Facebook, Twitter, and Instagram), instant messaging applications (e.g., WhatsApp), organizational/institutional email listserv/mailing lists, telephone calls or face-to-face meetings. Examples of these networks included non-governmental organizations (e.g., Malaysian Psychiatric Association, MPA), patient advocacy groups (e.g., Mental Illness Awareness and Support Association, MIASA) and social enterprise networks (e.g., Thoughtfull, *Laman Minda*). The inclusion criteria were: (i) aged 18 years old or older, (ii) either a media practitioner or media student, mental health professional, or person with lived experience of suicidal behavior [either personal or significant other)], (iii) sufficiently proficient in the English language, (iv) not clinically depressed based on a Patient Health Questionnaire-9 (PHQ-9) score of less than 10 (Kroenke et al., 2001), (v) had not had active suicidal thoughts or plans in the 2 weeks prior to the focus group discussion (FGD), any suicide attempt in the 6 months prior to the FGD or been bereaved by suicide in the 6 months prior to the FGD (Skehan et al., 2013). Exclusion criteria were non-fulfillment of any of the inclusion criteria. Help-seeking resources (i.e., crisis lines, information on accessibility and facilitation of referral to mental health services) were made available to every person who gave informed consent for the study including those who were excluded from the FGD. Study participants were given assurance that if they felt uncomfortable or the need to leave the session at any point, they could indicate so by raising their hand. The assistant moderator was on standby to attend to such needs. After each FGD, each participant was given a Post-FGD Screening Questionnaire (PHQ items-2 and 9) to complete. Provisions were made for participants who expressed any emotional distress or screened positive from the questionnaire, to be provided with supportive counseling (i.e., listening to their concerns and validating their emotions), help-seeking resources and facilitation of referral to mental health services.

There was no financial incentive provided for participation in the study.

Data Collection and Data Analysis

We collected data using focus group discussions (FGDs). Three focus groups were formed, representing the three stakeholder groups in the study, namely, persons with lived experience of suicidal behavior (either personal or significant other) (PLE), media practitioners, and mental health professionals (MHP). Each focus group consisted of 6–8 participants which is within the recommended sample size of 5–13 per focus group according to Matthews and Ross (2010).

All three FGDs were carried out simultaneously in different rooms and conducted in the English language. Each FGD was moderated by one of the researchers and audio-recorded, while a second researcher or trained research assistant took field notes. All 3 moderators reached consensus on standardizing the interview moderation prior to the FGD. All 3 moderators are experienced clinical psychiatrists (average of 6 years). Two of the moderators (CLF and RRP) received specific training in FGD from one of the moderators (NYP) with a Master of Science in Health research (MScHR) that included conducting FGDs in qualitative research. The FGDs were conducted with reference to a semi-structured interview guide (**Table 1**), with the moderator utilizing semi-structured, open-ended interview questions to guide the discussion. Subsequent questions that followed were directed by participant responses, with prompts from the moderator until saturation point was reached. The duration of each FGD was approximately 2 h. All audio recordings were transcribed verbatim.

The transcriptions were thematically analyzed by at least three different researchers. Each set of transcripts and field notes were repeatedly examined by each researcher, and the findings were discussed to achieve a consensus, to ensure objective interpretation of participant responses. We created codes and a coding template which contained code definitions to organize the raw data. These codes were later collated to search for emerging patterns of meaning (themes), reviewed to redefine the main overarching themes, and finally triangulated with the observation notes to enhance the findings.

This study was reviewed and approved by the Universiti Tunku Abdul Rahman Scientific and Ethical Review Committee (U/SERC/119/2018).

RESULTS

Profile of Participants

We recruited 6 PLEs, 8 media practitioners and 7 MHPs. Two people who gave informed consent were excluded from study participation - one was unable to attend the FGD due to an upper-respiratory tract infection, and the other person screened positive for suicidal thoughts in the 2 weeks prior to the FGD based on item-9 of the PHQ-9. In terms of general group dynamics, there was no dominance of the FGDs by any particular study participant. One participant was given supportive counseling following the FGD by an assigned assistant researcher who is a trained clinical psychologist; a suicide risk assessment with safety planning and facilitation to the necessary mental health resources and supports was also carried out. Participant characteristics are summarized in **Table 2**. All participants had encountered suicide-related stories in the media.

Themes

Three major themes emerged from the discussion and are shown with their various subthemes in **Figure 1** (Additional information on the level of consensus between all participants in the 3 FGDs can be found in the **Supplementary Table**).

Unsafe Reporting

The majority of participants agreed that the current manner in which suicide-related news is reported and published is generally unsafe and potentially harmful. Types of media discussed included print, broadcasting and digital media, especially social media. Suicide-related content on social media was recognized

TABLE 1 | Semi-structured interview guide.

Semi-Structured Interview Guide
• Some of you may have either read or reported on suicide-related content in the media. How has the experience affected you?
• What is your opinion on how an article with suicide-related content is (or should be) portrayed in the media?
• With regards to existing media reporting guidelines on suicide-related content, what is your opinion of guidelines for suicide-related content in the media?
• How can we improve in reporting suicide-related content?

TABLE 2 | Participant characteristics.

Focus group	Participant	Lived experience (LE)		Category
		(Yes = Y, No = N)	If Y, type of LE	
Media community (*N* = 8)	D	N	Not applicable	Freelance journalist (trauma)
	J	N	Not applicable	Media student
	G	N	Not applicable	Journalist and producer
	C	Y	Suicidal behavior (SO)	Media management
	B	N	Not applicable	Media student
	H	Y	Suicidal behavior (SO)	Journalist (radio)
	E	Y	Suicide-bereaved	Journalist (print)
	A	Y	Suicide-bereaved	Media student
Persons with lived experience (*N* = 6)	M	Y	Suicide-bereaved	Administrator
	Mg	Y	Suicidal behavior (SO)	Pensioner
	KC	Y	Suicide-bereaved, suicidal behavior (P, SO)	Communicator
	LL	Y	Suicidal behavior (P, SO)	Student
	N	Y	Suicidal behavior (P, SO)	Marketer
	Bt	Y	Suicide-bereaved, Suicidal behavior (SO)	Educator
Mental health professionals (*N* = 7)	I	Y	Suicide bereaved (C)	Psychiatrist
	W	Y	Suicide bereaved (C)	Psychiatrist
	J	N	Not applicable	Psychiatrist
	S	Y	Suicidal behavior (C)	Psychiatrist
	A	Y	Suicide bereaved (C)	Psychiatrist
	R	Y	Suicide bereaved (C)	Psychiatrist
	Z	Y	Suicidal behavior (C)	Psychiatrist

Lived experience (LE) is defined as encompassing either personal experience with suicidal behavior (P), suicide bereavement, exposure to suicidal behavior of significant others (SO), and/or exposure to client suicide or client suicidal behavior in the case of MHP participants (C). The presence of lived experience is determined either directly from information obtained from participant demographic forms or via findings from the focus group interview.

as a significant area of unsafe reporting. As expressed by media participant, A:

> *"Social media is a completely different story because a lot of the people who are creating content on social media are not industry professionals. And a lot of these people are people's main source of news, a lot of friends I have don't subscribe to even digital newspapers, they get their news completely from social media sources, their friends, blogging, yeah, Facebook Live, videos."* (A, Media).

Unsafe suicide-related material identified were in four forms: (i) content [such as detailed descriptions of methods, location and/or person(s) involved, graphic images and paucity of help-seeking resources]; (ii) framing [such as inaccurate and judgmental portrayals of the suicide or person(s) involved]; (iii) accessibility of unsafe content (such as repeated coverage of the same news and permanence of online archives), and (iv) prominence of unsafe content, in terms of front page placements and use of headlines. Although the focus of the discussions was on suicide-related reporting, it became evident that suicide-related material encountered by participants included other forms of communication beyond news reports, such as blogs, video footages by social media users and comments within each post. As such, we decided to adopt the term 'messages or messaging' to include such suicide-related material.

Reasons for unsafe reporting

Participants expressed several potential reasons behind the persistence of unsafe reporting (see **Figure 1**), namely inadequate knowledge, awareness and guidance related to safe reporting, lack of monitoring or governance, readership or popularity-seeking, lack of empathy and accountability, and information source(s) with unsafe content.

Inadequate awareness, knowledge, and guidance. The majority agreed that most people are not aware of the importance of safe reporting, nor do they realize the potential effects of unsafe suicide-related reporting.

As stated by an MHP,

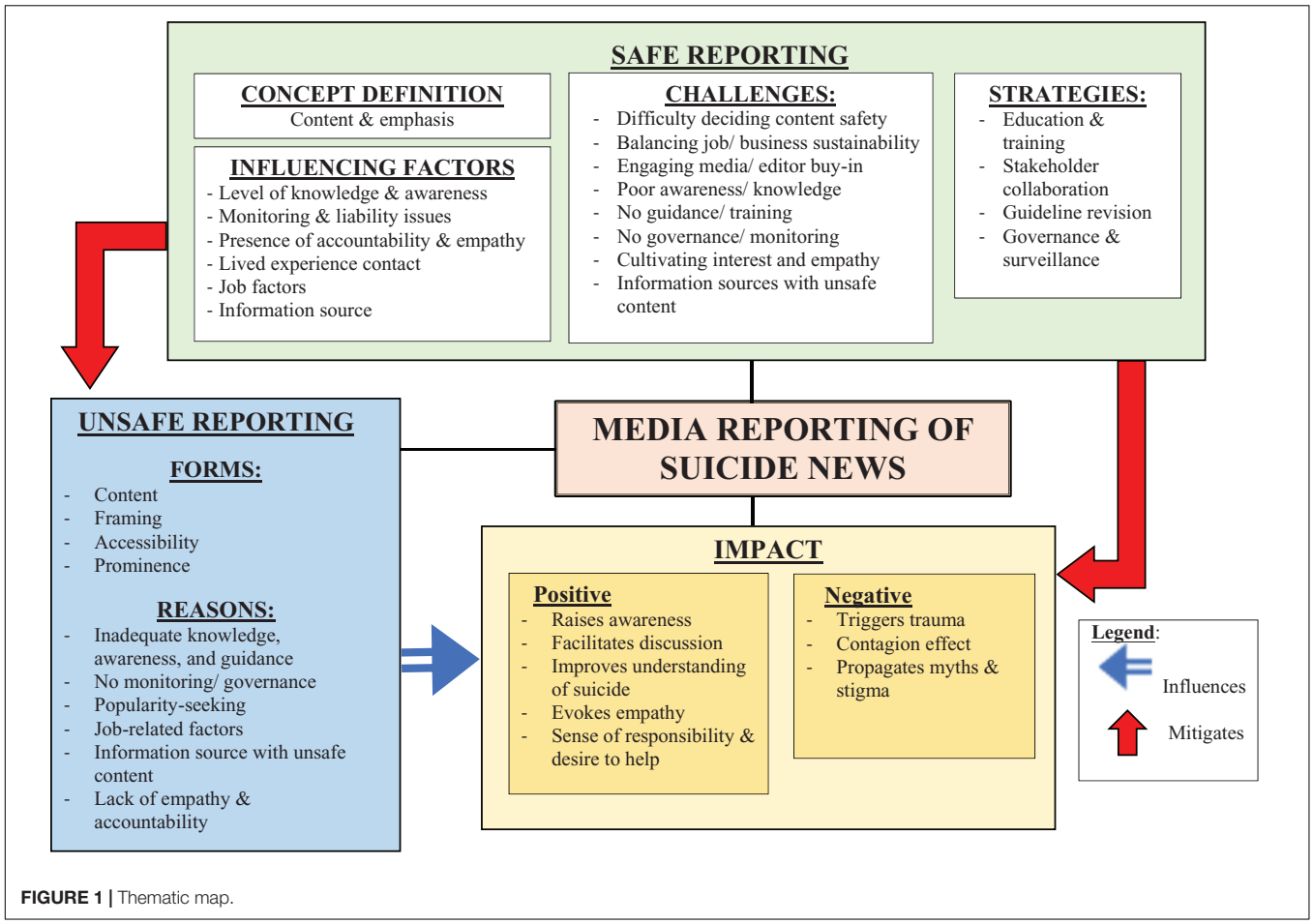

FIGURE 1 | Thematic map.

"I think not many people are aware [sic] the danger of irresponsible reporting of suicide." (S, MHP).

This is conceded by media participants such as E who did not realize the implications of sensationalism, nor how it would have trigger effects on someone with suicidal thoughts.

Others stated that there is also a lack of guidance specifically in the area on how to convey mental health or suicide-related information. While workshops are being conducted on defamation and libel, E added that the topic of suicide reporting is hardly prioritized.

Many were not even aware of the availability of media guidelines.

Indeed, A, a media participant, pointed out that even though there are Malaysian media guidelines available, the information did not reach media practitioners:

"It's just a matter of people don't know it and it's not enforced enough. I mean (. . .) how many journalists actually know what the guidelines on suicide are, how many of them would check it out (. . .) they've never been restricted from writing some like, sensationalist articles." (A, Media).

Others suggested that even if people knew of local media guidelines, they may be reluctant to adhere to guidelines that they perceived were developed without media participation or deemed restrictive.

". . .they don't feel that it is actually theirs. (. . .) It is actually done by someone else. If they don't feel the ownership from the guidelines, they don't feel the responsibility to follow it, you know. (. . .) So they feel that we are trying to dictate what they should do or (sic) should not do." (R, MHP).

Absence of monitoring or local guidance especially with regards to posts or articles on social media. According to C, a media participant, the lack of monitoring contributes to the lack of awareness on the need for safe reporting or messaging, in addition to not being consulted on the content nor being made aware of any guidelines for suicide and mental illness reporting, even as content creators.

"the content, the code for suicide, mental illness, is not being driven through in our decisions as content creators. (. . .) I don't think there are anyone monitoring mental illnesses depiction in content." (C, Media).

In addition, participants highlighted that many are using social media to express themselves and it is a challenging task to keep track of posts on social media:

". . .on Facebook, a lot of graphic imagery happens to come up on Facebook Live because it's difficult to trace in the current moment . . . when it happens in 2 s, . . . for them [social media companies] to come down on a like, deletion spree . . ., those blogs have already made their impact, . . . like twelve posts per minute, yeah, it's a lot more difficult to restrain something so unlimited." (A, Media).

Job-related factors. Media participants cited job-related factors which at times necessitated such reporting. Firstly, suicide stories are highlighted only when they are perceived to be newsworthy –

"I think covering a suicide follows any other news guideline which is, is it newsworthy? (. . .) if, it's relevant to a wider audience, (. . .) because there's an issue that we need to address, (. . .) what's the bigger message for us as a society that we need to prevent this (suicide) from happening." (G, Media).

D conceded, stating that for celebrity suicides, particularly, the news would *"be the front page. . ., that will open a* (2-page) *bleed,"* which meant *"that more information and more details"* would be published.

In addition, when covering a suicide story, media participants believed that it was their job and duty to report the truth of what had taken place, and this included referring to the method of suicide.

"As a, as a news story, (. . .) without giving the details, so for example, I think to say commit suicide or kill yourself is too vague to be a story, you'd have to say (methods. . .)" (G, Media).

Other media participants purported that the published report ultimately depended on editorial discretion – their editors had the final say. An MHP recalled a journalist's response when asked about the choice of language used in a published suicide report –

"He says that my editor likes to use this kind of word. 'I have to word this kind of word because we need to be different from other papers. In Tamil there is three main websites and stiff competition among them. So, when I (am) covering, this is one of the headline sensational news, I have to put (in this) the paper, which is not (found on) other papers.' There is competition among them, how they report this thing." (W, MHP).

Information sources with unsafe content. Media practitioners also tended to rely on information provided by perceived authoritative sources such as the police or autopsy findings which may contain unsafe materials:

"the authorities, the police, because we will report whatever the authorities said first." (D, Media).

Others from broadcast media reported similar predicaments as they relied on information from reporters as their source of news:

"(In) radio broadcasting, we do not have our own team of reporters (. . .), so we rely quite heavily on newspapers. So, um, if let's say those broadcasters who do not have the awareness or do not know about the guidelines, if the reporters really write it in a sensational way maybe, the broadcasters will just read it out." (H, Media).

However, some conceded that it was not necessary to include explicit details of the suicide method, "as long as it is possible to understand the story" (G, Media).

Lack of accountability and empathy, and popularity seeking. Participants cited lack of accountability and empathy; compounded by increasing self-interest (profit and popularity-seeking) as contributing factors to unsafe messaging in the media, including those by social media users. According to one MHP,

"The need to be the one who posted certain news online, (. . .) who gets the most shares, um retweets, likes, so that somehow affect a person's decision making in terms of deciding whether should I post this or should I not. Where your popularity matters more than the welfare of other people. So, that goes back to a person's values." (Z, MHP).

Impact

Suicide-related media content evidently impacted each participant in one way or another. Participants identified both positive and negative impacts of suicide-related media reporting. The majority of participants cited generally negative impacts when asked to comment on the quality of current media suicide-related material. It was interesting to note that media participants (apart from media students) were quick to deny experiencing any personal adverse emotional impact from suicide-related news.

Negative impact

Triggering trauma. All participants agreed that current suicide-related reporting may potentially affect consumers in an adverse manner, particularly among people with lived experience, in that their experience of encountering suicide stories on the media either reignited traumatic memories of their own suicidal behavior or rekindled grief reactions related to suicide bereavement. One PLE participant said that the details were unimportant and irrelevant.

"all these details (. . .), I think they are not important, they are not relevant. I think it really affects me because it trigger(s) all the emotions; and. . .all the pain and then you just feel sorrowful for the person and, sorrowful for the family." (Bt, PLE).

Some of the PLEs even preferred to avoid reading contents of any suicide-related article except for the headlines because,

". . .people who are writing it may not necessarily be sensitive to people who are vulnerable, like me. And for me, the most difficult time I had with these thoughts were like a decade ago and still, (pausing, getting teary) I know I can't come, like too close to the topics." (N, PLE).

MHPs were equally as negatively affected by suicide-related news or posts. They were reminded of their own grief, including experiencing intrusive images and feelings of failure; toward the loss of their patients as shown by the excerpts below:

"Seeing media reporting about your patients that you're seeing (sic) few days before their attempt is quite traumatizing to me. It makes (sic) me think a lot, if have I done enough for them." (I, MHP).

Others expressed outrage and disgust at the lack of empathy and negativity related to the live recording of suicides posted on Facebook and the negative comments that accompanied the

post. B (Media) claimed that she was disturbed by a thread of live tweets that seemed to 'encourage' a suicide attempt,

> *". . . if I was depressed or on the verge of suicide, if I just see how the public would respond to this, like 'Oh, they want me to die.' There wasn't anyone that was tweeting stuff like 'He should hold on a little longer'".*

Contagion effect. Participants agreed that unsafe reporting of suicide-related news can potentially trigger a contagion effect. For example, one media participant (A, Media) attributed a friend's suicide to the negative influences of suicide-related messages on social media, which led him to 'romanticize' suicide.

Coverage on celebrity-related suicides were especially likely to contribute to a contagion; as shown in the exerpts below:

> *"but when that [death of Anthony Bourdain] happened (. . .), I was like (. . .), 'Why, why would I still have that?' I thought I am over it. (. . .) It's been so long. I wrestled with my self-esteem for a little bit during that period because I felt like I have failed myself if I was still having these thoughts. Because of how much I relate(d) to him as a person, (. . .) I read up stuff online about him. (. . .) The more I read, the more I'm even more affected because there are so many people who love him and (pause), it just makes it even more difficult for me to deal with that incident. (. . .) So when I found out about the method, (pausing) it just kept playing in my head."* (N, PLE).

Propagating myths and stigma. Participants believed that media suicide reports may propagate myths or inaccurate information about suicide, thereby further worsening the stigma surrounding suicides. For example, one participant (C, Media) commented that a media documentary seemed to depict the actor Robin Williams' suicide as a form of peaceful, beautiful, and perfect death, a perfect ending; and inferred that in taking his own life he was in a sense taking control of his own life choices.

Positive impact

On the other hand, most participants also agreed that suicide-related news can produce positive impacts, in that reporting suicide stories can help to raise awareness on suicide matters and its severity, provide a platform to discuss about suicide and help to improve understanding related to suicide. In addition, some participants felt that suicide reporting could evoke feelings of empathy and responsibility toward preventing suicides:

> *"it affects me in the sense that. . .we need to help people capture better. . .and if we have a chance to start earlier, then we can maybe have a success rate of at least preventing or helping them."* (M, PLE).

Safe Reporting

The majority of participants agreed that suicide stories should be framed to embody positive messages, educate on facts related to mental health issues and suicide prevention, and include help-seeking resources. Participants from the MHP and PLE groups highlighted that there should be more article weightage on empowering and supporting people who may be seeking help and on reducing stigma, rather than focusing on the suicide act. The MHPs and PLEs also added that details or pictures which could potentially identify the decedent or their family, or pictures/suicide methods, should be avoided.

As explained by N, a PLE;

> *"I don't want to know (pause) (. . .) these really personal details that allow me to construct like an image of them in my head. That's not helpful to me personally. Someone who's going through those thoughts (pause) would understand that none of those details matter (. . .) because you want them to choose life."* (N, PLE).

Participants identified several factors that could influence safe suicide reporting (see **Figure 1**). Having knowledge and awareness of the topic, presence of legal implications that require media guidelines to be adhered to strictly, personal values of accountability and empathy, and contact with people with lived experience of mental health issues or suicidal behavior could encourage a more empathetic and responsible manner of report writing. The latter two are illustrated by the following excerpt from media representative, A:

> *"It makes you realize it's not exactly the same as, as another story. If you're talking about somebody who died of cancer it doesn't spur on people to get cancer. (. . .) But with suicides it affects people very personally, it affects mental illness very personally. (. . .) When you've had that empathetic, um, connection with somebody [with lived experience], when you see the impact it's had on people, it will affect the way that you write about suicide."* (A, media).

Challenges to safe reporting

Although media representatives held similar views on raising awareness of suicide as an important topic, they diverged on what would be deemed safe in terms of writing about suicide-related topics/stories while at the same time keeping to journalistic commitments of 'informing the public of the truth' and highlighting social issues. Media participants were divided on the degree of detail especially when they needed to provide context to build the story to maintain newsworthiness, and on the use of the term 'suicide.'

> As expressed by E, a media professional – *"[Suicide] has had quite an impact, and sometimes you are at loss to what to report, because . . . things like triggers and stuff like that. Because we as a newspaper to be practical, you need to attract readers, and not by sensationalizing it, but even to visualize it, for example. So, we don't put pictures of the people involved or the families because we are sensitive to them, but then you have a graph- a, a(n) illustrative image of a person standing [location], for example, which I read recently, it can also be a trigger (. . .) like have an effect on someone. So, it's a little bit of a conflict, on what you can or what you cannot do."* (E, Media).

Apart from having to delicately balance between benefit and harm in creating safe content, participants also highlighted challenges of needing to remain current and competitive in the news market, which is increasingly digital, against newer online portals who may not be aware of or governed by the standard ethics of reporting.

G of the media lamented:

> *"that's how it is, the difficulty is when traditional or professionally trained media is competing with untrained, young, new news portals. Then if they get all the digs with their click-bait headlines. Do you want to survive or you- Like how do you survive without going to that level? But you are competing with people who don't have that understanding anyway."* (G, Media).

Other challenges (see **Figure 1**) have been mentioned earlier.

Strategies to improve safe reporting

Participants discussed four main strategies to ensure safe reporting (see **Figure 1**).

Education and training. All participants were unanimous in advocating for better education to improve awareness and knowledge on safe reporting and its importance in relation to suicide prevention. Media participants acknowledged that there has been no specific teaching focused on how to approach issues related to mental health or suicide in the present journalism or media school syllabus. They recommended such teaching to be provided at an early stage and included in media school curricula whilst also supplemented with regular training to remind and inculcate practice in media content creators. H, a media participant added that receiving training positively changed her perspective, attitude, and approach to suicide stories:

> *"How I see suicide cases, is very different before and after I'm being exposed to proper knowledge of counseling, psychology, mental health and also the guidelines. It changed my perspective after I'm being exposed to more knowledge of counseling, psychology and mental health."* (H, Media).

Stakeholder collaboration.

Engaging and collaborating with the media. Media participants such as C and D recommended engaging and training editors who usually make the final decisions on a published report. MHP participant R had the same opinion, based on observations from interactions with journalists:

> *"We should target the editors rather than the reporters because most of the time, they [reporters] will just say that "oh, it's not our fault, we just follow orders."* (R, MHP).

Participants further provided suggestions on ways to engage media editors who were said to be often very busy and not readily available. These included suggestions by media participants to implement top-down directives via regulatory bodies on safe reporting training (G, Media), to raise awareness through the use of creative and concise video content (E, Media), to have engagement via collaborative rather than instructive means (D, Media), and to provide incentives and recognition such as awards or prizes to encourage safe reporting (KC, PLE and C, Media).

Collaboration with other stakeholders. Others added that safe reporting awareness should not be limited to media practitioners, but also taught to other stakeholders such as MHPs, policymakers, first responders (who often serve as information sources to the media) and the general public who are both users and contributors on social media. With improved awareness, these stakeholders can be in turn empowered to spread the awareness about the concept and importance of safe reporting to others.

> *"if we can get like from multiple stakeholders explaining to them that this is the research done on it, this is what you can do, you are really going to be great partner of ours, that's when they'll be like, 'Oh I can (emphasis) help other people, this is how I can positively contribute to the cause without harming someone in that sense."* (N, PLE).

Revision of media guidelines. Participants highlighted that current media guidelines, although helpful, should be updated. One PLE participant, N, pointed out that the media guidelines should be revised to encompass posts and publications on digital (including social) media, including guidance for social media users on considerations in respect of posting sensitive content. Another PLE participant suggested for social media platform owners to implement automated message prompts to remind users of media guideline adherence whenever suicide-related content is posted online.

Governance and surveillance. Apart from education, training, stakeholder collaboration and guideline revision, a majority of participants agreed that there is a need for some degree of governance and surveillance on media publications and posts related to suicide matters. As explained by media participant, A:

> *"When they write something it's never been penalized for having, having said some things, they just don't know the guidelines exist at all, and nobody, administrators, um, bosses- Nobody shows up and says this is wrong."* (A, Media).

Some MHPs recommended for the setting up of a dedicated government taskforce or institute to oversee matters related to suicide prevention. One PLE added that:

> *"The Ministry of Communication will play a huge role for governance (pausing), with a lot of help from the Ministry of Health in determining what needs to be filtered, what's the proper guidelines etc."* (N, PLE).

Some pushed for stricter regulations regarding suicide reporting, and for more punitive enforcement of media reporting guidelines:

> *"for a person to change, it requires more than just knowledge. So, I think the government should be punishing those people or those newspapers that (are) (. . .) covering news about suicide deaths (and) not following the regulations and acts that we already have in our country. If we don't do that, they will not adhere."* (Z, MHP).

Others disagreed, as summarized by G, a media participant:

> *"I don't necessarily agree, and I think that this conversation goes into like, very dangerous territory, because how do you start regulating and policing individuals on social media? There's just so many difficult gray areas. (. . .) It's just so complicated. Is this something we can police or is it just a question of morals, and how do you police this and you don't police oversexualization of music videos, you know?"* (G, Media).

DISCUSSION

Unsafe Reporting

Findings from this study are congruent with earlier studies that have highlighted the preponderance of potentially harmful, suicide-descriptive, over suicide-preventive and protective elements of Malaysian media (online newspapers) in terms

of content, framing and acceptability and prominence (Johari et al., 2017; Chan et al., 2018; Victor et al., 2019). Our study concurred with (Collings and Kemp, 2010)'s findings whereby media participants viewed explicit, graphic, or romanticized portrayal of suicide in the media (including methods), as unnecessary due to the risk of contagion effect. In addition, our participants highlighted the prevalence of unsafe suicide-related media messages on social media, which included online graphic images or videos, personal posts, discussions, and comments linked to suicide-related posts (which may or may not be safe). Furthermore, the comments and discussions often take a course of their own and contribute to further harmful suicide-related messages. Our participants with lived experience shared similar sentiments to those in Skehan et al. (2013)'s study in that help-seeking resources, especially on postvention services were particularly lacking.

The reasons attributed to the prevalent harmful or unsafe reporting of suicide stories in Malaysia are not dissimilar to those cited in Malaysian (Johari et al., 2017; Victor et al., 2019) and international studies (Collings and Kemp, 2010; Cheng et al., 2014; O'Brien, 2020). Poor literacy related to suicide prevention and the concept of safe suicide-related reporting (Collings and Kemp, 2010; Cheng et al., 2014; O'Brien, 2020) compounded by media organizations' endeavor to remain commercially competitive and popular in the rise of online news portals, as well as the lack of guidance and monitoring are common factors.

In our study, the majority of participants believed they were contributing toward raising awareness on suicide issues and were unaware of the potentially negative implications related to unsafe suicide reporting. Our media participants rationalized mentioning the method of suicide without the inclusion of explicit details, as this was regarded as a professional obligation to *"report the truth"* about real-life cases of suicide in the news. This was deemed necessary for the sake of clarity in communication so that readers could understand the narrative of the story. However, there are different views regarding the degree of detail that should be included about suicide methods in the media. Others raised concerns that restrictions on suicide-related writing or content creation may impede suicide prevention work, which is similar to the findings by Collings and Kemp (2010). In addition, very few were aware of the existence of the Malaysian Ministry of Health guidelines on responsible suicide reporting (Malaysia Ministry of Health, 2004). Another area of concern is that media practitioners also relied heavily on information sources which were themselves not necessarily safe.

Media corporations focus on producing material that are deemed 'newsworthy' to attract consumers, capitalize on sale and remain competitive while maintaining cost effectiveness (Allern, 2002; Crane et al., 2005; O'Brien, 2020). This translates to personifying and simplifying complex stories to make them more relatable and understandable to the general public (Allern, 2002; Cheng et al., 2014). In the case of suicide reporting, articles often focus on the death event due to limited news space and tend to be produced under intense pressure of time with editors having to make quick decisions on delicate issues (Allern, 2002; Crane et al., 2005; O'Brien, 2020). The resultant outcome is overly descriptive suicide news that often oversimplify and misrepresent suicide as being monocausal in nature. Such content is potentially triggering due to the personal details that may resonate with readers who share similar attributes to the decedent; and provide sufficient details for one to potentially imitate the act (Ng et al., 2021). In addition, participants raised concerns regarding the hierarchical and competitive nature within the media industry that were thought to fuel unsafe reporting. Journalists were expected to adhere to editorial decisions based on the presumption that sensationalist headlines would increase a newspaper's competitive edge. Cheng et al. (2014)'s study highlighted that such assumptions by the media about readers' interest for sensationalist news conflicted with actual audience preference for less sensationalist suicide news reporting. Moreover, Frye (2005) demonstrated an inverse relationship between the level of sensationalist content in newspapers with the volume of circulation, which is arguably a more objective assessment of readership interests. This is also demonstrated by Sumner et al. (2020) who found that online articles with greater fidelity to safe reporting practices were more likely to receive positive responses or to be reshared. It is imperative for the voice of lived experience to be included in the scientific discourse on the supply and demand of sensationalist suicide news reporting. This would be an important counterpoint to the risk of unsafe media narratives shaping public opinion on what is deemed socially acceptable in terms of suicide-news-reporting (Shanahan et al., 2011; Uzuegbunam and Udeze, 2013).

Impact

Our findings were consistent with international findings (Collings and Kemp, 2010; Skehan et al., 2013; Sinyor et al., 2018; Gregory et al., 2020) where participants acknowledged both positive and negative impacts of encountering suicide news. Participants appreciated that suicide-related news promoted awareness on the topic and could help to advocate for suicide prevention (Skehan et al., 2013; Sinyor et al., 2018; Gregory et al., 2020). In our study, one participant acknowledged that encountering suicide news had indirectly improved their understanding related to suicide.

From the negative perspective, study participants who were bereaved experienced a re-traumatization and retriggering of their grief reactions, especially from encountering the details provided in a suicide story, whom they felt were unnecessary and unhelpful to readers (Gregory et al., 2020). Consistent with findings by Cheng et al. (2007), Niederkrotenthaler et al. (2012), and Fink et al. (2018), participants agreed that inappropriately reported celebrity suicides conferred a risk of copycat suicides (Niederkrotenthaler et al., 2012; Cheng et al., 2014; Fink et al., 2018). Participants in Cheng's (2007) study described how their attention were drawn toward the suicide method and in turn 'learned' how to carry out a suicide from a media reporting of a celebrity suicide. Similarly, a PLE in our study described how a specific method of suicide kept 'playing in (their) head' upon encountering such information related to a celebrity suicide, in addition to the traumatic and intrusive nature of the experience. Other participants were negatively affected by suicide-related video footages and live tweets on social media; particularly by the negative comments that seemed to reinforce suicide acts

rather than promote help-seeking. Similar worrying phenomena of 'online suicide baiting' have been described in Seko (2016), Brown et al. (2018), and Phillips and Mann (2019).

Our study also revealed firsthand, personal, and emotional experiences of how the news of suicide on the media affected MHPs, especially those with client suicide. Participants described the experience of being re-traumatized by distressing intrusive media descriptions or images of their clients. Such descriptions evoked feelings of anger and guilt, which impacted their professional duties. While similar traumatic reactions have been described in MHPs who have encountered client suicide, our findings extend this knowledge in that unsafe media content itself can serve as a significant trauma trigger (Chemtob et al., 1988; Wurst et al., 2013; Seguin et al., 2014; Gibbons et al., 2019).

With regards to the impact on media participants, our findings contrasted with those by Collings and Kemp (2010) and Armstrong et al. (2020), in that our media participants (especially those without lived experience) did not seem as personally affected (Collings and Kemp, 2010; Armstrong et al., 2020). This may be related to their "journalistic commitment to detachment, impartiality or professional distance" in order to remain professionally objective (Deuze, 2005; Kotišová, 2019; Armstrong et al., 2020). Barnes (2019) described how journalists are required to suppress, fake or enhance emotions during interactions as per media organization rules (Hopper and Huxford, 2015; Barnes, 2019). Another important reason may be that our media participants were not directly involved in covering suicide news which may involve cold-calling or interviewing the bereaved. For those who did, there are some anecdotal evidence that Malaysian journalists were emotionally affected as a result of covering suicide news (Yang, 2018; Lau, 2019).

Safe Reporting Strategies

There is evidence in literature of the effectiveness of media guidelines in improving suicide-reporting practices and reducing suicide contagion (Bohanna and Wang, 2012). Our MHP participants posited that media professionals may be less motivated to abide by guidelines published that are not authored by one of their own profession. This is a view that has support in literature. Bohanna and Wang (2012)'s review indicates that the effectiveness of media guidelines will also require, amongst others; endorsement by the media community, consultation and collaboration – all in all, 'media ownership.' Studies in the United Kingdom (Norris et al., 2006) and New Zealand (Tully and Elsaka, 2004) have indicated that strong official advice, injunctions or restrictions from non-media industry sources on how to safely report suicide news is likely to be 'resented, ignored or overlooked' by journalists (Norris et al., 2006), a point that is reinforced recently by Duncan and Luce (2020). Even in the event of media industry self-regulation, the importance of ongoing collaboration and consultation with other suicide prevention stakeholders needs to be underscored (Tully and Elsaka, 2004; Norris et al., 2006). This perspective is echoed by the Canadian Psychiatric Association, which recommends 'ongoing collaboration' between media and mental health professionals that should acknowledge both the evidence base of the impacts of unsafe reporting and also the autonomy of journalists (Sinyor et al., 2018). In Austria, the involvement of the media industry in development, dissemination, and training processes for guidelines on suicide-reporting played a key role in changing reporting practices and reducing imitative suicide (Bohanna and Wang, 2012; Duncan and Luce, 2020). Similarly, in Australia, resources developed by suicide prevention non-profit institute with expertise on media and suicide prevention, *Mindframe*, in collaboration with media practitioners, were well received by journalists. In contrast, in China, media guidelines that were developed without the input of media practitioners, saw minimal 'buy-in', with reporting quality consequently remaining low (Tully and Elsaka, 2004; Fu and Yip, 2008; Bohanna and Wang, 2012). In New Zealand, prior to the coming into force of the Coroner's Amendment Act 2016 which provisions involved media consultation, previous guidelines were criticized for lack of consultation during development and did not appear to have been used by journalists (Tully and Elsaka, 2004; Collings and Kemp, 2010; Bohanna and Wang, 2012; Duncan and Luce, 2020).

In terms of strategies for capacity-building within the media community, media professionals unanimously agreed that there is a need for more structured and specific training with regards to safe reporting for suicide prevention, beginning from journalism school and continuing throughout their professional career in the media industry. Duncan and Luce (2020) have created a free online Suicide Reporting Toolkit based on the *Responsible Suicide Reporting Model* which caters to building capacity across the board for journalist, editors, and educators. The toolkit aims to address the irregular uptake of guidelines by incorporating safe reporting in a practical manner by being grounded in news-work and journalistic storytelling. Importantly the toolkit's real-world approach (narrative types, ethical rules, and standards of moderation) with regards to newsroom culture, especially tight deadlines and need for support for journalists covering suicide news, offers pragmatism in this landscape. Other potential points of intersectoral stakeholder collaboration in this area include curriculum-building at the education ministry level involving educators from the areas of both media and suicide prevention. Continuous professional education via workshops for media practitioners could also be considered as public-private partnerships between media organizations, and regulators such as the Malaysian Communications and Multimedia Commission within the Ministry of Communications and Multimedia.

Intersectoral Collaboration

The common goals shared by advocates of both media and suicide prevention such as promotion of public good as one of the core values of journalistic ethics can serve as points of convergence and collaboration between stakeholders (Collings and Kemp, 2010; Cheng et al., 2014; Jenkin et al., 2020). This is to ensure that suicide news reporting is safe while still retaining authentic facts via careful phrasing, framing and contextualization of the media narrative. Similar to Skehan and colleagues, 2013 study, participants also highlighted the need for more prevention-focused reporting on suicide-related news, i.e., inclusion of relevant information on crisis help-seeking resources and provision of emotional support for the suicide-bereaved (Skehan et al., 2013). Anecdotal accounts have demonstrated

that such a collaborative approach between mental health professionals and journalists can successfully influence editorial decisions toward safe suicide news reporting. Collaborating with media practitioners in improving the quality of safe suicide reporting could be one of the ways forward. The flexible nature of online/social media platforms enables changes to be made after publication. This may also facilitate real-time interventions as described by Martin, 2019, whereby unsafe content by a YouTuber was taken down following public outcry.

Monitoring and Governance

The absence of specific guidance and monitoring of suicide-related safe reporting practices in the content code of the Malaysian Communications and Multimedia Content Code (Communications And Multimedia Content Forum Of Malaysia, 2004) were highlighted by the media. This finding is noteworthy, as the Code guides self-regulation by the media industry in compliance with the Communications and Multimedia Act 1998 (CMA 98) in Malaysia. Hence, revising and updating this content code appears to be a more strategic approach for implementation of media guidelines. However, compliance with the Code is dependent on voluntary participation of online, excluding print, media companies/websites registered in Malaysia. In 2020, a report and draft bill for the formation of a Malaysian media council encompassing print, broadcast and online media was proposed by the media industry to the Ministry of Communications and Multimedia (Protem Committee Malaysia Media Council, 2020). Elements of safe reporting on suicide-related content have been included in the draft bill with input from the mental health community. Such ongoing multi-lateral intersectoral engagement is a step toward broader stakeholder inclusivity. As previously indicated in our discussion, media industry ownership and adherence to self-regulation is likely to be higher compared to externally imposed health-centric guidelines that may be perceived as a threat to professional autonomy.

Social Media

Focus group discussion participants in all groups consistently pointed out challenges posed by social media as an emerging source of news for readers in comparison to traditional media (i.e., print, radio, and television). In this context, issues arise in relation to the permanence and ease of access of online archives, and the added involvement of 'citizen reporters' as well as input by way of commenting and sharing, and even live streaming, by potentially any person who has access to social media platforms. This raises various issues. Unsafe suicide-related news content (including images) that is widely shared and interacted with may attain additional emphasis in terms of appearance on social media newsfeeds, giving such unsafe news more prominence even if it was not published with such intentions. While, unlike traditional media, it is possible for changes to be made after publication of a social media post to address any unsafe messaging, arguably such action would merely amount to mitigation rather than prevention. There is ample opportunity for further research to shed light on issues related to safe messaging in the context of social media networks.

Malaysia ranks the highest for mobile social media penetration in Southeast Asia with Facebook, a platform mentioned by our study participants; being one of the most popular (Kemp, 2020). At present, Facebook does not fall within the purview of existing national regulatory mechanisms. Self-regulatory mechanisms by Facebook such as artificial intelligence algorithms and engagement with suicide prevention experts (Facebook, 2021) are potential areas to build the evidence base for real-world safe messaging implementation.

Other Interesting Findings From This Study

Our FGD provided a serendipitous avenue, similar to Balint's group (Mahoney et al., 2013; Gerada, 2016) for MHPs to share and express their experiences related to losing their own clients to suicide. This was confirmed by an MHP participant who acknowledged feeling relieved after participating in the FGD for the opportunity to share their personal thoughts and feelings about their loss, and the knowledge that they were not alone, that their peers also had similar reactions.

During the course of the FGD, we encountered moments whereby content shared by some participants, especially those with lived experience, may have unintentionally triggered other participants. Those circumstances posed as challenging situations for the moderators who had to delicately address the situation and balance between the needs of the bereaved/affected to express and articulate their feelings while at the same time maintaining a safe environment to others present. Our study brings to surface the need for discussions between different stakeholders on how to communicate safely about suicide to be tempered by discretion and sensitivity to accommodate a spectrum of different nuances and diverse reactions (Dollah and Tandoc, 2020).

Strengths and Limitations of the Study

To the best of our knowledge, our study is the first to explore perspectives among mental health professionals with regards to suicide reporting in the media, and our findings contribute to current knowledge related to the impact of client suicide on MHPs. Our findings also provide further insight on how media content with overly descriptive details related to suicide methods, as well as the interactive nature of suicide-related stories and/or news enabled by social media platforms, can further traumatize PLEs.

This study may also be the first to explore this subject in a multicultural population. In Malaysia, news platforms can be found in a diverse range of languages owing to the plural societal make-up of the country.

Our sampling methods and inclusion criteria resulted in the media-practitioner/student FGD participants being predominantly from English-language Malaysian media, although there was also some representation from Malay- and Chinese-language news portals. A limitation to be noted is that the media practitioners/students in our sample had not been directly involved in covering news related to suicides. Hence, findings from our study have some limitations in terms of generalizability to non-English media. Another study limitation

is the lack of information on the representation of tabloid versus high-quality media.

It should also be noted that the sample of mental health professionals in this study consisted only of psychiatrists from public healthcare institutions. It would be useful for further studies to explore the perspectives of other mental health practitioners working in suicide prevention, such as private sector psychiatrists, clinical psychologists, counselors, social workers, public health professionals, and mental health advocates.

CONCLUSION

From our study, there seemed to be a low level of awareness with regards to existing local media guidelines on safe reporting of suicide-related content amongst the media, mental health professionals and people with lived experience of suicidal behavior. In addition, reporting unsafe media content can be traumatizing for media users with lived experience, including mental health practitioners who have been impacted by client suicide. Furthermore, our findings highlighted the need for postvention support for affected individuals, which is especially lacking for mental health professionals. Given the prevalence of unsafe reporting on social media platforms, there is a need for media guidelines to address this emerging area. Finally, despite the differing needs and experiences of stakeholder groups, we have found shared commonality and agreements on the need for safe reporting. Therefore, parties involved in suicide reporting can capitalize on shared values and adapt dynamically to the perspectives of, and impacts on, diverse stakeholders.

DATA AVAILABILITY STATEMENT

The original contributions generated for this study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Universiti Tunku Abdul Rahman Scientific and Ethical Review Committee (SERC). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

YN, KP, RP, WC, LC, JL, and SB: conceptualization study design. YN, KP, RP, WC, JTL, KL, and KT: focus group discussion. YN, RP, WC, JTL, and KL: transcription. YN, KP, RP, WC, and LC: data analysis. YN, KP, RP, WC, JL, LC, and KT: drafting of manuscript. YN, KP, RP, WC, LC, JTL, JL, SB, KL, and KT: review and final approval of manuscript. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

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REFERENCES

Allern, S. (2002). Journalistic and commercial news values: news organizations as patrons of an institution and market actors. *Nordicom Rev.* 23, 137–152. doi: 10.1515/nor-2017-0327

Armstrong, G., Vijayakumar, L., Cherian, A. V., and Krishnaswamy, K. (2020). "It'sa battle for eyeballs and suicide is clickbait": the media experience of suicide reporting in India. *PLoS One* 15:e0239280. doi: 10.1371/journal.pone.0239280

Barnes, L. (2019). *Learning to Cope With the Tough Times. Ethical Reporting of Sensitive Topics*. London.

Beautrais, A., Hendin, H., Yip, P., Takahashi, Y., Chia, B. H., Schmidtke, A., et al. (2008). "Improving portrayal of suicide in the media in Asia," in *Suicide and suicide prevention in Asia*, eds H. Hendin, M. Phillips, and L. Vijayakumar (Geneva: World Health Organization), 39–50.

Bohanna, I., and Wang, X. (2012). Media guidelines for the responsible reporting of suicide. *Crisis* 33, 190–198. doi: 10.1027/0227-5910/a000137

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Brown, R. C., Fischer, T., Goldwich, A. D., Keller, F., Young, R., and Plener, P. L. (2018). # cutting: non-suicidal self-injury (NSSI) on Instagram. *Psychol. Med.* 48, 337–346.

Chan, L. F., Ibrahim, N., Rahman, N. A. A., Bartlett, S., Ping, N. Y., and Nordin, A. S. A. (2018). Media Reporting of Suicide in the Era of "Malaysia Baru". *Malays. J. Psychiatry* 27, 67–73.

Chapple, A., Ziebland, S., Simkin, S., and Hawton, K. (2013). How people bereaved by suicide perceive newspaper reporting: qualitative study. *Br. J. Psychiatry* 203, 228–232. doi: 10.1192/bjp.bp.112.114116

Chemtob, C. M., Hamada, R. S., Bauer, G., Kinney, B., and Torigoe, R. Y. (1988). Patients' suicides: frequency and impact on psychiatrists. *Am. J. Psychiatry* 145, 224–228. doi: 10.1176/ajp.145.2.224

Cheng, A. T. A., Hawton, K., Lee, C. T. C., and Chen, T. H. H. (2007). The influence of media reporting of the suicide of a celebrity on suicide rates: a population-based study. *Int. J. Epidemiol.* 36, 1229–1234. doi: 10.1093/ije/dym196

Cheng, Q., Fu, K-w, Caine, E., and Yip, P. S. (2014). Why do we report suicides and how can we facilitate suicide prevention efforts? *Crisis* 35:74. doi: 10.1027/0227-5910/a000241

Collings, S. C., and Kemp, C. G. (2010). Death knocks, professional practice, and the public good: the media experience of suicide reporting in New Zealand. *Soc. Sci. Med.* 71, 244–248. doi: 10.1016/j.socscimed.2010.03.017

Communications And Multimedia Content Forum Of Malaysia (2004). *Overview of Malaysian Communications and Multimedia Content Code Communications*

and Multimedia Content Forum of Malaysia. Available online at: http://www.cmcf.my/overview (accessed March 1, 2021).

Crane, C., Hawton, K., Simkin, S., and Coulter, P. (2005). Suicide and the media: pitfalls and prevention: report on a meeting organized by the reuters foundation program at Green college and university of oxford centre for suicide research at Green College, Oxford, UK, November 18, 2003. *Crisis* 26, 42–47. doi: 10.1027/0227-5910.26.1.42

Deuze, M. (2005). What is journalism? Professional identity and ideology of journalists reconsidered. *Journalism* 6, 442–464. doi: 10.1177/1464884905056815

Dollah, S. R. B., and Tandoc, E. C. Jr. (2020). Triangle of tension: how social system, market forces & journalistic autonomy influence web analytics use. *Journalism Pract.* 1–17. doi: 10.1080/17512786.2020.1829984

Duncan, S., and Luce, A. (2020). Using the responsible suicide reporting model to increase adherence to global media reporting guidelines. *Journalism* doi: 10.1177/1464884920952685

Facebook (2021). *Suicide Prevention: Expert Engagement: Facebook*. Available online at: https://www.facebook.com/safety/wellbeing/suicideprevention/expertengagement (accessed March 1, 2021).

Fink, D. S., Santaella-Tenorio, J., and Keyes, K. M. (2018). Increase in suicides the months after the death of Robin Williams in the US. *PLoS One.* 13:e0191405. doi: 10.1371/journal.pone.0191405

Frye, W. B. (2005). *A qualitative Analysis of Sensationalism in Media*. Morgantown WV: West Virginia University Libraries.

Fu, K.-w., and Yip, P. S. F. (2008). Changes in reporting of suicide news after the promotion of the WHO media recommendations. *Suicide Life Threat. Behav.* 38, 631–636. doi: 10.1521/suli.2008.38.5.631

Gerada, C. (2016). Healing doctors through groups: creating time to reflect together. *Br. J. Gen. Pract.* 66, e776–e778.

Gibbons, R., Brand, F., Carbonnier, A., Croft, A., Lascelles, K., Wolfart, G., et al. (2019). Effects of patient suicide on psychiatrists: survey of experiences and support required. *BJPsych Bull.* 43, 236–241. doi: 10.1192/bjb.2019.26

Gregory, P., Stevenson, F., King, M., Osborn, D., and Pitman, A. (2020). The experiences of people bereaved by suicide regarding the press reporting of the death: qualitative study. *BMC Public Health* 20:176. doi: 10.1186/s12889-020-8211-1

Hopper, K. M., and Huxford, J. E. (2015). Gathering emotion: examining newspaper journalists' engagement in emotional labor. *J. Media Pract.* 16, 25–41. doi: 10.1080/14682753.2015.1015799

Jenkin, G. L., Slim, B. E., and Collings, S. (2020). News media coverage of stakeholder views on suicide and its reporting in New Zealand. 41:248–254. doi: 10.1027/0227-5910/a000629

Johari, M. A., Shukri, M. Z. M., Abd, M. A. S., Karim, M. H. H. I., Khazali, A. K., Nasarudin, A. A., et al. (2017). Perception of media in reporting suicide cases in Malaysia. *Akad. Baru J. Adv. Res. Soc. Behav. Sci.* 7, 59–67.

Kemp, S. (2020). *Digital 2020: Malaysia*. Kepios. Available from: https://datareportal.com/reports/digital-2020-malaysia (accessed March 1, 2021).

Kotišová, J. (2019). *An Introduction to Crisis Reporting: Setting Out. Crisis Reporters, Emotions, and Technology*. Springer, London. 1–28.

Kroenke, K., Spitzer, R. L., and Williams, J. B. (2001). The PHQ−9: validity of a brief depression severity measure. *J. Gen. Int. Med.* 16, 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x

Lau, OL. (2019). *Interview on the Suicide Case*. Petaling Jaya: Sin Chew Daily.

Mahoney, D., Brock, C., Diaz, V., Freedy, J., Thiedke, C., Johnson, A., et al. (2013). Balint groups: the nuts and bolts of making better doctors. *Int. J. Psychiatry Med.* 45, 401–411. doi: 10.2190/pm.45.4.j

Malaysia Ministry of Health (2004). *Guidelines for Media Reporting on Suicide*. Putrajaya.

Martin, F. (2019). "In the suicide forest: how social media news sharing is affecting news journalism," in *Sharing News Online*, (Cham: Palgrave Macmillan), 1–19. doi: 10.1007/978-3-030-17906-9_1

Matthews, B., and Ross, L. (2010). *Research Methods : a Practical Guide for the Social Sciences*. New York, NY: Pearson Longman, 235.

Ng, Y. P., Panirselvam, R. R., and Chan, L. F. (2021). "Media, Suicide and Contagion: Safe Reporting as Suicide Prevention," in *Suicide by Self-Immolation*, eds C. A. Alfonso, P. S. Chandra, and T. G. Schulze (Cham: Springer), 231–246. doi: 10.1007/978-3-030-62613-6_17

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., et al. (2020). Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 368:m575. doi: 10.1136/bmj.m575

Niederkrotenthaler, T., Fu, K-w, Yip, P. S., Fong, D. Y., Stack, S., Cheng, Q., et al. (2012). Changes in suicide rates following media reports on celebrity suicide: a meta-analysis. *J Epidemiol. Commun. Health* 66, 1037–1042. doi: 10.1136/jech-2011-200707

Niederkrotenthaler, T., Voracek, M., Herberth, A., Till, B., Strauss, M., Etzersdorfer, E., et al. (2010). Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *Br. J. Psychiatry* 197, 234–243. doi: 10.1192/bjp.bp.109.074633

Norris, B., Jempson, M., Bygrave, L., and Thorsen, E. (2006). *Reporting suicide worldwide: Media responsibilities*. Bristol: The MediaWise Trust.

O'Brien, A. (2020). Reporting on mental health difficulties, mental illness and suicide: journalists' accounts of the challenges. *Journalism* doi: 10.1177/1464884920903855 [Epub ahead of print],

Phillips, J. G., and Mann, L. (2019). Suicide baiting in the internet era. *Comput. Hum. Behav.* 92, 29–36. doi: 10.1016/j.chb.2018.10.027

Protem Committee Malaysia Media Council (2020). *Report and Draft Bill for the Formation of the Media Council*. Protem Committee Malaysia Media Council. Available online at: https://mediacouncil.my/ (accessed December 30, 2020)

Seguin, M., Bordeleau, V., Drouin, M.-S., Castelli-Dransart, D. A., and Giasson, F. (2014). Professionals' reactions following a patient's suicide: review and future investigation. *Arch. Suicide Res.* 18, 340–362. doi: 10.1080/13811118.2013.833151

Seko, Y. (2016). "Chapter 13: on deathcasting: alone together on the edge of death," in *Digital Media Usage Across the Lifecourse*, eds P. G. Nixon, R. Rawal, and A. Funk (Surrey: Ashgate), 172–187.

Shanahan, E. A., McBeth, M. K., and Hathaway, P. L. (2011). Narrative policy framework: the influence of media policy narratives on public opinion. *Polit. Policy* 39, 373–400. doi: 10.1111/j.1747-1346.2011.00295.x

Sinyor, M., Schaffer, A., Heisel, M. J., Picard, A., Adamson, G., Cheung, C. P., et al. (2018). Media guidelines for reporting on suicide: 2017 update of the Canadian psychiatric association policy paper. *Can. J. Psychiatry* 63, 182–196. doi: 10.1177/0706743717753147

Skehan, J., Maple, M., Fisher, J., and Sharrock, G. (2013). Suicide bereavement and the media: a qualitative study. *Adv. Ment. Health* 11, 223–237. doi: 10.5172/jamh.2013.11.3.223

Sumner, S. A., Burke, M., and Kooti, F. (2020). Adherence to suicide reporting guidelines by news shared on a social networking platform. *Proc. Natl. Acad. Sci.U.S.A.* 117, 16267–16272. doi: 10.1073/pnas.2001230117

Tully, J., and Elsaka, N. (2004). *Suicide and the media – A study of the media response to 'Suicide and the Media: The reporting and portrayal of suicide in the media – A resource*. Putrajaya: Ministry of Health.

Uzuegbunam, C. E., and Udeze, S. (2013). Sensationalism in the media: the right to sell or the right to tell. *J. Commun. Media Res.* 5, 69–78.

Victor, J., Heng, J., Govindaraju, G. M., Ling, T. P., Rajaratnam, U. D., and Fong, Y. L. (2019). Media reporting of suicide: a comparative framing analysis of Malaysian newspapers. *SEARCH J. Media Commun. Res.* 11, 73–88.

Wurst, F. M., Kunz, I., Skipper, G., Wolfersdorf, M., Beine, K. H., Vogel, R., et al. (2013). How therapists react to patient's suicide: findings and consequences for health care professionals' wellbeing. *Gen. Hosp. Psychiatry* 35, 565–570. doi: 10.1016/j.genhosppsych.2013.05.003

Yang, YY. (2018). *[Reporter room] I don't want to Report Suicide News Anymore*. Penang: Guang Ming Daily.

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The Suicidal Self in Cyberspace: Discursive Constructions of Identity in a Pro-Recovery Suicide Forum

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The proliferation of suicide-related content online has led to widespread fears that suicidal persons are at elevated risk in our networked society. Though much research has been done on the benefits and harms of digital technologies, few studies have attended to the deep discursive meanings co-created by suicidal users. The present study attends to meanings about identity interactionally created by members of SuicideForum.com (SF), a pro-recovery website. Methodologically, I collected a purposive sample of 2,119 posts across 131 threads, which I then examined using cultural discourse analysis, tracking discursive hubs like "suicide" and "suicidal" to arrive at corresponding radiants of meaning. Findings reveal two sets of discursive themes: one set speaks to problematic identities, the other to a self emancipated from suicidality. The suicidal self is expressed in discourse as the product of a fractured identity, marked by schism between an authentic "inner self" and a socially aligned but inauthentic "outer self." However, resolution of fractured identities depends not on harmonious fusion but on reconciliation. Moreover, staying alive—continuing to *be*—is contingent upon recognizing that every life, including one's own, has value, finding purpose and meaning, and tending to others' well-being. The analysis uncovers discrepancies between SF users' folk understanding of the suicidal self and that espoused by dominant (i.e., biopsychiatric) models. Their implications for clinical and therapeutic practice are discussed.

Keywords: suicide, internet, digital media, cybersuicide, cultural discourse analysis, ethnography of communication

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INTRODUCTION

The advent of Web 2.0, which has facilitated the creation of user-generated content online and enabled new forms of sociality among persons with discreditable stigmas (Goffman, 1963), has been met with both fears and hopes by scholars studying mental health and suicide. On one hand, there are widespread concerns that suicidal persons are at elevated risk in our networked society given the profusion of triggering content circulating on the Web. On the other hand, the presence of online communities that tend to their members' affective needs (Giles and Newbold, 2013), and mental health professionals' use of information and communication technologies (ICTs) to identify and extend help to people in crises (Quinnett and Baker, 2009), have allayed some of these concerns. The popular and scholarly discourses on *cybersuicide* (Sher and Vilens, 2009) have been structured by what Alvarez (2020) calls the benefits-harm paradigm, which is unsurprising given that the mental health disciplines, which have a large claim on the study of cybersuicide, are committed to maximizing well-being and reducing risk.

The harmful content, contexts, and uses identified in the literature are manifold. The most culturally salient is suicide due to cyberbullying, or *bullycide* (Recupero, 2012), which taps into fears surrounding digital and mobile media's capacity to extend the temporal and spatial reach of cruel behavior. Less salient to the popular imagination are asynchronous *pro-suicide* message boards, where users' motives for suicide are deemed valid (Westerlund, 2013), self-destructive behaviors are encouraged (Ikunaga et al., 2013), and voluntary death is framed as emancipatory, a legitimate release from suffering (Baume et al., 1997). Digital media's capacity for dissemination, and the ease with which digital information can be accessed, has also given rise to concerns about the proliferation of suicide means and methods online (Chang et al., 2011; Gunnell et al., 2015). These concerns are stoked by the presence of online suicide manuals, which provide step-by-step instructions on committing suicide (Westerlund, 2011), and online message boards where tips and tricks for enacting self-harm are freely shared (Westerlund, 2013).

Digital media have ushered new forms of visibility and sociality among suicidal persons, outside of therapeutic contexts typically presided by professionals. In addition to the harms already mentioned, we may also add *net suicide pacts*, in which two or more individuals who meet online agree on a time and place to end their lives together (Rajagopal, 2004). Unlike traditional suicide pacts, which form between intimates in real life in response to threats to the continuation of a relationship (such as a spouse or partner's diagnosis with a terminal illness), remediated suicide pacts form between strangers online, who in death are said to achieve the closeness they perceived to be missing in life (Ozawa-de Silva, 2008, Ozawa-de Silva, 2010; Seko, 2008). Far less common is *deathcasting*, in which an individual broadcasts his or her suicide to a live virtual audience, sometimes due to pressure from anonymous viewers who goad the user with incendiary messages (Stamenkovic, 2011). Seko (2018) links this "emergent visibility of the "suicidal" self" (p. 173) in liquid modernity to the desire to witness and to be seen and recognized.

Of course, for every destructive potential of the internet,[1] there is a corresponding constructive potential. In the realm of suicide prevention and intervention, these include professional websites that disseminate empirically validated information, such as risk factors, warning signs, and treatment options (Quinnett and Baker, 2009); the online delivery of various treatment modalities, such as e-therapy and telemedicine, to at-risk populations (Mewton and Andrew, 2015); and gatekeeper training programs for professionals likely to come into contact with suicidal persons (Aboujaoude and Starcevic, 2015). A number of professional websites contain message boards where users can solicit advice from other users, or from clinicians who serve as moderators. Of course, pro-recovery sites are not run exclusively by professional organizations. There exist, for example, social networking sites (SNS) run by suicidal persons and their loved ones (Biddle et al., 2016), support groups within existing SNS like Facebook (Mars et al., 2015), and blogs and blog circuits that narrativize the struggle with suicidality (Singaravelu et al., 2015).

Aside from classifying the different types of pro-recovery content on the Web, there is also interest in cataloguing the actual benefits derived by users from participating in interactive contexts. Such benefits might include, for example, a sense of community, empathetic understanding, and coping mechanisms for managing stressful life events (Baker and Fortune, 2008). Since one of the hallmarks of suicidality is ambivalence (Joiner, 2005), participation in supportive contexts can be life-saving, with highly vulnerable users renegotiating their lease in life by halting or delaying suicide plans as a result of contact with empathetic others (Ekman and Söderberg, 2009). Finding someone who shares one's stigma can replace feelings of abnormality with that of shared humanity, and ultimately, swing the pendulum towards life and away from death.

Though it remains useful, the benefits/harm paradigm, which taps into *utopian* hopes and *dystopian* fears about the internet, can sometimes efface the *syntopian* aspects of digital communication—that is, its capacity for meaning generation (Katz and Rice, 2002). In many studies of cybersuicide, the unit of analysis is the individual, who is envisioned as suffering from an underlying pathology (Seko, 2018), and technology is viewed as a double-edged tool that can exacerbate or ameliorate said condition—a view not unlike the transmission or effects models that dominated the early decades of mass media studies. Moroever, the internet is often conceived as monolithic, rigidly deterministic of human behavior, and users are passive recipients of harmful or beneficial content, instead of agents who use the platform's affordances to create meaning. Because the emphasis is on identifying threats and opportunities, promises as well as pitfalls, and because the unit of analysis is the individual rather than group, (sub)culture, or community, the deep discursive meanings active in participants' messages online are sometimes overlooked.

The present study is a modest attempt to arrive at discursive meanings about identity and personhood interactionally created by users of a pro-recovery suicide forum. I respond to Giles and Newbold's (2013) call to treat online mental health forums as *speech communities* or *communities of practice*, and mental health conditions as *subcultural identities*. Like Thompson (2012) in their study of 17 disorder communities online, I pay attention to the discursive moves participants rely on to signal themselves as members. Lastly, instead of treating the internet as a mere tool, I adopt Markham's (1998) view of the internet as a heterogeneous *space* in which discursive communities can jointly craft meanings about their communicative worlds and their personal and social identities.

[1]My spelling of "internet" with a lower-case "i" is deliberate. I share Baym and Markham's (2009) sentiment that using the upper-case "I" "suggests that 'internet' is a proper noun and implies that it is either a being [. . .] or that it is a specific place [. . .] granting the internet agency and power that are better granted to those who develop and use it" (p. vii).

THEORIES AND METHODS

For this study, I adopt Carbaugh's (2012) four-part, communication definition of *culture* as 1) an expressive system, 2) of symbols and symbolic forms, 3) that are deeply meaningful to participants in place, 4) and are transmitted by members across time. I then heed Hecht's (2010) call to extend *culture* to entitities not previously considered as such—by viewing "suicidal" individuals as a cultural rather than a diagnostic category, and users of a pro-recovery suicide forum as members of a *speech community*, defined by Hymes (1972) as a group of people whose discursive practices and strategies of meaning making underlie common values and beliefs.

Methodologically, I enlist cultural discourse analysis (CuDA) (Carbaugh and Hastings, 1992; Carbaugh, 2007, Carbaugh, 2017; Scollo, 2011) because it is a rich tool for *theorizing* communication generally and communicative practices specifically; for *describing* expressive activities in great depth; and for *interpreting* the meaning of discursive practices to those who engage in them, in their own terms, thereby honoring Geertz (1973) commitment to "thick description." CuDA has a rich theoretical lineage that includes the ethnography of communication (Hymes, 1972) and theories of speech codes (Philipsen, 1987) and cultural communication (Philipsen, 1997), which see "membering" as the communal function of social interaction. In the three decades since its inception, CuDA has been productively applied to various communicative practices and discursive communities, including users of websites and online platforms (see Scollo and Milburn, 2019, which collects the writings of 42 CuDA practitioners worldwide).

CuDA has two key assumptions. The first, known as the "axiom of particularity" (Carbaugh et al., 1997, p. 3–4), is that communication is used, valued, and conceived of in locally distinctive ways. In other words, communication is particular to places and varies from one context to the next. The second, known as the "axiom of actuality" (p. 4), is that in any given place, a system of communicative practices already exists, and through those practices, members are able to give form, order, and meaning to (i.e., actualize) their social lives. Such practices are infused with deeply meaningful messages called *cultural discourses*, so that when participants speak, they are not only saying something about the topic at hand; they are making metacultural commentaries about how to act, how to feel, how to relate to others, how to be, and how to inhabit the world. Carbaugh (2007) calls these the five *radiants of meaning* (p. 174) [2]—acting, feeling, relating, being, and dwelling, in that order – which are invoked each time *discursive hubs* (ibid.) are used.

Whereas *radiants* are the implicit meanings, *hubs* are the explicit units of analysis. They may take the form of words, phrases, gestures, images, symbols, and symbolic forms that are potent to a group, (sub)culture, or community, their meaningfulness apparent in their frequency of use, emphatic usage, mutual intelligibility, and accessibility to participants. Hubs and radiants are inseparable; a single hub can invoke multiple radiants at once, and hubs can work in isolation or in tandem to activate meaning; "a hub need not necessarily be explicitly affiliated with one and only one radiant of meaning" (Carbaugh, 2019, p. 319). To give one example: in an online thread where self-injurers share their reasons for self-harming (Alvarez, 2020), tracking the word "self-harm"—a discursive hub of action—reveals participant beliefs about self-discipline and mastery (radiant of *acting*), emotion management (*feeling*), troubled relationships (*relating*), and self-worth, or lack thereof (*being*). However, not all hubs/radiants are relevant or salient in every communicative scene – meanings about place (*dwelling*) were not invoked in the example mentioned—and for analytical purposes, the researcher can track one radiant at a time.

The present study is drawn from a much larger, ethnographic study of a pro-recovery suicide website called SuicideForum.com (SF hereafter).[3] SF is one of the largest websites dedicated to discussing suicide, and since its creation in 2005, it has amassed over 120,000 threads, 1.4 million posts, and 27,000 registered users worldwide. SF brands itself as a "peer to peer community support forum and chatroom for people in need," and it abides by a "Do no harm, promote no harm principle" (www.suicideforum.com/about-sf/). What this means is that while participants are free to discuss their struggles with suicide (past or present), they are prohibited from posting specific suicide plans or timelines, encouraging others' plans, soliciting suicide partners, sharing suicide methods, and discussing past attempts in minute detail, all of which are deemed triggering to other users. Moderators redact messages with triggering content, and users who commit infractions are issued sanctions in the form of points ranging from zero to twelve; accumulating twelve points results in immediate account termination. As mentioned, the site is expressly pro-recovery, defined by members as an active and earnest commitment to improving mental health (one's own and that of others) by providing informal online support in conjuction with formal treatment received elsewhere offline.

Besides the forums, the site provides reference materials on various mental health conditions, as well as numbers for crisis hotlines and links to crisis websites for seventy-nine countries. Though membership is not required to access much of the site's content, registration (which is free and requires no personally identifying information) is necessary for posting and participating in threads. Communication in SF is primarily in English. The site is staffed by volunteers and its operations are supported entirely by donations, which cover server costs, software updates, security and licensing. SF is not run or moderated by any particular organization, but by former members who now serve as staff or administrators. These individuals volunteer their time to perform various tasks, such as monitoring threads for objectionable content; responding to member queries, reports, and complaints; imposing sanctions for offenses; and maintaining site functionality.

[2]In more recent writings, Carbaugh and other practitioners of CuDA have added a sixth radiant: timing (see, for example, Scollo and Milburn, 2019), though one can argue that each of the five original radiants has a temporal dimension that is implicit or explicit in discourse.

[3]For preliminary findings, see Alvarez's section in Flanigan and Alvarez, 2019.

Prior to the investigation, I spent seven months informally browsing SF to familiarize myself with the site's layout, technical affordances, diversity of content, rules of conduct, and communicative norms. This was followed by thirty weeks of non-participant observation, where I utilized Hymes's (1972) descriptive theory to tease apart the components of the *communication scene* in question, which are captured by the mnemonic SPEAKING,[4] in order to understand how the website's discursive architecture shapes the meanings created therein. Given the huge volume of data on SF, I then collected and analyzed a purposive sample of messages within a restricted time frame, rather than set an *a priori* number of posts, which goes against CuDA's spirit of discovery and immersion. During the 30 week period, I collected 2,119 posts across 131 threads, making sure posts were drawn from every major section of the forums.[5] The posts amount to 683 pages of transcripts. In order to preserve the message structure of threads, no data scraping software were used during the collection process. All consulted threads were printed to facilitate hand coding, which I conducted by myself.

Using cultural discourse analysis, I systematically tracked the usage of "suicide," a discursive hub of action, and "suicidal," a discursive hub of emotion (as in *feeling* suicidal) as well as personhood (as in *being* suicidal), in participants' online discourse to arrive at corresponding radiants of meaning. I tracked each of the five aforementioned radiants one by one, formulating one research question for each. For each radiant, I conducted multiple rounds of coding to maximize completeness and accuracy. In the initial coding stage, I generated as many categories as possible based on recurring patterns in the transcripts. I then reviewed the transcripts to verify said categories, check for discrepancies, and identify additional categories previously missed. In the next stage, I grouped together related categories to identify overarching discursive themes and sub-themes.

In the course of the analysis, two major *sets* of themes emerged: 1) discursive pathways to suicide, or *problematic* ways of being, relating, acting, feeling, and dwelling; and 2) discourses of positive treatment and recovery, or *emancipatory* ways of being, relating, acting, feeling, and dwelling. Rather than position these themes as contrastive sets, it is perhaps more productive to view them as two parts of a discursive continuum that expresses pathways *into* and *out of* suicide. In the section that follows, I present meanings about personhood (*being*) that are invoked in SF users' online discourse by responding to the following research question: What models of personhood are presumed when participants discuss precipitants to and recovery from suicide? These interpretive accounts take the form of *cultural premises* (italicized throughout), which Carbaugh (2007), Carbaugh (2017) defines as abstract formulations that capture participants' taken-for-granted knowledge and beliefs about the way things are and the way things ought to be. I support each cultural premise with brief excerpts from forum threads.

Before presenting findings, a few words on ethics are in order. Neither intervention nor interaction with SF users took place, and analysis was limited to extant data on publicly accessible threads with heavy traffic. Furthermore, individual posts are not linked to personally identifying information, and site rules prohibit members from using their real-life photo as their avatar, from using their real name as their handle, and from reusing handles associated with accounts on other websites and platforms. In short, transcripts are already anonymized, and I encountered no evidence to the contrary throughout data collection and analysis. A related concern pertains to researchers' legal and ethical responsibilities upon encountering distressing information online, where there is imminent threat to the physical safety of groups or individuals (Stern, 2003). However, given SF's clear enforcement of its "Do no harm, promote no harm" principle, I did not encounter posts that warranted intervention on my part.

FINDINGS

In what follows, I present two sets of discursive themes that radiate from SuicideForum users' online discourse. As it will become evident, each set contains multiple variations of a central organizing theme. In the first section, I begin by providing context via an overview of SF users' clinical and sociodemographic characteristics. I then explore users' ontological view of suicidality as a product of fractured identity, which expresses itself in discourse in a variety of ways—for instance, as schism between an authentic inner self and an artificial outer self, between real and ideal(ized) selves, and temporally, between past, present, and future selves. In the second section, I discuss the ideal selves that are emergent in SF discourse. From SF users' discursive point of view, the person liberated from suicidality is greater than his or her biological makeup; has a sense of purpose; is cognizant of his/her inner fortitude; and is embedded in a web of meaningful relations—among other defining qualities. This model person has implications for how SF users reconcile the split self that contributes to suffering in the first place.

The Discursive Ontology of Suicidality

Clinically, registered users of SuicideForum.com (SF) wrestle with various mental health conditions, including substance abuse, anxiety, disordered eating, post-traumatic stress, attention deficit and hyperactivity, borderline personality, schizophrenia and other psychoses, and of course, depression. This partial list underscores the notion that suicide is not isomorphic with any one condition, but instead cuts across them. Users also vary in their attribution of suicidality to *endogenous* (arising from within) or *exogenous* (external to oneself) forces. Some espouse endogenous explanations (e.g., "please remember this is an illness"), while others embrace exogenous explanations ("You

[4]The components are: Setting (S), participants (P), ends/goals (E), act topics/act sequence (A), key/emotional pitch (K), instruments/channels (I), norms of interaction/interpretation (N), and genres of communication (G).

[5]During the study period, there were seven major sections: New Members, Suicidal Thoughts and Feelings, Road to Recovery, Let It All Out, Support and Advice, You Are Not Alone, The Gathering.

probably have good reasons for being this way, like some time in your life where a lot of bad things happened"). Participants also complain of various physical ailments ranging from acute to chronic, such as diabetes, tuberculosis, chronic pain, and multiple sclerosis.

Socio-demographically, it is not possible to ascertain the racial and ethnic make-up of users through non-participant observation, especially when the subject of race-ethnicity rarely enters the discourse. It is also not possible to ascertain class distribution, though some users report financial struggles such as loss of employment, underemployment, and concerns over making timely payments on bills and mortgages. However, it is apparent that SF embraces a spectrum of gender and sexual identities, with users presenting as male, female, or transgender, and as lesbian, gay, bisexual, queer, intersex, or asexual. Moreover, forum participants are also diverse in terms of age, with 13 years as the minimum age requirement for registration. The site's age inclusivity is reflected in the Forums' discursive architecture, with the "Generation Gap" section divided into "Adolescence and Young Adult," "Mid-Life," and "Late Life/Seniors." Lastly, the site is open to practitioners of all faiths and non-practitioners alike, provided that users do not impose their religious beliefs—or non-adherence to a religious doctrine—onto others.

As this brief portrait illustrates, members of the SF community come from different walks of life. Despite their differences, however, tracking their usage of "suicide," "suicidal," and other discursive hubs of interest, reveals *an ontological view of suicidality as the product of fractured identity*.

The fragmentation expressed in discourse presumes *an "inner" self and an "outer" self that are profoundly disconnected from one another*. In SF members' forum posts, the metaphor of the ocean is frequently invoked to illustrate this schism. Discussing their avatars, two members write:

> The ocean to me is a reflection of my inner self, looks can be deceptive, sometimes it's peaceful and quiet and other times in turmoil, bubble and trouble, it holds beauty within but dangers can also lurk deep inside
>
> I love the ocean, its so powerful, and the way the waves are crashing against the rock reminds me of the inner turmoil i sometimes feel.

The ocean is discursively elaborated through such qualities as "peaceful" and "quiet" on the surface, but full of "danger" and "turmoil" underneath its calm veneer. So potent is this inner turmoil that it can cause waves to swell and crash against rocks. Such is the suicidal person, who might appear tranquil on the outside but contain so much depth of feeling that they threaten to implode.

In discourse, members characterize *the outer self that they project to the world as artificial or fake, and the inner self, which is hidden from view, as real and authentic*. For instance, one user writes: "I feel like I have to put on this metaphorical outfit and wear a fake smile just to fit in with my classmates and my family." Referring to their avatar, another user writes: "I hide behind a mask and my avatar represents my hidden struggle." Both examples involve donning a performative exterior that is profoundly misaligned with an invisible interior. Of course, one can argue that everyone experiences some discrepancy between public and private, *front stage* and *back stage* (Goffman, 1959), and in some speech communities, bifurcation of the self is not only expected but natural (Geertz, 1973; Kotani, 2002). In SF members' discourse, however, the discrepancy is not only expressed as immense but problematic, too, causing one to "suffer in silence." This may be erected on the popular American notion that the inner should be aligned with the outer for one to have an "authentic self" (Carbaugh, 2005). But in the case of SF users, the inner self must be kept secret because it contains that which society deems unacceptable. Wrote one user: "People tend to make public the things that society approves of, and then hide all the rest."

The fragmentation of self is also expressed in discourse temporally, along the axis of time. One variant is a *discrepancy between past and present selves*, between the person one formerly *was*, and the person one currently *is*. When asked why s/he attempted suicide, one member responds: "I had recently quit the track and field and running was my life for years before that so I felt completely lost." For this user, being a runner constituted a vital part of their identity; to cease being a runner was to risk ceasing to *be*. In response to the same question, another member writes: "I was a new father and couldn't handle it." For this user, being suddenly thrust into a new role – and a new self – overwhelmed any attempt at identity alignment. Another variant expresses itself as a *discrepancy between present and future selves*. One overweight member of the SF community wants so very badly to become thin that she "gets angry at myself for eating," and falling short of her punitive self-discipline provokes suicidal crises.

In both temporal variants, there is once again a chasm between a socially aligned outer self, and an ideal(ized) inner self, and this chasm is a source of agony for SF users. *Misalignment and incongruence between split selves can eventuate in feelings of worthlessness*: "I felt worthless," "pathetic and socially inept," "I've done nothing good in life to be treated well." The deep dissatisfaction with the self that we have seen thus far is especially palpable in the online communication of members who are unhappy with their sex at birth. For instance, two users write, "I didn't want to be a male," and "I am a woman and I HATE it!" A third user adds: "Being in a male body for 17 years is far too long [. . .] more than a decade of not being the woman you identify and you truly are, can be detrimental!" In these examples, one's true gender identity – the authentic inner self – is imprisoned in an incompatible, yet socially prescribed, biological body.

To summarize, the ontology of suicidality from SF members' discursive point of view can be captured by this larger cultural premise: *There is a self, and when fragmented or bifurcated into incongruent parts – a problematic inner self and a socially aligned outer self – great anguished is produced, which can manifest in thoughts and feelings of suicide.* But as we will see shortly, the discourses of SF users are also rich with meaningful prescriptions for emancipating the self from the call of self-destruction.

A Discourse for Ideal and Emergent Selves

In response to a user's complaint that s/he does not meet objective standards of normalcy ("[n]ormal is the opposite of

me. . .everything I am not"), one user, quoting the scientist Neils Bohr, writes: "[H]ow problematical such concepts as "objective" and "subjective" are." To this another user adds: "Maybe *you* should define what normal is and give you a better idea of what you want to be." From this quick snapshot, it becomes apparent that participants respectfully correct one another's self-defeating evaluations without discrediting the underlying feelings. Upon closer inspection, such correctives also tap into the ideal self that SF users construct in discourse – notions of self that challenge *objective* standards of what it means to be human.

The ideal self that is discursively constructed by SF users is *greater than his/her biological makeup*. Beyond the fulfillment of bodily needs and cravings, this person also takes into consideration matters of the heart, so to speak: "I learned that life is so much more than physical wants and needs and desires. My heart was broken and needed healing too." Furthermore, *this person has a sense of purpose, which allows him/her to live life meaningfully*: "You have a purpose in life and you are here for a reason." The notion that life and death are not merely biological phenomena, but existential ones too, is apparent in one member's reservations about taking medication: "[M]eds may take away being suicidal but will still leave me with an empty existence, I would go through life just existing with no purpose. I don't want that." Psychotropic medication may or may not ameliorate suicidality, but it will certainly not give one purpose. It may keep one from falling off the proverbial cliff, but in order to pull oneself up onto the ledge, a sense of purpose is needed.

To resist suicide at every turn requires "willpower," but *without purpose, such willpower is limited*. Wrote one user: "Sure, willpower will get us so far, but everyone runs out of willpower at one point or another. What truly spurs us on in the moments that our willpower is lacking, is having a deeper meaning and purpose to our lives." *A sense of purpose can come from many sources* including, but not limited to, one's passions and aspirations for the future: "[W]hat is it that you care about, what do you live to do, what are your passions, what would truly make you happy in this world, what do you want to achieve in this lifetime?" *One can also derive purpose from one's suffering*, which users deem a natural part of existence. This does not mean seeking out suffering to imbue one's life with meaning; in the words of one user, "that would be false martyrdom."

A person with purpose has a future to look forward to. Phrased another way, *purpose can be located in the future*. On their own, the suicidal person cannot envision a future for themselves ("no future prospects"), or sees only greater misfortune in the horizon ("I just have a life of failure ahead of me"). Within the context of SF, such negative evaluations are respectfully corrected by other users by locating purpose in a future that has yet to come to fruition: "You've got so much left in life to accomplish"; "You don't realize what great things await you." Such comments resonate with Hecht's (2014) argument that the suicidal person owes it to his or her future self to continue living. To end one's life is to tragically deny one's future self the myriad opportunities for happiness and self-fulfillment that await.

SF users agree in discourse that *in order to lead better lives, they need to change as persons*. The desire for *metamorphosis into a "freer" person* is palpable in users' messages to one another. This yearning is expressed by one user's identification with a butterfly (their avatar of choice), which symbolizes "that I am in a bad place but trying to stay strong through these bad times and that I am hoping that things change just like the butterfly did from the caterpillar." A similar metaphor is enlisted in another post, with the user identifying with "a bird soaring to symbolize flying away from bad things which I want to do but don't know if strong enough yet." In both examples, old and new selves are differentiated spatially. The old self is earthbound and trapped, whereas the new and idealized self is free to roam the skies.

For change to happen, *one must recognize the wellspring of strength within*. According to one user, deep inside every person resides "a greater strength. . .that none of us really know that we have until we are forced to use it." It is easier to intuit this strength when it is exhibited by others, as in the case of a user who wishes to be like a lion: "bold, strong, proud, qualities i wish i possessed, while still being caring for members of their pride." But recognition of strength in oneself is vital for transformation to occur. For members of the SF community, perhaps the best *proof of one's strength lies in enduring, and surviving, suicide*. In response to a user who feels like a "punching bag," the passive recipient of life's relentless onslaughts, another user responds: "just thinking punching bags are designed to withstand even what the best fighters can throw at them, and when they are beat the punching bag is still intact." In short, to endure adversity with one's life intact is to exhibit resilience, which is evidence that one possesses strength.

Previously, I mentioned that SF users discursively conceive of the suicidal self as fragmented or bifurcated. However, recovery is not contingent upon the disavowal of negative aspects of the self, or the "naïve" reconstitution of splintered parts into a seamless whole. Rather, *it is the reconciliation of contradictory parts*—not in perfect harmony, but in bearable tension—*from which the possibility of self-transformation and recovery springs*. In this regard, the myth of Persephone is particularly resonant to users. According to Philipsen (1987), when invoked in discourse, myths not only bind together the imagination of community members; they also provide prescriptions for meaningful thought and action.

Persephone is the Greek goddess of the seasons who, upon eating six pomegranate seeds in the Underworld, is forced to spend six months of every year with Hades, after which she returns to the heavens and the mortal realm. Persephone's ascent from the Underworld marks the arrival of spring and then summer, and upon her inevitable descent, fall and winter follow. Observe what one user, who has chosen to base their avatar and handle on Persephone, has to offer:

> My avatar is Persephone (or Proserpina), by Rossetti. Persephone is my primary online name. She is the goddess of both Spring and the Underworld in Greek mythology. I view her as symbolizing the cycle of life

> and death, change and transformation. She also symbolizes being able to travel between worlds, between different states of consciousness, and between the normal world of the living and world of magic and mystery.

In the extract, we can see the invocation of agonistic terms: "Spring" and "Underworld," "life" and "death," "normal" and "magic and mystery." The mythic figure of Persephone encompasses these agons, suggesting the transformative potential of navigating the manifold contradictions of the self. When one braves into the Underworld of one's soul, one emerges transformed. Such is the descent into and rise from the depths of suicidality.

The ideal person changes for the better, not for the worse. S/he remains a good person in spite or because of adversity, "a good person to the core, even when faced by dark times." In discourse, the transformed person is also more "carefree"—"without a care for what others think of them," and "not giving a single damn at all about anything." Of course, *being "carefree" does not mean forsaking all responsibilities*, for SF users believe that they have a social obligation to try and "make other people happy," or at least not contribute to others' unhappiness. As examples throughout this article have shown, their supportive orientation is apparent in the support they endeavor to provide others, within and beyond the discursive space of SF. Being "carefree" is also not synonymous with the pursuit and attainment of unadulterated happiness. From SF users' discursive point of view, *true happiness is pure fantasy*; "the best one can hope for is to be mostly happy."

The emancipated self is embedded in a web of meaningful relations. The first-person plural "we" in particular is a very powerful discursive hub of personhood, and its prolific use by SF members (e.g., "You're not suffering in silence anymore, man. We've got you"), even when referring to one's own personal views or feelings ("We care for you"; "We like you"), suggests a strong sense of affiliation that emerges as a result of participation in the site. The discursive move away from singularity towards relationality is accompanied by recognition that *suicidal individuals do not have a monopoly on suffering*: "Everyone suffers in life. That's not to say that life is bad for everyone, but rather everyone has some time of hardship." But despite this relational orientation, members acknowledge that *one should tend to one's needs first*: "I decided to live life for my own happiness"; "you have to put yourself first here"; "What would make you happy? Not anyone else, but you?"; "Don't worry about anyone else but you."

Ultimately, SF users discursively envision *a self that possesses agency and self-determination*. In one particular thread, the topic creator (TC) writes about feeling coerced by his father to join the military and turns to other SF users for advice. The responses are rather telling, to say the least.

> You're the only one who has a right to decide though, since you are the only one who has to live your life.
>
> Fact is, you don't have to do anything you don't want to in this world.
>
> I think you have every right to live as you please. Sometimes it takes a bit of time to create this life, so patience is important, but once you are independent you have the rest of your life to live however you like.

In short, we are the masters of our own fates, and thus, should be free from imposition. *One's life is one's own to live*. This cultural proposition has fascinating parallels to an earlier proposition that *suicide is enacted by the self, for the self* (see Flanigan and Alvarez, 2019). Just as death is one's own, so too is life.

DISCUSSION

In line with; Burke 1963-1964 proposition that human beings are goaded by the spirit of hierarchy and "rotten with perfection" (p. 509), every discursive community, including SuicideForum.com, subscribes to an ideal of what it means to be a person. This symbolic ghost, which Burke derives from the Aristotelian concept of *entelechy* (p. 507), haunts individuals when they fail to realize such an ideal. In tracking SF members' usage of discursive hubs like "suicide" and "suicidal" in their online communication, two overarching discursive themes regarding personhood emerge, one relating to problematic ways of *being*, the other to a self liberated from suicidality.

From SF members' discursive point of view, an individual has a self, and this self can be fragmented or bifurcated. The self can be split across multiple axes – for instance, between an authentic yet problematic inner self, and a socially aligned yet inauthentic outer self. The split can also occur temporally, between past and present, present and future, actual versus ideal(ized) selves. Bifurcation of the self can produce much anguish and may eventuate in thoughts and feelings of suicide. Though a split self is not necessarily problematic in many cultural milieus, it is a source of undue suffering for members of SF, and the sundered parts demand reconciliation (though not necessarily integration).

No one deserves to be suicidal, but anyone can become so. Suicide does not discriminate on the basis of identity markers such as class, gender identity, sexual orientation, faith, or age; the specter of suicide looms even in childhood. The suicidal person is ambivalent and oscillates between life and death, their sense of purpose evacuated of meaning. However, for the pendulum to be on the side of life, s/he must regain purpose and establish meaningful ties to others. No person can exist inside a vacuum, and staying alive – continuing to *be* – is (to borrow the words of Heidegger [1927/2010]) contingent upon *being-with-others*.

As we have seen, SF users' online communication also invokes notions of a self emancipated from suicidality. According to users' folk understanding, every life, including one's own, has value. No one deserves to be suicidal, and everyone deserves a chance to feel good about themselves. People are also more than their biological makeup. They must tend to the needs of both body and mind, and deal with emotional pain in their own way, in their own time. Furthermore, one's life is one's own to live. Everyone is

accountable for their own actions, and before tending to others, they must tend to their own needs first.

In the struggle against suicide, willpower alone is not enough. To continue living, one must live *meaningfully*, for which a sense of purpose is necessary. Purpose can be derived from many sources, including one's passions, aspirations for the future, and suffering, whose meaning is for the suicidal person to discover. One does not have a monopoly on suffering, for everyone experiences hardships, and a person who overcomes suicide is capable of overcoming any adversity. Though each person's struggle in life is unique, we are all connected by our shared humanity. Finally, in spite of all the hardships, one must remain good and strive to always change for the better.

To summarize, the discourses of SF users presume for its formulation an ideal or model person, one that possesses agency over the trajectory of his or her life, inner strength and fortitude, a sense of purpose, and the capacity to find meaning in suffering. The ideal self that emerges in discourse, in the wake of a suicidal crisis, is not necessarily one that is whole, but one that is able to navigate its contradictory parts, without forsaking one's responsibility to contribute to others' well-being. If a goal of therapy or counseling is to help patients, clients, and survivors to actualize the model person they aspire to be, then it stands to reason that existing treatment regimens can benefit from incorporating suicidal persons' own terms and meanings. As Hornstein (2009) has argued, patient-led peer support groups that respect the experiential knowledge and inner wisdom of the so-called mentally ill, such as Hearing Voices and Alternatives to Suicide, have much to teach professionals. At present, in the realm of suicidality, the scholarly literature on offline peer-to-peer (P2P) support is heavily biased towards people *bereaved* by suicide. Literature on offline P2P support among individuals *struggling* with thoughts of suicide, outside clinical contexts, is lacking, making comparisons between online and offline pro-recovery venues difficult to draw. Nevertheless, SF members' grounded discourses are not without implications for clinical and therapeutic practice that take place offline.

First, realizing that a suicidal patient may be agonizing over a fractured sense of self, will allow the clinician to incorporate strategies for the management and alignment of spoiled identity. Second, the clinician ought to commend the fortitude it takes for a suicidal person to remain alive – a sharp contrast to organized psychiatry's emphasis on deficits, on deviations from established (and often unrealistic) thresholds of normalcy (Reznek, 2016). Instead of treating the suicidal person as defective, s/he will recognize their resilience and respect their right to self-determination. Recognizing the agency of suicidal persons does not mean approving the choice to end a life. Rather, it means enlisting suicidal persons as *active* participants in their own recovery, rather than passive recipients of paternalistic care. In other words, suicidal persons' claims to agency over the termination of their life (see Flanigan and Alvarez, 2019), rather than contradicted, should be channeled towards the *resumption* of life.

Third, given the supportive orientation exhibited by SF users in discourse, clinicians need to emphasize to their suicidal clients the social and communal good of staying alive. A similar argument has been made by Hecht (2014), who points out that in *choosing* to live, the suicidal person benefits his or her immediate community in some way, however small. To this I would add that the suicidal person benefits as well. Reciprocal acts are circular, such that in helping others, one is also helping oneself. In recognizing that suicidal persons are still capable of having a positive impact on the lives around them, their agency is also respected.

Lastly, recovery does not end with the administration of treatment and subsequent amelioration of symptoms. Vocational and rehabilitative efforts cannot afford to ignore the existential dimensions of suicidality – particularly, the salvific role of purpose and meaning. It is not enough for suicidal thoughts and feelings to be attenuated; they must also be replaced with a "zest for life," to borrow the words of one user. Should clinicians listen to patients' stories for their deep *meanings*, for their beats and rhythms – as opposed to listening for symptoms the way a physician listens for heart murmurs – the lifeworlds of suicidal persons open up and become humanly and discursively intelligible.

DATA AVAILABILITY STATEMENT

This study analyzed a publicly accessible and anonymous online forum.

AUTHOR CONTRIBUTIONS

MA is solely responsible for the conception and design of the study, for the collection and analyses of data, and for writing the manuscript in its entirety, submitted here with his approval.

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REFERENCES

Alvarez, M. (2020). "Discursive Tensions and Contradictions: A Cultural Analysis of an Online Self-Harm Forum," in *Communicating with, about, and through Self-Harm: Scarred Discourse*. Editor W. Bareiss (Lanham, MD: Lexington Books), 113–133.

Baker, D., and Fortune, S. (2008). Understanding Self-Harm and Suicide Websites. *Crisis* 29 (3), 118–122. doi:10.1027/0227-5910.29.3.118

Baume, P., Cantor, C. H., and Rolfe, A. (1997). Cybersuicide: The Role of Interactive Suicide Notes on the Internet. *Crisis* 18 (2), 73–79. doi:10.1027/0227-5910.18.2.73

Baym, N., and Markham, A. (2009). "Introduction: Making Smart Choices on Shifting Ground," in *Internet Inquiry: Conversations about Method*. Editors A. Markham and N. Baym (Thousand Oaks, CA: SAGE), vii–xix.

Biddle, L., Derges, J., Mars, B., Heron, J., Donovan, J. L., Potokar, J., et al. (2016). Suicide and the Internet: Changes in the Accessibility of Suicide-Related Information between 2007 and 2014. *J. Affective Disord.* 190, 370–375. doi:10.1016/j.jad.2015.10.028

Burke, K. (1963-1964). Definition of Man. *Hudson Rev.* 16 (4), 491–514. doi:10.2307/3848123

Carbaugh, D. (2012). "A Communication Theory of Culture," in *Inter/cultural Communication: Representation and Construction of Culture*. Editor A. Kurylo (Thousand Oaks, CA: SAGE), 69–87.

Carbaugh, D. (2007). Cultural Discourse Analysis: Communication Practices and Intercultural Encounters. *J. Intercultural Commun. Res.* 36 (3), 167–182. doi:10.1080/17475750701737090

Carbaugh, D. (2005). *Cultures in Conversation*. New York, NY: Lawrence Erlbaum.

Carbaugh, D. (2019). "Epilogue," in *Engaging and Transforming Global Communication through Cultural Discourse Analysis: A Tribute to Donal Carbaugh*. Editors M. Scollo and T. Milburn (Madison, NJ: Fairleigh Dickinson University Press), 313–322.

Carbaugh, D., and Hastings, S. O. (1992). A Role for Communication Theory in Ethnography and Cultural Analysis. *Commun. Theor.* 2, 156–165. doi:10.1111/j.1468-2885.1992.tb00035.x

Carbaugh, D. (2017). "Terms for Talk, Take 2: Theorizing Communication through its Cultural Terms and Practices," in *The Handbook of Communication in Cross-Cultural Perspective*. Editor D. Carbaugh (New York, NY: Routledge), 15–28.

Chang, S.-S., Page, A., and Gunnell, D. (2011). Internet Searches for a Specific Suicide Method Follow its High-Profile Media Coverage. *Ajp* 168 (8), 855–857. doi:10.1176/appi.ajp.2011.11020284

E. Aboujaoude and V. Starcevic (2015). in *Mental Health in the Digital Age: Grave Dangers, Great Promise* (New York, NY: Oxford University Press).

Ekman, I., and Söderberg, S. (2009). "Across the Street – Not Down the Road" - Staying Alive through Deliberate Self-Harm," in *Internet and Suicide*. Editors L. Sher and A. Vilens (Hauppauge, NY: Nova Science Publishers), 221–232.

Flanigan, J., and Alvarez, M. (2019). "Cultural Discourse Analysis as Critical Analysis: A View from Twin Oaks and SuicideForum.Com," in *Engaging and Transforming Global Communication through Cultural Discourse Analysis: A Tribute to Donal Carbaugh*. Editors M. Scollo and T. Milburn (Lanham, MD: Fairleigh Dickinson University Press), 73–90.

Geertz, C. (1973). *The Interpretation of Cultures: Selected Essays*. New York, NY: Basic.

Giles, D. C., and Newbold, J. (2013). 'Is This normal?' the Role of Category Predicates in Constructing Mental Illness Online. *J. Comput-mediat Comm.* 18, 476–490. doi:10.1111/jcc4.12022

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. New York, NY: Simon & Schuster.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York, NY: Anchor.

Gunnell, D., Derges, J., Chang, S.-S., and Biddle, L. (2015). Searching for Suicide Methods. *Crisis* 36 (5), 325–331. doi:10.1027/0227-5910/a000326

Hecht, J. M. (2014). *Stay: A History of Suicide and the Arguments against it*. New Haven, CT: Yale University Press.

Hecht, M. (2010). "The Promise of Communication in Large-Scale, Community-Based Research," in *Distinctive Qualities in Communication Research*. Editors D. Carbaugh and P. M. Buzzanell (New York, NY: Routledge), 53–72.

Heidegger, M. (1927/2010). *Being and Time*. Albany, NY: SUNY Press.

Hornstein, G. (2009). *Agnes's Jacket: A Psychologist's Search for the Meaning of Madness*. Emmaus, PA: Rodale. doi:10.36019/9780813549095

Hymes, D. (1972). "Models of Interaction of Language and Social Life," in *Directions in Sociolinguistics: The Ethnography of Communication*. Editors J. Gumperz and D. Hymes (New York, NY: Holt Rinehart & Winston), 35–71.

Ikunaga, A., Nath, S. R., and Skinner, K. A. (2013). Internet Suicide in Japan: A Qualitative Content Analysis of a Suicide Bulletin Board. *Transcult Psychiatry* 50 (2), 280–302. doi:10.1177/1363461513487308

Joiner, T. (2005). *Why People Die by Suicide*. Cambridge, MA: Harvard University Press.

Katz, J. E., and Rice, R. E. (2002). *Social Consequences of Internet Use: Access, Involvement, and Interaction*. Cambridge, MA: MIT Press. doi:10.7551/mitpress/6292.001.0001

Kotani, M. (2002). Expressing Gratitude and Indebtedness: Japanese Speakers' Use of "I'm Sorry" in English Conversation. *Res. Lang. Soc. Interaction* 35, 39–72. doi:10.1207/s15327973rlsi35-1_2

L. Sher and A. Vilens (2009). in *Internet and Suicide* (Hauppauge, NY: Nova Science Publishers).

Markham, A. (1998). *Life Online: Researching Real Experience in Virtual Space*. Walnut Creek, CA: AltaMira Press.

Mars, B., Heron, J., Biddle, L., Donovan, J. L., Holley, R., Piper, M., et al. (2015). Exposure to, and Searching for, Information about Suicide and Self-Harm on the Internet: Prevalence and Predictors in a Population Based Cohort of Young Adults. *J. Affective Disord.* 185, 239–245. doi:10.1016/j.jad.2015.06.001

Mewton, L., and Andrews, G. (2015). Cognitive Behaviour Therapy via the Internet for Depression: A Useful Strategy to Reduce Suicidal Ideation. *J. Affective Disord.* 170, 78–84. doi:10.1016/j.jad.2014.08.038

M. Scollo and T. Milburn (2019). in *Engaging and Transforming Global Communication through Cultural Discourse Analysis: A Tribute to Donal Carbaugh* (Madison, NJ: Fairleigh Dickinson University Press).

Ozawa-de Silva, C. (2010). Shared Death: Self, Sociality and Internet Group Suicide in Japan. *Transcult Psychiatry* 47 (3), 392–418. doi:10.1177/1363461510370239

Ozawa-de Silva, C. (2008). Too Lonely to Die Alone: Internet Suicide Pacts and Existential Suffering in Japan. *Cult. Med. Psychiatry* 32, 516–551. doi:10.1007/s11013-008-9108-0

Philipsen, G. (1997). "A Theory of Speech Codes," in *Developing Communication Theories*. Editors G. Philipsen and T. Albrecht (Albany, NY: SUNY Press), 119–156.

Philipsen, G. (1987). "The prospect for Cultural Communication," in *Communication Theory: Eastern and Western Perspectives*. Editor D. L. Kincaid (Thousand Oaks, CA: SAGE), 245–254. doi:10.1016/b978-0-12-407470-5.50025-6

Quinnett, P., and Baker, A. (2009). "Web-based Suicide Prevention Education: Innovations in Research, Training, and Practice," in *Internet and Suicide*. Editors L. Sher and A. Vilens (Hauppauge, NY: Nova Science Publishers), 41–61.

Rajagopal, S. (2004). Suicide Pacts and the Internet. *Bmj* 329, 1298–1299. doi:10.1136/bmj.329.7478.1298

Recupero, P. (2012). Suicide and the Internet, in *Textbook of Suicide Assessment and Management*. Editors R. I. Simon and R. E. Hales. 2nd ed. (Arlington, VA: American Psychiatric Publishing), 515–538.

Reznek, L. (2016). *Peddling Mental Disorder: The Crisis in Modern Psychiatry*. Jefferson, NC: McFarland.

Scollo, M. (2011). Cultural Approaches to Discourse Analysis: A Theoretical and Methodological Conversation with Special Focus on Donal Carbaugh's Cultural Discourse Theory. *J. Multicultural Discourses* 6 (1), 1–32. doi:10.1080/17447143.2010.536550

Seko, Y. (2018). "On Deathcasting: Alone Together on the Edge of Death," in *Digital Media Usage Across the Lifecourse*. Editors P. G. Nixon, R. Rawal, and A. Funk (Abingdon, UK: Routledge), 172–187.

Seko, Y. (2008). "Suicide Machine" Seekers: Transgressing Suicidal Taboos Online. *Learn. Inq.* 2, 181–199. doi:10.1007/s11519-008-0035-3

Singaravelu, V., Stewart, A., Adams, J., Simkin, S., and Hawton, K. (2015). Information-Seeking on the Internet. *Crisis* 36 (3), 211–219. doi:10.1027/0227-5910/a000307

Stamenkovic, M. (2011). In Full View: Cybersuicide, Hypervisual Self and Public Showcase of Death (For Real). *Medijski Dijalozi* 5 (12), 73–101. http://hdl.handle.net/1854/LU-4443210

Stern, S. R. (2003). Encountering Distressing Information in Online Research: A Consideration of Legal and Ethical Responsibilities. *New Media Soc.* 5, 249–256. doi:10.1177/1461444803005002006

SuicideForum.com (n.d.). About SF. Retrieved September 30, 2016, from Available at: https://www.suicideforum.com/about-sf/.

Thompson, R. (2012). Screwed up, but Working on it. *Ni* 22 (1), 86–104. doi:10.1075/ni.22.1.06tho

Westerlund, M. (2013). Talking Suicide. *Nordicom Rev.* 34, 35–46. doi:10.2478/nor-2013-0052

Westerlund, M. (2011). The Production of Pro-suicide Content on the Internet: A Counter-discourse Activity. *New Media Soc.* 14, 764–780. doi:10.1177/1461444811425221

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Relationship of Social and Behavioral Characteristics to Suicidality in Community Adolescents With Self-Harm: Considering Contagion and Connection on Social Media

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A close link has been established between self-harm and suicide risk in adolescents, and increasing attention is given to social media as possibly involved in this relationship. It is important to identify indicators of suicidality (i.e., suicide ideation or attempt) including aspects related to contagion in online and offline social networks and explore the role of social media in the relationship between social circumstances and suicidality in young adolescents with self-harm. This study explored characteristics of Korean adolescents with a recent history of self-harm and identified how behavioral and social features explain lifetime suicidality with emphasis on the impact of social media. Data came from a nationwide online survey among sixth- to ninth-graders with self-harm during the past 12 months ($n = 906$). We used χ^2 tests of independence to explore potential concomitants of lifetime suicidality and employed a multivariate logistic regression model to examine the relationship between the explanatory variables and suicidality. Sensitivity analyses were performed with lifetime suicide attempt in place of lifetime suicidality. 33.9% ($n = 306$) and 71.2% ($n = 642$) reported to have started self-harm by the time they were fourth- and six-graders, respectively; 44.3% ($n = 400$) reported that they have friends who self-harm. Having endorsed moderate/severe forms and multiple forms of self-harm (OR 5.36, $p < 0.001$; OR 3.13, $p < 0.001$), having engaged in self-harm for two years or more (OR 2.42, $p = 0.001$), having friends who self-harm (OR 1.92, $p = 0.013$), and having been bullied at school were associated with an increased odds of lifetime suicidality (OR 2.08, $p = 0.004$). Notably, having posted content about one's self-harm on social media during the past 12 months was associated with an increased odds of lifetime suicidality (OR 3.15, $p < 0.001$), whereas having seen related content in the same period was not. Sensitivity analyses yielded similar results with lifetime suicide attempt, supporting our findings from the logistic regression. The current study suggests

that self-harm may be prevalent from early adolescence in South Korea with assortative gathering. The relationship of vulnerable adolescents' social circumstances to suicide risk may be compounded by the role of social media. As the role of social media can be linked to both risk (i.e., contagion) and benefit (i.e., social connection and support), pre-existing vulnerabilities alongside SH and what online communication centers on should be a focus of clinical attention.

Keywords: adolescent, self-harm, suicidality, social media, contagion, social connection

INTRODUCTION

Adolescent self-harm (SH), the deliberate destruction or alteration of one's body tissues without suicidal intent, is a growing public health problem, posing adverse emotional, physical, and economic effects on family members (Gratz, 2001; Ferrey et al., 2016). The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM–5) distinguished between non-suicidal self-injury (NSSI) and suicidal behavior disorder (SBD) and included both as conditions for further study (American Psychiatric Association [APA], 2013). Although SH is conceptually distinguished from suicidal behaviors in the desire and intent involved, still the most disturbing problem with SH lies in its close relationship to suicide, a leading cause of death among adolescents worldwide (World Health Organization [WHO], 2021). A theoretical framework by Thomas Joiner posits that the capability for enacting suicide can be acquired through repeated exposure to painful and provocative experiences such as self-injurious behavior (Joiner, 2007) along with the involvement in other types of violence such as childhood abuse (Serafini et al., 2017). Literature has provided empirical support for this model by not only evidencing that SH history is often a strong correlate of suicide attempt (SA) with suicide ideation (SI), but also demonstrating that an extensive history of SH is associated with an increased risk for suicide; greater versatility (i.e., various methods used) and severity, and longer duration of SH are positively correlated with suicidality (i.e., suicide ideation or attempt) (Nock et al., 2006; Lloyd-Richardson et al., 2007; Klonsky et al., 2013; Turner et al., 2013; Victor and Klonsky, 2014).

Given this link between SH and suicidality, it is increasingly important to identify robust indicators of suicidal risk in community adolescents with SH, especially considering a rising prevalence of SH in this population (Muehlenkamp and Gutierrez, 2007; Tørmoen et al., 2020). While previous studies have attempted to identify behavioral aspects of SH related to a greater risk of suicidality (e.g., severity and number of methods used), this endeavor could be challenging in a group solely consisting of self-injurers because SH history itself often accounts for a large portion of the variance in suicide risk (Klonsky et al., 2013; Turner et al., 2013; Victor and Klonsky, 2014), leaving less variance to other explanatory factors. Another issue may relate to the role of the onset in early adolescence. While SH frequently begins at around age 13 in community adolescents (Stallard et al., 2013; Morey et al., 2017; Gillies et al., 2018), recent trends in adolescent SH including changes in the onset age have not yet been explored much in the general adolescent population (Tørmoen et al., 2020). Previous studies have shown that an earlier onset (i.e., typically at or below age 12) is associated with more frequent, diverse, and severe forms of SH (Ammerman et al., 2018; Muehlenkamp et al., 2018; O'Connor et al., 2018). Despite this potential role of the onset over the course of more pervasive SH, its association with suicidal risk is yet to be sufficiently established especially in a community sample of young adolescents.

Understanding SH in adolescence now necessitates considering the complex social context characterized by rapid interactions on social media (Nesi et al., 2018b) given the drastic increase in social media use affecting adolescent life and the salience of peer influences during this developmental period (Heilbron and Prinstein, 2008; Rideout and Robb, 2018). Social media exerts particular influence over youth's interpersonal experiences via its unique features (Nesi et al., 2018a) while offering a space to share the narratives and experiences for those who self-harm (Gargiulo and Margherita, 2019). Alarmingly, however, explicit depictions of SH are now easily accessible via popular content-sharing platforms such as Instagram or YouTube (Dyson et al., 2016; Moreno et al., 2016), and young people use Internet searching for information on SH and suicide methods (Mars et al., 2015). Furthermore, with visualness much emphasized in the communication within social media, the involvement of this sensory-specific nature of social media in youth's behaviors may be intertwined with individual differences that render youth vulnerable to SH, such as sensory processing patterns and avoidant response tendencies particularly in the face of emotional arousal and aversive internal experiences (Chapman et al., 2006; Serafini et al., 2016; Nesi et al., 2018a). Although it may be debatable whether exposure to SH-related content fosters similar behaviors in youth (Shanahan et al., 2019), still being attentive to what teens view and post online is of importance because this may reflect the signs and symptoms of their distress and suicidality (Laffier, 2016; George, 2019). Another aspect of potential risk includes limited guidance on the content and non-compliance with regulations resulting in inadequate protection particularly for vulnerable youth (Dyson et al., 2016; Moreno et al., 2016). George (2019) suggested that the impact of the exposure to SH- and suicide-related posts will be stronger on vulnerable adolescents; adolescents with a history of SH may find these posts more provoking. Nonetheless, only a few studies have investigated a link between exposure to SH posts on social media and engagement in the actual

Abbreviations: SH, Self-harm; SA, Suicide attempt; SI, Suicide ideation.

behavior offline; even fewer attempted to link such exposure to suicidal risk among those with a history of SH (Zhu et al., 2016; Arendt et al., 2019).

Relatively underexplored in the area of SH than suicide, the effect of contagion – diffusion of thoughts or behaviors through social network – offers another critical viewpoint (Hawton et al., 2012; Jarvi et al., 2013; Abrutyn et al., 2020). While contagion through direct social ties has been commonly recognized as more influential by means of shared thoughts (Christakis and Fowler, 2009), contagion of suicidal thoughts and behaviors via media has especially emerged as a serious issue to have led the Center for Disease Control to create and distribute guidelines for the reporting of suicide (O'Carroll and Potter, 1994). This is not an overwrought response considering that media coverage of suicide is often associated with the formation of suicide clusters in youth and young adults (Gould et al., 2014). Adolescents can be more susceptible to contagion than adults in general, consistent with the heightened need for social integration in this age group (Reiter et al., 2019), and the impact of contagion in online and offline networks (e.g., via exposure to social media content or direct social ties) may be more pronounced in vulnerable adolescents considering the particular influence of social media and assortative relating involved in their relationship formation (Gould et al., 2003; Joiner, 2003). In this context, it would be imperative to probe the question of how contagion of suicidality manifests in youth sharing a common risk (e.g., SH) and, to begin with, whether exposure to SH content on social media and social ties with other self-injurers can be linked to an increased suicide risk in adolescents who self-harm.

The purpose and hypotheses of this study were as follows. First, we aimed to provide preliminary data on the demographic, social, and behavioral characteristics of community adolescents in South Korea with a recent history of SH. To expand existing knowledge to young adolescents, we specifically focused on a group of sixth- to ninth-graders (typically ages 11–15 years). Next, we aimed to investigate social and behavioral features associated with lifetime suicidality and identify how these features explain lifetime suicidal risk in this group. Based on extant literature, we hypothesized that more severe forms, multiple methods, and longer duration of SH, along with an increased frequency, would be associated with lifetime suicidality and an increased risk. Particularly, assuming the importance of social media content and assortative relating, we hypothesized that exposure to SH posts – viewing and posting of related content – and having friends who self-harm would be associated with lifetime suicidality and an increased risk after controlling for the effect of the aforementioned behavioral aspects of SH.

MATERIALS AND METHODS

Participants and Procedure

The study was based on a nationwide online survey in South Korea. Inclusion criteria consisted of (a) sixth- to ninth-graders; and (b) endorsed at least one act of SH during the past 12 months. Sample was drawn from six stratified districts (i.e., Gyeonggi, Seoul, Gyeongsang, Jeolla, Chungcheong, and Gangwon) according to the estimated proportion in the national population. Participants were recruited via Macromill Embrain[1], an online research company in South Korea: (1) If parents of eligible sixth- to ninth-graders were enrolled in the firm's panel, adolescents were contacted by their parents who received an invitation email from the company; (2) If eligible eighth- and ninth-graders were enrolled in the firm's panel, they were directly contacted via email. The respondents, including the parents in case (1), entered a URL of the survey webpage and initially completed screening questions (Self-Harm Screening, see **Supplementary Material 1**); those found eligible then completed an online consent form. In case (1), the adolescents additionally completed Self-Harm Screening themselves in a private setting and an online consent form if still found eligible. Adolescents who gave consent answered subsequent questionnaires on demographics, behavioral and social characteristics, and psychological and behavioral constructs. A total of 906 eligible responses were obtained. All participating adolescents and/or parents were informed about the study and signed an online consent form.

The study was approved by the Institutional Review Board (IRB) of Seoul National University Hospital (IRB Number H-1904-093-1027) with a waiver of documentation of consent. A pilot test was conducted among part of the firm's adolescent panel using Self-Harm Screening to estimate SH appearance. Out of 198 eighth- and ninth-graders that responded, 129 (65.2%) reported at least one act of SH during the past 12 months.

Assessment

Self-Harm Screening

Twenty items were preliminarily devised and used to screen adolescents who have endorsed SH during the past 12 months (see **Supplementary Material 1**). Based on the review of literature and non-academic sources to identify characteristics of SH behaviors in Korean adolescents, we selected some items from existing measures of SH, such as The Self-Harm Inventory (SHI) (Sansone et al., 1998) as well as rating and adding culturally sensitive items based on clinical observations by an expert group. Depending on whether the behavior was present during the past 12 months, items were answered either "yes" or "no." For the purpose of this study, SH was explicitly defined as the act of deliberating harming oneself without an intent to commit suicide.

Lifetime Suicidality and SA

Lifetime suicidality and SA were assessed using two items from Columbia Suicide Severity Rating Scale (C-SSRS) (Posner et al., 2008): (1) Active SI with some intent to act (i.e., "Have you had suicidal thoughts with some intention of acting on them?"); and (2) Suicidal acts or behavior (i.e., "Have you taken any steps toward making a suicide attempt or preparing to kill yourself (e.g., collecting pills, giving valuables away, writing a suicide note)?"). Lifetime suicidality was regarded as present if item

[1]https://embrain.com

(1) or (2) was answered "yes" and lifetime SA if item (2) was answered "yes."

Socio-Demographics

The sociodemographic variables included sex, grade (year at school), family composition, paternal and maternal education level, and self-reported academic performance.

Behavioral Features of SH

Behavioral features of SH were evaluated in five aspects: lifetime frequency, duration, onset, the number of forms in the past 12 months, and severity. Lifetime frequency was categorized as either "five times or more" or "four times or less" based on previous studies (Gargiulo et al., 2019), duration as either "two years or more" or "a year or less," onset as either "at or below sixth grade (ages 11–12 or below)" or "at or above seventh grade (ages 12–13 or above)," and the number of forms endorsed in the past 12 months as either "multiple" or "single."

Severity of SH was categorized as either "moderate/severe" or "mild" based on previous studies (Lloyd-Richardson et al., 2007). We first categorized twenty acts listed in Self-Harm Screening according to their severity: "minor," "moderate/severe," and "other" (see **Supplementary Material 2**). We then generated two types based on these categories: "Mild" type consisted of cases with "mild" behaviors only, and "moderate/severe" type included at least one "moderate/severe" behavior. Four cases with "other" behaviors only were excluded from all analyses.

Social Circumstances

The social characteristics were investigated as follows: having friends who self-harm, having been bullied at school, having seen content related to one's SH behaviors on social media during the past 12 months (i.e., "During the past 12 months, have you seen any of the listed behaviors you engaged in on social media such as Facebook, Instagram, Twitter, and/or YouTube?"), and having posted related content on social media during the past 12 months (i.e., "During the past 12 months, have you posted content about any of the listed behaviors you engaged in on social media such as Facebook, Instagram, Twitter, and/or YouTube?"). Items were answered either "yes" or "no."

Statistical Analysis

We performed all analyses using R version 3.6.3 for Windows[2]. We first used the chi-squared test of independence to explore potential concomitants of lifetime suicidality. Next, we employed multivariate logistic regression to examine the relationship between explanatory variables and suicidality. Finally, we investigated the model-data fit with the Hosmer–Lemeshow test and computed Nagelkerke's R^2 to determine the total variance explained by the explanatory variables included in our model.

[2]https://cran.r-project.org/

RESULTS

Sample Characteristics and Associations With Lifetime Suicidality

Table 1 summarizes the demographic, social and behavioral characteristics of the sample (n = 902), and the associations between lifetime suicidality and all potential concomitants. Importantly, 33.9% (n = 306) reported to have started SH by the time they were fourth-graders: 53.4% (n = 126) among the current sixth-graders, 29.2% (n = 66), 25.2% (n = 58), and 26.7% (n = 56) among the seventh-, eighth-, and ninth-graders, respectively. All variables other than paternal and maternal education level and the onset of SH were significantly associated with lifetime suicidality. Contingency coefficients indicated no significant correlation between concomitants, so all variables with a significant association with lifetime suicidality were entered into the regression model.

Multivariate Logistic Regression for Lifetime Suicidality

Table 2 presents the relationship between the explanatory variables and lifetime suicidality in a logistic regression model. Having endorsed at least one moderate/severe form of SH during the past 12 months compared to mild forms only (OR 5.36, $p < 0.001$) and multiple forms of SH compared to a single form (OR 3.13, $p < 0.001$), having engaged in SH for two years or more compared to a year or less (OR 2.42, $p = 0.001$), having friends who self-harm (OR 1.92, $p = 0.013$), having been bullied at school (OR 2.08, $p = 0.004$), and having posted content about one's SH on social media during the past 12 months (OR 3.15, $p < 0.001$) were associated with an increased odds of lifetime suicidality. However, the effect of five times or more SH compared to four times or less and having seen content related to SH one engaged in on social media during the past 12 months was not significant (OR 1.10, $p = 0.688$; OR 1.54, $p = 0.101$).

The regression model provided a satisfactory model-data fit (Hosmer–Lemeshow test $p = 0.934$), and the explanatory variables accounted well for the total variance in lifetime suicidality (Nagelkerke $R^2 = 0.462$).

Sensitivity Analyses With Lifetime SA

For results in terms of an outcome most often explored in existing literature (e.g., SA), we conducted sensitivity analyses by repeating the analytic procedures using a subset of data. Data were on cases with SH only (n = 764) and those with both SH and SA (n = 82). Fifty-six participants reporting lifetime SI without SA [i.e., item (1) but (2) answered "yes" from Lifetime suicidality and SA] were excluded. The reference group was SH only (n = 764), and the dependent variable in the logistic regression was SA (n = 82).

All demographic, social, and behavioral characteristics but the onset of SH were significantly associated with lifetime SA (see **Table 3**). The following results were obtained from a multivariate logistic regression for lifetime SA with the same set of explanatory variables used in **Table 2** (see **Table 4**). The relationship of social and behavioral features to lifetime SA was overall similar

TABLE 1 | Sample characteristics and associations with lifetime suicidality ($n = 902$).

Characteristics			SH only ($n = 764$)	SH + Suicidality ($n = 138$)	χ^2	Unadjusted OR (95% CI)[a]
Socio-demographics	Sex	Male ($n = 497$, 55.1%)	438(88.1%)	59(11.9%)	9.458**	1.00 [reference]
		Female ($n = 405$, 44.9%)	326(80.5%)	79(19.5%)		1.80 (1.25, 2.60)
	Grade (year at school)	6th ($n = 236$, 26.2%)	214(90.7%)	22(9.3%)	12.843**	1.00 [reference]
		7th ($n = 226$, 25.1%)	195(86.3%)	31(17.3%)		1.54 (0.87, 2.79)
		8th ($n = 230$, 25.5%)	188(81.7%)	42(18.3%)		2.16 (1.26, 3.82)
		9th ($n = 210$, 23.3%)	167(79.5%)	43(20.5%)		2.49 (1.45, 4.40)
	Family composition	Both parents ($n = 844$, 93.6%)	724(85.8%)	120(14.2%)	10.581**	1.00 [reference]
		Other ($n = 58$, 6.4%)	40(69.0%)	18(31.0%)		2.72 (1.48, 4.85)
	Father's education level	$\leqq$ High school degree/unknown ($n = 181$, 20.1%)	154(85.1%)	27(14.9%)	4.808	1.05 (0.65, 1.65)
		College degree ($n = 646$, 71.6%)	553(85.6%)	93(14.4%)		1.00 [reference]
		>College degree ($n = 75$, 8.3%)	57(76.0%)	18(24.0%)		1.89 (1.03, 3.30)
	Mother's education level	$\leqq$ High school degree/unknown ($n = 160$, 17.7%)	130(81.3%)	30(18.8%)	2.434	1.41 (0.88, 2.22)
		College degree ($n = 605$, 67.1%)	520(86.0%)	85(14.0%)		1.00 [reference]
		>College degree ($n = 137$, 15.2%)	114(83.2%)	23(16.8%)		1.24 (0.73, 2.02)
	Academic performance	Below average ($n = 95$, 10.5%)	67(70.5%)	28(29.5%)	37.605***	1.83 (1.10, 3.00)
		Average ($n = 468$, 52.0%)	381(81.4%)	87(18.6%)		1.00 [reference]
		Above average ($n = 339$, 37.6%)	316(93.2%)	23(6.8%)		0.32 (0.19, 0.51)
Behavioral features of SH	Frequency (lifetime)	1–4 times ($n = 474$, 52.5%)	417(88.0%)	57(12.0%)	7.739**	1.00 [reference]
		5 times or more ($n = 428$, 47.5%)	347(81.1%)	81(18.9%)		1.71 (1.18, 2.47)
	Severity (past 12 months)	Mild ($n = 772$, 85.6%)	706(91.5%)	66(8.5%)	184.74***	1.00 [reference]
		Moderate/severe ($n = 130$, 14.4%)	58(44.6%)	72(55.4%)		13.20 (8.63, 20.37)
	Number of forms (past 12 months)	Single ($n = 458$, 50.8%)	437(95.4%)	21(4.6%)	80.752***	1.00 [reference]
		Multiple ($n = 444$, 49.2%)	327(73.6%)	117(26.3%)		7.39 (4.63, 12.34)
	Duration	$\leq$1 year ($n = 393$, 43.6%)	350(89.1%)	43(10.9%)	9.619**	1.00 [reference]
		$\geq$2 years ($n = 509$, 56.4%)	414(81.3%)	95(18.7%)		1.86 (1.27, 2.77)
	Onset	$\leq$6th grade ($n = 642$, 71.2%)	542(84.4%)	100(15.6%)	0.068	1.00 [reference]
		$\geq$7th grade ($n = 260$, 28.8%)	222(85.4%)	38(14.6%)		0.93 (0.61, 1.38)
Social circumstances	Having friends who self-harm	No ($n = 502$, 55.7%)	466(92.8%)	36(7.2%)	56.306***	1.00 [reference]
		Yes ($n = 400$, 44.3%)	298(74.5%)	102(25.5%)		4.41 (2.96, 6.71)
	Having been bullied at school	No ($n = 705$, 78.2%)	635(90.1%)	70(9.9%)	69.954***	1.00 [reference]
		Yes ($n = 197$, 21.8%)	129(65.5%)	68(34.5%)		4.77 (3.25, 7.01)
	Having seen SH content on social media (past 12 months)	No ($n = 623$, 69.1%)	572(91.8%)	51(8.2%)	76.877***	1.00 [reference]
		Yes ($n = 279$, 30.9%)	192(68.8%)	87(31.2%)		5.07 (3.47, 7.47)
	Having posted SH content on social media (past 12 months)	No ($n = 797$, 88.4%)	712(89.3%)	85(10.7%)	110.42***	1.00 [reference]
		Yes ($n = 105$, 11.6%)	52(49.5%)	53(50.5%)		8.50 (5.45, 13.30)

SH, Self-harm.

[a] *The reference group is SH only (n = 764).*

**p < 0.05, **p < 0.01, ***p < 0.001.*

TABLE 2 | Multivariate logistic regression for lifetime suicidality ($n = 902$).

Characteristics		SH + Suicidality ($n = 138$)	
			Adjusted OR (95% CI)[a]
Socio-demographics	Sex	Male	1 [reference]
		Female	1.61* (1.01, 2.60)
	Grade (year at school)	6th	1 [reference]
		7th	1.33 (0.65, 2.79)
		8th	1.69 (0.83, 3.52)
		9th	2.08* (1.03, 4.31)
	Family composition	Both parents	1 [reference]
		Other	1.52 (0.65, 3.43)
	Academic performance	Below average	1.01 (0.50, 1.97)
		Average	1 [reference]
		Above average	0.39** (0.22, 0.69)
Behavioral features of SH	Frequency (lifetime)	1–4 times	1 [reference]
		5 times or more	1.10 (0.68, 1.79)
	Severity (past 12 months)	Mild	1 [reference]
		Moderate/severe	5.36*** (3.06, 9.49)
	Number of forms (past 12 months)	Single	1 [reference]
		Multiple	3.13*** (1.78, 5.69)
	Duration	≤1 year	1 [reference]
		≥2 years	2.42** (1.44, 4.18)
Social circumstances	Having friends who self-harm	No	1 [reference]
		Yes	1.92* (1.15, 3.22)
	Having been bullied at school	No	1 [reference]
		Yes	2.08** (1.27, 3.40)
	Having seen SH content on social media (past 12 months)	No	1 [reference]
		Yes	1.54 (0.92, 2.56)
	Having posted SH content on social media (past 12 months)	No	1 [reference]
		Yes	3.15*** (1.70, 5.84)

SH, Self-harm.
[a] *The reference group is SH only (n = 764).*
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

to the results from **Table 2**. Having endorsed at least one moderate/severe form of SH during the past 12 months compared to mild forms only (OR 6.36, $p < 0.001$) and multiple forms of SH compared to a single form (OR 6.57, $p < 0.001$), having engaged in SH for two years or more compared to a year or less (OR 2.73, $p = 0.005$), having friends who self-harm (OR 2.43, $p = 0.015$), having been bullied at school (OR 1.96, $p = 0.041$), and having posted content about one's SH on social media during the past 12 months (OR 3.87, $p < 0.001$) were associated with an increased odds of lifetime SA. Consistent with the results from **Table 2**, the effect of five times or more SH compared to four times or less and having seen content related to SH one engaged in on social media during the past 12 months was not significant (OR 1.19, $p = 0.597$; OR 1.37, $p = 0.379$).

DISCUSSION

In this community-based study, we explored characteristics of Korean young adolescents with SH and identified their relationship to lifetime suicidality with emphasis on the impact of social media. In addition to comprehensively address behavioral components of SH, we addressed exposure to SH-related social media content and social connection with other self-injurers as two processes possibly involved in suicidality among those sharing a common risk, namely SH. Notably, different results were found between "posting" and "seeing" content about one's SH during the past 12 months, with only having posted content associated with an increased risk of lifetime suicidality and SA when controlling for other behavioral and social features. This may be understood as rendering support to the proposed impact of social media posts while suggesting that specific mechanisms that underlie more "active" and rather "passive" exposure are related to different outcomes. As concerns direct social ties to other self-injurers, slightly less than half of the adolescents in this study reported having friends who self-harm, with this condition also linked to an increased risk of suicidality and SA history.

Behavioral Features of SH and Suicidality

For the most part, the relationship between behavioral features of SH and suicidality in our young adolescent sample corroborated previous findings (Nock et al., 2006; Lloyd-Richardson et al., 2007; Jacobson et al., 2008; Duarte et al., 2020); more severity, a greater number of forms, and longer duration of SH were associated with an increased risk. Though limited in making predictive inferences, the current study demonstrates that more practice with and exposure to SH in terms of time (i.e., duration), means (i.e., the number of forms) and severity are associated with a greater risk of suicidality in community adolescents, consistent with the notion that the capability for suicide can be acquired through self-inflicted injury, and that past experiences with self-injury can facilitate the acts of serious lethality (e.g., suicidal behaviors) (Joiner, 2007; Van Orden et al., 2010). Being a correlate of suicidality and SA history, however, lifetime frequency of SH explained neither of these outcomes in our regression models. Based on the view that repeated SH and subsequent habituation to the fear and pain involved in self-injurious behaviors provide the groundwork for suicide crises (Joiner, 2007), this somewhat undermined importance of frequency may not be readily interpretable. Although frequency of SH has often been noted as an indicator of suicide risk (Victor and Klonsky, 2014), the association of this feature with suicidal behaviors is not as robust as that of other features of SH, with frequency often regarded more as a proxy for other measures (e.g., severity and

TABLE 3 | Characteristics of the subsample and associations with lifetime SA ($n = 846$).

Characteristics			SH only ($n = 764$)	SH + SA ($n = 82$)	χ^2	Unadjusted OR (95% CI)[a]
Socio-demographics	Sex	Male ($n = 469$, 55.4%)	438(93.4%)	31(6.6%)	10.651**	1.00 [reference]
		Female ($n = 377$, 44.6%)	326(86.5%)	51(13.5%)		2.20 (1.39, 3.56)
	Grade (year at school)	6th ($n = 226$, 26.7%)	214(94.7%)	12(5.3%)	9.960*	1.00 [reference]
		7th ($n = 213$, 25.2%)	195(91.5%)	18(8.5%)		1.64 (0.77, 3.60)
		8th ($n = 214$, 25.3%)	188(87.9%)	26(12.1%)		2.44 (1.22, 5.18)
		9th ($n = 193$, 22.8%)	167(86.5%)	26(13.5%)		2.75 (1.37, 5.84)
	Family composition	Both parents ($n = 794$, 93.9%)	724(91.2%)	70(8.8%)	9.768**	1.00 [reference]
		Other ($n = 52$, 6.1%)	40(76.9%)	12(23.1%)		3.12 (1.50, 6.08)
	Father's education level	≦ High school degree/unknown ($n = 175$, 20.7%)	154(88.0%)	21(12.0%)	14.047***	1.64 (0.93, 2.81)
		College degree ($n = 599$, 70.8%)	553(92.3%)	46(7.7%)		1.00 [reference]
		>College degree ($n = 72$, 8.5%)	57(79.2%)	15(20.8%)		3.17 (1.62, 5.95)
	Mother's education level	≦ High school degree/unknown ($n = 151$, 17.8%)	130(86.1%)	21(13.9%)	6.983*	1.91 (1.08, 3.30)
		College degree ($n = 564$, 66.7%)	520(92.2%)	44(7.8%)		1.00 [reference]
		>College degree ($n = 131$, 15.5%)	114(87.0%)	17(13.0%)		1.77 (0.95, 3.16)
	Academic Performance	Below average ($n = 88$, 10.4%)	67(76.1%)	21(23.9%)	33.675***	2.49 (1.38, 4.39)
		Average ($n = 429$, 50.7%)	381(88.8%)	48(11.2%)		1.00 [reference]
		Above average ($n = 329$, 38.9%)	316(96.0%)	13(4.0%)		0.33 (0.17, 0.60)
Behavioral features of SH	Frequency (lifetime)	1–4 times ($n = 447$, 52.8%)	417(93.3%)	30(6.7%)	8.915**	1.00 [reference]
		5 times or more ($n = 399$, 47.2%)	347(87.0%)	52(13.0%)		2.08 (1.30, 3.37)
	Severity (past 12 months)	Mild ($n = 738$, 87.2%)	706(95.7%)	32(4.3%)	184.74***	1.00 [reference]
		Moderate/Severe ($n = 108$, 12.8%)	58(53.7%)	50(46.3%)		18.84 (11.28, 31.98)
	Number of forms (past 12 months)	Single ($n = 443$, 50.8%)	437(98.6%)	6(1.4%)	71.881***	1.00 [reference]
		Multiple ($n = 403$, 49.2%)	327(81.1%)	76(18.9%)		16.49 (7.68, 43.28)
	Duration	≤1 year ($n = 375$, 44.3%)	350(93.3%)	25(6.7%)	6.439*	1.00 [reference]
		≥2 years ($n = 471$, 55.7%)	414(87.9%)	57(12.1%)		1.92 (1.19, 3.19)
	Onset	≤6th grade ($n = 606$, 71.6%)	542(89.4%)	64(10.6%)	1.507	1.00 [reference]
		≥7th grade ($n = 240$, 28.4%)	222(92.5%)	18(7.5%)		0.69 (0.39, 1.17)
Social circumstances	Having friends who self-harm	No ($n = 483$, 57.1%)	466(96.5%)	17(3.5%)	47.375***	1.00 [reference]
		Yes ($n = 363$, 42.9%)	298(82.1%)	65(17.9%)		5.93 (3.48, 10.65)
	Having been bullied at school	No ($n = 674$, 79.7%)	635(94.2%)	39(5.8%)	55.618***	1.00 [reference]
		Yes ($n = 172$, 20.3%)	129(75.0%)	43(25.0%)		5.41 (3.37, 8.72)
	Having seen SH content on social media (past 12 months)	No ($n = 598$, 70.7%)	572(95.7%)	26(4.3%)	64.51***	1.00 [reference]
		Yes ($n = 248$, 29.3%)	192(77.4%)	56(22.6%)		6.38 (3.93, 10.61)
	Having posted SH content on social media (past 12 months)	No ($n = 757$, 89.5%)	712(94.1%)	45(5.9%)	111.46***	1.00 [reference]
		Yes ($n = 89$, 10.5%)	52(58.4%)	37(41.6%)		11.19 (6.65. 18.87)

SH, Self-harm; SA, Suicide attempt.
[a] *The reference group is SH only ($n = 764$).*
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.*

TABLE 4 | Multivariate logistic regression for lifetime SA ($n = 846$).

Characteristics			SH + SA ($n = 82$)
			Adjusted OR (95% CI)[a]
Socio-demographics	Sex	Male	1 [reference]
		Female	1.75 (0.93, 3.34)
	Grade (year at school)	6th	1 [reference]
		7th	1.51 (0.58, 4.09)
		8th	2.02 (0.78, 5.47)
		9th	2.58 (1.02, 6.93)
	Family composition	Both parents	1 [reference]
		Other	1.56 (0.53, 4.33)
	Academic performance	Below average	1.17 (0.49, 2.69)
		Average	1 [reference]
		Above average	0.37* (0.16, 0.79)
Behavioral features of SH	Frequency (lifetime)	1–4 times	1 [reference]
		5 times or more	1.19 (0.63, 2.27)
	Severity (past 12 months)	Mild	1 [reference]
		Moderate/severe	6.36*** (3.18, 12.96)
	Number of forms (past 12 months)	Single	1 [reference]
		Multiple	6.57*** (2.73, 18.53)
	Duration	≤1 year	1 [reference]
		≥2 years	2.73** (1.37, 5.67)
Social circumstances	Having friends who self-harm	No	1 [reference]
		Yes	2.43* (1,20, 5.07)
	Having been bullied at school	No	1 [reference]
		Yes	1.96* (1.02, 3.73)
	Having seen SH content on social media (past 12 months)	No	1 [reference]
		Yes	1.37 (0.68, 2.74)
	Having posted SH content on social media (past 12 months)	No	1 [reference]
		Yes	3.87*** (1.78, 8.46)

SH, Self-harm; SA, Suicide attempt.
[a] *The reference group is SH only (n = 764).*
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.*

duration) (Nock et al., 2006; Muehlenkamp and Gutierrez, 2007; Hamza et al., 2012; Turner et al., 2013; Mars et al., 2019).

An "early onset" of SH (at or below ages 11–12) was neither a significant correlate of suicidality nor of SA history in the present study. When compared to Brager-Larsen et al. (2021) in which the sample consisted of psychiatric outpatients, this result may be suggestive of the heightened importance of SH onset in suicidal risk among those with clinically significant symptoms; interacting with psychological distress (e.g., depression), SH started at an early age may possibly develop into more pervasive forms of SH which, in turn, aggravate the risk for suicidality. It may be that, for those without clinically meaningful symptoms, onset maintains a rather distal relationship to suicidality mainly via other aspects of SH (e.g., lifetime frequency, versatility, and severity) than being directly linked to the risk throughout the trajectory of SH. However, to valorize current findings and further clarify the role of the onset over the course of SH, more studies with longitudinal designs and different age groups would be needed. Given that participation was limited to sixth- to ninth-graders, the reduced importance of the onset in the current study can also be explained by the restricted age range of the sample, posing two issues to be considered: the opt-out of individuals with a typical or later onset and relatively short duration of SH. It is still worth noting, though, that over one-third and two-thirds of the sample reported to have started SH by the time they were fourth- and sixth-graders (ages 9–10 and ages 11–12), respectively. This may be in line with a previous report on the decrease in the age at SH onset among hospital-treated young adults (Griffin et al., 2018) while adding to the existing literature underscoring the importance of more timely prevention efforts made upon age 12 or below before SH becomes established (Stallard et al., 2013).

Social Media in the Relationship Between Adolescents' Social Circumstances and Suicidality

A noticeable finding regarding exposure to social media posts was that having posted content about one's SH during the past 12 months was associated with an increased risk of lifetime suicidality and SA when controlling for other behavioral and social features, while merely having seen related content in the same period did not maintain its association with suicidality risk after adjusting for other variables. A similar attempt to differentiate between "posting" and "seeing" content has recently been made by Swedo et al. (2020) in a study on youth suicide clusters. Posting suicide-related content was overall associated with an increased odds of both SI and SA, while seeing related posts was only associated with an increased odds of SI when confounding variables were adjusted (Swedo et al., 2020). Results from the present study support the idea that more active involvement, such as creating and posting content, likely occurs among those at higher risk on the spectrum of suicidality (Swedo et al., 2020). This involvement may be differentiated in some respects from a typical way of "being active" on social media (e.g., sharing photos or updating one's status) which is often associated with fewer psychological symptoms, possibly via the role of social support (Frison and Eggermont, 2016; Thorisdottir et al., 2019). An explanation to this might be that producing and posting SH or SA content are motivated by different thought processes and could be read more as a "cry for help" or "a rehearsal of suicide plan" (Swedo et al., 2020). Future studies will need to differentiate between specific behaviors on social media (e.g., browsing, reposting, and watching others' posts), the extent

to which individuals are psychologically and socially engaged in these behaviors, and the degree of intentionality involved in the exposure to potentially harmful content to better understand how social media can add to the risk of SH and suicide in vulnerable adolescents (Arendt et al., 2019).

That a little less than half of the participants responded that they have friends who self-harm may not only reflect that relationship is an important area that unites adolescents with SH (Gargiulo, 2020) but also that assortative relating is common among self-injurers from an early age. It has been suggested that assortative relating alone may not be sufficient to explain the contagion of suicidal symptoms in adolescents and young adults and that the shared risk factors that pre-exist need to be considered to properly weigh its impact (Hawton et al., 2020). To some degree, an increased risk in adolescent self-injurers could be reflected in their social ties as documented in the connection between peer's SH and an increased risk of lifetime suicidality in our study. Taken together with the literature, this poses further questions to be explored including whether suicidality contagion can be exacerbated with SH as a shared risk while considering the role of social media. Specifically, two routes could be considered: with social media offering a channel for assortative gathering based on the commonalities (e.g., SH), enabling online interactions among those who are pulled together with similar others more active; and by providing information on suicidal behaviors and making discussion on the topic more feasible, thereby habituating youth to the idea of suicide (Joiner, 2007). Either way, the difference observed between viewing and posting of SH content in explaining suicidality may also relate to different degrees of involvement in these dynamics in social media networks, with posting content about one's own SH reflecting more involvement than observing related content.

The relationship of adolescent bullying victimization experience to suicidality history can further be understood with thwarted belongingness as a psychological and interpersonal construct of suicidal desire (Joiner, 2007; Van Orden et al., 2010). Documenting that having been a victim of bullying is associated with an elevated risk for lifetime suicidality in adolescents with SH, the present study suggests that experience of frustrated belongingness is somehow linked to a heightened risk among adolescents displaying a certain level of capability for self-injury, in accordance with the mounting evidence that bullying victimization in childhood and adolescence, a typical form of social exclusion, is associated with various forms of psychological distress, SH, and suicidality over the life course (Fisher et al., 2012; Winsper et al., 2012; Lereya et al., 2013, 2015; Takizawa et al., 2014; Geoffroy et al., 2016). The sequence of the events is unknown in our study, yielding the result open to a number of viable interpretations. While a frustrated need to belong could have instigated suicide desire among those with an accrued behavioral capability of self-injury, it is also possible that victims of bullying turned more to SH as a means to relieving interpersonal stress and psychological pain and, with repetition of SH, have developed suicidal thoughts and behaviors. Alternatively, pre-existing risks (e.g., maladaptive family experiences or impulsity) may have rendered youth more prone to both social exclusion and engagement in SH which, taken together, contributed to higher suicidal risk (Lereya et al., 2013).

Regardless of the form it takes, such relationship between bullying victimization, SH, and suicidality in youth can further be compounded by social media both in a harmful and protective way (Hawton et al., 2020). Adolescents perceiving a lack in meaningful real-world social contact could rely more on online interactions (Gross, 2009) which may, on the one hand, add to the risk by facilitating active discussion of suicidal thoughts and behaviors, but on the other hand, put the brakes on severe thoughts and behaviors by offering a sense of belongingness (Joiner, 2007; Van Orden et al., 2010). The benefit social media can provide in terms of online social connection appears more valid considering that interpersonal connection and support can often be powerful enough to buffer against suicidality posed by other risks (e.g., family adversities) (Cho and Haslam, 2010; Forster et al., 2020). It should also be noted that often young people who access SH content online have been engaging in SH already and that social media, along with other online environments, can be a protected space for these people where the experience of SH can emerge and be shared (Gargiulo and Margherita, 2019; Lavis and Winter, 2020). Insofar as its roles can be linked to both risk (i.e., contagion) and benefit (i.e., social connection and support), social media itself is not necessarily a risk for adolescents with SH, but the pre-existing vulnerabilities alongside SH and what online communication centers on would be a focus of clinical attention. Further research is warranted to elucidate when and how relationship and communication on social media that cluster around SH either aggravate or buffer suicide risk, along with its specific mechanism (e.g., alterations in norms and strengthened cohesion), in order to accurately assess the impact of contagion and connection in social media for at-risk adolescents and identify points for strategic interventions.

Strengths and Limitations

The present study furthered previous understanding of social contagion in adolescent SH by linking two possible means of contagion in previous literature (i.e., social media exposure and peer's SH) to suicidality in young adolescents with a recent SH history. Differing outcomes linked to more "active" engagement compared to rather a "passive" exposure to SH posts were discussed with regard to the dynamics in social media networks as well as the individual intention involved and signs of distress. A considerable proportion of adolescent self-injurers reporting peer's SH and its connection with an increased risk of lifetime suicidality indicate the prevalence and potential importance of assortative gathering in youth with SH. While social media is possibly involved in assortative relating in this vulnerable population given its transformative role in peer relationship, and the spread of SH and suicidality via potentially provoking posts, it can also be a means of providing social connection and support especially for those in lack of a meaningful social contact. Additionally, by including sixth- and seventh-graders (ages 11–13) reporting a history of SH proportional to eighth- and ninth-graders (ages 13–15) in the sample, this study expanded previous knowledge to a group of adolescents both above and under the average age at SH onset.

More pervasive SH in terms of time (i.e., duration), means (i.e., the number of forms) and severity was associated with a greater risk of lifetime suicidality in young community adolescents, in accordance with previous findings from other samples. That more than two-thirds of the sample have started SH by ages 11–12 indicates that SH could be prevalent in Korean adolescents from an earlier age than previously known, suggesting that clinical attention is required.

Several limitations and shortcomings of this study are discussed as follows. First, due to the cross-sectional nature of the study design, it is difficult to conclude that some explanatory variables (e.g., bullying victimization and exposure to SH via social media posts) predict subsequent risk of suicidality and SA. Studies with longitudinal design are needed to further strengthen the findings from this study. Another methodological limitation may involve the measurement of the explanatory variables: based on the reference point of some binary variables (e.g., lifetime frequency of SH), results may be open to changes. Also, social circumstances of adolescents (e.g., friends who self-harm) could be quantitatively measured for more informative results in future studies. Next, we did not account for the role of SI and separated it neither as an associate nor as an outcome. SI is often the strongest correlate of SA history among self-injurers while explaining an increased risk of SA in adolescent self-injurers (Victor and Klonsky, 2014; Duarte et al., 2020). In community adolescents, augmented SI is also apparent in those with both NSSI and SA than those only with NSSI (Muehlenkamp and Gutierrez, 2007). Given this pronounced role of SI, future research will need to explore how SI interacts with features investigated in the present study especially throughout contagion and connection on social media to explain SA. Finally, although consisting of community adolescents, neither clinical features nor psychological correlates of the present sample were identified. While the co-occurrence of SH and SA is common in both clinical and non-clinical samples of adolescents (Nock et al., 2006; Taliaferro et al., 2012), the two often differ in suicidal risk as well as in behavioral features of SH (e.g., frequency and number of methods) (Jacobson and Gould, 2007; Hamza et al., 2012; Duarte et al., 2020). In this regard, future studies will benefit from taking into account psychological correlates (e.g., depressive symptoms) to more accurately assess the relationship between the social and behavioral aspects of SH and suicidality in community adolescents.

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 the Institutional Review Board (IRB) of Seoul National University Hospital (IRB Number H-1904-093-1027) with a waiver of documentation of consent. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

AUTHOR CONTRIBUTIONS

J-WK, J-SL, SK, DS, C-HC, DH, and JY were involved in obtaining research funding and designing the survey. J-SL, SK, and DS developed Self-Harm Screening items. HH contributed to establishing the survey protocol and collecting the data. J-WK, ES, KL, and S-BH formulated research questions. ES undertook data analyses and wrote the manuscript with GN. KL contributed to editing the manuscript. J-WK supervised the study. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2021.691438/full#supplementary-material

REFERENCES

Abrutyn, S., Mueller, A. S., and Osborne, M. (2020). Rekeying cultural scripts for youth suicide: how social networks facilitate suicide diffusion and suicide clusters following exposure to suicide. *Soc. Ment. Health* 10, 112–135. doi: 10.1177/2156869319834063

American Psychiatric Association [APA]. (2013). *Diagnostic And Statistical Manual Of Mental Disorders (Dsm-5®)*. Virginia: American Psychiatric Pub.

Ammerman, B. A., Jacobucci, R., Kleiman, E. M., Uyeji, L. L., and Mccloskey, M. S. (2018). The relationship between nonsuicidal self-injury age of onset and severity of self-harm. *Suicide Life Threat. Behav.* 48, 31–37. doi: 10.1111/sltb.12330

Arendt, F., Scherr, S., and Romer, D. (2019). Effects of exposure to self-harm on social media: evidence from a two-wave panel study among young adults. *New Media Soc.* 21, 2422–2442. doi: 10.1177/1461444819850106

Brager-Larsen, A., Zeiner, P., Klungsøyr, O., and Mehlum, L. (2021). Is Age of Self-Harm Onset Associated With Increased Frequency of Non-Suicidal Self-Injury and Suicide Attempts in Adolescent Outpatients?. *BMC Psychiatry* [Preprint]. doi: 10.21203/rs.3.rs-153519/v1

Chapman, A. L., Gratz, K. L., and Brown, M. Z. (2006). Solving the puzzle of deliberate self-harm: the experiential avoidance model. *Behav. Res. Ther.* 44, 371–394. doi: 10.1016/j.brat.2005.03.005

Cho, Y.-B., and Haslam, N. (2010). Suicidal ideation and distress among immigrant adolescents: the role of acculturation, life stress, and social support. *J. Youth Adolesc.* 39, 370–379. doi: 10.1007/s10964-009-9415-y

Christakis, N. A., and Fowler, J. H. (2009). *Connected: The Surprising Power Of Our Social Networks And How They Shape Our Lives*. New York: Little, Brown Spark.

Duarte, T. A., Paulino, S., Almeida, C., Gomes, H. S., Santos, N., and Gouveia-Pereira, M. (2020). Self-harm as a predisposition for suicide attempts: a study of adolescents' deliberate self-harm, suicidal ideation, and suicide attempts. *Psychiatry Res.* 287:112553. doi: 10.1016/j.psychres.2019.112553

Dyson, M. P., Hartling, L., Shulhan, J., Chisholm, A., Milne, A., Sundar, P., et al. (2016). A systematic review of social media use to discuss and view deliberate self-harm acts. *PLoS One* 11:e0155813. doi: 10.1371/journal.pone.0155813

Ferrey, A. E., Hughes, N. D., Simkin, S., Locock, L., Stewart, A., Kapur, N., et al. (2016). The impact of self-harm by young people on parents and families: a qualitative study. *BMJ Open* 6:e009631. doi: 10.1136/bmjopen-2015-009631

Fisher, H. L., Moffitt, T. E., Houts, R. M., Belsky, D. W., Arseneault, L., and Caspi, A. (2012). Bullying victimisation and risk of self harm in early adolescence: longitudinal cohort study. *BMJ* 344:e2683. doi: 10.1136/bmj.e2683

Forster, M., Grigsby, T. J., Gower, A. L., Mehus, C. J., and Mcmorris, B. J. (2020). The role of social support in the association between childhood adversity and adolescent self-injury and suicide: findings from a statewide sample of high school students. *J. Youth Adolesc.* 49, 1195–1208. doi: 10.1007/s10964-020-01235-9

Frison, E., and Eggermont, S. (2016). Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents' depressed mood. *Soc. Sci. Comput. Rev.* 34, 153–171. doi: 10.1177/0894439314567449

Gargiulo, A. (2020). Narratives of self-harm at school: identifying trajectories of intervention in educational contexts. *Eur. J. Psychol.* 16, 95–111. doi: 10.5964/ejop.v16i1.1883

Gargiulo, A., Dolce, P., and Margherita, G. (2019). Psychodynamic profiles of non-suicidal self-injury in adolescence: from the intra-psychic to the interpersonal dimension. *BPA Appl. Psychol. Bull.* 67, 2–16.

Gargiulo, A., and Margherita, G. (2019). Narratives of Self-harm: the experience of young women through the qualitative analysis of blogs. *Mediterr. J. Clin. Psychol.* 7, 1–19.

Geoffroy, M.-C., Boivin, M., Arseneault, L., Turecki, G., Vitaro, F., Brendgen, M., et al. (2016). Associations between peer victimization and suicidal ideation and suicide attempt during adolescence: results from a prospective population-based birth cohort. *J. Am. Acad. Child Adolesc. Psychiatry* 55, 99–105. doi: 10.1016/j.jaac.2015.11.010

George, M. (2019). The importance of social media content for teens' risks for self-harm. *J. Adolesc. Health* 65, 9–10. doi: 10.1016/j.jadohealth.2019.04.022

Gillies, D., Christou, M. A., Dixon, A. C., Featherston, O. J., Rapti, I., Garcia-Anguita, A., et al. (2018). Prevalence and characteristics of self-harm in adolescents: meta-analyses of community-based studies 1990–2015. *J. Am. Acad. Child Adolesc. Psychiatry* 57, 733–741. doi: 10.1016/j.jaac.2018.06.018

Gould, M., Jamieson, P., and Romer, D. (2003). Media contagion and suicide among the young. *Am. Behav. Sci.* 46, 1269–1284. doi: 10.1177/0002764202250670

Gould, M. S., Kleinman, M. H., Lake, A. M., Forman, J., and Midle, J. B. (2014). Newspaper coverage of suicide and initiation of suicide clusters in teenagers in the USA, 1988–96: a retrospective, population-based, case-control study. *Lancet Psychiatry* 1, 34–43. doi: 10.1016/s2215-0366(14)70225-1

Gratz, K. L. (2001). Measurement of deliberate self-harm: preliminary data on the Deliberate Self-Harm Inventory. *J. Psychopathol. Behav. Assess.* 23, 253–263.

Griffin, E., Mcmahon, E., Mcnicholas, F., Corcoran, P., Perry, I. J., and Arensman, E. (2018). Increasing rates of self-harm among children, adolescents and young adults: a 10-year national registry study 2007–2016. *Soc. Psychiatry Psychiatr. Epidemiol.* 53, 663–671. doi: 10.1007/s00127-018-1522-1

Gross, E. F. (2009). Logging on, bouncing back: an experimental investigation of online communication following social exclusion. *Dev. Psychol.* 45, 1787–1793. doi: 10.1037/a0016541

Hamza, C. A., Stewart, S. L., and Willoughby, T. (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: a review of the literature and an integrated model. *Clin. Psychol. Rev.* 32, 482–495. doi: 10.1016/j.cpr.2012.05.003

Hawton, K., Hill, N. T., Gould, M., John, A., Lascelles, K., and Robinson, J. (2020). Clustering of suicides in children and adolescents. *Lancet Child Adolesc. Health* 4, 58–67. doi: 10.1016/s2352-4642(19)30335-9

Hawton, K., Saunders, K. E., and O'connor, R. C. (2012). Self-harm and suicide in adolescents. *Lancet* 379, 2373–2382.

Heilbron, N., and Prinstein, M. J. (2008). Peer influence and adolescent nonsuicidal self-injury: a theoretical review of mechanisms and moderators. *Appl. Prev. Psychol.* 12, 169–177. doi: 10.1016/j.appsy.2008.05.004

Jacobson, C. M., and Gould, M. (2007). The epidemiology and phenomenology of non-suicidal self-injurious behavior among adolescents: a critical review of the literature. *Arch. Suicide Res.* 11, 129–147. doi: 10.1080/13811110701247602

Jacobson, C. M., Muehlenkamp, J. J., Miller, A. L., and Turner, J. B. (2008). Psychiatric impairment among adolescents engaging in different types of deliberate self-harm. *J. Clin. Child Adolesc Psychol.* 37, 363–375. doi: 10.1080/15374410801955771

Jarvi, S., Jackson, B., Swenson, L., and Crawford, H. (2013). The impact of social contagion on non-suicidal self-injury: a review of the literature. *Arch. Suicide Res.* 17, 1–19. doi: 10.1080/13811118.2013.748404

Joiner, T. (2007). *Why People Die By Suicide*. Cambridge, Massachusetts: Harvard University Press.

Joiner, T. E. Jr. (2003). Contagion of suicidal symptoms as a function of assortative relating and shared relationship stress in college roommates. *J. Adolesc.* 26, 495–504. doi: 10.1016/s0140-1971(02)00133-1

Kim, S., Seo, D.-G., Park, J.-C., Son, Y.-K., Lee, J.-H., Yoon, D., et al. (2020). "Validation of the korean self-harm screening inventory (KSHSI): a preliminary study," in *Proceedings of the International Society for the Study of Self-Injury (ISSS)*, Vienna. (accessed June 27, 2020).

Klonsky, E. D., May, A. M., and Glenn, C. R. (2013). The relationship between nonsuicidal self-injury and attempted suicide: converging evidence from four samples. *J. Abnorm. Psychol.* 122, 231–237. doi: 10.1037/a0030278

Laffier, J. L. (2016). "Social relations: Exploring how youth use social media to communicate signs and symptoms of depression and suicidal ideation," in *Youth 2.0: Social Media and Adolescence*, eds M. Walrave, K. Ponnet, E. Vanderhoven, J. Haers, and B. Segaert (Cham: Springer), 161–178. doi: 10.1007/978-3-319-27893-3_9

Lavis, A., and Winter, R. (2020). # Online harms or benefits? An ethnographic analysis of the positives and negatives of peer-support around self-harm on social media. *J. Child Psychol. Psychiatry* 61, 842–854.

Lereya, S. T., Copeland, W. E., Costello, E. J., and Wolke, D. (2015). Adult mental health consequences of peer bullying and maltreatment in childhood: two cohorts in two countries. *Lancet Psychiatry* 2, 524–531. doi: 10.1016/s2215-0366(15)00165-0

Lereya, S. T., Winsper, C., Heron, J., Lewis, G., Gunnell, D., Fisher, H. L., et al. (2013). Being bullied during childhood and the prospective pathways to self-harm in late adolescence. *J. Am. Acad. Child Adolesc. Psychiatry* 52, 608–618.e2.

Lloyd-Richardson, E. E., Perrine, N., Dierker, L., and Kelley, M. L. (2007). Characteristics and functions of non-suicidal self-injury in a community sample of adolescents. *Psychol. Med.* 37, 1183–1192. doi: 10.1017/s00332917070 0027x

Mars, B., Heron, J., Biddle, L., Donovan, J. L., Holley, R., Piper, M., et al. (2015). Exposure to, and searching for, information about suicide and self-harm on the Internet: prevalence and predictors in a population based cohort of young adults. *J. Affect. Disord.* 185, 239–245. doi: 10.1016/j.jad.2015.06.001

Mars, B., Heron, J., Klonsky, E. D., Moran, P., O'connor, R. C., Tilling, K., et al. (2019). Predictors of future suicide attempt among adolescents with suicidal thoughts or non-suicidal self-harm: a population-based birth cohort study. *Lancet Psychiatry* 6, 327–337. doi: 10.1016/s2215-0366(19)30030-6

Moreno, M. A., Ton, A., Selkie, E., and Evans, Y. (2016). Secret society 123: understanding the language of self-harm on Instagram. *J. Adolesc. Health* 58, 78–84. doi: 10.1016/j.jadohealth.2015.09.015

Morey, Y., Mellon, D., Dailami, N., Verne, J., and Tapp, A. (2017). Adolescent self-harm in the community: an update on prevalence using a self-report survey of adolescents aged 13–18 in England. *J. Public Health* 39, 58–64. doi: 10.1093/pubmed/fdw010

Muehlenkamp, J. J., and Gutierrez, P. M. (2007). Risk for suicide attempts among adolescents who engage in non-suicidal self-injury. *Arch. Suicide Res.* 11, 69–82. doi: 10.1080/13811110600992902

Muehlenkamp, J. J., Xhunga, N., and Brausch, A. M. (2018). Self-injury age of onset: a risk factor for NSSI severity and suicidal behavior. *Arch. Suicide Res.* 24, 551–563. doi: 10.1080/13811118.2018.1486252

Nesi, J., Choukas-Bradley, S., and Prinstein, M. J. (2018a). Transformation of adolescent peer relations in the social media context: Part 1—A theoretical framework and application to dyadic peer relationships. *Clin. Child Fam. Psychol. Rev.* 21, 267–294. doi: 10.1007/s10567-018-0261-x

Nesi, J., Choukas-Bradley, S., and Prinstein, M. J. (2018b). Transformation of adolescent peer relations in the social media context: Part 2—application to peer group processes and future directions for research. *Clin. Child Fam. Psychol. Rev.* 21, 295–319. doi: 10.1007/s10567-018-0262-9

Nock, M. K., Joiner, T. E. Jr., Gordon, K. H., Lloyd-Richardson, E., and Prinstein, M. J. (2006). Non-suicidal self-injury among adolescents: diagnostic correlates and relation to suicide attempts. *Psychiatry Res.* 144, 65–72. doi: 10.1016/j.psychres.2006.05.010

O'Carroll, P. W., and Potter, L. B. (1994). Suicide contagion and the reporting of suicide: recommendations from a national workshop. *MMWR Recomm. Rep.* 43, 9–18.

O'Connor, R. C., Wetherall, K., Cleare, S., Eschle, S., Drummond, J., Ferguson, E., et al. (2018). Suicide attempts and non-suicidal self-harm: national prevalence study of young adults. *BJPsych Open* 4, 142–148. doi: 10.1192/bjo.2018.14

Posner, K., Brent, D., Lucas, C., Gould, M., Stanley, B., Brown, G., et al. (2008). *Columbia-Suicide Severity Rating Scale (C-SSRS).* New York, NY: Columbia University Medical Center 2008.

Reiter, A. M., Suzuki, S., O'doherty, J. P., Li, S.-C., and Eppinger, B. (2019). Risk contagion by peers affects learning and decision-making in adolescents. *J. Exp. Psychol. Gen.* 148:1494–1504. doi: 10.1037/xge0000512

Rideout, V., and Robb, M. B. (2018). *Social Media, Social Life: Teens Reveal Their Experiences*. San Francisco, CA: Common Sense Media.

Sansone, R. A., Wiederman, M. W., and Sansone, L. A. (1998). The self-harm inventory (SHI): development of a scale for identifying self-destructive behaviors and borderline personality disorder. *J. Clin. Psychol.* 54, 973–983. doi: 10.1002/(sici)1097-4679(199811)54:7<973::aid-jclp11>3.0.co;2-h

Serafini, G., Canepa, G., Adavastro, G., Nebbia, J., Belvederi Murri, M., Erbuto, D., et al. (2017). The relationship between childhood maltreatment and non-suicidal self-injury: a systematic review. *Front. Psychiatry* 8:149. doi: 10.3389/fpsyt.2017.00149

Serafini, G., Gonda, X., Pompili, M., Rihmer, Z., Amore, M., and Engel-Yeger, B. (2016). The relationship between sensory processing patterns, alexithymia, traumatic childhood experiences, and quality of life among patients with unipolar and bipolar disorders. *Child Abuse Negl.* 62, 39–50. doi: 10.1016/j.chiabu.2016.09.013

Shanahan, N., Brennan, C., and House, A. (2019). Self-harm and social media: thematic analysis of images posted on three social media sites. *BMJ Open* 9:e027006. doi: 10.1136/bmjopen-2018-027006

Stallard, P., Spears, M., Montgomery, A. A., Phillips, R., and Sayal, K. (2013). Self-harm in young adolescents (12–16 years): onset and short-term continuation in a community sample. *BMC Psychiatry* 13:328. doi: 10.1186/1471-244X-13-328

Swedo, E. A., Beauregard, J. L., De Fijter, S., Werhan, L., Norris, K., Montgomery, M. P., et al. (2020). Associations between social media and suicidal behaviors during a youth suicide cluster in Ohio. *J. Adolesc. Health* 68, 308–316. doi: 10.1016/j.jadohealth.2020.05.049

Takizawa, R., Maughan, B., and Arseneault, L. (2014). Adult health outcomes of childhood bullying victimization: evidence from a five-decade longitudinal British birth cohort. *Am. J. Psychiatry* 171, 777–784. doi: 10.1176/appi.ajp.2014.13101401

Taliaferro, L. A., Muehlenkamp, J. J., Borowsky, I. W., Mcmorris, B. J., and Kugler, K. C. (2012). Factors distinguishing youth who report self-injurious behavior: a population-based sample. *Acad. Pediatr.* 12, 205–213. doi: 10.1016/j.acap.2012.01.008

Thorisdottir, I. E., Sigurvinsdottir, R., Asgeirsdottir, B. B., Allegrante, J. P., and Sigfusdottir, I. D. (2019). Active and passive social media use and symptoms of anxiety and depressed mood among Icelandic adolescents. *Cyberpsychol. Behav. Soc. Netw.* 22, 535–542. doi: 10.1089/cyber.2019.0079

Tørmoen, A. J., Myhre, M., Walby, F. A., Grøholt, B., and Rossow, I. (2020). Change in prevalence of self-harm from 2002 to 2018 among Norwegian adolescents. *Eur. J. Public Health* 30, 688–692. doi: 10.1093/eurpub/ckaa042

Turner, B. J., Layden, B. K., Butler, S. M., and Chapman, A. L. (2013). How often, or how many ways: clarifying the relationship between non-suicidal self-injury and suicidality. *Arch. Suicide Res.* 17, 397–415. doi: 10.1080/13811118.2013.802660

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., and Joiner, T. E. Jr. (2010). The interpersonal theory of suicide. *Psychol. Rev.* 117, 575–600.

Victor, S. E., and Klonsky, E. D. (2014). Correlates of suicide attempts among self-injurers: a meta-analysis. *Clin. Psychol. Rev.* 34, 282–297. doi: 10.1016/j.cpr.2014.03.005

Winsper, C., Lereya, T., Zanarini, M., and Wolke, D. (2012). Involvement in bullying and suicide-related behavior at 11 years: a prospective birth cohort study. *J. Am. Acad. Child Adolesc. Psychiatry* 51, 271–282.e3.

World Health Organization [WHO]. (2021). *Adolescent And Young Adult Health*. Geneva: World Health Organization.

Zhu, L., Westers, N. J., Horton, S. E., King, J. D., Diederich, A., Stewart, S. M., et al. (2016). Frequency of exposure to and engagement in nonsuicidal self-injury among inpatient adolescents. *Arch. Suicide Res.* 20, 580–590. doi: 10.1080/13811118.2016.1162240

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Suicide Exposure in a Polymediated Age

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With growing evidence that media plays a vital role in shaping public understanding of suicidality and influencing behaviours, media portrayals of suicidality have for some time been the focus of suicide prevention efforts. Traditional media has changed, and now exists alongside and within an instantaneous, interactive sharing of information created and controlled by anyone; the way most people use it today incorporates a wide variety of online communication media. *Polymedia* describes media communication as both a product and process, where anyone can contribute and act as producers, consumers, audiences, and critics. In a "Polymediated age," media exposure becomes much more complex. To understand how media exposure to suicide influences and impacts on others, it is important to take into account the *communicative ecology of media technologies* and the different interactions we can have with them. We researched the effects of this type of exposure by conducting in-depth interviews with a purposive sample of individuals who have lived experience and/or knowledge of suicide exposure via polymediated communication in the aftermath of a suicide. Using thematic analysis, our data demonstrates how exposure to suicide has become more complex as a result of new communicative media technology: it can be both a gift and a curse, difficult to distinguish, predict or control. Polymedia has the power to determine new forms of narrative and new forms of behaviour that on the one hand can provide support and prevention efforts, while on the other hand can promote conflict and cast an adverse influence on suicidal behaviour. Polymedia provides novel affordances for very intimate collective exposure to suicide. Our findings shed important new light on how the interplay between news media and social media has transformed our relationship with the information to which we're exposed. We highlight important suggestions for those working in suicide prevention to develop (1) media strategies that recognise the multiple ways in which users are exposed and impacted, and (2) mechanisms for a strategic amplification and moderation of specific types of content. Media organisations and users of social media alike can contribute to maximising the beneficial capacity of polymediated exposure to suicide.

Keywords: suicide, exposure, social media, polymedia, prevention, new media, lived experience, qualitative

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INTRODUCTION

In the last 10 years social media has risen to immense popularity and come to play an important role in shaping norms and codes of practice globally. It is used for interpersonal communication and information seeking, providing users with information and allowing them to connect with people. In 2021, 4.2 billion people worldwide (53.6% of the global population) are active social media users (Data Reportal, 2021); the UK has 53 million active social media users (71.6% of the population) (Statista, 2021).

Social media, its influence and its embeddedness in our society is ever evolving. For example, for Generation Z, who were born after 2001, digital culture is a natural part of life; the internet is relied upon exclusively for everyday communication and entertainment, and has a more authoritative position than ever as the primary source of information (Turner, 2015; Pikhart and Klímová, 2020). We are currently witnessing a much wider shift, toward a more permanently connected digital culture, where "intelligent internet," machine learning and artificial intelligence drive the connections we have with one another and the wider society, cultures and consumerism. Web 4.0, known as the symbiotic web, reflects this notion of a symbiotic interaction relationship where our devices are always on, we are always connected, and systems are learning to understand users via artificial intelligence and advanced, often opaque algorithms.

Alongside this cultural shift, literature on the topic of social media and its impact on various aspects of human life has highlighted both the negative and positive influences of intense social media use on individuals and society (Twenge, 2017; Pinker, 2018; Appel et al., 2020). In this paper, we draw attention to the benefits and risks associated with extensive media use in relation to suicidality, specifically to the context of the aftermath of a suicide.

Growing evidence suggests that exposure to suicide via media, including traditional, digital, and social media, can play a vital role in shaping public understanding of suicide, and can influence actual behaviours. It is now widely accepted that sensationalist forms of media coverage of suicide and suicidal behaviour can trigger further suicides (Niederkrotenthaler, 2017). Recent research has also suggested that audiences can also be impacted in positive ways when exposed to content on how to cope with suicidality and adverse circumstances (Niederkrotenthaler et al., 2010, 2020a). The effects of exposure via traditional media have received much research attention (e.g., Stack, 2003; Gould, 2006; Neiderkrotenthaler and Stack, 2017), along with several studies that have explored the impact of exposure via suicide-related internet use (Bell et al., 2017; Biddle et al., 2018), suicide-related educative websites (Till et al., 2017), online suicide message boards (Niederkrotenthaler et al., 2016) and online videos (Dagar and Falcone, 2020; Niederkrotenthaler et al., 2020b). However, much less is known about the impact of exposure via new online communication technologies such as social media. Research in this area to date is extremely limited.

We discussed the positive and negative impact of social media use (e.g., Facebook) in the aftermath of a suicide in our previous work which examined perspectives from lived experiences (Bailey et al., 2014; Bell et al., 2015; Bell and Bailey, 2017). On the positive side, our findings highlighted how it was a means for the bereaved to help make sense of the event and manage the distress and grief associated with the death. Participants used sites (Facebook being the most common) to reach out to users in comparable circumstances of incredible shock, trauma and sadness to provide much-needed support for one another that lasted through the immediate aftermath of the suicide, continuing for many months, sometimes years after. Negative effects included the potential for alternative contested narratives, increased distress, conflict, and suicide contagion (Bell and Bailey, 2017).

Findings from our recent research (Bell and Westoby, forthcoming) indicated that it is now common for people to find out about a suicide via social media within hours of the event and for people to spread the news instantly by sharing and re-posting; this is consistent with findings reported by Heffel et al. (2015) and Robertson et al. (2012). Some participants in Heffel et al.'s (2015) study who were close to the deceased reported feeling angry at others for constantly posting on the deceased's Facebook page; other participants found these reminders distressing. It became evident that much of the information exchanged in this way was inaccurate. Robertson et al. (2012) argue that rapid widespread rumour, speculation and information about the death facilitated by these technologies were likely to increase the risk of suicide contagion amongst young people.

Our findings were consistent with Sumner et al. (2020) in suggesting that the increased connection made possible through social media platforms such as Facebook expands the range of impact from suicide exposure in multiple ways, promulgating detailed and intimate information and sensationalising how the death is seen. More needs to be known about the positive and negative effects of this phenomenon.

At the same time, research examining the lived experience of media exposure to suicide is also very limited. Miklin et al. (2019) and others (e.g., Hjelmeland and Knizek, 2010) argue that this is an important gap in our understanding of why suicide happens and how people are affected and impacted by exposure to suicide. Miklin et al. (2019) suggest individuals may develop their own understanding of the suicide through interpersonal conversations, public health campaigns, media and individual contemplation. In this activity, a very intimate and personal experience with suicide – such as exposure to the death of a loved one by suicide – is significant because it forces one to engage in the process of meaning-making. Work by Neimeyer et al. (2006, 2014) has shown that this process is more often collective, rather than individual, as people draw from a variety of sociocultural resources and each other as they try to make sense of the death.

Thus to understand how media exposure to a death by suicide influences and impacts on others, it is important to take into account the *communicative ecology of media technologies* and the many different interactions we can have with them. This understanding must be rooted in the lived experience of those who have been exposed.

Polymedia

Polymedia refers to the abundance of media sources that are interrelated in everyday conditions (Madianou and Miller, 2012); it signifies the many different forms that media can take and the

many different interactions we can have with them. Social media, for instance, is one element of this abundant and complex weave of interrelated media sources.

The term polymedia was first proposed by Madianou and Miller (2012, 2013) to describe the emerging environment of proliferating communication opportunities and to understand the consequences of digital media in the context of interpersonal communication. They suggested that polymedia, with its emphasis on the affordances of the communicative environment, radically transforms interpersonal communication at a distance. This carries implications for the ways in which interpersonal communication is enacted and experienced.

Kudaibrgenova (2019) discussed the role of polymedia in shaping diverse discourses, pointing out that social media often spreads information ahead of conventional media and is used to actively contribute to a myriad of messages and agendas. Polymediated communication is both a product and a process, where anyone can contribute and individuals can act as producers, consumers, audiences and critics. In the context of news and information, the opportunities provided by polymedia mean that there are increased ways for the narrative to evolve. Firstly, certain content and discourses reach wider audiences much more rapidly. Secondly, audiences are no longer passive consumers of media, rather they are active participants being simultaneously consumers and producers of content (Herbig and Herrmann, 2016). By interacting with news information rather than passively consuming it, individuals spread the story further by sharing it, and generate content by commenting on it.

We argue that in a polymediated age, exposure to suicide becomes much more complex. When the creation of (suicide) content changes and spreads via the opportunities provided by polymedia, the audience is exposed to much more than the story in isolation, as would be the case in traditional news media. Rather, reactions, opinions, other experiences, beliefs and judgements are posted and reposted by users in response to the story. By doing so, the story is perpetuated by the audience; it is fluid and continues to evolve beyond its original form.

Madianou and Miller (2012, 2013) argue that polymedia also emphasises how users exploit these affordances in order to manage their emotions and relationships in the recursive process of creation. They suggest that this negotiation (and the social or emotional consequences) often becomes the message itself. This in turn raises important questions about the power of the content and the power of those who frame the agenda and the message online.

Polymedia theory has been utilised in a variety of contexts – in the field of Communication Studies, for example – but not (in so far as our own knowledge to date) in the context of exposure to suicide. However, we suggest that it provides a fruitful framework because of its emphasis on communicative ecology and the relationship between the technological and the social, and because, as Madianou (2012, 2014) points out, in polymediated communication, the ways in which users navigate media will often closely reflect their emotional and social needs.

In this article we draw upon qualitative data from in-depth interviews with a purposive sample of individuals who have lived experience and/or knowledge of suicide exposure via polymediated communication in the aftermath of a suicide. This included (1) individuals who have been bereaved and affected by suicide and (2) individuals working in services supporting those who are bereaved and affected by suicide.

We are concerned with how polymedia has changed the nature of exposure and the impact of the exposure on its audience. This presents several key questions. First: how does the news of a suicide start and spread? Second: how does the ensuing communication between users online perpetuate the spread of information? Third: how are the people who are exposed to this mass dialogue impacted? And finally: in what ways do new forms of communicative media differ from traditional media exposure?

Our analysis demonstrates how exposure to suicide has become more complex as a result of new communicative media technology (polymedia). In doing so we argue that exposure to suicide via social media can be a double edged sword (a gift or a curse). We illustrate the power of polymedia in determining new forms of narrative and new forms of behaviour that on the one hand can be leveraged to provide much needed support, disseminate reliable helping resources, and augment prevention and intervention efforts, while on the other hand can promote conflict and resentment and complicate the meaning-making process, which may cast an adverse influence on suicidal behaviour.

MATERIALS AND METHODS

The aim of the study was to gain a more detailed insight into the impact of polymediated exposure to suicide by exploring the various uses and practices of online social media communication in the aftermath of a suicide.

A panel of experts in supporting those affected or bereaved by suicide in some capacity and/or with lived experience of being bereaved or affected by suicide (i.e., those who were close to someone who died by suicide) was convened in February 2020. The panel attended a Knowledge Exchange workshop which was delivered by the authors, in collaboration with a regional Suicide Prevention Board (SPB) in the UK. The SPB consists of a range of experts responsible for the development and implementation of suicide prevention strategy in the region. An invitation to attend the workshop was circulated widely amongst contacts known to the SPB, appealing to those who had knowledge, experience and interest in the topic of social media use in the aftermath of a suicide.

The aim of the workshop was to bring together a purposive sample of experts from different professional backgrounds and with a wide range of experiences to discuss, reflect and share knowledge on the safe and responsible use of social media in the aftermath of a suicide. Amongst those that attended the workshop were a postvention service manager, police emergency responder, university student support service manager, regional suicide prevention lead, bereavement support worker, youth counsellor, school pastoral care manager, volunteer support worker, and experts in public and mental health (see **Table 1**).

The workshop lasted for half a day. Topics discussed included the uniqueness of suicide bereavement; harmful and protective

effects of social media use in the aftermath of a suicide; how social media can be harnessed to manage trauma, alleviate grief, and reach those who need support; how to mitigate against harmful effects and promote positive effects of social media use following a suicide. Discussions were guided by the facilitators (JB and CW), assisted also by the Suicide Prevention Lead and volunteer support worker with lived experience of suicide bereavement who were both members of the SPB.

All attendees completed a short qualitative evaluation survey at the end of the workshop. Using brief open-ended questions, the survey sought to establish how useful the workshop was perceived by experts to be in improving their understanding of the topic and how it might improve practice in their professional roles. At the end of the survey attendees were asked to indicate their agreement to take part in a follow-up in-depth individual interview with researchers. Attendees were also invited to nominate other known individuals with relevant lived experience (bereaved or affected by suicide) to take part in the interviews (facilitating a "snowballing" method of data collection for the researchers).

Notes were taken by the facilitators during discussions in the workshop and used as a basis to develop themes and questions for the interview guide. For example, if an issue or theme was raised and agreed upon by a significant proportion of experts at the workshop, regardless of professional background, then this would be noted as criteria worthy of further careful exploration at interviews. The workshops thus primed interview participants with respect to reflecting further on the impact of exposure to suicide via social media and their own personal and professional experiences ahead of the in-depth interviews.

The interviews (conducted online/telephone) sought to examine participants' knowledge and experiences of polymediated exposure to suicide (including social media and how, when, and why this is used) and their perceptions of the impact of this on others in the community in much more detail. Semi-structured interview guides were used to illicit detailed information, with open-ended questions allowing for variations in the ways in which participants chose to construct and tell their stories. Ethical approval for the study was granted by the Faculty of Health Sciences Research Ethics Committee at the University of Hull, United Kingdom. Written consent was sought from interview participants prior to data collection. Regardless of their own professional background and experience, all participants were also provided with information regarding local and national accessible sources of support. All participants consented to interviews being recorded, and for their anonymised data to be used in publications. We have used pseudonyms here to protect individual identities.

All recorded interviews were transcribed verbatim by a professional transcribing service. Transcribed data were analysed by the authors using the constant comparative method, an analytical process associated with grounded theory (Glaser and Strauss, 1967) and thematic analysis (Braun and Clarke, 2006). Researchers were already familiar and sensitised to the data, having undertaken the interviews and facilitated discussions at the workshop. We began by coding the data within each transcript according to emergent themes using the principles of constant and continuous comparison of data. Each code was compared to previous codes to determine if a new code or theme was required or needed to be revised. This process was repeated reiteratively until themes were fully developed. Themes were constructed and decided upon the basis of consensus among all or most interviewees. In the following sections, we present these themes, which were common to most or all participants, using data from individual participants as illustrative examples along with written narratives constructed around them.

RESULTS

Table 2 shows anonymised details of interview participants. Eight interviews, lasting between lasting between 43 and 150 min in duration were undertaken. This yielded a data set of 589 min (almost 10 h) which constituted a total of 224 pages of qualitative text. In this paper we draw on data collected at the individual interviews and not data collected at the evaluation survey.

How the News of a Suicide Starts and Spreads

> *Twenty years ago, your point of view was only in your little circle of friends, whereas now you can spread that across the world can't you?* (Isaac 872)

All our interview participants reflected on the exposure and exploitation of suicide deaths on social media; Facebook in particular is the platform in which the majority of this activity occurred, but Snapchat, Instagram, and Twitter, including their instant messaging features, also contributed to the same overarching stories. When a death by suicide occurs, these platforms facilitate the swift spread of news across the country and beyond, frequently outpacing how quickly those close to the deceased can notify one another by traditional means (phone call, face-to-face conversation). Sharing is fast and easy; it can be done by anyone, anywhere. As one of our respondents noted, "The ripples go very far and wide" (Isobel 699).

TABLE 1 | Workshop attendees by professional expertise and gender.

Gender	Profession/expertise
Male	Schools pastoral care manager
Male	Local authority schools safeguarding
Female	Local authority public health lead
Female	Police emergency responder
Female	Postvention support worker and service co-ordinator
Female	Local authority public health manager
Female	Postvention support service manager
Female	Mental health and well-being service team supervisor
Female	Children's advocacy officer and lived experience
Female	Post graduate researcher/nurse
Female	Head of university student support service
Female	Youth counsellor
Male	Public health improvement officer

TABLE 2 | Interviewees by gender, expertise and interview duration.

Gender	Expertise	Interview duration
Female (Cathy)	Professional and lived experience	150 min
Female (Lynn)	Lived experience	96 min
Female (Belinda)	Lived experience	68 min
Female (Anna)	Professional	66 min
Female (Isobel)	Professional	70 min
Male (Paul)	Professional and lived experience	50 min
Male (Isaac)	Professional	46 min
Female (Eve)	Professional and lived experience	43 min

How the news was first shared is not what most of our interviewees reported – this is often impossible to trace back – rather, it was how the news suddenly exploded. A like, comment or share of a post by one Facebook user will cause the post to appear on the newsfeed of their friends, friends of friends, and beyond. Any participation causes the reach of the narrative to widen much further. A Facebook user can tag their friend in a comment below the posted article, inviting them to join the discussion. With barely a tap or click, the sharing becomes exponential. A number of our interviewees recalled traditional media being the first to expose the suicide death to the spheres of social media. Others recalled traditional media being alerted to a suicide that is being spoken about by a relatively small community on social media, who then write an article about it, often lifting information by observing the community dialogue about it (at times even taking photos from the bereaved or deceased's Facebook pages); this is both published online and then shared across social media platforms. The sharing of their articles to social media sites attracts (or provokes) comments from other users, which hands the control of the narrative from the old media to the consumer, ensuring its continued promulgation. Comments from social media users, whether divisive, offensive, or supportive, invite further participation from other users.

Isaac commented on the overwhelming number of different thoughts and opinions on a single story one is exposed to:

> *Those comments that you click on then have clicks on them as well, so you're suddenly. . . in an arena that you probably didn't think you were going to be in. . . you're then in a whole whirlwind of ideas and. . . thoughts.* (Isaac 469–872)

Isobel noted that some users would write a new post which lamented the passing of the deceased, or repost related content, and within this post they would tag said deceased, perpetuating the spread of the news:

> *Some people's accounts were very actively used and they would continue, as in they, family members, would continue to write messages and post, repost things constantly. . . the thing of tagging the person was common.* (Isobel 866)

As more people continue to contribute by sharing, posting, commenting, tagging and liking content related to the death, more are exposed. What would traditionally be contained within a relatively local network or community surrounding the deceased now reaches an (inter)national audience. A wide variety of people are connected by the news, from those who are closely related to the deceased to those who are distantly acquainted and everyone in between.

> *What comes through your newsfeed is coming from lots of different directions, a lot of different age groups, a lot of different mix. . .. the easiest thing to do is share a meme, share a quote, share something quickly. . .. that's how Instagram works, quick.* (Lynn 1367)

Lynn's comment above illustrates what Eve refers to as the "general melee": information coming from different directions, and numerous social media platforms all contributing to the story.

Anna, a bereavement support worker who responded in a school setting following the death of a pupil, reflects on the variety of channels being used by young people to communicate about the death (Snapchat, Facebook). The choice of platforms available to social media users doubles and triples the buzz of information bombarding the closely bereaved and distantly acquainted alike with condolences, fond memories, tributes, arguments, family and friendship group politics, distress, trauma, shock, disbelief, judgements, rumour, and speculation; simultaneously, more users are continually being alerted and exposed to the death.

> *They all experienced everything in such different ways, they'd all heard so many different stories, different ways of him dying. There were some bits that didn't quite add up, clearly. They all had different opinions on how things happened. And why things happened. Everyday different rumours and different stories.* (Anna 381)

A number of our respondents discuss how the spread of information is controlled, and to what extent. We refer to this as "control over the narrative" (Bell and Westoby, forthcoming). Paul demonstrated an acceptance of news spreading via social media before anyone can stop it.

> *I contact schools and where schools have already known about it. . . they've found out on social media before they've found out from the local authority. . . It's so widely acknowledged now that actually so much goes on social media first. . . we almost expect it.* (Paul 444–449)

The struggle for control over the narrative leaves some wondering whether it is their responsibility or right to intervene. Paul observed parents not wanting details of a suicide to be exposed on social media in view of their children; they felt that privacy was appropriate at such a time, and at such an age. However, the deceased student's friends wanted to memorialise the death on social media. The school questioned whether it was their place to write a statement and whether to disable comments.

Paul is aware of the *status quo*; users of Facebook, including institutions, know that the spread of news via social media is unstoppable. It comes as a surprise but is at the same time predictable. The public have the power to perpetuate the story but are also powerless to stop it; it is a paradox of being both empowered and powerless.

How the Ensuing Communication Between Users Perpetuates the Spread of Information

Our data suggests that in the wake of a suicide death, a perceived hierarchy is constructed by those affected. Many of our participants referred to what appeared to resemble a hierarchy of who has the right to grieve, who has the right to share information and expose others to it, who has the right to control the narrative, and who has the right to access and generate both the information itself and the manner in which it is used online. There is an inner circle of those who are very close to the deceased (usually their partner, their immediate family, and close friends), a wider circle of those who know the deceased quite well, and then a periphery of those who are more distantly acquainted or do not know the deceased.

Cerel et al. (2014) propose a nested model of suicide survivorship in the context of suicide bereavement. Our data points to a similar model of concentric circles radiating outward from the people closest to the incident, who are situated in the centre. Numerous references to "hierarchy," "inner," and "outer circles" by our respondents would suggest that social media users perceive a similarly shaped hierarchy in their online community.

One important facet of a nested hierarchy is the order in which people are informed of the death. With eager sharing comes the risk of users who are close to the deceased learning of the death for the first time via social media in a manner which lacks the sensitivity of hearing from a close family member or friend. Belinda recalls giving the news of her partner's death via phone in order of who is in the inner circle: "You've got your initial layer of people you need to tell and then you're working through it. . . I haven't got to that next layer" (131). It is an example of an invisible yet perceptible hierarchical line being crossed: those closest to Belinda should be informed by phone, not social media (872). Not only is finding out from family preferred (offering a full conversation, a softened blow and reciprocated grief), it also confirms in the eyes of other users that you were close to the deceased. To learn via social media implies that your relationship with the deceased wasn't significant. Paul expresses disappointment that he learned "through some friends that. . . passed the information on via Facebook" (52). Learning through social media about the death of someone one felt close to demotes them from the inner circle; they find out at the same time as everyone else in the outer circle.

Motives for each user's participation in this spread varies from a well-intentioned tribute or raising of awareness to a vying for one's own popularity and relevancy. One of our respondents used the term "bandwagoners" to describe people in the outer circles who capitalise on the news of a suicide to further their own profile on social media. A bandwagoner will make a display of their grief and publicly reflect on their connection to the deceased in attempt to be relevant to the situation, to draw attention to themselves and to harvest likes. This phenomenon recurred throughout our interviews:

> *It's the people who are just there for the moment, who just want to be a part of it. It's the case of "oh I knew him, therefore I'm going to share it. It was like sharing and sharing and sharing and sharing and all for the likes.* (Lynn 161)

Lynn received personal messages from those trying to imply that they have a relationship with the bereaved as well as the deceased: "There was a lot of people like that... jumping on the bandwagon and messaging me all of a sudden" (127).

Isaac observed that people with only a vague connection to the deceased who strive for relevancy are looking for "their 5 min of fame" (687), which Isobel echoed:

> *Even if they were very distantly friends with that person, [they] would. . . feel the need to kind of comment publicly to say they had some sort of link. . . that level of competitiveness. . . it's almost like their fifteen minutes of fame.* (Isobel 231)

Isobel interprets the stretch to seem relevant to the deceased as comparable to how people talk about meeting a celebrity and using whatever method they could to identify themselves publicly as having some relationship to that person:

> *So they would use that kind of . . . affiliation of "well. . . I met them and I knew them" and that may have been justifying their right to grieve but it might also have been that they sense that this person was this great person who had. . . ended their life and they wanted to be part of all that hype.* (Isobel 1041)

Eve observed that those involved in the scramble to be seen were "being crushed if they're not at the top of the list" (Eve 166). This "list" refers to the hierarchy; she refers to the "quite abusive," "bitter," and "personal" nature of the exchanges. Paul refers to this as "that grief competition" (593), which Isobel confirms. Isaac (334) sees the inner circle as being impenetrable, evaluating one's worth in terms of what knowledge they were privy to *before* the person took their life. "Somebody might post up a comment and then people would sort of compete for how well they know that person" (Isobel 266). Everyone lays their cards out (I know *this*. Well, I know *this*), who knew what, and for how long, "who was closest" and therefore "who's got more right to be upset" (Isobel 53). These representations were sometimes disputed by others. Lynn described "bandwagoners" in the outer circle who sent messages recounting memories of her sibling who died by suicide as "extremely fake": "I'm going to pretend I'm grieving, I'm going to pretend I'm hurting" (Lynn 246).

The outpouring of disinhibited emotion or opinion results in different and sometimes contested representations of those involved in the event and their actions. Conflicts arise from users whose depictions are coloured by their individual beliefs: people and their actions are condoned, condemned and analysed.

> *Everybody has to react in their own way. . . they were angry and directing stuff . . . wanting to put things that are not correct on there. . . conspiracy theories and. . . who to blame.* (Belinda 270)

Cathy commented on people in the local community sphere and beyond who did not know her recently deceased son; they would express their opinions without considering that close family members can view this.

Yeah, they've got no control over, over themselves. . . they don't give a damn. . . They've just got to have their opinion. . . [They] don't know the effect it can have. (Cathy 2148)

How Those Exposed to This Mass Dialogue Are Impacted

It's very kind of hit and miss I think isn't it, with social media and how it helps, and how it doesn't help? (Anna 844)

The mass dialogue of polymediated communication forms a narrative made of many voices which we refer to as collective story-making. Exposure to collective story-making impacts users of social media in the different circles they exist in. People who are exposed are impacted in different ways. As Anna notes above, this can be a gift (offering consolation, help and support, which enables coping, meaning-making and shared grieving) and a curse (a toxic environment of drama that can lead to trauma, anger, distress, excluding and disenfranchising those in the peripheries, complicating grief and potentially contributing to suicide contagion). We begin this section by focusing on the negative impact which was underscored by many of our participants.

Firstly, our interviewees at times observed a lack of consideration for close family members from both traditional media and the online community alike. The news media sites publish an article detailed to an extent of the suicide being "sensationalised." The publication of this inspires opinionated comments from the online community, the effect of which causes the family to lose their sense of control.

That's quite devastating, knowing that you and your family's business would be splashed all over the local news. And then anybody and everybody could comment on that. (Isobel 361)

Anna offers an example of when the representation of the actions of the deceased were contested, where "thousands and thousands of comments and different opinions on what had happened" collided (422). The impact of this contested representation "causes that conflict" and "spirals outward because of the intense emotions that they feel at that time" (908). She observed that the cumulative effect of exposure to the noise and melee was overwhelming:

One young person sat up until three am in the morning scrolling through those comments, not sleeping, not eating because of what he'd seen on there. . . It definitely added that trauma for them to imagine what had happened, lots of pupils had dreams about what had happened. (Anna 443)

Similarly, Isobel recounted working with close family members, who "found it very distressing to look at Facebook or to look at photographs of the person or to hear the person's voice" (Isobel 613). As a result of this exposure, "they become so phobic that if they looked at it. . . they would go to pieces" (618).

Lynn reflects on how the behaviour of "extremely fake" bandwagoners impacted her. She described it as "triggering," referring specifically to how it contributed to her own suicidality ("I was going to take my own life" [811]).

Social media and everything going on with it adding and punching, it felt like punches. . . like drinking poison, more and more and more poison, it definitely contributed to my breakdown, and if that didn't exist and I was a. . . lot more protected, well I certainly wouldn't have had as much venom in me. (Lynn 819)

Someone known distantly to Lynn used the story of her deceased sibling on their social media to further their status as a popular mental health blogger, an experience Lynn described as "traumatic."

She became Instagram famous with a mental health blog on Instagram. . . she was constantly talking about suicide. . . she had such a grand following. . . it became quite traumatic. . . it just felt like so much exposure over time. . . I had to block and delete her. (Lynn 626)

Isobel observed different sides of the family (within the inner circles also) taking offence at the other's posts: "I can't believe that they've written on the wall because their relationship wasn't like that" (284). There is perhaps an implied element of prestige to the public "wall" of the deceased, and people who write on it without (inner circle) authority defile it and cause upset to the inner circle. As Lynn said, "know your place":

People that had nothing to do with our family, nothing to do with [the deceased], nothing to do with me. . . or barely even knew him, having something to say. . . we don't need you to talk. (Lynn 385)

Eve offered the perspective of someone who is in the outer circle being exposed to content. Her own reaction to the death was unexpected: "it devastated me. . . completely blew me out of the water. . . I just couldn't control myself" (243). She found herself compelled to visit the site but struggled to articulate why: "I was completely voyeuristic. . . I don't know what made me keep being drawn to it. . . just [a] way of working through something I think for me" (Eve 315). Eve perhaps represents somebody who draws comfort from observing the events as they unfold but chooses not to contribute to the discussion.

Paul was "desperate" to know more about a recently deceased friend who he had lost contact with as a way of seeking closure (615). However, he didn't feel as though he had a right to comment and so silently followed the conversations on Facebook.

Paul and Eve are part of a silent community of disenfranchised observers – people whose thoughts and feelings are not expressed, recognised or validated, perhaps due to a fear of judgement from others in the melee, a fear of causing further upset, or because "They didn't know how to deal with the situation" (Lynn 578). In our data, we found instances of close friends being the quiet ones, suggesting that those in the inner circle are not immune to this reticence to speak. Those in the inner circle have the added pressure of being quite obliged *to* say something. The silence of this community makes it impossible to gauge their numbers.

All of our participants were able to identify ways in which polymediated exposure had positively impacted on the mental health of users; this included bringing people together to seek and provide emotional support, sharing information, exchanging happy memories and feeling comforted. For some it was a safe and accessible space for users to express their thoughts and emotions and gain acceptance and support from others, including

signposting to helpful services and raising awareness. As Cathy notes, in essence, the positive impact came from the kindness that users shared: "There's an awful lot of kindness out there" (2173). In the final part of this section, we shift our focus to this impact.

Paul refers to the feeling of warmth and how the family of his deceased friend found this platform "really helpful" in managing their emotions (70). Social media was seen as a place for memorialising; it seems to capture something positive about the deceased and their life. Paul illustrates an example of collective story-making that was cooperative, not full of contestations: "lots and lots of really positive and really lovely, lovely posts" (62) gravitated around Twitter and Facebook.

> *It prompts people to share their memories within the comments, and I've done that also. . . All the normal, everyday stuff . . . insights into his life. . . comments from other people that you might not know. . . builds up a story of that person's life.* (Paul 62)

Paul found that the 150 people building a positive legacy for his friend, and eulogising together, prevented him from feeling the self-blame and regret often inherent in the aftermath of a suicide. He found support, rather than distress, in the repeated exposure to the content, and was able to use the platform to engage in the process of meaning-making.

Similarly, Belinda fondly reflected on users who shared "positive quotes" and "affirmations," while appraising the importance of their positive impact: these "are quite inspirational and have made me smile." She asserted that this is "what I needed" (Belinda 751). Belinda recognised "the things that refer to people's mental health" and in turn promoted this to others: "I share them on if I think they will help" (684). It is an example of the dissemination of helpful resources through users sharing and resharing.

Cathy put a post on her son's Facebook page asking people to post memories, stories and photographs: "they're lovely to me because they're new. . . I'm never going to have a new photograph of [him]" (1346). She praised the support she received through Facebook, a support that was mutual between users, who would pay attention and reach out to one another when they recognised the "signs" (2636) that indicated distress.

For Eve, it felt as though the real world was failing her, so she turned to Facebook for solace:

> *It devastated me. . . I remember going to the pub and not being able to stop crying for the night. And not knowing what way to take that. [So] it's good to go on the Facebook page. And to see. People are still remembering him and what other people are saying, that was helpful. It was really warming to go on that and hear stories about him.* (Eve 232)

Anna explained how the school pupils later themselves attempted to take control of the narrative by setting up a private Facebook group which she described as a "coping mechanism" to the benefit of their emotional wellbeing:

> *People could. . . post pictures, memories, video, all of that kind of thing. . . people would comment and say how they're feeling on that day and what they remembered about the deceased as well.* (Anna 138)

Polymedia facilitated mutual support – a kind of collective meaning-making amongst the pupils, enabling them to "pull together," express themselves, understand their emotions and the emotions of others.

> *[Pupils shared an] understanding of they're going through the same thing. . . I think it worked for them in knowing that they wasn't alone. . . a lot of questions of well, why am I the only one that feels like this? And the answer was actually. . . you may experience emotions differently but you're going through the same experience.* (Anna 762)

DISCUSSION

We have attempted to capture the communicative ecology of exposure by examining the ways in which the flow of content (what people are saying, when, where) changes the content itself. Traditional media was only one platform, one story, the monomyth (Herbig and Herrmann, 2016). Pre-social media, audiences would have been exposed to the news/details of a suicide in a less immediate and visual manner. Our analysis has highlighted how polymedia has changed the nature of media exposure to suicide. Exposure via polymedia does not begin and end with the publication of the story. It is dynamic rather than passive: the story continues to perpetuate and evolves beyond a linear trajectory as consumers share and comment on it, with different versions of events branching off in different directions, then branching further and so on. In this environment the audience is exposed to so much more. With polymedia, information spreads faster and there is a home for all of this information, imagery and intense emotion to gather in a place that is visible to everyone. The story is unfiltered and much more difficult to ignore or escape from. Rather than a monomyth, the consumers of the story are also the creators of a continuing narrative: "The process of invention occurs at both ends" (Herbig and Herrmann, 2016: 751).

Both the shared content and public comments which follow the story of a suicide death can influence how suicidality and suicidal behaviours are perceived, transmitted and responded to. As Pirkis et al. (2017) have argued, content may be interpreted very differently by different users, depending on a range of factors including their current mood: something they skip over at one point may be extremely salient for them at another. This complexity is amplified by the fact that online written text has low levels of social cues which can often lead to misunderstandings (Herbig and Herrmann, 2016). If content is highly emotive (as Madianou, 2012 and Madianou, 2014 suggests is often the case with polymediated communication in situations of unwanted exposure or scandal), there is more chance that elements of what is said will be misunderstood by the audience.

Polymediated exposure to suicide can be both a gift and a curse. For some the experience infers heightened vulnerability to suicide, for others it can help make sense of the death and infers a lesser likelihood of contagion. As Miklin et al. (2019) suggests, for some, witnessing the grief of others after exposure to suicide may generate a stronger commitment to

life, making them more committed to not dying by suicide (the "I could never do it" group, p24) and more likely to seek help and appropriate support. How an individual will be influenced depends largely on the meaning they draw from the experience, which is now a collective, multifaceted, and rapidly shifting process. It does not lend itself to the simplistic casting in binary positive or negative terms; rather, it may be a complex combination which is difficult to distinguish, predict and control.

Despite this, there are some important and useful implications that we can infer. We have discussed the potential benefits of media discourse on suicidality highlighted by the Papageno effect in our previous work: we make recommendations for postvention services and users alike to flood social media with "cookie cut" statements that ask users to demonstrate respect and empathy and to pause and consider how their comments might impact on others before posting; such statements could be accompanied by stories of hope and resilience in the aftermath of a suicide (Bell and Westoby, forthcoming). Furthermore, we suggest that services could also share posts that link people directly to further resources and information about suicide prevention (Bell and Westoby, forthcoming).

It has been argued elsewhere that by maximising reporting and content on how to cope with suicidality and adverse circumstances, media can make a very relevant contribution to suicide prevention (Niederkrotenthaler, 2017 and Niederkrotenthaler et al., 2020a). There are some signs that once this intervention has been well established, applied AI and machine learning may offer some hope of carrying it on. Since 2017 Facebook has used machine learning and artificial intelligence to detect and flag posts – or comments on posts – that signal a high risk of suicide. Their machine learning is getting rapidly better at determining the suicidal intent of a post, using DeepText and multiple classifiers like time of day, type of content, material in comments, etc. When the concern threshold is hit, the next time the person who posted the concerning content logs in, they'll receive links to help and resources and prompts to contact friends (Bell and Kasket, 2021). This is an operationalisation of the "Papageno effect." It represents a form of what Donovan and Boyd (2021) refer to as "Strategic Amplification," where Papageno-related content is detected, spread and amplified by algorithms, dampening the negative impact and remedying the spread of harmful content.

Our findings have shed important new light on how the complicated interplay between news media and social media has transformed our relationship with the information to which we are exposed, about which little is currently understood. However, being based on a small sample of individuals from an area in the north of England, our findings may have limited generalisability at present. Not all of our participants had direct lived experience, but rather worked closely with individuals who were directly affected. This sample was purposefully chosen to gain multiple perspectives, but its potential limitations should also be acknowledged. Further research of this type is needed to validate our analytical constructs and test the generalisability of our results. We need to extend our research to include representation from all participant groups; national, international and cross-cultural samples would provide increased depth and detail about how communication starts and spreads and strengthen our understanding of the impact of polymediated exposure. Future studies must include more individuals who have lived understanding, including those who work in media industries, professionals and practitioners who work in postvention services, and the wider circles of friends, acquaintances and observers.

Technology and the ways we interact with it shifts continuously. For this reason, it is also important that we continue to keep up with shifts and continue to gather new data on the topic, including data on how those exposed are impacted. It is essential that the views of ICT and media industry researchers are taken into account in future studies. Research would benefit from cross disciplinary initiatives that embrace fields such as artificial intelligence, machine learning, psychology, computer science and communication studies to elucidate new forms of knowledge.

Practices need to be updated to meet the challenges of networked media. ICT researchers must work with suicide prevention experts and media organisations to create and review policies, providing guidelines on what they should and should not amplify, and explore mechanisms for amplification.

Suicide prevention is everybody's business: the public audience and those working in suicide prevention can each be part of the strategic amplifying of Papageno-related content. It is the responsibility of all who are involved in the flow of information. Education about responsible sharing of suicide-related content, proactive protective monitoring mechanisms for families, and closer collaboration between those working in media organisations and suicide prevention will help to maximise the beneficial capacity of polymediated exposure to suicide.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because all individual participants have been promised confidentiality. Requests to access the datasets should be directed to JB, j.bell@hull.ac.uk.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Ethics Committee Faculty of Health Sciences at the University of Hull. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

JB conducted interviews. JB and CW undertook the data analysis, and conceived and wrote the manuscript. Both authors contributed to the article and approved the submitted version.

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REFERENCES

Appel, M., Marker, C., and Gnambs, T. (2020). Are social media ruining our lives? A review of meta-analytic evidence. *Rev. Gen. Psychol.* 24, 60–74. doi: 10.1177/1089268019880891

Bailey, L., Bell, J., and Kennedy, D. (2014). Continuing social presence of the dead: exploring suicide bereavement through Online Memorialisation. *New Rev. Hypermedia Multimed.* 21, 72–86. doi: 10.1080/13614568.2014.983554

Bell, J., and Bailey, L. (2017). "The use of Facebook in the aftermath of a suicide: findings from a qualitative study in England," in *Suicide and the Media: International Perspectives on Research, Theory and Policy*, eds T. Niederkrotenthaler and S. Stack (Göttingen: Hogrefe Publishing).

Bell, J., Bailey, L., and Kennedy, D. (2015). 'We do it to keep him alive': bereaved individuals' experiences of online suicide memorials and continuing bonds. *Mortality* 20, 375–389. doi: 10.1080/13576275.2015.1083693

Bell, J., and Kasket, E. (2021). The spectacle of suicide on social media: an exploration of spectacular death and spectacular grief. *Paper Presented at the Death Online Research Symposium*, København.

Bell, J., Mock, K., Gardener, E., and Pirkis, J. (2017). Suicide related internet use amongst suicidal young people in the UK: characteristics of users, effects of use, and barriers to offline help seeking. *Arch. Suicide Res.* 22, 263–277. doi: 10.1080/13811118.2017.1334609

Bell, J., and Westoby, C. (forthcoming). "The Aftermath of a suicide: social media exposure and implications for postvention," in *Suicide Risk Assessment and Prevention,* ed. M. Pompili (Berlin: Springer).

Biddle, L., Derges, J., Goldsmith, C., Donovan, J. L., and Gunnell, D. (2018). Using the internet for suicide-related purposes: contrasting findings from young people in the community, and self-harm patients admitted to hospital. *PLoS One* 13:e0197712. doi: 10.1371/journal.pone.0197712

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Cerel, J., McIntosh, J., Neimeyer, R., Maple, M., and Marshall, D. (2014). The Continuum of "Survivorship": definitional issues in the aftermath of suicide. *Suicide Life Threat. Behav.* 44, 591–600. doi: 10.1111/sltb.12093

Dagar, A., and Falcone, T. (2020). High viewership of videos about teenage suicide on YouTube. *J. Am. Acad. Child Adolesc. Psychiatry* 59, 1–3. doi: 10.1016/j.jaac.2019.10.012

Data Reportal (2021). *Digital 2021: Global Overview Report*. Available online at: https://datareportal.com/reports/digital-2021-global-overview-report (accessed May 20, 2021).

Donovan, J., and Boyd, D. (2021). Stop the presses? Moving from strategic silence to strategic amplification in a networked media ecosystem. *Am. Behav. Sci.* 65, 333–350. doi: 10.1177/0002764219878229

Glaser, B., and Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Mill Valley, CA: Sociology Press.

Gould, M. (2006). Suicide and the media. *Ann. N. Y. Acad. Sci.* 932, 200–224.

Heffel, C. J., Riggs, S. A., Ruiz, J. M., and Ruggles, M. (2015). The aftermath of a suicide cluster in the age of online social networking: a qualitative analysis of adolescent grief reactions. *Contemp. Sch. Psychol.* 19, 286–299. doi: 10.1007/s40688-015-0060-z

Herbig, A., and Herrmann, A. F. (2016). Polymediated Narrative: the case of the Supernatura Episode "Fan Fiction". *Int. J. Commun.* 10, 748–765.

Hjelmeland, H., and Knizek, B. L. (2010). Why we need qualitative research in suicidology. *Suicide Life Threat. Behav.* 40, 74–80. doi: 10.1521/suli.2010.40.1.74

Kudaibrgenova, D. T. (2019). The body global and the body traditional: a digital ethnography of Instagram and nationalism in Kazakhstan and Russia. *Centr. Asian Surv.* 38, 363–380. doi: 10.1080/02634937.2019.1650718

Madianou, M. (2012). *Migration and New Media: Transnational Families and Polymedia*. London: Routledge.

Madianou, M. (2014). Smartphones as polymedia. *J. Comput. Mediat. Commun.* 19, 667–680. doi: 10.1111/jcc412069

Madianou, M., and Miller, D. (2012). *Migration and New Media: Transnational Families and Polymedia*. London: Routledge.

Madianou, M., and Miller, D. (2013). Polymedia: towards a new theory of digital media in interpersonal communication. *Int. J. Cult. Stud.* 16, 169–187. doi: 10.1177/1367877912452486

Miklin, S., Mueller, A. S., Abrutyn, S., and Ordonez, K. (2019). What does it mean to be exposed to suicide?: Suicide exposure, suicide risk, and the importance of meaning-making. *Soc. Sci. Med.* 233, 21–27. doi: 10.1016/j.socscimed.2019.05.019

Neiderkrotenthaler, T., and Stack, S. (2017). *Suicide and the Media: International Perspectives on Research, Theory and Policy*. Göttingen: Hogrefe Publishing.

Neimeyer, R. A., Baldwin, S. A., and Gilles, J. (2006). Continuing bonds and reconstructing meaning: mitigating complications in bereavement. *Death Stud.* 30, 715–738. doi: 10.1080/07481180600848322

Neimeyer, R. A., Klass, D., and Dennis, M. R. (2014). A social constructionist account of grief: loss and the narration of meaning. *Death Stud.* 38, 485–498. doi: 10.1080/07481187.2014.913454

Niederkrotenthaler, T. (2017). "Papageno Effect: its progress in media research and contextualization with findings on harmful media effects," in *Media and Suicideeds*, eds S. Stack and T. Niederkrotenthaler (London: Routledge).

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., et al. (2020a). Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *Bmj* 368:m575. doi: 10.1136/bmj.m575

Niederkrotenthaler, T., Gould, M., Sonneck, G., Stack, S., and Till, B. (2016). Predictors of psychological improvement on non-professional suicide message boards: content analysis. *Psychol. Med.* 46, 3429–3442. doi: 10.1017/s003329171600221x

Niederkrotenthaler, T., Schacherl, R., and Till, B. (2020b). Communication about suicide in YouTube videos: content analysis of German-language videos retrieved with method-and help-related search terms. *Psychiatry Res.* 2020:113170. doi: 10.1016/j.psychres.2020.113170

Niederkrotenthaler, T., Voracek, M., Herberth, A., Till, B., Strauss, M., Etzersdorfer, E., et al. (2010). Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *Br. J. Psychiatry* 197, 234–243. doi: 10.1192/bjp.bp.109.074633

Pikhart, M., and Klímová, B. (2020). eLearning 4. 0 as a sustainability strategy for generation Z language learners: applied linguistics of second language acquisition in younger adults. *Societies* 10:38. doi: 10.3390/soc10020038

Pinker, S. (2018). *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*. New York, NY: Viking.

Pirkis, J., Mok, K., and Robinson, J. (2017). "Suicide and new media: the good, the bad, and the Googly," in *Suicide and the Media: International Perspectives on Research, Theory and Policy*, eds T. Niederkrotenthaler and S. Stack (Göttingen: Hogrefe Publishing).

Robertson, L., Skegg, K., Poore, M., Williams, S., and Taylor, B. (2012). An adolescent suicide cluster and the possible role of electronic communication technology. *Crisis* 33, 239–245. doi: 10.1027/0227-5910/a000140

Stack, S. (2003). Media coverage as a risk factor in suicide. *J. Epidemiol. Community Health* 57, 238–240. doi: 10.1136/jech.57.4.238

Statista (2021). *Social Media Useage in the United Kingdom (UK) – statistics & Facts*. Available online at: https://www.statista.com/topics/3236/social-media-usage-in-the-uk/#dossierSummary__chapter3 (accessed March 12, 2021).

Sumner, S. A., Burke, M., and Kooti, F. (2020). Adherence to suicide reporting guidelines by news shared on a social networking platform. *Proc. Natl. Acad. Sci. U.S.A.* 117, 16267–16272. doi: 10.1073/pnas.2001230117

Till, B., Tran, U. S., Voracek, M., and Niederkrotenthaler, T. (2017). Beneficial and harmful effects of educative suicide prevention websites: randomised controlled trial exploring Papageno v. Werther effects. *Br. J. Psychiatry* 211, 109–115. doi: 10.1192/bjp.bp.115.177394

Turner, A. (2015). Generation Z: technology and social interest. *J. Individ. Psychol.* 71, 103–113. doi: 10.1353/jip.2015.0021

Twenge, J. M. (2017). *IGen: Why Today's Super-Connected Kids are Growing Up Less Rebellious, More Tolerant, Less Happy—And Completely Unprepared for Adulthood—And What That Means for the Rest of Us*. New York, NY: Simon & Schuster.

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Effects of Educative Materials on Doctors' Intention to Initiate Life-Saving Procedures After a Suicide Attempt: Randomised Controlled Trial

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Introduction: The topic of euthanasia, assisted dying, and how to deal with death wishes has received strong public and media attention in many countries. Nevertheless, there is currently no research which has analysed if educative materials that favour or disfavour the initiation of life-saving measures after a suicide attempt impact on attitudes to initiate such procedures among physicians.

Materials and Methods: A double-blind randomised controlled trial was conducted to test if educative materials that either support life-saving measures or rather recommend against it after a near-fatal suicide attempt has an effect on intentions to initiate such measures (trial registration: DRKS00024953, www.drks.de). $N = 192$ doctors from the Medical University Vienna (Austria) participated in the study and either read educative materials not recommending ($n = 59$), or recommending life-saving measures ($n = 64$), or were not reading educative materials ($n = 69$, control group). The primary outcome was intentions to initiate life-saving measures in an open case vignette featuring the case of a terminally ill cancer patient. Other variables assessed were demographics, experiences with terminally ill and dying patients, training or qualification in mental health, specialty, position, whether doctors worked in emergency medicine, and attitudes toward assisted dying. A logistic regression analysis was used.

Results: There was no immediate effect of educative materials on intentions to initiate life-saving measures, $\chi^2(2) = 0.94$, $p = 0.63$. The adjusted model including all tested predictors was significant [$\chi^2(15) = 37.82$, $df = 15$, $p < 0.001$]. Attending position, male gender, low age, and more negative attitudes to assisted dying predicted a decision for life-saving measures. Higher agreement with life-saving measures was reported for a case vignette about a patient with schizophrenia than for a case vignette about a patient with Huntington's disease.

Discussion: Educative materials either favouring or disfavouring the initiation of life-saving measures after a suicide attempt do not appear to immediately influence

related decision-making processes. Related intentions appear mainly influenced by personal opinions on the topic and by the specific patient case. Good-quality in-depth discussions regarding end-of-life decisions and to develop well-founded and non-opinionated guidelines are highly warranted.

Keywords: suicide, suicide prevention, assisted suicide, emergency medicine, educative media material, media effects, end-of-life decision

INTRODUCTION

Euthanasia and assisted dying are timely yet under-researched topic areas. The public debate over end-of-life decisions has become increasingly widespread around the world in recent years (Ryynänen et al., 2002; Emanuel et al., 2016). This is related to the broader discussion on how to tackle this issue in society, policy, and healthcare (Emanuel, 1994; Moskop and Iserson, 2001; Goligher et al., 2017), and an increasing number of countries have adopted increasingly liberal legislation in recent years (Emanuel et al., 2016). In the context of societal discussions about this topic, some research has assessed attitudes toward assisted dying and euthanasia (Fekete et al., 2002; Seale, 2009; Humphrey, 2011; McCarthy, 2014; Stolz et al., 2015). These studies have often investigated attitudes in the general public (Seale, 2009; Humphrey, 2011; McCarthy, 2014; Stolz et al., 2015; Yun et al., 2018), and several findings indicate that increasingly permissive attitudes have been adopted in the general public in many countries over time (Emanuel et al., 2016). A few studies, however, have also been conducted among healthcare staff (Fried et al., 1993; Fekete et al., 2002; Ryynänen et al., 2002; Seale, 2009; Yun et al., 2018; Abohaimed et al., 2019). Healthcare personnel, particularly physicians, are of high relevance in public discourse on the topic area, because these groups are typically directly involved in end-of-life decisions, and medical professions consistently enjoy a large authority in public perceptions, which is typically higher than that of other stakeholders including politicians (Fowid, 2018; Schönherr and Zandonella, 2020). Existing literature suggests that attitudes of doctors toward end-of-life-related attitudes are not well-understood. With regard to variables potentially underlying perspectives and opinions, more experience with palliative medicine and dying patients, appears to be associated with more negative attitudes toward assisted suicide (Grassi et al., 1999; Peretti-Watel et al., 2005; Abohaimed et al., 2019). Accordingly, some studies have found that specialties and disciplines frequently treating terminally ill patients, such as oncologists (Peretti-Watel et al., 2005) and palliative medicine specialists (Seale, 2009), were less approving of euthanasia and related topics. Further, some studies reported attitudes in favour of euthanasia and assisted dying more pronounced in male doctors (Seale, 2009; Abohaimed et al., 2019), older physicians (Peretti-Watel et al., 2005; Seale, 2009), and physicians in a lower position (Abohaimed et al., 2019). Patients' diagnosis and prognosis was also found to be influencing physicians' opinions about euthanasia and assisted dying, with a more accepting attitude in terminally ill patients (Ryynänen et al., 2002).

In the wake of legislation reforms such as those seen recently in many countries surrounding the topic of euthanasia and assisted suicide, media have always been relevant to form public opinion and clearly influences public debates (Jaye et al., 2021). Media reporting on the topic area is often highly opinionated, in accordance with strong attitudes pro or against assisted suicide in specific population groups (Rietjens et al., 2013). It remains unknown, however, if opinionated media items can actually impact attitudes toward the topic of assisted suicide. From the field of media and suicide research, there is some but very little evidence which suggests opinionated reporting might indeed have some immediate impact on public attitudes. Arendt and colleagues tested in a laboratory experiment if the specific choice of wordings in a media article might influence attitudes to suicide in a lay audience (Arendt et al., 2018). They found that participants reading a media item using more permissive language related to suicide showed more positive attitudes and greater support for suicide among individuals suffering from incurable diseases than participants who read the same educative media article, but with less permissive wording for suicide (Arendt et al., 2018). Accordingly, the way of presenting suicide related content in media appears to influence how individuals interpret and value suicide in the general public.

With regard to media effects in the area of euthanasia and assisted dying, there is even less research available. Particularly, there is a clear research gap related to the question if opinionated media articles about end-of-life decisions can influence professional decision-making among healthcare staff.

To bridge this research gap, we conducted a randomised controlled trial to investigate immediate media effects of opinionated educative materials in medical doctors. We tested written educative material either favouring the acceptance of a death wish raised by suicidal patients or disfavouring the acceptance in doctors and assessed any impact of the media item on their intentions to initiate life-saving measures.

Specifically, we tested the following hypotheses:

(a) Doctors presented with educative materials favouring the initiation of life-saving measures will report higher intentions to initiate life-saving measures after reading the considerations, whereas those reading the materials disfavouring the initiation of life-saving measures will be more opposed to initiate life-saving measures, as compared to the control group.
(b) Doctors reading educative materials favouring the initiation of life-saving measures will show stronger agreement with life-saving measures whereas those reading

the materials disfavouring the initiation of life-saving measures will show stronger disagreement with life-saving measures, as compared to the control group, in different patients' scenarios.

(c) Doctors with more pro-assisted dying attitudes will be more opposed to initiate life-saving measures.

We also explored differences between gender, seniority level, specialty, and training.

MATERIALS AND METHODS

Participants

For this study, medical doctors in clinical practise, with an Austrian citizenship or permanent residence in Austria, and good German skills were included to participate. We recruited doctors at the Medical University of Vienna. The Medical University and its university hospital, AKH, is one of the largest hospitals in Europe, with around 5.500 employees. Doctors were invited to participate in a 10-min online study via e-mail invitation, which disclosed that the study would test the impact of information material on medical decision-making in emergency situations. The announcements also stated that the material would bring up topics such as suicide or a patient's wish to die, without giving specific details.

Randomisation, Blinding, and Allocation Concealment

We conducted an online, double-blind randomised controlled trial with two intervention groups and one control group from May to June 2020 (details on the study group conditions are provided in the section Materials and Procedure). All doctors of the Medical University of Vienna ($n = 1.804$ on reference date: 1 March 2021) were randomised to one of the three conditions before sending out individual e-mail invitations. Condition 1 included the reading of educative material disfavouring the initiation of life-saving measures; condition 2 included the same material but favouring life-saving measures, and condition 3 was the control group which did not receive any opinionated text (see below, procedure for more details). For randomisation, the human resources department of the Medical University of Vienna created an anonymized list of all doctors of the Medical University of Vienna using anonymized IDs (i.e., the numbers from 1 to 1.804). One of the researchers (MB) randomly assigned each anonymized ID to the numbers 1, 2, or 3, using the List Randomizer option at the www.random.org/lists website. We provided the human resources staff with the randomised list (i.e., a list of the numbers from 1 to 1.804 assigned to the numbers 1–3). Staff matched the anonymized IDs to doctors' names and e-mail addresses and sent out invitations to the online study consistent with the respective study arm. Three different study invitations were sent out with doctors assigned a 1 receiving a link to the study in experimental arm 1, doctors assigned a two receiving a link to the study in experimental arm 2, and doctors assigned a 3 receiving a link to the study in the control arm.

Materials and Procedure

Figure 1 shows the study flowchart. Once inclusion criteria were checked and informed consent was provided, participants in all groups were asked to answer a set of socio-demographic questions, including information on position, specialty, and education and training. Further, participants' experiences with terminally ill and dying patients as well as attitudes toward assisted dying were measured.

Individuals in the experimental groups 1 and 2 were then asked to read two case vignettes about patients in emergency situations. Case vignette 1 was about a 43-year-old patient with a 20-year-long history of schizophrenia who intended to end his life by drug overdosing. Case vignette 2 described a 35-year-old patient who intended to die by self-immolation 1 week after being diagnosed with Huntington's disease (leading to severe burns on 80% of his body surface). Both vignettes stated that the patients had raised a wish to die/were suicidal. Study participants were asked to imagine they were seeing these patients. After the presentation of the vignettes, participants in the experimental group 1 were presented with a brief educative text *disfavouring* the initiation of life-saving procedures (meaning to accept the wish to die). Participants in the experimental group 2 were presented with a brief educative text *favouring* the initiation of life-saving procedures (meaning not accepting the wish to die). Participants in both experimental groups were then asked to rate their agreement with the recommended measures for each case study, respectively.

Participants in the control group did not see any of these two case vignettes. All three groups, however, were presented with another case vignette. Note that this was the third vignette for participants in group 1 and 2, but the first (and only) vignette in the control group.

This was an open case vignette about a 72-year-old cancer patient who had intended to end his life with the application of a drug, pentobarbital. Individuals in all study arms were asked to imagine they were seeing this terminally ill patient in the emergency department and were then asked to choose one of the two options: (a) not initiating life-saving measures and accepting the patient's wish to die, or (b) initiating life-saving measures and not accepting the patient's wish to die. After their rating, participants were also asked to rate their response certainty on a 10-point Likert scale.

The case studies presented in the current study were based on actual descriptions of medical emergency situations described by Krones in educative materials (2018). The case vignettes and recommendations were also featured in an educative newsletter that was sent out to all German speaking physicians, including physicians from Austria, subscribing to www.coliquio.de. These materials emphasised the acceptance of death wish in the respective case vignettes, triggering controversies in Austria and Germany particularly. We adapted the recommendations to include a version favouring the initiation of life-saving measures. The brief text was developed in accordance with suicide prevention literature (Sonneck et al., 2016).

At the end of the questionnaire, the purpose of the study was disclosed to participants. Also, all participants were informed that from a suicide-preventive point of view, the recommendations

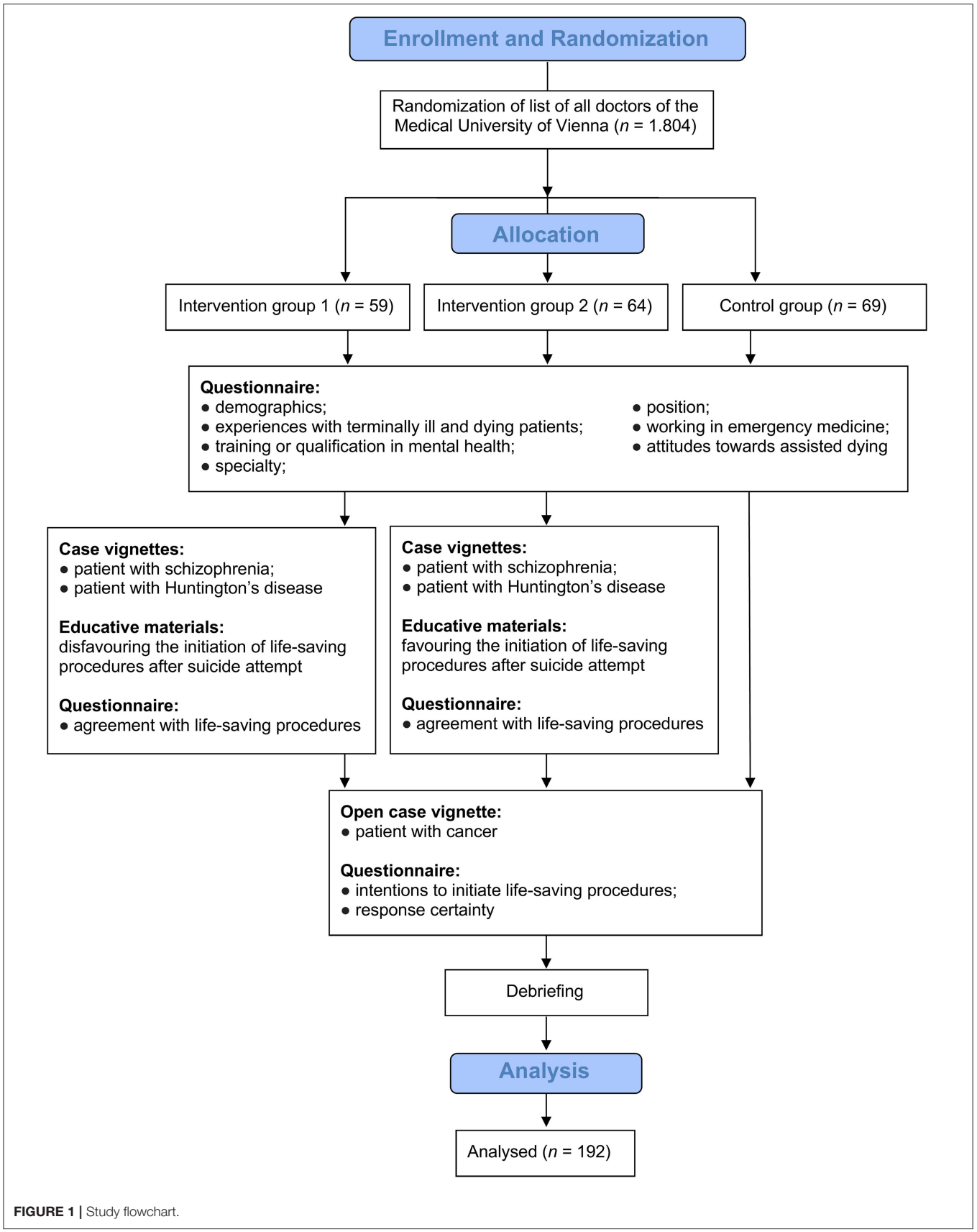

FIGURE 1 | Study flowchart.

favouring non-initiation of life-saving measures without any additional in-depth discussion about the individual cases were problematic mainly because a proper assessment of the wish to die, as suggested in the presented information texts, was often impossible without additional information and sheer speculation. Further, valuable time would be lost if cases would be discussed in detail regarding intent in the emergency setting before initiating life-saving measures.

Outcome Measures

Agreement With Life-Saving Measures in Case Vignettes About Different Patients' Scenarios

After reading the case vignettes about a patient with schizophrenia and about a patient with Huntington's disease, participants in the two intervention groups were asked to rate their agreement with the measures recommended by the educative materials (i.e., intervention group 1: disfavouring the initiation of life-saving procedures, meaning to accept the wish to die; intervention group 2: favouring the initiation of life-saving procedures, meaning not accepting the wish to die) for each case vignette, respectively (i.e., case vignette 1: patient with schizophrenia; case vignette 2: patient with Huntington's disease) on a 10-point Likert scale from 1 (strongly disagree) to 10 (strongly agree). To create an outcome variable for agreement with life-saving measures, we reverse coded participants' responses in intervention group 1 resulting in a 10-point Likert scale from 1 (agreement with wish to die) to 10 (agreement with life-saving measures) for participants in both intervention groups.

Primary Outcome: Intentions to Initiate Life-Saving Procedures in Open Case Vignette

The primary outcome in the presented study were intentions to initiate life-saving measures in the open case vignette about a 72-year-old cancer patient. Participants were asked to either (a) accept the patient's wish to die, or (b) not accept the patient's wish to die and initiate life-saving measures.

Response Certainty of Answer in Open Case Vignette

Individuals rated their response certainty of the primary outcome (i.e., the decision in the open case vignette) on a 10-point Likert scale from 1 (very uncertain) to 10 (very certain).

Attitudes Toward Assisted Dying

Attitudes toward assisted dying were measured with 4 questions that were used in the British Social Attitudes survey of public opinions (Clery et al., 2007). Respondents rated their level of agreement with 4 statements about assisted dying practises, including euthanasia and physician-assisted suicide (e.g., "First, a person with an incurable and a painful illness, from which they will die—e.g., someone dying of cancer. Do you think that, if they ask for it, a doctor should ever be allowed by law to end their life, or not?"), on a 4-point Likert scale from 1 (definitely should not be allowed) to 4 (definitely should be allowed). This questionnaire was before used in studies on physicians' attitudes to euthanasia and physician-assisted suicides (Seale, 2009). In accordance with Seale (2009) mean scores across all items were calculated to create an Assisted Dying Attitudes (ADAtt) total score ranging from 1 (low support for assisted dying) to 4 (high support for assisted dying) (Cronbach's $\alpha = 0.91$).

Personal Experiences With Terminally Ill and Dying Patients

Based on Leisch (2019), experiences in working with terminally ill and dying patients was assessed by asking participants about their agreement with the four statements: "I have experiences in assisting in caring for a terminally ill individual", "I have experiences in caring for a terminally ill individual on my own", "I have experiences in medically treating terminally ill individuals", and "I have experiences in hospice care". Based on participants' answer, we created the dichotomous variable "experience" vs. "no experience".

Position, Specialty, and Education and Training

Participants were asked about their position ("intern/resident" or "attending"), specialty ("anaesthesia/intensive care", "surgical disciplines", "internistic disciplines", "neurology, psychiatry, and psychotherapeutic medicine", or "others"), whether they worked in emergency medicine (yes vs. no), and about extra training or qualification in mental health or psychology (yes vs. no).

Power Analysis

A power analysis using G*Power 3.1.9.2 (Faul et al., 2007) indicated that an χ^2 test to analyze differences among three groups (i.e., intervention group 1, intervention group 2, and control group; $df = 2$) with a dichotomous outcome (i.e., decision for the initiation of life-saving procedures vs. decision for the initiation of life-saving procedures), using an alpha-level of 0.05 and a power of 0.80 would require a total sample size of 155 participants to detect an effect size w of 0.25.

Data Analysis

A binary logistic regression analysis was used to investigate whether participants in the three different study groups (i.e., intervention group 1, intervention group 2, and control group) differed in terms of their intentions to initiate life-saving procedures in the open case vignette (primary outcome).

To test for effects of experiences with terminally ill and dying patients, extra training or qualification in mental health or psychology, specialty, position, whether doctors worked in emergency medicine, sociodemographic variables (i.e., gender and age), and attitudes toward assisted dying on intentions to initiate life-saving procedures in the open case vignette, we calculated separate binary logistic regression analyses. Subsequently, all of the above variables were used simultaneously in an adjusted multivariable model.

We calculated a Kruskal-Wallis test to analyze differences in participants' response certainty of their decision in the open case vignette.

To test for differences in participants' agreement with life-saving measures in the case vignettes about a patient with schizophrenia and about a patient with Huntington's disease among the two experimental groups, Mann-Whitley U-tests were used.

TABLE 1 | Descriptive statistics for intervention group #1: reading educative material disfavouring life-saving procedures ($n = 59$), intervention group #2: reading educative material favouring life-saving procedures ($n = 64$), and control group: no educative material ($n = 69$).

Variable	Intervention group #1	Intervention group #2	Control group	χ^2/η
Age *M* (*SD*)	42.81 (12.36)	41.69 (10.71)	41 (10.93)	0.07[a]
Gender				
Females *n* (%)	28 (48.28)	25 (39.06)	37 (54.41)	3.14[b]
Males *n* (%)	30 (51.72%)	39 (60.94)	31 (45.59)	
Position				
Intern/resident *n* (%)	18 (30.51)	23 (35.94)	25 (37.31)	0.70[b]
Attending *n* (%)	41 (69.49)	41 (64.06)	42 (62.69)	
Specialty				
Anaesthesia/intensive care *n* (%)	11 (18.64)	11 (17.19)	13 (18.84)	7.79[c]
Surgical disciplines *n* (%)	11 (18.64)	17 (26.56)	16 (23.19)	
Internistic disciplines *n* (%)	10 (16.95)	11 (17.19)	13 (18.84)	
Neurology, psychiatry, and psychotherapeutic medicine *n* (%)	7 (11.86)	7 (10.94)	7 (10.14)	
Others *n* (%)	13 (22.03)	16 (25.00)	19 (27.54)	
More than one specialty *n* (%)	7 (11.86)	2 (3.13)	1 (1.45)	
Doctors working in emergency medicine *n* (%)	24 (40.68)	21 (32.81)	22 (31.88)	1.27[b]
Extra training or qualification in mental health or psychology *n* (%)	10 (16.95)	16 (25.00)	17 (24.64)	1.46[b]
Experiences with terminally ill and dying patients *n* (%)	53 (89.83)	59 (92.19)	63 (91.30)	0.29[b]
Pro-life-saving procedures in open case vignette *M* (*SD*)	20 (37.04)	25 (39.68)	30 (45.45)	0.94[b]
Response certainty of answer in open case vignette *M* (*SD*)	6.93 (2.72)	7.08 (2.40)	7.52 (2.60)	0.10[a]
Attitudes toward assisted dying *M* (*SD*)	2.06 (0.91)	2.33 (0.82)	2.25 (0.99)	0.12[a]

Frequencies (n), percentages (%), means (M), and standard deviations (SD) provided for each group, as well as χ^2 values from χ^2 tests and Eta coefficients from Eta coefficient tests testing group differences.

[a] *Eta coefficient.*

[b] *χ^2 test result. df = 1.*

[c] *χ^2 test result. df = 5.*

Further, differences in the agreement with life-saving measures in the presented recommendation among the two case vignettes (case 1: patient with schizophrenia vs. case 2: patient with Huntington's disease) were analysed with a Wilcoxon signed-rank test.

Ethics Statement

The study was approved by the Ethics Committee of the Medical University of Vienna and the Vienna General Hospital (study protocol 2233/2018). Participants provided consent by clicking on "Continue" and starting the online survey. The trial was registered with the German Clinical Trials Register (DRKS00024953, 31 March 2021, www.drks.de).

RESULTS

Study Participant Characteristics

In total, 192 doctors from the Medical University participated in the study (intervention group 1 with educative materials disfavouring the initiation of life-saving procedures: $n = 59$; intervention group 2 with educative materials favouring the initiation of life-saving procedures: $n = 64$; controls: $n = 69$). $N = 90$ participants were female (46.88%) and the mean age was 41.80 years ($SD = 11.30$), ranging from 25 up to 66 years. Characteristics of participants were similar between groups as indicated by χ^2 and Eta coefficient tests (**Table 1**).

Primary Outcome: Intentions to Initiate Life-Saving Procedures in Open Case Vignette

Overall, the majority of participants ($n = 108$, 56.25%) reported to accept the patients' wish to die and decided against the initiation of life-saving procedures. Participants in the different study arms did not differ in their intentions to initiate life-saving measures, $\chi^2(2) = 0.94$, $p = 0.63$. Further, no effects of experiences with terminally ill and dying patients [$\chi^2(1) = 1.09$, $p = 0.30$], training and qualification in mental health [$\chi^2(1) = 0.62$, $p = 0.43$], specialty [$\chi^2(5) = 1.90$, $p = 0.89$], position [$\chi^2(2) = 0.73$, $p = 0.70$], whether doctors worked in emergency medicine [$\chi^2(1) = 0.01$, $p = 0.91$], gender [$\chi^2(1) = 1.45$, $p = 0.23$], and age [$\chi^2(1) = 0.07$, $p = 0.79$] were found. Attitudes toward assisted dying predicted intentions to initiate life-saving procedures, $\chi^2(1) = 14.19$, < 0.001. Low support of assisted dying was associated with a tendency to decide for life-saving measures.

The adjusted model including all predictors was significant [$\chi^2(15) = 37.82$, $df = 15$, $p < 0.001$]. Attending position, male gender, low age, and low support for assisted dying predicted a decision for life-saving measures (**Table 2**).

TABLE 2 | Logistic regression analysis for predictors for intentions to initiate life-saving procedures in open case vignette.

	Crude					Adjusted				
	B	**SE**	**df**	**OR (95% CI)**	***p***	**B**	**SE**	**df**	**OR (95% CI)**	***p***
Group (Ref: control group)			2		0.63			2		0.15
Intervention group 1 (pro dying)	−0.35	0.37	1	0.71 (0.34, 1.47)	0.35	−0.88	0.46	1	0.41 (0.17, 1.03)	0.06
Intervention Group 2 (pro living)	−0.24	0.36	1	0.79 (0.39, 1.59)	0.51	−0.54	0.42	1	0.58 (0.26, 1.33)	0.20
Experiences with terminally ill and dying patients (Ref: no experience)										
With experience	−0.53	0.51	1	0.59 (0.22, 1.60)	0.30	−1.20	0.63	1	0.30 (0.09, 1.02)	0.05
Extra training in mental health (Ref: no training)										
With training	0.28			1.33 (0.66, 2.67)	0.43	−0.16	0.48	1	0.85 (0.33, 2.17)	0.73
Specialty (Ref: anaesthesia/intensive care)			5		0.89			5		0.79
Surgical disciplines	−0.02	0.48	1	0.98 (0.39, 2.52)	0.97	0.49	0.59	1	1.63 (0.51, 5.17)	0.41
Internistic disciplines	0.19	0.50	1	1.22 (0.46, 3.21)	0.70	0.22	0.59	1	1.24 (0.39, 3.97)	0.71
Neurology, psychiatry, and psychotherapeutic medicine	0.23	0.57	1	1.26 (0.41, 3.87)	0.69	0.84	0.76	1	2.32 (0.52, 10.31)	0.27
Others	0.17	0.46	1	1.18 (0.48, 2.94)	0.72	0.73	0.59	1	2.07 (0.65, 6.63)	0.22
More	−0.82	0.88	1	0.44 (0.08, 2.45)	0.35	0.02	0.96	1	1.02 (0.15, 6.75)	0.98
Position (Ref: intern/resident)			2		0.70			2		**0.02**
Attending	0.26	0.32	1	1.29 (0.69, 2.41)	0.42	1.57	0.56	1	4.80 (1.59, 14.54)	**<0.01**
Emergency medicine (Ref: no)										
In emergency medicine	0.04	0.31	1	1.04 (0.56, 1.92)	0.91	0.21	0.39	1	1.23 (0.57, 2.64)	0.59
Gender (Ref: male)										
Female	−0.37	0.30	1	0.69 (0.38, 1.26)	0.23	−0.86	0.38	1	0.42 (0.20, 0.89)	**0.02**
Age	−0.004	0.01	1	1.00 (0.97, 1.02)	0.79	−0.06	0.03	1	0.94 (0.89, 0.99)	**0.01**
Attitudes toward assisted dying (ADAtt)	−0.68	0.19	1	0.51 (0.35, 0.74)	**<0.001**	−1.10	0.24	1	0.33 (0.21, 0.53)	**<0.001**
Constant						5.16	1.38	1	174.74	**<0.001**
Omnibus-tests						$\chi^2 = 37.82$, $df = 15$, $p <$ **0.001**				
Nagelkerkes R^2						0.26				
Hosmer and Lemeshow						$\chi^2 = 8.30$, $df = 8$, $p =$ **0.41**				

Ref, Reference group; OR, Odds Ratio, CI, Confidence Interval. Significant P-values are in bold.

Secondary Outcomes

No significant differences in response certainty of the decision about the open case vignette among the three study groups were found, $\chi^2(2) = 2.41$, $p = 0.30$.

Agreement with life-saving measures were not significantly different among the two experimental groups in the case vignette about a patient with schizophrenia ($U = 1649.50$, $p = 0.43$) and in the case vignette about a patient with Huntington's disease ($U = 1581.50$, $p = 0.25$).

Participants reported significantly higher agreement with life-saving measures in the case vignette about a patient with schizophrenia ($Mdn = 9.00$) than in the case vignette about a patient with Huntington's disease ($Mdn = 8.00$), $z = -4.73$, $p < 0.001$, $N = 120$, $r = 0.43$.

DISCUSSION

This study is the first that assessed immediate effects of educative materials that either support non-initiation of life-saving measures after a suicide attempt or recommend life-saving measures on intentions to initiate such measures in physicians in a randomised controlled trial. The materials used were constructed based on original opinionated educative materials targeting physicians, using the same case vignettes.

We found no immediate effect of educative material on doctors' intentions to initiate life-saving procedures after a patient's suicide attempt. Further, personal experiences with terminally ill and dying patients and extra training in mental health did not appear to have an effect on those intentions. Also, decision patterns were independent from whether doctors worked in emergency medicine and did not differ among different medical specialties.

Rather, the present findings indicate that intentions to initiate life-saving measures after a patient's suicide attempt were largely depending on personal attitudes toward assisted dying. Doctors with pro-assisted dying attitudes showed stronger disagreement with life-saving measures and had a more accepting opinion toward the patients' wish to die, regardless of what educative materials they were presented with. Other variables at least partially explaining differences in intentions to initiate life-saving measures included doctors' position, gender, and age. Stronger attitudes in favour of life-saving were seen among more senior physicians, males, and younger doctors. Also the specific patient case and scenario, i.e., his or her diagnosis (and prognosis),

appeared to make some difference. Specifically, attitudes in favour of life-saving were higher in a patient with a severe psychiatric disorder (schizophrenia) as compared to a terminally ill patient (Huntington's disease with severe burns).

Some of the present findings are consistent with previous studies. Consistent with findings from a French (Peretti-Watel et al., 2005) and a British study (Seale, 2009), younger physicians showed more attitudes in favour of life-saving. In line with Abohaimed et al. (2019), more senior physicians showed more favourable opinions toward life-saving procedures. This may be attributed to the fact that more senior physicians may have treated more patients and may be more aware of treatment alternatives. Our finding that physicians were more accepting of non-life-saving treatment in terminally ill patients (as compared to a psychiatric patient) is also consistent with previous research (Fried et al., 1993; Ryynänen et al., 2002).

The present study indicated some differences to previously published literature, where attitudes and opinions about life-saving treatment varied with medical specialty (Peretti-Watel et al., 2005; Seale, 2009) and with experiences with terminally ill and dying patients (Grassi et al., 1999; Peretti-Watel et al., 2005; Abohaimed et al., 2019). Further, previous findings (Seale, 2009; Abohaimed et al., 2019) suggested attitudes more positive of euthanasia in males whereas we found an opposite pattern with higher intentions to initiate life-saving measures in males. Considering that previous studies have not typically used actual case vignettes and did not assess intentions to initiate life-saving measures (but rather assessed general opinions on euthanasia and assisted dying), findings of this study might not be fully comparable. Further, this study was conducted at a major university hospital and findings in this setting might not be representative of smaller or less specialised clinical settings.

Limitations

The study has some limitations. First, we measured effects of educative material after a brief one-time exposure to educative materials only. It remains unclear whether repeated exposure might have a stronger effect. In the light of ongoing discussions on end-of-life decisions, assisted suicide, patient will, and euthanasia, frequent exposure to educative materials as well as discussion items in media are very likely and might still have a relevant impact. Second, we assed data on a fairly mixed group of physicians from one large university hospital, with some underrepresented specialties. Further, we cannot rule out selection bias due to interest in the study topic. A comparison of baseline data suggests that physicians assigned to the three study groups did not differ on important baseline characteristics, suggesting that the randomisation process worked regarding these variables, and should not result in biassed assessments in the effect of the educative materials. The present findings on the effects of other variables (beyond media impact) such as attitudes, however, might not be representative of the entire staff or beyond the university hospital. Further, there are other variables beyond those assessed that might have an impact on decision-making. Specifically, we did not ask about religious beliefs which may also attitudes toward end-of-life care (Ryynänen et al., 2002; Seale, 2009; Abohaimed et al., 2019). Further, outcome variables were assessed post-exposure to the material only. But a successful randomisation process generally compensates for a lack of baseline characteristics. Finally, this study measured attitudes only and did not capture actual behaviour (i.e., actual decisions in emergency situations).

Implications and Recommendation

With the public and professional debate over end-of-life decisions lately becoming more active (Emanuel, 1994; Moskop and Iserson, 2001; Emanuel et al., 2016; Goligher et al., 2017), and a number of countries adopting increasingly liberal legislation, including Austria, where assisted suicide will be legalised as with 2022 (https://www.vfgh.gv.at/downloads/VfGH-Erkenntnis_G_139_2019_vom_11.12.2020.pdf), discussions regarding ethical aspects of euthanasia and assisted suicide and how to respond to patients with death wished are highly controversial (Materstvedt et al., 2003; Sontheimer, 2008; Olié and Courtet, 2016; Henman, 2017). Considering these active, and often highly opinionated, debates and the timeliness of the topic area, stronger guidance appears highly warranted in order to facilitate a state-of-the art decision-making on how to manage such instances of suicide attempts. Even though no effect of one-time exposure to opinionated material either favouring or disfavouring physicians' intentions to initiate life-saving procedures was found in the present study, we cannot rule out that repetitive exposure to opinionated material circulating in public media might still have an impact on attitudes, and potentially, decision-making. This is concerning if the discussion lacks sufficient depth in order to properly address patient needs. We were unable to assess if the opinionated materials presented in this study resulted in any useful discussions about the topic. No matter which specific decision would be deemed most accurate in a specific patient case, any helpful discussion would always carefully reflect about the issue, and aim for an understanding of the individual patient case that is as complete as possible. In the current case vignettes, which were drawn from a real source, much of the relevant information was not provided or discussed. Any effect of these vignettes to increase pro-end-of-life considerations would have been highly concerning.

Particularly in times of legislation reforms with ongoing public debates on end-of-life decisions, further insights about mechanisms underlying doctors' attitudes regarding these decisions and the role of media material in influencing opinions are highly warranted. There is a strong need for good-quality in-depth discussions regarding end-of-life decisions among medical professionals and the general public and to develop well-founded and non-opinionated guidelines.

CONCLUSION

One-time exposure to educative materials related to end-of-life-decisions does not appear to influence intentions to provide

life-saving support after a suicide attempt in doctors at a university clinic. Intentions to initiate life-saving procedures after suicide attempts appear mainly influenced by personal opinions on the topic but also by the specific patient case. Education and discussion efforts in this area need to acknowledge the important roles of personal opinions and attitudes for decision-making processes in this topic area and should aim for providing accurate well-reflected inter-disciplinary professional guidance about how to manage such situations.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because of a non-distribution agreement with the data protection commission of the Medical University of Vienna. Requests to access the datasets should be directed to Thomas Niederkrotenthaler, thomas.niederkrotenthaler@meduniwien.ac.at.

ETHICS STATEMENT

The study was approved by the Ethics Committee of the Medical University of Vienna and the Vienna General Hospital (study protocol 2233/2018). Participants provided consent by clicking on "Continue" and starting the online survey.

AUTHOR CONTRIBUTIONS

MB and TN contributed to conception and design of the study, and conducted the study. MB performed the statistical analysis, supervised by TN. MB wrote the first draft of the manuscript. TN wrote sections of the manuscript. Both authors contributed to manuscript revision, read, and approved the submitted version.

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REFERENCES

Abohaimed, S., Matar, B., Al-Shimali, H., Al-Thalji, K., Al-Othman, O., Zurba, Y., et al. (2019). Attitudes of physicians toward different types of euthanasia in Kuwait. *Med. Princ. Pract.* 28, 199–207. doi: 10.1159/000497377

Arendt, F., Scherr, S., Niederkrotenthaler, T., and Till, B. (2018). The role of language in suicide reporting: investigating the influence of problematic suicide referents. *Soc. Sci. Med.* 208, 165–171. doi: 10.1016/j.socscimed.2018.02.008

Clery, E., McLean, S., and Phillips, M. (2007). "Quickening death: the euthanasia debate," in *British Social Attitudes: Perspectives on a Changing Society. 23rd Annual Report*, eds. A. Park, J. Curtice, K. Thomson, M. Phillips, and M. Johnson, M (London: Sage), 35–54.

Emanuel, E. J. (1994). The history of euthanasia debates in the United States and Britain. *Ann. Intern. Med.* 121, 793–802. doi: 10.7326/0003-4819-121-10-199411150-00010

Emanuel, E. J., Onwuteaka-Philipsen, B. D., Urwin, J. W., and Cohen, J. (2016). Attitudes and practices of euthanasia and physician-assisted suicide in the United States, Canada, and Europe. *JAMA*. 316, 79–90. doi: 10.1001/jama.2016.8499

Faul, F., Erdfelder, E., Lang, A. G., and Buchner, A. (2007). G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39, 175–191. doi: 10.3758/bf03193146

Fekete, S., Osvath, P., and Jegesy, A. (2002). Attitudes of Hungarian students and nurses to physician assisted suicide. *J. Med. Ethics*. 28:126. doi: 10.1136/jme.28.2.126

Fowid, –, Forschungsgruppe Weltanschauungen in Deutschland. (2018). *Berufsprestige 2013-2016 [Occupational prestige 2013-2016].* Available online at: https://fowid.de/meldung/berufsprestige-2013--2016-node3302 (accessed July 3, 2021).

Fried, T. R., Stein, M. D., O'Sullivan, P. S., Brock, D. W., and Novack, D. H. (1993). Limits of patient autonomy: physician attitudes and practices regarding life-sustaining treatments and euthanasia. *Arch. Intern. Med.* 153, 722–728. doi: 10.1001/archinte.153.6.722

Goligher, E. C., Ely, E. W., Sulmasy, D. P., Bakker, J., Raphael, J., Volandes, A. E., et al. (2017). Physician-assisted suicide and euthanasia in the ICU: a dialogue on core ethical issues. *Crit. Care Med.* 45, 149–155. doi: 10.1097/CCM.0000000000001818

Grassi, L., Magnani, K., and Ercolani, M. (1999). Attitudes toward euthanasia and physician-assisted suicide among Italian primary care physicians. *J. Pain Symptom Manage.* 17, 188–196. doi: 10.1016/s0885-3924(98)00155-9

Henman, M. P. (2017). Suicidal patients with a do-not-resuscitate order. *J. Emerg. Med.* 52, 117–120. doi: 10.1016/j.jemermed.2016.09.004

Humphrey, T. (2011). *The Harris Poll #9.* Available online at: http://www.prnewswire.com/news-releases/large-majorities-support-doctor-assisted-suicide-for-terminally-ill-patients-in-great-pain-114540239.html (accessed July 3, 2021).

Jaye, C., Lomax-Sawyers, I., Young, J., and Egan, R. (2021). The people speak: social media on euthanasia/assisted dying. *Med. Humanit.* 47, 47–55. doi: 10.1136/medhum-2018-011565

Krones, T. (2018). Suizidversuche in der Notfallmedizin: mein Wille geschehe – ethische Aspekte [Suicide attempts in emergency medicine: my will be done – ethical aspects]. *Notfall + Rettungsmedizin* 21, 117–185. doi: 10.1007/s10049-018-0448-1

Leisch, M. M. (2019). *Opinions of medical students and health professionals on active voluntary euthanasia and assisted suicide.* [master's thesis]. Medical University of Vienna, Austim.

Materstvedt, L. J., Clark, D., Ellershaw, J., Førde, R., Boeck Gravgaard, A.-M., Müller-Busch, H. C., et al. (2003). Euthanasia and physician-assisted suicide: a view from an EAPC Ethics Task Force. *Palliat. Med.* 17, 97–101. doi: 10.1191/0269216303pm673oa

McCarthy, J. (2014). *Seven in 10 Americans Back Euthanasia.* Gallup website. Available online at: http://www.gallup.com/poll/171704/seven-americans-back-euthanasia.aspx (accessed July 3, 2021).

Moskop, J. C., and Iserson, K. V. (2001). Emergency physicians and physician-assisted suicide, part I: a review of the physician-assisted suicide debate. *Ann. Emerg. Med.* 38, 570–575. doi: 10.1067/mem.2001.118860

Olié, E., and Courtet, P. (2016). The controversial issue of euthanasia in patients with psychiatric illness. *JAMA* 316, 656–657. doi: 10.1001/jama.2016.9883

Peretti-Watel, P., Bendiane, M. K., and Moatti, J. P. (2005). Attitudes toward palliative care, conceptions of euthanasia and opinions about its legalization among French physicians. *Soc. Sci. Med.* 60, 1781–1793. doi: 10.1016/j.socscimed.2004.08.037

Rietjens, J. A., Raijmakers, N. J., Kouwenhoven, P. S., Seale, C., van Thiel, G. J., Trappenburg, M., et al. (2013). News media coverage of euthanasia: a content analysis of Dutch national newspapers. *BMC Med. Ethics* 14:11. doi: 10.1186/1472-6939-14-11

Ryynänen, O. P., Myllykangas, M., Viren, M., and Heino, H. (2002). Attitudes toward euthanasia among physicians, nurses and the general public in Finland. *Public Health* 116, 322–331. doi: 10.1038/sj.ph.1900875

Schönherr, D., and Zandonella, M. (2020). *Arbeitsbedingungen und Berufsprestige von Beschäftigten in systemrelevanten Berufen in Österreich [labour conditions and occupational prestige among employees in system-relevant professions].*

Available online at: https://arbeiterkammer.at/interessenvertretung/arbeitundsoziales/arbeitsmarkt/AK_Studie_Arbeitsbedingungen_in_systemrelevanten_Berufen.pdf (accessed July 3, 2021).

Seale, C. (2009). Legalisation of euthanasia or physician-assisted suicide: survey of doctors' attitudes. *Palliat. Med*. 23, 205–212. doi: 10.1177/0269216308102041

Sonneck, G., Kapusta, N., Tomandl, G., and Voracek, M. (2016). *Krisenintervention und Suizidverhütung. [Crisis intervention and suicide prevention*]. Wien: UTB facultas.wuv.

Sontheimer, D. (2008). Suicide by advance directive? *J. Med. Ethics*. 34:e4. doi: 10.1136/jme.2008.025619

Stolz, E., Burkert, N., Großschädl, F., Rasky, E.va, Stronegger, W. J., and Freidl, W. (2015). Determinants of public attitudes toward euthanasia in adults and physician-assisted death in neonates in Austria: a national survey. *PLoS ONE*. 10:e0124320. doi: 10.1371/journal.pone.0124320

Yun, Y. H., Kim, K. N., Sim, J. A., Yoo, S. H., Kim, M., Kim, Y. A., et al. (2018). Comparison of attitudes toward five end-of-life care interventions (active pain control, withdrawal of futile life-sustaining treatment, passive euthanasia, active euthanasia and physician-assisted suicide): a multicentred cross-sectional survey of Korean patients with cancer, their family caregivers, physicians and the general Korean population. *BMJ Open*. 8:e020519. doi: 10.1136/bmjopen-2017-020519

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ORIGINAL RESEARCH
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A Short Media Training Session Is Effective in Reinforcing Psychiatrists' Communication Skills About Suicide

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Because it has been associated with significant increases [through the Werther Effect (WE)] or decreases [through the Papageno Effect (PE)] of suicide rates, media coverage of suicide-related events is recognized as a prevention leverage. Unfortunately, the recommendations that the World Health Organization (WHO) has published to help journalists reporting on suicide remain poorly applied. The Mini Media Training (MMT) is a short media training session designed to increase psychiatrists' ability to communicate about suicide during interviews. We aimed at assessing the effect of the MMT on psychiatrists' ability to help journalists complying with the WHO recommendations. From June 2017 to December 2019, 173 physicians and residents in psychiatry were recruited during French national congresses. At baseline (T0) and 1 and 3 months later (T1), participants received the MMT, which consisted in a simulated interview where they we asked to answer a journalist about a mock suicide. Communication skills were measured with a score summing the number of delivered pieces of advice in relation to the WHO recommendations, with a maximum score of 33. A weighted score was also derived based on the degree of directivity needed for the participant to provide these items, again with a possible maximum of 33. A total of 132 psychiatrists participated in the study at T0 and T1. Both the weighted and unweighted score significantly increased from T0 to T1 ($d = +2.08$, $p < 0.001$, and $d = +1.24$, $p < 0.001$, respectively). Having a history of contacts with journalists, a short professional experience (<3 years) and prior knowledge of the WE, PE, and WHO recommendations were significantly associated with greater unweighted and weighted scores at baseline. The latter two variables also predicted greater T0–T1 improvement of the weighted score. These results suggest that the MMT could be effective for improving the ability of psychiatrists to guide journalists toward more responsible media coverage of suicide. As a short, easy to implement educational activity, the MMT could therefore be considered in association with other measures to help media professionals mitigating the WE and promoting the PE.

Keywords: suicide, media, Werther effect, Papageno effect, psychiatrist, training

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Abbreviations: MMT, Mini Media Training; PE, Papageno Effect; WE, Werther Effect; WHO, World Health Organization.

INTRODUCTION

Despite sustained prevention efforts, suicide still accounts for 1.4% of premature deaths worldwide (Bachmann, 2018). In most Asian, American and European regions, it remains one of the top ten causes of age standardized years of life loss (Naghavi, 2019). In France, suicide has caused about 9,280 evitable deaths in 2016 (Observatoire National du Suicide, 2019).

In response to this alarming observation, the World Health Organization (WHO) has set, in its Global Mental Health Action Plan, the objective of a 10% decrease of suicides over the period 2013–2020 (WHO, 2019). Among prevention actions recommended as efficient, the WHO promotes the empowerment of media professionals in reporting on suicide-related events. For more than half a century, the literature has indeed provided robust evidence that incautious media coverage of suicide is associated with a substantial increase of suicide rates, especially in young populations (Phillips, 1974; Leon et al., 2014) and/or when a celebrity in involved (Niederkrotenthaler et al., 2020). Detrimental consequences of suicide-related reports have been tagged "Werther Effect" (WE) in reference to the European suicide epidemy that followed the publication of Goethes' *Sorrow of the Young Werther* (Von Goethe, 1774). Conversely, more limited but growing evidence exist that specific media productions, such as testimonies of individuals who successfully coped with a suicidal crisis, could reduce suicidal ideations, increase life satisfaction, provide knowledge about suicide-related matters and promote help-seeking behaviors in readers or viewers (Niederkrotenthaler et al., 2019). Niederkrotenthaler et al. (2010) coined Papageno Effect (PE) the possible protective effects of such portray in reference to the resilient character of Mozart's opera *The Magic Flute*.

Importantly, both the WE and PE have been related to specific characteristics of media productions. From a quantitative point of view, the risk of WE increases with the number and length of articles and broadcasts according to a dose-effect relationship (Etzersdorfer et al., 2004; Pirkis et al., 2006). From a qualitative point of view, using a sensational tone, describing with precision the mean and place of the suicidal event or displaying the term "suicide" in the headline have been related to stronger WE, presumably due to greater salience and emotional impact (Etzersdorfer et al., 2004; Pirkis et al., 2006; Niederkrotenthaler and Sonneck, 2007; Niederkrotenthaler et al., 2010; Notredame et al., 2015). Conversely, the literature suggests that suicide-related reports that contribute to debunk stereotypes around suicide and highlight help resources promote the PE (Niederkrotenthaler et al., 2014; Notredame et al., 2016).

To improve media coverage of suicide, the WHO published in 2008 eleven recommendations for media professionals (World Health Organization (WHO), and International Association for Suicide Prevention (IASP), 2008). Basically, the document encourages journalists to raise awareness about suicide without spreading misconceptions, to carefully consider the relevance of covering a suicide-related event that has already been reported, to avoid sensationalizing or normalizing style and wording, to remain vague when describing the mean and place of the suicide and to pay special attention when dealing with a celebrity suicide. In 2017, the WHO added a twelfth recommendation dedicated to the promotion of the PE by encouraging journalists to provide precisions about how to deal with stressors or suicidal thoughts and how to get help (World Health Organization (WHO), and International Association for Suicide Prevention (IASP), 2017).

Regrettably, release of national adaptations of the WHO recommendations has led to mixed results (Tatum et al., 2010; Chandra et al., 2014). Michel et al. (2000) for instance, observed that the publication of the Swiss guidelines resulted in an overall improvement of the quality of the reporting, but also in a significant increase of the number of articles dealing with suicide. This observation violates one of the most critical recommendation about avoiding redundancy in suicide-related information (Michel et al., 2000). Fu and Yip (2009) failed to find any significant difference in the compliance of media productions to the WHO recommendations before and after their national release. Likewise, Tatum et al. (2010) observed that the newspapers articles about suicide published in the 2 years after the release of the United States media guidelines did not consistently reflect their influence.

One possible account for the poor compliance of media productions with guidelines (Collings and Kemp, 2010) is that journalists are rarely aware of their responsibility about suicide and remain mostly uninformed of the existence of any recommendations (Jamieson et al., 2003). Therefore, rather than a simple publication and distribution process, a global interdisciplinary approach involving consultation and collaboration with media professionals may be needed for the WHO guidelines to be applied (Notredame et al., 2016).

In France, the Papageno Program works since 2015 at preventing suicide contagion and promoting access to care by leveraging different communication channels.[1] One of its core goal consists in reaching better compliance with the WHO recommendations in media productions. Inspired by similar national initiatives (Skehan et al., 2009; Scherr et al., 2019; Duncan and Luce, 2020), the Papageno program carries out a multimodal strategy associating the spread of a French translation of the WHO guidelines with the publication of resources and the organization of training sessions for media actors, professionals and students. More recently, the program also considered strengthening the role of psychiatrists in the prevention of the WE and promotion of the PE.

Because they are frequently interviewed as experts about suicidal behaviors, psychiatrists are key resources to raise media stakeholders' awareness about the possible consequences of suicide coverage and to help them addressing themes in relations with suicidal behaviors. However, psychiatrists and psychotherapists were shown to endorse very heterogenous theories and understandings about media effects on mental health (Arendt and Scherr, 2017). Most French medical curricula don't include any course or training about public communication. Thereby, psychiatrists tend to feel uncomfortable about responding to journalists and media contributors or even mistrust them. As a consequence, they often decline their interview request.

[1] www.papageno-suicide.com

To create new opportunities for improving media coverage of suicide, the Papageno Program developed a Mini Media Training (MMT) session specifically designed for mental health professionals. The MMT aims at raising psychiatrists' awareness about the importance of communicating about suicide, at delivering accurate information about the WE and PE, at strengthening their capacity to respond to journalists in compliance with the WHO recommendations and at promoting reliable resources. The training session consists in a 10-min roleplay where psychiatrists are asked to answer the questions of a fiction journalist about a celebrity suicide. After this mock interview, the psychiatrists are offered a feedback based on their responses. As a positive reinforcer, answers in line with the WHO recommendations are pinpointed and likely positive consequences highlighted. The instructor then informs the participants about not-cited recommendations and provides advice about how to introduce them to journalists. Finally, psychiatrists receive a booklet containing the French version of the WHO recommendations.

The primary objective of the present study is to assess the effect of the MMT on psychiatrists' ability to communicate about suicide in a way that helps journalists apply the WHO recommendations. We also studied the predictors of this ability and of its progression after the MMT.

MATERIALS AND METHODS

Participants

Participants were French-speaking voluntary psychiatrists and residents in psychiatry recruited during eight French national psychiatry congresses that took place between June 2017 and December 2019. All participants provided their oral consent.

Procedure

The participants were approached randomly during the psychiatry congresses (T0). They were informed orally and in writing about the study as part as the recruitment procedure. They were told that they were going to participate in a research aiming at evaluating the ability of psychiatrists to respond journalists about suicidal events. Then, participants were briefly introduced to the Papageno Program and were given an overview of the study process. They were then administered self-questionnaires about their sociodemographic characteristics, before receiving a face-to-face MMT. The instructor that led the mock interviews was also the main investigator of the study (KW). The MMT started with a short, standardized introduction providing some elements of context about the fictious suicide that motivated the interview. The instructor pretended he was a journalist working for a local newspaper. He explained that the body a famous French actor had just been discovered. He added that the actor had left a suicide note to his wife.

To test the extent to which the participant was able to spontaneously avoid talking about the specific case of the actor but rather provide general advice to guide the journalist, the questions were formulated to create three levels of directivity:

1. "What can you tell me about this suicide" (no directivity).
2. "What can you tell me about suicide in general" (low directivity).
3. "Do you have any advice for us to write our article" (strong directivity).

Between 1 and 3 months later (T1), the participants were called to carry on a second MMT by phone. They were informed of this recall at the time of their recruitment, at T0. They were explained that they would receive a text message or e-mail to schedule the appointment. The structure of the interview was exactly the same as in the first MMT. The scenario was analogous as respect to the type of event but changed in content. The instructor told the participant that a young singer who participated to a TV show was found dead in one location and surrounded by objects suggesting a death by suicide. The death was told to have occurred 3 days after the leak of a sextape involving the singer. The questions that the mock journalist asked were the same as at T0.

Both T0 and T1 were audio recorded.

Outcomes

To assess the effect of the MMT, we developed a 33-items score of compliance with WHO recommendations (the WHOr score). Twenty-seven items of this grid consisted in direct operationalization of the WHO recommendations. The last six items assessed whether the participant informed the journalist about the WE and PE, avoided taking about the specific suicide case, and promoted reliable resources such as the consultation of the WHO recommendations (**Table 1**). The audio-records of the interviews were screened based on the 33 items of the WHOr score. One point was attributed for each cited item, and the total score was calculated by summing the points (unweighted WHOr score). To measure the ability of the psychiatrist to spontaneously deliver the pieces of advice, we also calculated a weighted WHOr score attributing three points when the items were spontaneously cited, two points when they were cited after a lowly directive question and one point when they were cited after a highly directive question. The total weighted WHOr score was calculated by summing the points, then dividing by three to bring the total score to 33, like the unweighted WHOr score. These scores also made it possible to take into account the degree of adherence of psychiatrists to WHO recommendations. The higher these scores, the more the psychiatrists adhered to the recommendations.

Ratings were carried out by two researchers (KW and SV, who practiced rating based on recordings collected during a pilot study at current work Kappa coefficients were calculated for each of the items (see **Supplementary Table 1**). The items for which the Kappa was less than 0.6 (N = 11) were reviewed by the 2 assessors for harmonization of the rating (Landis and Koch, 1977).

Co-variables

We collected several variables to describe the sample: (1) socio-demographic characteristics: age (in years), gender (male, female), (2) professional information: status (psychiatrist,

TABLE 1 | Items of the WHOr score and the codebook defining each of them.

Generalities
1. Make yourself available to journalists: Score only when the participant makes himself available to the journalist for after the interview.
2. Encourage the consultation of the WHO recommendations: Score only when the participant specifically or explicitly mentions WHO recommendations.
3. Consult reliable scientific resources.
4. Inform about the Werther effect.
5. Inform about the Papageno effect.
6. Refuse to comment on the specific case: Rate when the participant does not give his opinion on the suicide mentioned, or does not take a position on it. Do not rate responses that make assumptions related to the suicide mentioned, or that describe the facts related to it.
WHO recommendation 1: take the opportunity to educate the public about suicide
7. Advise against presenting suicide as a consequence of a single cause: Score when the participant explicitly refers to the multifactorial nature of suicide, or when he describes in detail the process of the suicidal crisis by highlighting the chain of the different factors involved.
8. Encourage people to remember that suicide is often associated with psychiatric illness or substance use: Rate only those responses that clearly emphasize that psychiatric illness or substance use is frequently associated with suicide.
9. Encourage talking about suicide/dispel myths: Rate responses that prompt the journalist to talk about suicide in general, as well as responses that encourage journalists to de-stigmatize suicide.
10. Encourage the inclusion of elements suggesting that suicide is as a major public health problem: Rate responses that use arguments indicating that suicide is a public health issue. Do not rate responses that simply mention the frequent nature of suicide.
11. Encourage giving information about suicide risk factors or warning signs: Rate the responses that suggest the existence of risk factors for suicide by explicitly using the expression, or by mentioning risk factors by presenting them as such. Rate the responses that suggest the existence of warning signs at the onset of suicide, either explicitly using the expression or an equivalent, or by describing the dynamic process of the suicidal crisis.
12. Encourage mentioning the suicidal thoughts that preceded the act: Score only those responses that link the presence of suicidal ideation to a suicide act. Do not rate responses that only evoke suicidal ideation without associating them with a suicidal gesture.
WHO recommendation 2: avoid any language that sensationalizes or normalizes suicide, or presents it as a solution
13. Discourage language elements that tend to sensationalize, normalize, trivialize, or criminalize the act of suicide: Rate the responses that make the journalist aware of the importance of the elements of language used in talking about a suicide, or that encourage thejournalist to avoid any emotional content in the mention of a suicidal fact.
14. Encourage not to use expressions such as “successful suicide” or “failed attempt”.
15. Discourage language elements that contribute to presenting suicide as a solution: Rate only those responses that explicitly encourage the journalist not to present suicide as a solution.
WHO recommendation 3: avoid prominent placement and undue repetition of stories about suicide
16. Avoid repeating the coverage a suicide story/questioning the relevance of a new article: Rate the responses which insist on the harmful effect of the repeated media coverage of a suicidal event, or which explicitly question the relevance of writing an article on this subject. Do not rate responses that question the content of the article, without questioning the very existence of the article.
17. Recommend not placing the article on the first page or at the top of the page: Rate only those responses that clearly indicate that the article dealing with the suicide incident should not be featured in the newspaper.
18. In general, advise against highlighting and over-mediating suicidal events: Rate the responses that clearly emphasize the necessary differentiation that must be made, by the media, between the specific suicidal act, and suicide in general, and which clearly indicates that the emphasis should be on the second and not on the first.
WHO recommendation 4: avoid explicit descriptions of the method used in a completed or attempted suicide
19. Recommend not detailing the means used during a suicide or attempted suicide: Rate only those responses that clearly indicate that suicidal means should not be used in the article or story.
WHO recommendation 5: avoid providing detailed information about the site of a completed or attempted suicide
20. Advise against any detailed information concerning the place where the suicide or attempted suicide took place, as well as the history of this place in matters of suicide: Rate only those responses that clearly indicate that the location of the suicide took place in the article or story.
21. Advise against any details concerning the suicidal act: Rate only those responses that clearly advise reporters against giving details of the suicide incident itself. Do not rate responses that advise against dealing with suicide in particular without emphasizing not going into the details of the suicide in question.
WHO recommendation 6: word headlines carefully
22. Discourage the use of the word “suicide” in headlines, or the location or method of suicide.
WHO recommendation 7: exercise caution in using photographs or video footage
23. Discourage using inappropriate image(s) about the suicide.
24. Invite not to publish the content of the farewell letter: Score only those responses that clearly indicate that publication of the found farewell letter should be avoided.

(Continued)

TABLE 1 | Continued

WHO recommendation 8: take particular care when reporting celebrity suicides
25. Encourage the treatment of a celebrity suicide or attempted suicide with caution, without valuing the gesture and/or by recontextualizing: Rate only the responses that link the specificity of a celebrity's suicide, with at least one of the following three points concerning the media coverage of this suicide: caution, lack of valuation of the gesture, and recontextualization (or an equivalent at least one of the three). Do not rate responses that simply evoke the celebrity of the person without making the connection to one of the three dimensions mentioned above.
26. Encourage to focus on the consequences that the suicidal behavior will have: Rate the answers that clearly mention one type of possible consequence of the act. Do not rate responses that simply state that there will be consequences, without specifying which ones.
27. Discourage speculation about the possibility of a suicidal cause for the unexplained death of a celebrity: Rate only those responses that stress the need to be certain that the fact mentioned is indeed suicide. Do not rate responses that imply that the suicide in question is certain.
WHO recommendation 9: show due consideration for people bereaved by suicide
28. Encourage respect for the privacy of the family and friends of the person affected by the suicide.
29. Recommend avoiding the interviews of families and friends persons who died by suicide.
WHO recommendation 10: provide information about where to seek help
30. Encourage giving information about resources/where to find help: Rate only those responses that clearly cite a specific worker or structure from which a person with suicidal thoughts can find help.
31. Encourage people to talk about the possibility of action, of care: Rate the responses that evoke the possibility of aid, prevention, care, and the fight against suicide. Do not rate the answers that start from the example of the deceased person to evoke the possibility of taking charge of a suicidal crisis.
32. Encourage giving examples of interventions that have contributed to prevent suicidal behaviors: Rate responses that suggest that the journalist include an insert in the article that includes the testimony of a person who has successfully overcome a suicidal crisis.
WHO recommendation 11: recognize that media professionals themselves may be affected by stories about suicide
33. Mention the potential impact and/or resonance that a suicidal behavior can induce in journalists: Rate only the answers clearly mentioning the resonances that the suicidal act can have on the journalist.

resident in psychiatry), professional experience (in years), hospital activity (yes, no), (3) level of knowledge (high if the participant reported to know the WE, the PE and the WHO recommendations, medium if the respondent declared to know one of the three notions, and low if none of the notions were known), and (4) media relations: previous experience with journalists (no experience, have already been solicited but without having answered, having already been interviewed).

Analysis

The baseline characteristics were described and compared between respondents and non-respondents at T1 using Chi-square tests for proportions and Student's tests for means.

To assess the effect of the MMT, analyses were only performed in participants who responded to both T0 and T1. Effect-sizes of change in mean WHOr scores were calculated using Cohen's d for a paired samples by dividing the mean difference by the standard deviation of the difference. Within-subjects *t*-test was performed to compare WHOr scores at T0 and T1.

To identify factors likely to influence the WHOr score and its improvement after the MMT, we computed multivariate linear regression models with the WHOr scores at T0 and T1 being the outcome variable.

We adjusted the models for gender (male, female), professional experience (in years, categorized into four quartiles), hospital activity (yes, no), level of knowledge (high, medium, and low) and history regarding relations with media (no experience, solicited, and interviewed). Age and status were not included due to redundancy with the information provided by the variable "professional experience." The models explaining the WHOr scores at T1 were additionally adjusted for the score at baseline. Associations between factors and WHOr scores were presented as differences and 95% confidence intervals (CI 95%).

The tests were two-tailed, and the level of significance was 0.05. Analyses were performed using R 3.6.1.

RESULTS

Sample Characteristics

The characteristics of the respondents are described in **Table 2**. Among the psychiatrists and residents in psychiatry attending the French national psychiatry congresses, 173 volunteered to participate in the study at T0, and 132 also participated at T1 (response rate = 76%). No differences at baseline were found between respondents and non-respondents at T1.

Impact of the Mini Media Training

Both the unweighted and the weighted WHOr scores increased at T1 (**Figure 1**). The average unweighted WHOr score was 4.72 (±2.78) at T0 and 6.80 (±3.41) at T1 (difference = 2.08, $p < 0.001$). The average weighted WHOr score was 3.02 (±2.00) at T0 and 4.26 (±2.31) at T1 (difference = 1.24, $p < 0.001$). Depending on whether we relied on the unweighted or weighted WHOr score, this corresponded to a Cohen's d equal to 0.76 or 0.65, respectively.

TABLE 2 | Baseline characteristics of the respondents and non-respondents at T1.

	Overall sample	Non-respondents at T1	Respondents at T1	*p*
	N = 173	*N* = 41	*N* = 132	
Age, *m* (sd)	41.7 (15.7)	45.5 (15.2)	40.5 (15.7)	0.074
Genre, *n* (%)				0.913
Male	81 (46.8)	20 (48.8)	61 (46.2)	
Female	92 (53.2)	21 (51.2)	71 (53.8)	
Status, *n* (%)				0.127
Psychiatrist	116 (67.1)	32 (78.0)	84 (63.6)	
Resident	57 (32.9)	9 (22.0)	48 (36.4)	
Professional experience, *m* (sd)	14.6 (14.1)	17.4 (14.1)	13.8 (14.1)	0.153
Hospital activity, *n* (%)				0.112
Yes	132 (76.3)	27 (65.9)	105 (79.5)	
No	41 (23.7)	14 (34.1)	27 (20.5)	
Previous experience with journalists, *n* (%)				0.224
No previous experience	77 (44.5)	20 (48.8)	57 (43.2)	
Solicited	16 (9.2)	1 (2.4)	15 (11.4)	
Interviewed	80 (46.2)	20 (48.8)	60 (45.5)	
Previous knowledge, *n* (%)				0.590
Low	20 (11.6)	19 (46.3)	54 (40.9)	
Medium	80 (46.2)	19 (46.3)	61 (46.2)	
High	73 (42.2)	3 (7.3)	17 (12.9)	
Unweighted WHOr score, *m* (sd)	4.64 (2.65)	4.39 (2.20)	4.72 (2.78)	0.489
Weighted WHOr score, *m* (sd)	2.97 (1.88)	2.81 (1.43)	3.02 (2.00)	0.535

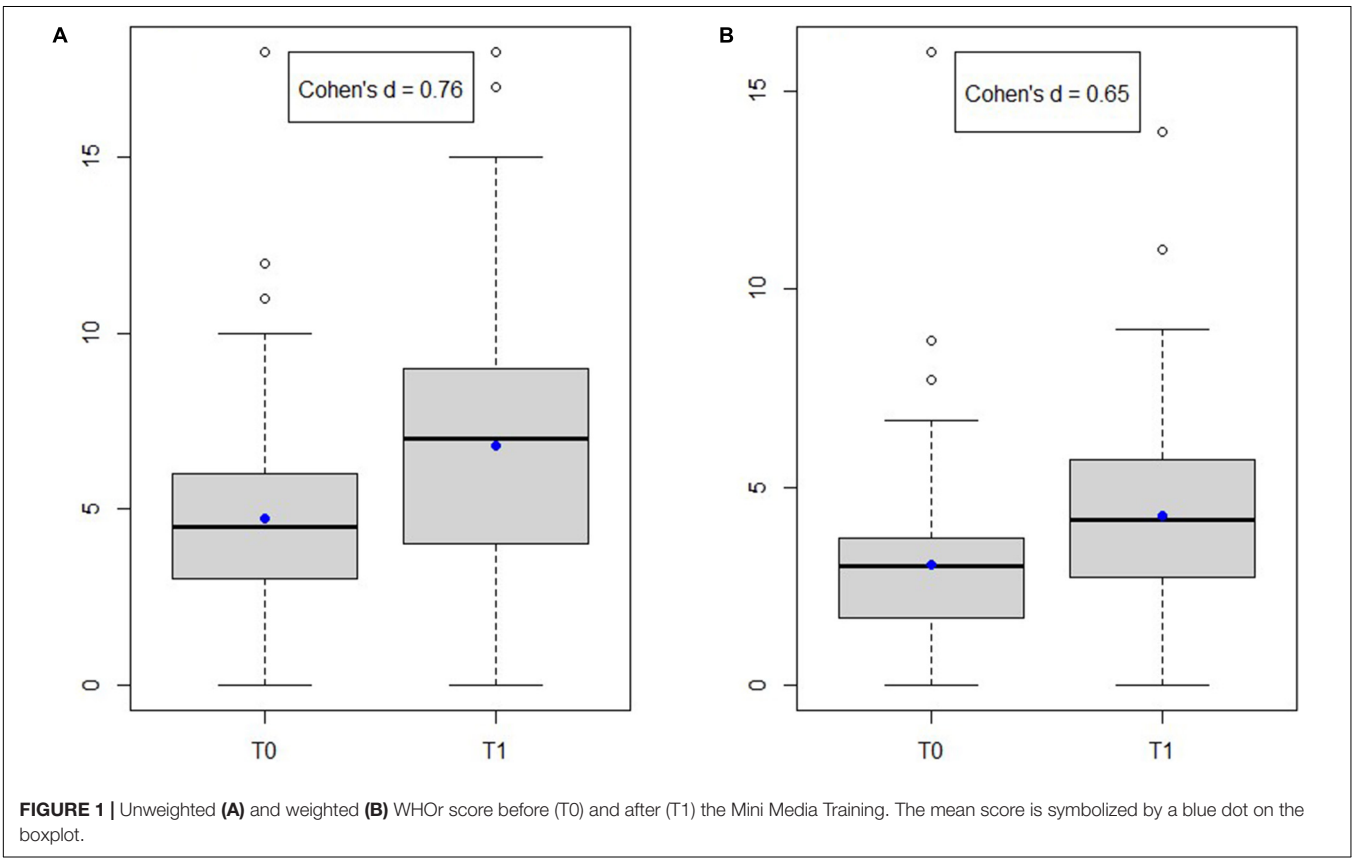

FIGURE 1 | Unweighted **(A)** and weighted **(B)** WHOr score before (T0) and after (T1) the Mini Media Training. The mean score is symbolized by a blue dot on the boxplot.

The detailed responses to T0 and T1, item by item and depending on the level of directivity, are provided in **Supplementary Table 2**.

Factors Associated With the WHOr Score

Results of the models explaining the WHOr scores at T0 are presented in **Figure 2**. Compared to psychiatrists with short professional experience (<3 years), those reporting a long professional experience (>28 years) had a significantly lower WHOr score at T0 (estimate [CI 95%] = −2.17 [−3.36, −0.97], $p < 0.001$ for the unweighted WHOr score, and −1.17 [−2.02, −0.32], $p = 0.007$ for the weighted score. Conversely, a high level of knowledge was associated with a better WHOr score at T0 compared to a low level of knowledge (estimate [CI 95%] = 2.16 [0.87, 3.44], $p = 0.001$ for the unweighted WHOr score, and 1.67 [0.76, 2.58], $p < 0.001$ for the weighted WHOr score). In the model explaining the weighted WHOr score, having an experience of media interview was also associated with a score was also associated with a higher score (estimate [CI 95%] = 0.64 [0.01, 1.28], $p = 0.049$).

Results of the models explaining the WHOr scores at T1 are presented in **Figure 3**. After adjusting for the score at baseline (the higher the T0 score, the higher the T1 score), professional experience was still associated with a lower WHOr score at T1. Compared to psychiatrists reporting an experience under 3 years, those with a more than 28 years of experience had a lower WHOr score at T1 (estimate [CI 95%] = −2.74 [−4.19, −1.30], $p < 0.001$ for the unweighted WHOr score, and −1.55 [−2.53, −0.57], $p = 0.002$ for the weighted WHOr score). In the model explaining the unweighted WHOr score, this difference was also significant for those reporting 7–28 years of experience (estimate [CI 95%] = −1.47 [−2.83, −0.11], $p < 0.034$). A high level of knowledge was only associated with the weighted WHOr score (estimate [CI 95%] = 1.26 [0.22, 2.31], $p = 0.018$).

DISCUSSION

Main Results

Among the 132 psychiatry physicians that completed both T0 and T1 assessments, the MMT resulted in significant improvements of both weighted and unweighted WHOr scores, suggesting better abilities in advising journalists about media coverage of suicide. Having a shorter professional experience, a history of contact with journalists and stronger general knowledge about the WE, PE, and the WHO recommendations were associated with greater communication skills at baseline. All these characteristics, along with prior experience in communicating with media, also predicted a better weighted WHOr score at T1.

Interpretation

These results support the relevance of the MMT for improving psychiatrists' ability to guide journalists toward more responsible media coverage of suicide. After the MMT, physicians where more prone to deliver relevant pieces of advice in relation with the WHO recommendations, as suggested by the significant T0–T1 increase of the WHOr unweighted score. The T0–T1 progression of the weighted score also indicate a stronger tendency to

Variable		N	Estimate	p	Estimate	p
Professional experience	< 3 years	51	Reference		Reference	
	4-7 years	41	0.27 (-0.77, 1.31)	0.606	0.49 (-0.25, 1.23)	0.196
	7-28 years	39	-0.99 (-2.13, 0.15)	0.087	-0.38 (-1.19, 0.43)	0.356
	> 28 years	42	-2.17 (-3.36, -0.97)	<0.001	-1.17 (-2.02, -0.32)	0.007
Gender	Male	81	Reference		Reference	
	Female	92	-0.07 (-0.84, 0.71)	0.869	-0.05 (-0.61, 0.50)	0.847
Hospital activity	No	41	Reference		Reference	
	Yes	132	0.23 (-0.70, 1.16)	0.633	0.21 (-0.45, 0.87)	0.526
Media experience	No experience	77	Reference		Reference	
	Solicited	16	0.05 (-1.33, 1.43)	0.947	0.08 (-0.90, 1.06)	0.871
	Interviewed	80	0.70 (-0.20, 1.60)	0.125	0.64 (0.00, 1.28)	0.049
Knowledge	Low	73	Reference		Reference	
	Medium	80	0.49 (-0.34, 1.32)	0.249	0.23 (-0.36, 0.82)	0.443
	High	20	2.16 (0.87, 3.44)	0.001	1.67 (0.76, 2.58)	<0.001

FIGURE 2 | Factors associated with the unweighted and the weighted WHOr scores at T0–Results of the multivariate linear regression models.

Variable		N	Estimate	p	Estimate	p
Baseline score		132		0.61 (0.44, 0.78) <0.001		0.58 (0.41, 0.74) <0.001
Professional experience	< 3 years	41		Reference		Reference
	4-7 years	37		-0.09 (-1.22, 1.04) 0.877		0.24 (-0.54, 1.03) 0.542
	7-28 years	23		-1.47 (-2.83, -0.11) 0.034		-0.78 (-1.71, 0.15) 0.099
	> 28 years	31		-2.74 (-4.19, -1.30) <0.001		-1.55 (-2.53, -0.57) 0.002
Gender	Male	61		Reference		Reference
	Female	71		0.34 (-0.55, 1.23) 0.449		0.38 (-0.24, 0.99) 0.229
Hospital activity	No	27		Reference		Reference
	Yes	105		0.19 (-0.93, 1.30) 0.741		0.07 (-0.70, 0.84) 0.860
Media experience	No experience	57		Reference		Reference
	Solicited	15		-1.20 (-2.69, 0.28) 0.111		-0.24 (-1.27, 0.79) 0.649
	Interviewed	60		0.03 (-1.05, 1.10) 0.962		0.03 (-0.71, 0.78) 0.930
Knowledge	Low	54		Reference		Reference
	Medium	61		0.32 (-0.63, 1.26) 0.510		0.16 (-0.50, 0.81) 0.634
	High	17		1.13 (-0.35, 2.61) 0.135		1.26 (0.22, 2.31) 0.018

FIGURE 3 | Factors associated with the unweighted and the weighted WHOr scores at T1–Results of the multivariate linear regression models.

deliver these recommendations spontaneously. It is noteworthy–and maybe counterintuitive–that younger professionals have been found to be more comfortable communicating with journalists than their older counterparts. This may reflect a generational gap according to which younger populations are more aware of contemporaneous communication challenges because they grew in a highly mediatic environment (Horst, 2012). The consequences of communication about suicide, in particular, has gained a considerable interest in the past 10 years (Niederkrotenthaler and Till, 2019), with possible translations into the curriculum of young doctors. Also, minimal professional experience may be associated with greater plasticity of professional identity, and possibly greater availably to the acquisition of new professional skills. This may explain that the MMT appeared more beneficial to early career than to confirmed psychiatrists.

The participants had better performances during the interviews when they had greater prior knowledge of the WE, PE, and WHO recommendations. This result was expected since literacy is usually considered as a prerequisite for, or potentiator of, professional skills, especially as regards to suicide prevention (Inman et al., 1984). Although they did not necessarily know each of the recommendations, it is likely that psychiatrists relied on their general awareness of the WE and PE to infer the relevant pieces of advice to provide to the journalists. The level of prior knowledge about the effect of media coverage of suicide at baseline predicted a greater progression of the WHOr weighted score between T0 and T1, but not of the unweighted score. Rather than informing about the new pieces of advice to deliver, the MMT may have helped psychiatrists who already had knowledge about suicide-related communication to take a stronger lead during the interview and guide more proactively the journalists.

Finally, it was also expected that participants who already had contacts with journalists would have greater weighted scores at baseline than the rest of the sample. Indeed, already having dealt with journalists is likely to be associated with greater confidence during interviews, and therefore with greater ease in spontaneously giving advice to media professionals.

Perspective

The journalistic work is driven by strong missions and constrains that might sometimes contradict prevention perspectives, especially when it comes to suicidal behaviors. For instance, the duty to provide information in a context of increasing economic pressure and of competition with social media incite media professionals to rapidly release high impact productions (Collings and Kemp, 2010). This may lead to structural contradictions with the principles of the WHO recommendations by urging journalists to use catchy headlines, explicit pictures or a sensational tone. Some journalists may also perceive externally applied recommendations as restrictions for their freedom of information (Notredame et al., 2016; Yaqub et al., 2020). Despite these possible sticking points, most media professionals show a strong interest in mental health issues. In a survey that inquired 20 journalists by a self-questionnaire sent over the Internet, 90% of the sample agreed that the press could be used as a vehicle for spreading information about mental health (Barasino et al., 2016; Legrand, 2016). However, the respondents also expressed some frustration

because many psychiatrists refused, ignored, or responded after a long delay to their interview request. As a short, easy to implement pedagogical format, the MMT may offer a solution to mitigate this interprofessional gap. It encourages and give psychiatrists the tools to actively present themselves as resources for journalists. While breaking with a prescriptive or moralizing attitude, it helps them endorsing the role of prevention ambassadors, overcoming the possible points of tension between media demands and health principles, and, in turn, raise awareness in journalists. Beyond simply delivering technical advice, this effort to make media and mental health perspectives converge may be the condition for both mental health professionals and journalists to really grasp the challenges of the WHO recommendations and thus apply them (Notredame et al., 2016).

According to our results, students and young psychiatrists could be a primary target for such educative programs. Assuming that residency and early carrier is the privileged period for physicians to build their professional identity, delivering media-oriented training sessions such as the MMT during this time of the curriculum could help raising a culture of collaboration between journalists and mental health professionals at the benefit of suicide prevention (Notredame et al., 2016).

Limits

To our knowledge, the present study is the first evaluated initiative taken to improve the communication skills of psychiatrists about suicide. However, several methodological limitations need to be taken in account. (1) The experimental setting was not exactly the same at T0 and T1. For ecological reasons, we organized a face-to-face simulation exercise at T0, while the interview was carried out by telephone at T1. This may alter the possibility to impute the observed score variations to the MMT because of reduced comparability between the assessment points. However, it is very unlikely that phone contacts had, by themselves, improved the performance of the psychiatrists. In addition, this protocol helped considerably minimizing the attrition bias which was less than 25%. (2) Due to agenda constrains of the participants, the time lag between T0 and T1 varied from 1 and 3 months, which may have introduced variability in the performances due to a memory retention bias. If our results allow to be pretty confident about the effect of the MMT at 1 month, other studies could be led to confirm the remanence of this effect on longer periods. (3) During the training interviews, the journalist adopted a neutral position without bouncing on the psychiatrist's responses or pushing him to his limits. Such conditions may lack realism, and it is possible that the trained psychiatrists would show poorer performances in an ecological context. An interesting development path for MMT could be to divide the participants into two groups, one with a journalist adopting a neutral tone, the other with a journalist with a more aggressive style. Such work would make it possible to better understand the potential influence of journalistic style on the quality of the psychiatrist's responses. (4) Investigators had to deal with rating ambiguities between some items of the WHOr scale. For example, the items "Avoid repeating the coverage of a suicidal behavior/questioning the relevance of a new article" and "In general, advise against highlighting and over-mediating suicidal events" were sometimes overlapping (5) As the MMT evaluates the effectiveness of the entire intervention, i.e., the debriefing associated with the brochure given to the participant at the end of T0, it was unfortunately not possible to attribute the observed effect to any of the components of MMT. (6) Although still very influent in France and worldwide (Newman et al., 2021), journalism isn't the only source of suicide-related media productions. For instance, suicidal contents are frequent on websites (Baker and Fortune, 2008) and social media (Ruder et al., 2011), with a large panel of stakeholders involved such as citizens, webmasters, or blog moderators. Also, the notion of "suicidal contents" cannot be summed up to reports of suicidal behaviors. Testimonies, general information, posts or fictions may also be concerned by the risk of WE and opportunity of PE. To that respect the MMT has a rather narrow scope and specific variations should be considered.

CONCLUSION

The MMT appears as an interesting tool to improve psychiatrists' ability to guide journalists toward a more responsible media coverage of suicide. In a relatively short time, it raises awareness about the effects of suicide-related communication and trains the participants to concretely help journalists better applying the WHO recommendations. Because actioning indirect levers, its sole implementation would certainly not be sufficient to reduce the WE and promote the PE. However, the MMT aims at involving psychiatrists as active stakeholders in the collective effort for safer media productions about suicide. As such, it may be synergistic with other actions organized in France by the Papageno program, such as the publication of national adaptation of the recommendations (Legrand, 2016), more complete media trainings (Legrand, 2016) or collaborations between mental health trainees and students in journalism (Notredame et al., 2016).

DATA AVAILABILITY STATEMENT

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

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 for participation was not required for this study in accordance with the national legislation and the institutional requirements. Written informed consent was not obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

C-EN and NP were responsible for the original idea of the Mini-Media Training. C-EN conceived the protocol. KW carried out the Mini-Media Training sessions and collected the data. KW and SV rated the interviews and managed the data. MW performed the analysis. KW, C-EN, and MW wrote the manuscript with support from NP, SV, PG, and GV. GV supervised the whole project. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2021.733691/full#supplementary-material

Supplementary Table 1 | Initial kappa coefficients for each item (in red, items whose initial kappa coefficients were less than 0.6).

Supplementary Table 2 | Responses to each of the items of the WHOr score according to the level of directivity at T0 and T1 (paired sample, *N* = 132).

REFERENCES

Arendt, F., and Scherr, S. (2017). A qualitative study on health practitioners' subjective theories regarding the media effects on depression-related outcomes. *Suicidol. Online* 8, 78–88.

Bachmann, S. (2018). Epidemiology of Suicide and the Psychiatric Perspective. *Int. J. Environ. Res. Public Health* 15:1425. doi: 10.3390/ijerph15071425

Baker, D., and Fortune, S. (2008). Understanding self-harm and suicide websites: a qualitative interview study of young adult website users. *Crisis* 29, 118–122. doi: 10.1027/0227-5910.29.3.118

Barasino, O., Laurent, A., and Charrel, C.-L. (2016). *Journalistes, Psychiatres : les voix de la Communication*. Available Online at: https://www.f2rsmpsy.fr/100-journalistes-psychiatres-voix-communication.html [accessed Jun 12, 2021].

Chandra, P. S., Doraiswamy, P., Padmanabh, A., and Philip, M. (2014). Do newspaper reports of suicides comply with standard suicide reporting guidelines? A study from Bangalore, India. *Int. J. Soc. Psychiatry* 60, 687–694. doi: 10.1177/0020764013513438

Collings, S. C., and Kemp, C. G. (2010). Death knocks, professional practice, and the public good: the media experience of suicide reporting in New Zealand. *Soc. Sci. Med.* 71, 244–248. doi: 10.1016/j.socscimed.2010.03.017

Duncan, S., and Luce, A. (2020). Teaching responsible suicide reporting (RSR): using storytelling as a pedagogy to advance media reporting of suicide. *Journal. Educ.* 9, 18–31.

Etzersdorfer, E., Voracek, M., and Sonneck, G. (2004). A dose-response relationship between imitational suicides and newspaper distribution. *Arch. Suicide Res.* 8, 137–145. doi: 10.1080/13811110490270985

Fu, K.-W., and Yip, P. S. F. (2009). Estimating the risk for suicide following the suicide deaths of 3 Asian entertainment celebrities: a meta-analytic approach. *J. Clin. Psychiatry* 70, 869–878. doi: 10.4088/jcp.08m04240

Horst, H. A. (2012). "New Media Technologies in Everyday Life," in *Digital Anthropology*, eds, H. A. Horst, and D. Miller. (Oxfordshire: Routledge), 19.

Inman, D. J., Bascue, L. O., Kahn, W. J., and Shaw, P. A. (1984). The relationship between suicide knowledge and suicide interviewing skill. *Death Educ.* 8, 179–184. doi: 10.1080/07481188408252456

Jamieson, P., Jamieson, K. H., and Romer, D. (2003). The responsible reporting of suicide in print journalism. *Am. Behav. Sci.* 46, 1643–1660. doi: 10.1177/0002764203254620

Landis, J. R., and Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33, 159–174. doi: 10.2307/2529310

Legrand, C. (2016). *Accompagner les journalistes vers un traitement médiatique plus responsable du suicide. Le rôle des psychiatres*. Available Online at: https://papageno-suicide.com/publications-scientifiques/ [accessed Jun 12, 2021].

Leon, S. L., Cloutier, P., BéLair, M.-A., and Cappelli, M. (2014). Media coverage of youth suicides and its impact on paediatric mental health emergency department presentations. *Healthc. Policy* 10, 97–107.

Michel, K., Frey, C., Wyss, K., and Valach, L. (2000). An exercise in improving suicide reporting in print media. *Crisis* 21, 71–79. doi: 10.1027//0227-5910.21.2.71

Naghavi, M. (2019). Global Burden of Disease Self-Harm Collaborators. Global, regional, and national burden of suicide mortality 1990 to 2016: systematic analysis for the Global Burden of Disease Study 2016. *BMJ* 364:l94. doi: 10.1136/bmj.l94

Newman, N., Fletcher, R., Schulz, A., Andi, S., Robertson, C. T., and Nielsen, R. K. (2021). *Reuters Institute Digital News Report 2021*. Oxford: Reuters Institute for the Study of Journalism.

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., et al. (2020). Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 368:m575. doi: 10.1136/bmj.m575

Niederkrotenthaler, T., Reidenberg, D. J., Till, B., and Gould, M. S. (2014). Increasing help-seeking and referrals for individuals at risk for suicide by decreasing stigma: the role of mass media. *Am. J. Prev. Med.* 47, S235–S243.

Niederkrotenthaler, T., and Sonneck, G. (2007). Assessing the impact of media guidelines for reporting on suicides in Austria: interrupted time series analysis. *Aust. N. Z. J. Psychiatry* 41, 419–428. doi: 10.1080/00048670701266680

Niederkrotenthaler, T., Stack, S., Till, B., Sinyor, M., Pirkis, J., Garcia, D., et al. (2019). Association of Increased Youth Suicides in the United States With the Release of 13 Reasons Why. *JAMA Psychiatry* 76, 933–940. doi: 10.1001/jamapsychiatry.2019.0922

Niederkrotenthaler, T., and Till, B. (2019). Suicide and the Media: from Werther to Papageno Effects – A Selective Literature Review. *Suicidologi* 24:7398. doi: 10.5617/suicidologi.7398

Niederkrotenthaler, T., Voracek, M., Herberth, A., Till, B., Strauss, M., Etzersdorfer, E., et al. (2010). Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *Br. J. Psychiatry* 197, 234–243. doi: 10.1192/bjp.bp.109.074633

Notredame, C.-E., Pauwels, N., Vaiva, G., Danel, T., and Walter, M. (2016). [Can we consider the journalist an actor in suicide prevention?]. *Encephale* 42, 448–452.

Notredame, C.-E., Pauwels, N., Walter, M., Danel, T., and Vaiva, G. (2015). [Media coverage of suicide: from the epidemiological observations to prevention avenues]. *Presse Med.* 44, 1243–1250.

Observatoire National du Suicide. (2019). *Observatoire National du Suicide*. Paris: French Ministry of Health.

Phillips, D. P. (1974). The influence of suggestion on suicide: substantive and theoretical implications of the Werther effect. *Am. Sociol. Rev.* 39, 340–354.

Pirkis, J. E., Burgess, P. M., Francis, C., Blood, R. W., and Jolley, D. J. (2006). The relationship between media reporting of suicide and actual suicide in Australia. *Soc. Sci. Med.* 62, 2874–2886. doi: 10.1016/j.socscimed.2005.11.033

Ruder, T. D., Hatch, G. M., Ampanozi, G., Thali, M. J., and Fischer, N. (2011). Suicide announcement on Facebook. *Crisis* 32, 280–282. doi: 10.1027/0227-5910/a000086

Scherr, S., Markiewitz, A., and Arendt, F. (2019). Effectiveness of a Workshop Intervention on Responsible Reporting on Suicide Among Swiss Media Professionals. *Crisis* 40, 446–450.

Skehan, J., Burns, L. S., and Hazell, T. (2009). The Response Ability Project: integrating the Reporting of Suicide and Mental Illness into Journalism Curricula. *Journal. Mass Commun. Educ.* 64, 191–204.

Tatum, P. T., Canetto, S. S., and Slater, M. D. (2010). Suicide coverage in U.S. newspapers following the publication of the media guidelines. *Suicide Life Threat Behav.* 40, 524–534. doi: 10.1521/suli.2010.40.5.524

Von Goethe, J. W. (1774). *Die leiden des jungen Werthers*. Leipzig: Weygand'sche Buchhandlung.

World Health Organization (WHO) (2019). Available Online at: https://www.who.int/mental_health/prevention/suicide/suicideprevent/fr (accessed 2021).

World Health Organization (WHO), and International Association for Suicide Prevention (IASP). (2008). *Preventing suicide: A resource for media professionals*. Switzerland: WHO.

World Health Organization (WHO), and International Association for Suicide Prevention (IASP). (2017). *Preventing suicide: A resource for media professionals, Update 2017*. Switzerland: WHO.

Yaqub, M. M., Beam, R. A., and John, S. L. (2020). 'We report the world as it is, not as we want it to be': Journalists' negotiation of professional practices and responsibilities when reporting on suicide. *Journalism* 21, 1283–1299. doi: 10.1177/1464884917731957

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ORIGINAL RESEARCH
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A Suicide Monitoring and Crisis Intervention Strategy Based on Knowledge Graph Technology for "Tree Hole" Microblog Users in China

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"Zou Fan" is currently the largest "tree hole" on Weibo, where people having suicidal ideation often express their thoughts and use this channel to seek support. Therefore, early suicide monitoring and timely crisis intervention based on artificial intelligence technology are needed for this social media user group. This research was based on the knowledge graph technology, whereby "Tree Hole Intelligent Agent" (i.e., Artificial Intelligence Program) was used to identify "Zou Fan Tree Hole" users at high risk for suicide, and then, the "Tree Hole Action" carried out proactive suicide crisis intervention with them. The "Tree Hole Action" has temporarily prevented 3,629 potential suicides. The "Tree Hole Action" plays a significant role in suicide risk monitoring and crisis intervention for social media users and has been seen to have an important social impact.

Keywords: suicide, crisis intervention, knowledge graph, tree hole of Weibo, artificial intelligence, social media

INTRODUCTION

Suicide is a global phenomenon and occurs at all stages of life. The data released by the World Health Organization [WHO] (2019) show that approximately 800,000 people die due to suicide worldwide each year, and 79% of victims were from low- and middle-income countries. Globally, suicide is the leading cause of death among people aged 15–29 years (World Health Organization [WHO], 2019), posing a significant threat to adolescents and young adults. The suicide rate of Chinese women in 2017 was 7.5 and that of men was 10.7 per 100,000 population (Chinese Center for Disease Control and Prevention, 2019a). Suicide is a tragedy for families, communities, and the entire country. It results in a loss of family productivity and income as well as an increase in the financial burden of the family (Bachmann, 2018). Suicide also has a long-term impact on the relatives and friends of the deceased and poses a mental burden on them (Chinese Center for Disease Control and Prevention, 2019b).

Although suicide is a serious and complex problem, it is possible to prevent suicide by adopting timely, low-cost, and evidence-based intervention methods (World Health Organization [WHO], 2019). Affected by stigma and social taboos, people with suicidal ideation rarely express their

thoughts or seek help from families, friends, or professionals (Cheng et al., 2017). On the contrary, with the rapid development of Internet-based social networks in recent years, people express their feelings and opinions in virtual communities and platforms. For example, in China, Weibo has become the primary channel for social media users to express suicidal thoughts and seek support (Fu et al., 2013; Guan et al., 2015a). The term "tree hole" comes from the ancient fairy tale "King Donkey Ears," and it was later circulated to refer to a place where one expresses his/her feelings (Lv, 2012). Driven by modern social media, Weibo has become a place where many "tree holes" exist. When a Weibo user committed suicide each time, the Weibo account became a "tree hole" for others experiencing emotional crises to express feelings in the comments field due to its more insidious characteristics (Yang et al., 2019). "Zou Fan Tree Hole" is the largest one on Sina Weibo and serves as an example. In 2012, after the suicide death of a young girl with the user name of "Zou Fan" on Sina Weibo, her Weibo received more than two million comments from 350,000 users. The majority of the comments were made during nighttime and focused on suicidal ideation (Huang et al., 2019b; Yang et al., 2019). The fact that many of these users who expressed suicidal thoughts in "Zou Fan Tree Hole" had suicidal behaviors later. Suicide monitoring and crisis intervention are needed for this group of social media users.

In recent years, the emergence of artificial intelligence (AI) technology has provided a new way to predict, monitor, and manage the suicidal behavior of social media users. The AI technology can generate risk algorithms that rely on big data to predict the outbreak of suicide and identify individuals or populations at risk (Fonseka et al., 2019). A study found that the risk classification accuracy of both AI and machine learning technology exceeded 90% (Bernert et al., 2020). Zhu (2019) used machine learning technology to create a suicidal ideation detection system on Weibo. The system can perform the real-time analysis of various Weibo content and can timely identify comments with suicidal ideation (Huang et al., 2014; Zhu, 2019). The well-known American social media "Facebook" also uses AI and machine learning technology to identify suicidal ideation posts or live videos (de Andrade et al., 2018). Besides, a series of suicide prevention and help-seeking apps and services, such as Radar, Woebot, and Voice Assistant Services, have been developed for users at risk of suicide (de Andrade et al., 2018).

For individuals at risk of suicide, prevention is a continuous process, including risk assessment and crisis intervention (Li, 2007). The AI technology has shown superior performance in suicide risk identification and monitoring and provides a basis for subsequent intervention (Vogel, 2018). The purpose of this study was to report on the "Tree Hole Action," which uses knowledge graph technology to identify and classify the suicide risk of users in the "Zou Fan Tree Hole" site and to conduct suicide crisis intervention for those with high suicide risk at levels 6–10 (having a definite suicide plan or suicide in progress). This project effectively integrates AI and mental health services in a collaborative strategy using online and offline resources to provide practical guidance for suicide risk monitoring and crisis intervention for social media users.

MATERIALS AND METHODS

This study aimed to describe the development of a suicide monitoring and crisis intervention strategy named "Tree Hole Action" and to assess the effect of its implementation. The effect of implementation in this study refers to the reported number of messages at high suicide risk, the reported number of users with high suicide risk, the number of people rescued, and the internal structure and regional organization that has been formed. The whole study includes two phases: one is the establishment and development of "Tree Hole Action" and the other is the implementation of crisis intervention to prevent suicide.

Phase I: Establishment and Development of "Tree Hole Action"

Suicide Risk Identification and Classification Based on Knowledge Graph Technology

Based on the Intelligent Agent system of the semantic data processing platform and combined with the knowledge graph technology, Huang Zhisheng developed the "Tree Hole Intelligent Agent" (Huang et al., 2019a). It comprises four processing modules, namely, data capture, data aggregation, data analysis, and report generation (Huang et al., 2019a). It monitors posted comments in the "Zou Fan Tree Hole" and performs intelligent analysis 24 h/day. It grabs the data every day from the "tree hole" website and extracts eight data attributes for each message, then uses a suicide knowledge graph and risk identification rule algorithm to analyze the data and generate "tree hole" monitoring reports. In the process of data analysis, natural language processing tools were used for word segmentation and syntactic parse. Meanwhile, based on the "Tree Hole Knowledge Graph" and risk identification rule algorithm, the messages of suicide risk level 6 and above were extracted. These risk identification rules adopt Definite Clause Grammars (DCG) Transformation Rules in the logical programming language Prolog. Based on the DCG rules, an extended description of knowledge graph reasoning ability is added, and domain knowledge is obtained from the knowledge graph to interpret each piece of message, thereby determining its suicide risk level (Huang et al., 2019a).

The knowledge graph is a graph-based knowledge representation and organization method, which is a systematic, structured, and integrated domain-specific knowledge expressed in the form of semantic technology (Huang et al., 2019a; Li et al., 2020). To provide sufficient knowledge support for the "Tree Hole Intelligent Agent," Huang Zhisheng constructed a "Tree Hole Knowledge Graph," which is composed of suicide ontology, time ontology, space ontology, and desire ontology (Huang et al., 2019a). Suicide ontology focuses on suicide methods and suicide plans; time ontology covers the concepts of absolute and relative time; space ontology describes related concepts of spatial geography; and desire ontology is used to portray the subjective desires and related negative concepts of the people (Huang et al., 2019a). The "Tree Hole Knowledge Graph" provides various basic knowledge related to suicide and depression and is mainly used to permit the "Tree Hole Intelligent Agent" to judge the

possibility of suicide contained in the information found in social media. The "Tree Hole Knowledge Graph" structure is shown in **Figure 1**.

Relying on the "Tree Hole Knowledge Graph," the Agent can classify the suicide risk of "tree hole" users (according to the certainty of suicide methods and the urgency of time) and automatically identifies those users with high suicide risk levels of 6–10 (Huang et al., 2019a). The Agent then generates a "tree hole" monitoring report and sends it to the "Tree Hole Action" WeChat group. The suicide risk classification standards are as follows (Huang et al., 2019a): level 10 (suicide may be in progress), level 9 (suicide method has been determined and may occur soon), level 8 (suicide has been planned, and the suicide date is generally determined), level 7 (suicide method has been determined, and the suicide date is unknown), level 6 (suicide has been planned, and the suicide date is unknown), level 5 (expression of strong desire to commit suicide, and the suicide method is unknown), level 4 (suicidal desire has been expressed, and the specific method and plan are unknown), level 3 (intense survival pain, and no suicidal wishes expressed), level 2 (survival pain has been clearly expressed, and no suicidal wishes expressed), level 1 (survival pain is partially expressed, and no suicidal wishes expressed), and level 0 (no expression of survival pain noted).

Personnel Recruitment and Crisis Intervention Training for "Tree Hole Action"

Guideline of online suicide rescue

The "Tree Hole Action" has set up an online suicide prevention committee composed of crisis intervention experts, mental health and psychology nursing experts, and AI experts. Based on their rescue experiences and research-based scientific evidence on suicide crisis intervention, this committee has compiled a guideline for online suicide rescue so novice rescuers can better understand and guide the crisis intervention procedure. An outline of this guideline is shown in **Table 1**.

Volunteer recruitment and systematic training

To standardize the management of volunteer recruitment and training, the "Tree Hole Rescue Management Committee" developed regulations regarding volunteer management for "Tree Hole Action." The members of "Tree Hole Action" joined the project voluntarily after they became aware of the project through academic seminars, news media reports, and the comments and recommendations of other team members. The regional leader of the "Tree Hole Action" conducts a preliminary review, followed by a final review by the management committee before a prospective volunteer is accepted as a team member. Volunteers must participate in two stages of online training on suicide prevention. The first stage of training focuses on how to use the guideline of online suicide rescue. This is followed by an online simple answer questions and case analysis evaluation, which examines how volunteers establish contact with rescue targets, assess suicide risk, identify depression symptoms, recognize ethical issues, and offer emergency responses in the rescue process. The total score is 100 (passing standard $\geq$ 60). The score range of volunteers is 37–100 (average score: 83.79), and the pass rate is 93.44%. Volunteers with scores below 60 will continue to take part in the next round of training until they pass the evaluation. The second stage of training includes 20 sessions of 1–1.5 h each, focusing on suicide prevention. The contents of this two-stage training are shown in **Table 2**. After the suicide rescue training, volunteers complete an online assessment with

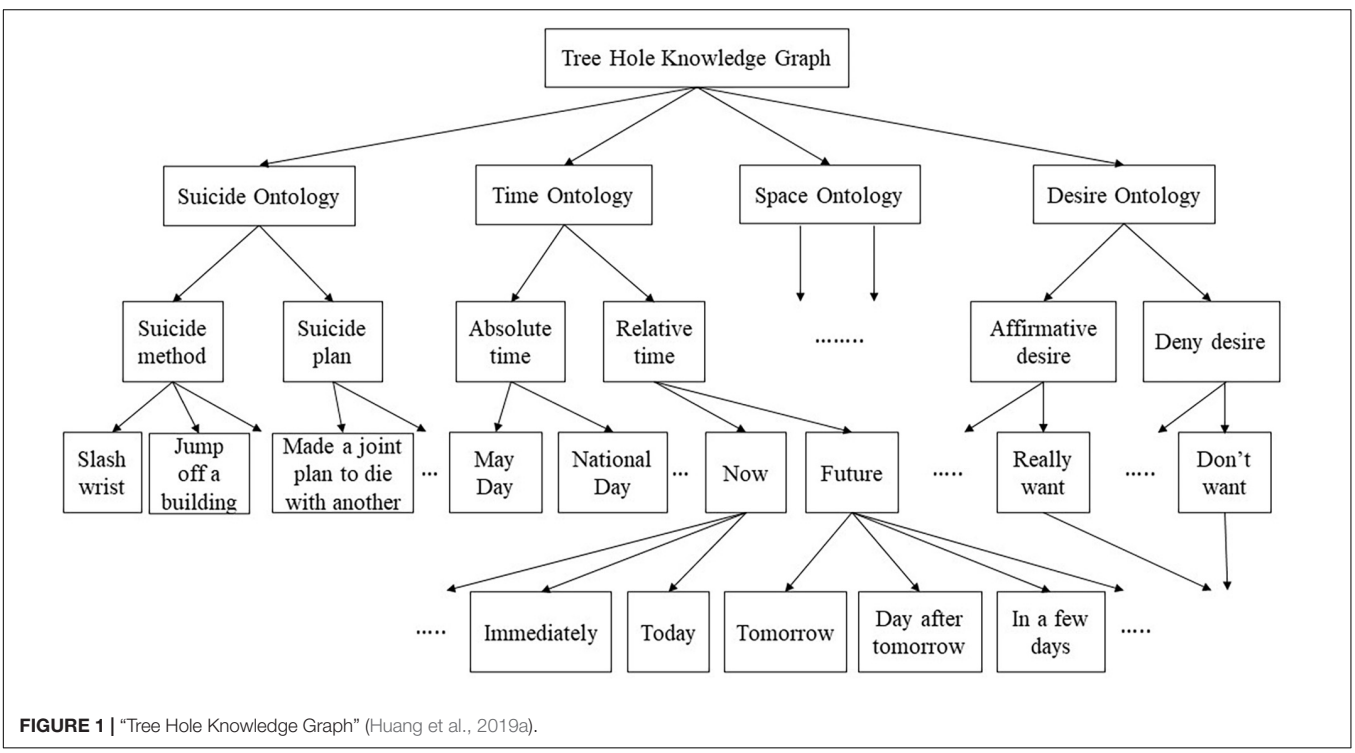

FIGURE 1 | "Tree Hole Knowledge Graph" (Huang et al., 2019a).

TABLE 1 | Content outline of the guideline of online suicide prevention.

Chapter number	Chapter title	Content of chapter
One	Introduction	Purpose and significance of "Tree Hole Action"
Two	A brief introduction to "Tree Hole Action"	Technical means of "Tree Hole Action," suicide risk classification standard, etc.
Three	Online suicide rescue standard process	Process of "Tree Hole Action"
Four	How to initiate a rescue	Interpretation of "tree hole" monitoring reports; select rescue targets from monitoring reports; identify false suicide information
Five	Method of establishing contact with the rescue target	How to contact rescue targets; what to do if targets do not respond; what should be done if rescue targets respond but refuse help; how to maintain communication with rescue targets, etc.
Six	Online suicide rescue team actions	Set up a rescue team; set up a caring team; contact rescue target's family or friends; seek assistance from police; Weibo alarm; WeChat alarm; telephone alarm, etc.
Seven	Rescue team members and their positioning	Locate assistance to be provided to rescue targets; adaption process of rescue team volunteers after death of rescue target; whether there is a need for team operations, etc.
Eight	Rescue strategies for specific problems	Rescue strategies for emotional problems, domestic violence, school bullying, emotional problems related to homosexuality, financial debts, personality disorders, and serious disease issues
Nine	Matters needing attention	Matters needing attention in the rescue process
Ten	Concluding remarks	Further improvement of guideline of online suicide rescue
Appendix One	Official contact information of "Tree Hole Action"	Official Weibo address and email address of "Tree Hole Action"
Appendix Two	List of regional contact personnel of "Tree Hole Action"	Regional directors of 15 domestic regions as well as Europe, North America, and Asia Pacific
Appendix Three	News reports about "Tree Hole Action"	Domestic and foreign news reports about "Tree Hole Action"
Appendix Four	Teaching plan for third training course of "Tree Hole Action"	Suicide rescue training arrangements
Appendix Five	Special reminder classification in monitoring type of message reports	14 situations that require attention and how to deal with them

multiple-choice questions, which assessed the level of mastery of management regulations and situations of the volunteers requiring attention during a rescue. At this stage, volunteers can retake the assessment several times till they attain a score of 100. Only volunteers who have passed the training and evaluation can participate in "Tree Hole Action."

There are currently 389 volunteers in "Tree Hole Action," including more than 60 experts in psychiatry and psychology, 70 professionally trained psychological counselors, and other volunteers from all walks of life. Among them, men accounted for 33.4%, and women accounted for 66.6%. Volunteer members are between 18 and 69 years of age (M = 31.14, SD = 10.74), and 54.5% are below 30 years of age.

TABLE 2 | Pre-job training and suicide rescue training.

Training type	Training session	Name of training course
First stage of training: pre-job training	First	Basic process of "Tree Hole Action"
	Second	Basic process and matters needing attention of "tree hole" alarm; classification method and interpretation of "tree hole" information special reminder
	Third	Rescue strategies for certain types of "tree hole" users
	Fourth	Matters needing attention in "Tree Hole Action" and case analysis
Second stage of training: suicide rescue training	First	Basic knowledge of suicide rescue
	Second	Theories and methods of suicide prevention
	Third	Depression and suicide
	Fourth	Mental illness rehabilitation technology: theory and practice
	Fifth	Cognitive model of suicide: theory and application
	Sixth	Trust mechanism and rescue strategy of online suicide rescue
	Seventh	Application of psychological counseling technology in crisis intervention
	Eighth	Bioethics and death philosophy
	Ninth	Crisis intervention
	Tenth	Ethical issues of crisis intervention
	Eleventh	Psychological distress and suicide
	Twelfth	Cognitive impairment in patients with depression
	Thirteenth	Training of social psychology workers
	Fourteenth	Treatment of depression disorders
	Fifteenth	Principle and practice of "Tree Hole Action"
	Sixteenth	Hotline intervention process for high suicide risk
	Seventeenth	Six step model of suicide intervention
	Eighteenth	Bipolar depression and its intervention strategies
	Nineteenth	Substance dependence and suicide
	Twentieth	How to write a short paper on "Tree Hole Action"

Phase II: Implementation of Crisis Intervention to Prevent Suicide

Publish "Tree Hole" Monitoring Reports

The "Tree Hole Intelligent Agent" publishes "tree hole" monitoring reports daily on the "Tree Hole Action" WeChat group. These reports include "tree hole" messages, the date of the messages, suicide risk classification, gender, age, city, and Weibo links. If the suicide risk classification is level 6 and above, crisis intervention for suicide prevention is initiated.

Procedure of Crisis Intervention in "Tree Hole Action"

Based on the interpretation of the "tree hole" monitoring reports, rescue team members select rescue targets and determine their risk level through personal communication *via* Sina Weibo. If the suicide risk of the rescue target is below level 8, the rescue team members will contact the target using private network messages,

offer to counsel, and promote ongoing communication. If the target is at a risk level of 8 or higher, team members will try to track the family and friends of the targets through online information analysis, and suicide information will be shared with them to prevent the anticipated suicide of the target. Furthermore, all the targets at high risk (level 8 and above) will be added to a list of names, and special monitoring procedures will be implemented. The special monitoring procedures are for those users whose names are added to the high-risk list. "Tree Hole Intelligent Agent" will pay close attention to the messages of target users under "Zou Fan Tree Hole" and their Weibo dynamics. Date, time, Weibo ID, Weibo account, Weibo nickname, Message content, emotional symbol, Weibo nickname of the responder, and Weibo address of the responder will be extracted and analyzed (Huang et al., 2019a). Besides the AI analysis, a team member with professional backgrounds will contact the user actively through Weibo private messages and assess the suicidal ideation of the user. Once the person is found to have strong suicidal ideation or a suicide plan, a rescue team will be formed and respond with crisis intervention. Each rescue team is comprised of an expert in psychiatry in the geographical location where the target is located, a regional director, and other volunteers who have communicated with targets. Volunteers are responsible for collecting and sorting information about rescue targets, such as checking their previous microblogs, understanding their available support system, and determining their current problems. Psychological counselors or psychotherapists are responsible for offering counseling services, promoting ongoing communication, and implementing interventions in accordance with the six-step model of crisis intervention (James and Gilliland, 1982/2018). Regional directors are responsible for overall coordination, communicating with local resources, contacting the site, coordinating the alarm, and other related matters. If necessary, psychiatrists will be invited to answer questions about the use of medications. The process of "Tree Hole Action" is shown in **Figure 2**.

DATA COLLECTION AND ANALYSIS

After participating in a suicide rescue, members of the rescue team each complete a "Tree Hole Action" personal workload form, and these data are submitted each quarter. The reports of rescue team members include the number of people at each rescue level (range: 1–5) each quarter. The rescue level is as follows: level 5 (sent messages to rescue targets, established a relationship of mutual trust, enabled the victim to actively express their emotions, and temporarily prevented the suicide; or directly participated in rescue operations to prevent collective suicides); level 4 (sent messages to rescue targets and established personal contacts; or contacted family members, work units, or the police to temporarily prevent the suicide); level 3 (sent messages to rescue targets, conducted multiple rounds of communication, and alleviated the suicidal mood of the victim); level 2 (sent messages to rescue targets and received responses, or joined a rescue group); and level 1 (sent messages to rescue targets, but no response was received).

RESULTS

Summary of Monitoring Reports and Crisis Intervention for Suicide Prevention

From November 2018 to May 2020, the "Tree Hole Intelligent Agent" identified 5,766 high-risk messages of suicide among 3,236 "tree hole" users, and the high-risk messages reached 3,548 person-time. Among these users, there were 762 (23.55%) male users, 2,107 (65.11%) female users, and 367 (11.34%) users did not identify their gender. The number of messages from levels 6 to 9 was 1,193, 4,225, 48, and 300, respectively (**Table 3**).

During the crisis intervention from July 2018 to December 2020, the total number of people who received services from level 1 to level 5 was 11,716, while the number of people who received intervention from level 1 to level 5 was 5,283, 2,804, 1,969, 801, and 859, respectively (**Table 4** and **Figure 3**). The "Tree Hole Action" prevented 3,629 potential suicides.

Internal Structure and Regional Organization of "Tree Hole Action"

At present, "Tree Hole Action" has formed a systematic, standardized, and effectively managed internal organizational structure, including an organizational management committee, donation management committee, training committee, media working committee, ethics committee, and a technical committee. In addition, "Tree Hole Action" has established regional organizations in 15 domestic areas (e.g., Beijing, Zhejiang, Henan, Hubei, Guangdong, and Sichuan) and Europe, North America, and the Asia-Pacific region aiming to provide "tree hole" users at high suicide risk with timely, effective, and long-term intervention measures.

DISCUSSION

Social Impact and Advantages of "Tree Hole Action"

The "Tree Hole Action" project, based on the knowledge graph technology and crisis intervention provided by the rescue team members, prevented 3,629 potential suicides from 2018 to 2020. Moreover, "Tree Hole Action" became a systematic, standardized, and effective organization to provide suicide prevention services. "Tree Hole Action" has made a significant social impact, has been a model for public crisis intervention, and was rated as the impact event of Sina Weibo in 2019. It has been reported by more than 100 media outlets globally, such as China News Service, Global Times, and Tokyo Shimbun of Japan. Moreover, "Tree Hole Action" has raised public awareness and understanding of suicide and attracted many people to volunteer for the project.

"Tree Hole Action" provides a normative and referenceable model for suicide risk monitoring and crisis intervention of social media users. The application of knowledge graph technology provides technical support for actively identifying Weibo users at risk of suicide. As mentioned, suicide risk identification and prediction are the basis of the project. Traditional methods of suicide prediction based on written questionnaires or scales

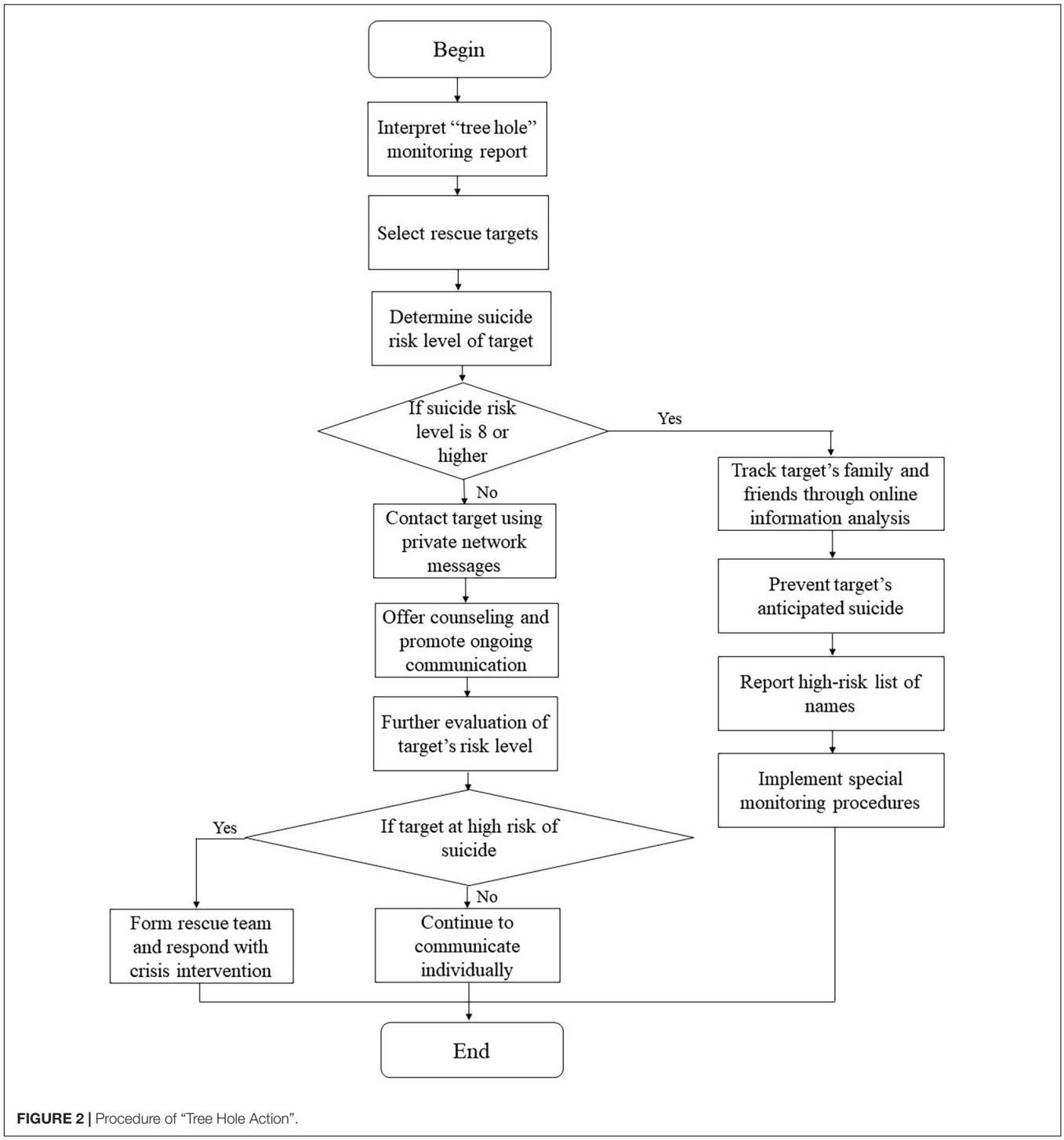

FIGURE 2 | Procedure of "Tree Hole Action".

are not adequately accurate, time-sensitive, and require the respondent to actively participate (Guan et al., 2015a; Cheng et al., 2017; Marks, 2019). The AI technology can make up for the shortcomings of traditional screening tools and improve suicide risk prediction accuracy (Marks, 2019). The knowledge graph can integrate all kinds of complex knowledge and data resources, i.e., a primary method for applying AI technology (Huang et al., 2019a). Huang Zhisheng applied the "Tree Hole Knowledge Graph" to the "Tree Hole Intelligent Agent" to judge the possibility of suicide in social media information, thereby identifying individuals with high suicide risk. The "Tree Hole Intelligent Agent" can accurately eliminate more than 99% of useless information, greatly reducing the workload of manual intervention and significantly improving the efficiency of the interpretation of "tree hole" information (Huang et al., 2019a). It can also carry out 24-h real-time monitoring of the "Zou Fan Tree

TABLE 3 | Users with high-risk messages identified by "Tree Hole Intelligent Agent" from November 2018 to May 2020.

Suicide risk level	Messages	"Tree Hole" users (person-time)	"Tree Hole" users with one high-risk message (person-time)	"Tree Hole" users with more than two high-risk messages (person-time)
Level 6	1,193	736	565	171
Level 7	4,225	2,517	1,863	654
Level 8	48	27	25	2
Level 9	300	268	246	22
Total	5,766	3,548*	2,699	849

**The 3,548 in the table refers to person-time, while the 3,236 in the article refers to the number of users with high suicide risk.*

TABLE 4 | Number of people rescued from level 1 to level 5.

Year	Month	Level 1	Level 2	Level 3	Level 4	Level 5	Total 1–5	Total 3–5
2018	July–September	15	12	16	5	7	55	28
	October–December	74	44	43	29	37	227	109
2019	January–March	222	73	66	69	48	478	183
	April–June	171	163	167	74	101	676	342
	July–September	687	296	213	108	111	1,415	432
	October–December	1,918	748	372	163	183	3,384	718
2020	January–March	967	380	328	116	100	1,891	544
	April–June	464	430	298	95	112	1,399	505
	July–September	232	302	244	74	110	962	428
	October–December	533	356	222	68	50	1,229	340
	Total	5,283	2,804	1,969	801	859	11,716	3,629

Hole" and immediately send out suicide monitoring warnings, which may lead to successful suicide crisis intervention.

Meanwhile, the "Tree Hole Intelligent Agent" has high reliability and accuracy in suicide monitoring warnings. In the early stage, to evaluate the reliability of the "Tree Hole Intelligent Agent" in suicide risk classification, we randomly extracted monitoring reports during 16 days for analysis, which included a total of 21,356 "tree hole" messages and 163 messages with level 6 suicide risk or higher. By analyzing and evaluating these 163 messages, we found that the average correct rate of early warning information sent by the "Tree Hole Intelligent Agent" was 82% (Huang et al., 2019a). The suicide monitoring model constructed in this project based on the knowledge graph technology has shown great potential in identifying and monitoring the suicide risk of social media users. This innovative approach clarifies its value in monitoring large-scale populations (Guan et al., 2015b). At the same time, the current system still misses some information on high suicide risk, so it is necessary to improve and optimize the suicide risk identification algorithm to obtain more accurate warning results (Huang et al., 2019a).

"Tree Hole Action" integrates online and offline interventions, which intervene in suicide prevention more actively, continuously, and timely than other suicide crisis intervention methods. The crisis intervention hotline functioned as an important channel for many people with suicidal ideation to seek help and obtain support (Shaffer et al., 1988). Some researchers found that the crisis intervention hotline helped reduce the suicide risk of those with a high risk of suicide (Wang et al., 2011; Pang et al., 2015). However, the hotline worked passively for suicide prevention, in that it could not actively identify the suicide intention. Recently, the trend of more and more Internet social media users willing to express their thoughts online has provided a need for suicide crisis intervention based on social networks. It is a fruitful addition to the existing intervention methods that rely on the social network information of users for early identification and intervention of suicide risk and turn passive intervention into proactive intervention. In addition to "Tree Hole Action," Zhu Tingshao used a machine learning model to identify Weibo users with suicidal thoughts and behaviors and offered them timely and effective interventions *via* direct message, providing information and emotional support (Liu et al., 2019; Zhu, 2019). For this kind of intervention, once individuals at high risk of suicide do not respond online, it will be difficult to stop their suicidal behavior. That is why "Tree Hole Action" set up an offline work team for continuing intervention, and it has shown success in rescue efforts. This professionally organized and social media-based suicide crisis intervention method could optimize the advantages of team members with diverse backgrounds and could improve the success rate of intervention. However, it is difficult to identify whether users with high suicide risk actually commit suicide subsequently. We can only use the existing data to show that "Tree Hole Action" prevented 3,629 potential suicides. Although the evaluation of the effect of Internet-based suicide crisis intervention has certain limitations, "Tree Hole Action" can achieve preventive effects and can enrich current suicide prevention strategies. The program is worthy of the long-term implementation and evaluation.

"Tree Hole Action" has a stable organizational structure, standardized rescue procedures, and systematic volunteer training, ensuring effective suicide crisis intervention. The various internal committees of "Tree Hole Action" have clear and reasonable duties, promoting suicide prevention. The rescue team conducted suicide intervention according to the guidelines and achieved good results, which confirmed that the procedures have good feasibility and provide appropriate guidance in the actual rescue process. As a non-profit organization, "Tree Hole Action" recruited many volunteers with great demand to effectively increase their skills and literacy. The systematic volunteer training program formed by "Tree Hole Action" functions well in training and providing qualified human resources for suicide rescue.

Difficulties and Challenges Faced by "Tree Hole Action"

At the same time, "Tree Hole Action" has also faced challenges. First, the sustained development of "Tree Hole Action" demands careful consideration. Currently, the rescue team relies on individual volunteer applicants, and the consistency and stability of the volunteer team needs to be further enhanced. Second,

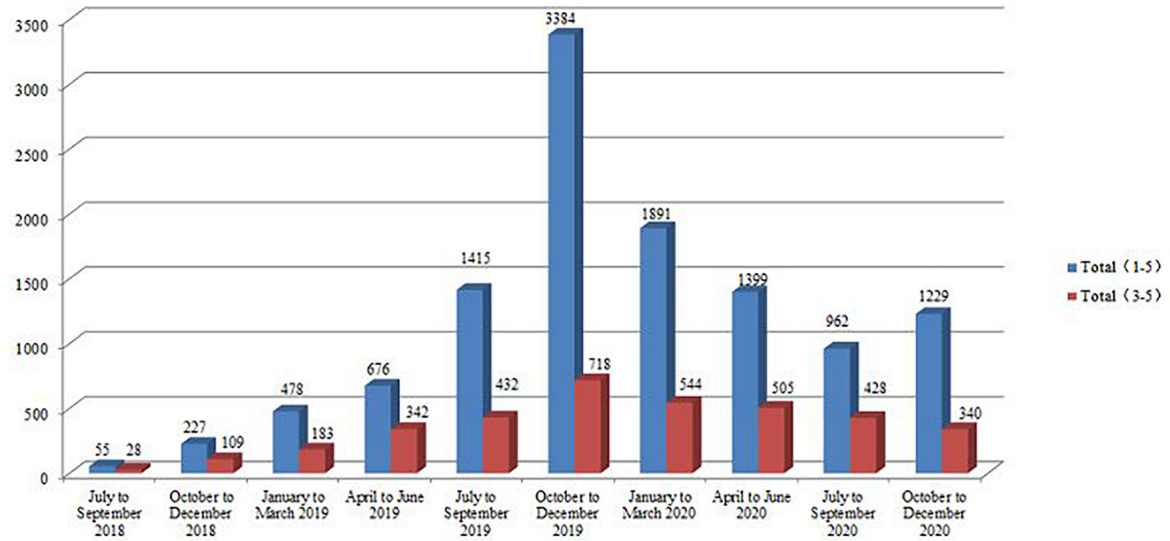

FIGURE 3 | Total number of people rescued in levels 1–5 and 3–5 from July 2018 to December 2020.

"Tree Hole Action" mobilized social forces, including some non-professional volunteers in the rescue team. "Tree Hole Action" provided more than 20 h of training and continuous supervision for non-professionals, and the emergency rescue activities were carried out in small groups under the guidance of professionals. However, compared with other resources such as a psychological assistance hotline, "Tree Hole Action" is not a treatment activity that occurs within a professional institution, so its approach and purpose may still be questioned.

Meanwhile, "Tree Hole Action" is mainly carried out through the network, and it is difficult to track and supervise whether the behavior of an individual can be standardized. Third, the privacy protection of social media users and research involving ethical issues also deserves attention. When a Weibo private message is sent to a user at risk of suicide, but the user does not reply, there is a need to conduct a further evaluation based on the Weibo dynamics of the user. If there is sufficient evidence that the user is at high risk of suicide, the police are asked to intervene, which may cause controversy as to whether these actions interfere with the right of the user to die. Finally, the integration of online rescue and offline resources needs to be further improved, which is also an area for future research.

LIMITATIONS

There are several limitations to this study. First, "Tree Hole Action" began to evaluate the effectiveness of the two-stage training program for volunteers in 2020, focusing on knowledge and skills. At present, there has been no assessment of the attitudes and satisfaction of volunteers with training courses. A comprehensive evaluation is planned by the current researchers. Second, the target population of "Tree Hole Action" is social media users, which means that individuals who have suicidal ideation but are not accustomed to expressing suicidal thoughts on social media can be difficult to identify and receive timely suicide crisis intervention. Third, the proportion of occurrences of suicide deaths and suicide attempts among individuals at different levels of suicide risk have not been analyzed. Future studies need to focus on the reliability and validity of the "Tree Hole Intelligent Agent" which have not been tested comprehensively in this study.

CONCLUSION

"Tree Hole Action" is a successful example of using AI in coordination with mental health services. It effectively integrates AI technology, mental health professional resources, and social forces and plays a specific role in suicide risk monitoring and crisis intervention for social media users. However, the accumulated experience is also limited, and there is a need to further enrich and improve the relevant norms of online suicide rescue and prevention practices in the future.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding authors.

AUTHOR CONTRIBUTIONS

BXY, LX, LL, and WN completed the manuscript draft. XYL, MQA, and YDX did the literature review. QL, XQW, and ZL checked the data. ZH, XG, and DL contributed to the in-depth

revisions of the manuscript. All authors contributed to and approved the final manuscript.

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REFERENCES

Bachmann, S. (2018). Epidemiology of suicide and the psychiatric perspective. *Int. J. Environ. Res. Public Health* 15:1425. doi: 10.3390/ijerph15071425

Bernert, R. A., Hilberg, A. M., Melia, R., Kim, J. P., Shah, N. H., and Abnousi, F. (2020). Artificial intelligence and suicide prevention: a systematic review of machine learning investigations. *Int. J. Environ. Res. Public Health* 17:5929. doi: 10.3390/ijerph17165929

Cheng, Q., Li, T. M., Kwok, C. L., Zhu, T., and Yip, P. S. (2017). Assessing suicide risk and emotional distress in Chinese social media: a text mining and machine learning study. *J. Med. Internet Res.* 19:e243. doi: 10.2196/jmIr.7276

Chinese Center for Disease Control and Prevention (2019a). *Lancet's Latest Paper: A Study on the Burden of Disease in China in 2017*. Available online at: http://www.chinacdc.cn/gwxx/201906/t20190628_203617.html (accessed 25 February 2021).

Chinese Center for Disease Control and Prevention (2019b). *World Mental Health Day 2019–Focus on Suicide Prevention*. Available onine at: http://www.chinacdc.cn/ztxm/2019qgkpr_11622/201910/t20191011_206120.html (accessed 25 February 2021)

de Andrade, N. N. G., Pawson, D., Muriello, D., Donahue, L., and Guadagno, J. (2018). Ethics and artificial intelligence: suicide prevention on facebook. *Philos. Technol.* 31, 669–684. doi: 10.1007/s13347-018-0336-0

Fonseka, T. M., Bhat, V., and Kennedy, S. H. (2019). The utility of artificial intelligence in suicide risk prediction and the management of suicidal behaviors. *Aust. N. Z. J. Psychiatry* 53, 954–964. doi: 10.1177/0004867419864428

Fu, K. W., Cheng, Q., Wong, P. W., and Yip, P. S. (2013). Responses to a self-presented suicide attempt in social media: a social network analysis. *Crisis* 34, 406–412. doi: 10.1027/0227-5910/a000221

Guan, L., Hao, B., Cheng, Q., Ye, Z., and Zhu, T. (2015a). Behavioral and linguistic characteristics of microblog users with various suicide ideation levels: an explanatory study. *Chin. J. Public Health* 31, 349–352.

Guan, L., Hao, B., Cheng, Q., Yip, P. S., and Zhu, T. (2015b). Identifying Chinese microblog users with high suicide probability using Internet-based profile and linguistic features: classification model. *JIMR Ment. Health.* 2:e4227. doi: 10.2196/mental.4227

Huang, X., Zhang, L., Chiu, D., Liu, T., Li, X., and Zhu, T. (2014). "Detecting suicidal ideation in Chinese microblogs with psychological lexicons," in *Proceedings of the 2014 IEEE 11th Intl Conf on Ubiquitous Intelligence and Computing and 2014 IEEE 11th Intl Conf on Autonomic and Trusted Computing and 2014 IEEE 14th Intl Conf on Scalable Computing and Communications and Its Associated Workshops*, Bali, 844–849.

Huang, Z., Min, Y., Lin, F., and Xie, D. (2019b). Time characteristics of suicide information in social media. *China Dig. Med.* 14, 7–10. doi: 10.3969/j.issn.1673-7571.2019.03.002

Huang, Z., Hu, Q., Gu, J., Yang, J., Feng, Y., and Wang, G. (2019a). Web-based intelligent agents for suicide monitoring and early warning. *China Dig. Med.* 14, 3–6.

James, R. K., and Gilliland, B. E. (1982/2018). *Crisis Intervention Strategies.* Trans. Xiao, S. Y., Zhou, L, 7th Edn. Beijing: China Light Industry Press. (Original work published 1982).

Li, G. (2007). *Suicide and Self-Harm*, 1st Edn. Beijing: People's Medical Publishing House, 196–197.

Li, L., Wang, P., Yan, J., Wang, Y., Li, S., Jiang, J., et al. (2020). Real-world data medical knowledge graph: construction and applications. *Artif. Intell. Med.* 103:101817. doi: 10.1016/j.artmed.2020.101817

Liu, X., Liu, X., Sun, J., Yu, N. X., Sun, B., Li, Q., et al. (2019). Proactive suicide prevention online (PSPO): machine identification and crisis management for Chinese social media users with suicidal thoughts and behaviors. *J. Med. Internet Res.* 21:e11705. doi: 10.2196/11705

Lv, S. S. (2012). The anonymity effect of tree hole propagation. *Literature Educ.* 12, 30–31.

Marks, M. (2019). *Artificial Intelligence Based Suicide Prediction. 18 Yale Journal of Health Policy, Law, and Ethics 98 (2019), 21 Yale Journal of Law & Technology 98*. Available online at SSRN: https://ssrn.com/abstract=3324874 (accessed September 10, 2021).

Pang, Y., Yang, F.-D., Tong, Y.-S., Zhao, L.-T., Wang, C.-L., Liang, H., et al. (2015). Related factors of attempted suicide among Beijing psychological aids hotline callers. *Chin. Ment. Health J.* 29, 533–538. doi: 10.3969/j.issn.1000-6729.201507.010

Shaffer, D., Garland, A., Gould, M., Fisher, P., and Trautman, P. (1988). Preventing teenage suicide: a critical review. *J. Am. Acad. Child Psy.* 27, 675–687. doi: 10.1097/00004583-198811000-00001

Vogel, L. (2018). AI opens new frontier for suicide prevention. *Can. Med. Assoc. J.* 190:E119. doi: 10.1503/cmaj.109-5549

Wang, C.-L., Li, X.-Y., Wang, S.-L., Tong, Y.-S., Yang, F.-D., and Cui, Y.-H. (2011). Quality and effectiveness of phone intervention of the Beijing crisis hotline. *Chin. Ment Health J.* 2, 641–645. doi: 10.3969/j.issn.1000-6729.2011.09.001

World Health Organization [WHO] (2019). *Suicide*. Available online at: https://www.who.int/news-room/fact-sheets/detail/suicide (accessed 25 February 2021).

Yang, F., Huang, Z., Yang, B. X., Ruan, J., Nie, W., and Fang, S. (2019). Analysis of suicidal ideation patterns of Weibo "Tree Hole" users based on artificial intelligence technology. *J. Nurs. Sci.* 34, 42–45.

Zhu, T. (2019). Application scenarios of artificial intelligence assisting psychology research. *Frontiers*:48–53. doi: 10.16619/j.cnki.rmltxsqy.2019.20.006

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Effectiveness of a Malaysian Media Intervention Workshop: Safe Reporting on Suicide

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Background: Suicide remains an important cause of premature deaths and draws much media attention. However, unsafe reporting and portrayal of suicides by the media have been associated with increased risk of suicidal behavior. Current evidence suggests that media capacity-building could potentially prevent suicide. However, there are still knowledge gaps in terms of a lack of data on effective strategies for improving awareness and safe reporting of suicide-related media content. This study aims to investigate the effectiveness of a workshop conducted with members of the media community on the safe reporting of suicide-related content.

Methods: An interventional single-arm pre and post pilot study was conducted on a sample of the Malaysian media community recruited through purposive and snowball sampling. The media safe reporting workshop was conducted by a suicide prevention expert with a media industry background. Thirty participants completed a self-reported evaluation questionnaire on their awareness and knowledge of reporting on suicide-related media content; before and after the interventional workshop.

Results: There was a significant difference between the total scores before and after the intervention, with a large effect size. Post-intervention scores were significantly improved in 8 items, namely those related to the reporting of: (i) the content of any suicide note; (ii) headlines with methods of suicide; (iii) headlines with the location of suicide; (iv) cases of suspected suicide despite the unconfirmed cause of death; (v) suicide news to cater to readers' interests; (vi) cause of suicide; (vii) details of the location of suicide; and (viii) the negative impact to media community when reporting suicide stories. In particular, there was an improvement in the majority of items for people from the media community with no lived experience of suicidal behavior.

Conclusion: The media safe reporting workshop is a potentially effective intervention for improving awareness and knowledge measures relating to safe reporting on suicide among the media community, with a more pronounced effect in those without lived experience of suicidal behavior. Limitations in the sample size, generalizability, short-term evaluation, and lack of a control group warrant future larger, longer-term controlled, and more representative studies.

Keywords: Malaysian, media, workshop, safe reporting, suicide

INTRODUCTION

Suicide is a public health concern that draws media attention worldwide. Globally every year, approximately 800,000 people die by suicide (WHO, 2016). The impact of suicide is profound. For every individual who dies by suicide, an estimated average of 135 people are markedly affected (Cerel et al., 2019). The suicide-bereaved have been found to experience significant negative trauma reactions, stigmatization, mental disorders, and suicidal behavior (Cerel et al., 2005). Suicide has been known to be the result of a complex dynamic interplay between numerous contributing factors, with evolving knowledge of potential risk factors. For one, childhood maltreatment has been significantly associated with non-suicidal self-injury and suicide attempts (Serafini et al., 2017a). Other factors such as extreme sensory processing patterns have significant correlations with affective disorders, with the prevalence of lower registration in those with higher hopelessness (Serafini et al., 2017b), often leading to suicidal behavior. Past studies have considered multi-level and multi-faceted approaches to combat suicide including universal interventions aimed at different populations; as well as more selective interventions tailored for high risk groups and those with suicidal behavior (Institute of Medicine Committee on Prevention of Mental Disorders, 1994; Department of Health Tag, 2007; WHO, 2016).

The impact of the reporting and portrayal of suicide in the media has become an increasing public health concern (Sisask and Värnik, 2012). Media suicide stories or reports, especially those involving celebrities; which contain explicit descriptions of the method and location of the suicide, repeated sensationalized coverage, as well as the portrayal of suicide as a solution to life problems, have been observed to be associated with increased risk of suicidal behavior (Pirkis et al., 2006, 2018; Niederkrotenthaler et al., 2009, 2012, 2020). The rate of suicide increased by 9.85% during the months following the death by suicide of the famous Hollywood comedian and actor Robin Williams (Fink et al., 2018). The increase in suicide attempts is proportionate to the publicity generated by wide (unsafe) media coverage of suicide incidents (Hassan, 1995). Inappropriate reporting and sensationalized news glorifying the suicidal act of a person or celebrity could lead to suicide contagion and 'copycat suicides' among individuals with pre-existing vulnerabilities of suicidal behavior (Phillips, 1985; Hassan, 1995). While inappropriate reporting can pose harm to the concerned community, responsible media reporting has the potential to reduce the risk of suicide (Phillips, 1985; Hassan, 1995; Samaritans, n.d.). For example, the less sensationalized reporting of the suicide of U.S musician Kurt Cobain, emphasizing its impact on mental health as well as the availability of support services for those similarly afflicted sent positive messages to concerned communities (Jobes et al., 1996). Simple messages on the preventability of suicide and availability of help services in media campaigns led to increased calls to helplines (Oliver et al., 2008; Jenner et al., 2010). Media reports that highlighted adaptive coping or the personal mastery of problems when facing a crisis were inversely associated with suicide rates (Niederkrotenthaler et al., 2010).

Amid this growing body of evidence supporting the potential positive influence of the media in preventing suicide, guidelines for media reporting on suicide have changed the way suicide-related news is reported, meaning it is sensitive to the public and, in turn, associated with a reduction in suicide rates (Bohanna and Wang, 2012). However, the effectiveness of such guidelines requires consultation and collaboration with the media community (Tully and Elsaka, 2004; MediaWise, 2006; Bohanna and Wang, 2012; Duncan and Luce, 2020b). Intersectoral collaboration amongst all stakeholders in suicide prevention is thus crucial, and good media collaboration and training have been proposed as strategies for suicide prevention campaigns. While efforts have been made to integrate the education on appropriate reporting of suicide into journalism curricula, such as the Response Ability Project, a collaboration between mental health professionals and journalism educators at Australian universities (Skehan et al., 2009), there is also a need for continued monitoring and training to 'refresh' journalists' knowledge in order for adherence to guidelines to be sustained (Niederkrotenthaler and Sonneck, 2007; Bohanna and Wang, 2012; Cheng et al., 2014). In Malaysia, changes in the media landscape have provided alternative ways for people to assess information; through new media journalism, the internet, social media, and blogs (Weiss, 2013; Mustaffa et al., 2017; Taibi and Na, 2020). While media reporting guidelines were published in 2004 (Ministry of Health Malaysia, 2004), reporting practices have seen little improvement. There is a poor level of awareness and lack of responsible reporting in the Malaysian media (Johari et al., 2017; Victor et al., 2019; Fong, 2021; Ng et al., 2021a). The prevalence of suicide in Malaysia was 6–8 per 100,000 population per year (Armitage et al., 2015). Hence, there is a clear need for collaborative engagements with stakeholders of safe media reporting including the media community (Johari et al., 2017; Chan et al., 2018).

In the European context, a workshop intervention with Swiss journalists was shown to increase participants' self-efficacy and attitudes about safe reporting (Scherr et al., 2019). In Hong Kong,

continuous engagement with media professionals through knowledge exchange and monitoring efforts saw evidence of reduced intensity and sensationalism in suicide news reports (Law et al., 2019).

Our study also contributes to the body of knowledge in this area by taking an objective approach in evaluating the effectiveness of a workshop for the media community on safe media reporting. In particular, this study assessed the level of awareness and knowledge of key aspects of safe suicide reporting practices, before and after the workshop intervention, amongst a sample of Malaysian media community professionals.

MATERIALS AND METHODS

An interventional single-arm pre and post-pilot study were conducted among a sample of the Malaysian media community and professionals, recruited through purposive and snowball sampling. We hypothesized that there would be significant differences in terms of the self-reported scores of awareness and knowledge of safe suicide reporting among the media community and professionals before and after participation in the media intervention workshop. Our use of the term media community refers to media professionals, media academics and media journalism students who may be print/broadcast/digital media director, content producer, journalists, editors, sub-editors, news stringers, newscasters, columnists, bloggers, video-bloggers (or vloggers) working on one or more media platforms including newspapers, magazines, television, radio and online/social media. News platforms in Malaysia can be found in different languages – Malay, English, Chinese, and Tamil. The inclusion criteria were: (i) aged 18 years old or older, (ii) a member of the media community and professionals, (iii) sufficiently proficient in the English language, (iv) not clinically depressed based on a Patient Health Questionnaire-9 (PHQ-9) score of less than 10, (v) had not had active suicidal thoughts or plans in the 2 weeks prior to the workshop, any suicide attempt in the 6 months prior to the workshop or been bereaved by suicide in the 6 months prior to the workshop. The exclusion criteria were current suicidal ideation within the past 2 weeks i.e., positive screen for suicidal ideation, or significant depressive symptoms with total scores in a Patient Health Questionnaire (PHQ-9) of 10 and above (Kroenke et al., 2001; Sherina et al., 2012) or persons who had attempted suicide or were bereaved by suicide in the past 6 months.

The required sample size for this study is a minimum of 30 participants, estimated based on the rule of thumb for a pilot study (Hooper, 2019) and G*Power software (Faul et al., 2007) for a power of 80% with $\alpha = 0.05$, two-tailed and an estimated effect size of 0.5. A total of 40 participants were eligible for inclusion in the study (**Figure 1**). On-site psychological support was provided by a volunteer mental health professional who was not a member of the research team. Any participant with a positive screen in the post-evaluation modified Patient Health Questionnaire (PHQ) who required psychological support after the media workshop would be attended to by the mental health professional with further mental health services offered if needed.

The intervention, which is the media safe reporting workshop, was conducted on February 20, 2019, by one of the research team members, QC who is a suicide prevention expert with a media background. The 2-h workshop consisted of core topics on media guidelines, fundamental principles in suicide reporting as well as specific recommendations and cases for discussion (**Table 1**), adapted from a book on recommendations on suicide reporting (Yip et al., 2015). Participants were required to answer individually, 16 questions in the evaluation questionnaire that assess participants' awareness and knowledge of key aspects of safe suicide reporting (**Table 2**). The evaluation questionnaire was adapted from an updated version of a questionnaire used in the Response Ability Project (Skehan et al., 2009). The pre and post-intervention responses of each participant for the same evaluation questionnaire were matched using an anonymous code. Each question was scored with a Likert scale of 0–5; with a total sum of 80. Higher scores correspond to higher levels of awareness and knowledge of safe suicide reporting.

The data were then analyzed using the Statistical Package for the Social Sciences (SPSS) software, version 26.0. Participants' baseline characteristics were analyzed using Kruskal-Wallis and Mann Whitney tests. The pre- and post-intervention scores for the evaluation questionnaires were analyzed using a paired *t*-test. Cohen's *d* was used as the measure of effect size. Cohen's *d* value of 0.20, 0.50, and 0.80 indicate small, moderate, and large effect sizes respectively (Cohen, 2013). For each item in the evaluation questionnaire that yielded significant findings ($p < 0.05$), further analysis using the Wilcoxon Signed Ranks Test was used for examining the group characteristics of the participants. These related to types of media portals, their roles and job scope, length of experience, and frequency of encounter with suicide news, awareness of the existence of media guidelines and their adherences, and whether they have significant others with suicidal behavior (**Supplementary Material**).

RESULTS

Thirty participants (75% of invited) completed the questionnaires before and after the intervention. Four participants were excluded; 1 scored more than 10 points in the PHQ-9, another was bereaved by suicide in the past 6 months, and 2 had recent suicidal ideations (**Figure 1**). Nearly three quarters 73.3% ($n = 22$) are media practitioners with 23.3% ($n = 7$) comprising media academics and students. More than 80% (83.3%, $n = 25$) were in full-time work or study and 40% ($n = 12$) had professional experience of more than 10 years. All the participants had no prior exposure to any form of training on safe suicide reporting. Of the types of media portals, 46.7% ($n = 14$) were strictly online portals. Sixty-three point three percent ($n = 19$) of them were aware of the existence of any forms of media guidelines for safe suicide reporting, 30% ($n = 9$) knew of the existence of Malaysian media guidelines. About one-third of the participants (36.7%, $n = 11$) had significant others with suicidal thoughts in the past, while 10% ($n = 3$) had significant others who made a suicide attempt in their lifetime. The pre-intervention scores for awareness and knowledge of safe reporting were not significantly

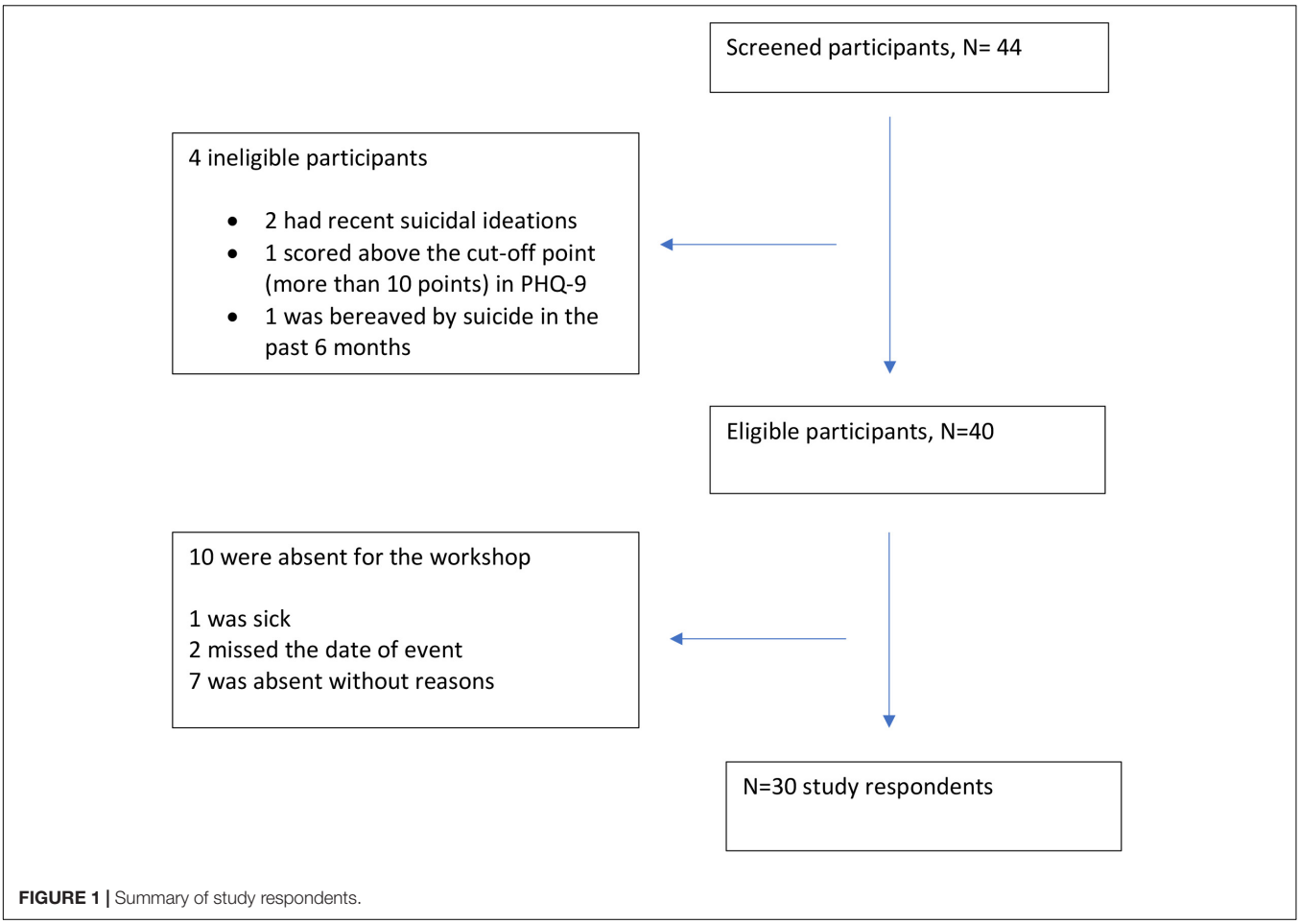

FIGURE 1 | Summary of study respondents.

different concerning all characteristics, except one. A Mann-Whitney test indicated that participants who were not aware of the existence of a Malaysian media guideline on suicide reporting has higher median scores of pre-intervention awareness and knowledge of safe reporting (Mdn = 64) than those who were aware of its existence (Mdn = 56), $U = 50.50$, $p = 0.046$.

On the effect of intervention, there was a statistically significant difference between the total scores of awareness and knowledge of safe reporting between pre- and post-intervention with large effect size [t (29) = 4.936, $p < 0.001$, $d = 0.9$]. There are 8 items for which scores were significantly improved post-intervention (**Table 2**); and were related to knowledge on (i) reports of contents of any suicide note [t (29) = 3.804, $p < 0.01$], (ii) headlines with methods of suicide [t (28) = 2.703, $p < 0.05$], (iii) headlines with location of suicide [t (29) = 3.764, $p < 0.01$], (iv) cases of suspected suicide despite unconfirmed cause of death [t (29) = 3.496, $p < 0.01$], (v) suicide news to cater to readers' interests [t (28) = 2.339, $p < 0.05$], (vi) reports on cause of suicide [t (29) = 3.247, $p < 0.01$], (vii) reports on location of suicide [t (29) = 3.881, $p < 0.01$] as well as (viii) negative impact to media community when reporting on suicide [t (29) = 2.112, $p < 0.05$].

For all these significant items (see **Supplementary Material**), the common group characteristic factor in the improvement of post-intervention scores was the media community with no lived experience. Media communities with no lived experience scored significant improvement scores ($p < 0.05$) in all 8 items as compared to those with lived experience. Those in the media community who worked full-time as compared to part-time scored significantly different ($p < 0.05$) in 7 out of 8 significant items, the 1 exclusion item was "suicide news to cater to readers' interests." Other group characteristic factors were online news portals and media community who were aware of the existence of any forms of media guidelines for safe suicide reporting; both with significant findings ($p < 0.05$) in 6 out of 8 items. No participants screened positive in the modified post-evaluation Patient Health Questionnaire.

DISCUSSION

Safe suicide reporting was identified as one of the main strategies for suicide prevention (Niederkrotenthaler et al., 2010, 2012, 2020; Bohanna and Wang, 2012; Sisask and Värnik, 2012). Our study highlighted the positive role of a workshop intervention in training the media community about safe suicide reporting. The improvement was evidenced in the awareness and knowledge domains of safe reporting of suicide after the 2-h media

TABLE 1 | The media safe reporting workshop.

Total hours	Core topics
Part I: 1 hour	Part 1: Introducing the overarching media guidelines 1) A brief history of media guidelines on suicide news reporting 2) The need to update media guideline 3) Fundamental principles in responsible suicide reporting a) Protect privacy and consider the risks borne by vulnerable individuals. b) Take the opportunity to educate the public about mental health and suicide prevention c) Practice self-care in the community of media professionals
Part II: 1 hour	Part 2 A) Specific recommendations – Selective reporting and editorial considerations B) Case discussion

workshop, in particular pertaining to knowledge of inappropriate reporting of headlines with methods and location of suicide, the inclusion of any suicide note, cause and details of suicide location in the content of reports, as well as negative impact of reporting unconfirmed cases and to cater for readers' interest. There was also an increase in awareness of the negative impact on the media community when reporting suicide stories. These overall findings are also supported by another study (Scherr et al., 2019) on positive outcomes of workshop intervention among Swiss media professionals in relation to their self-efficacy and attitudes in suicide reporting. One limitation to safe practice may be contributed by the lack of knowledge and expertise or skills surrounding the process of reporting. Our study provides theoretical knowledge on specific components of safe suicide reporting such as harmful descriptions of suicide and protective suicide-prevention (Ng et al., 2021b) in line with Papageno and Werther's discussion of effect in media suicide reporting (Phillips, 1985; Niederkrotenthaler et al., 2010). Knowledge of these components was evidenced to show significant improvement after our media workshop.

Other useful components may include the introduction of the responsible suicide reporting (RSR) model (Duncan and Luce, 2020b), which utilizes three key aspects, namely: (i) typology of suicide story, (ii) four ethical rules in reporting; and (iii) Standard of Moderation. The authors described a five narrative model (event-driven, post-judicial, tribute-drive, anniversary, and action-as-memorial) for suicide news and their implications in each story type. The narrative model provides a means for journalists to reflect on their ethical responsibility and minimizes unsafe reporting through four ethical rules: not to sensationalize, stigmatize, glorify, and gratuitously (mnemonic: SSGG) report suicide-related stories in the media. Lastly, the RSR model emphasizes the standard of moderation (harm minimization to bereaved, safe information, tone and language used, the responsible gathering of content, and providing information on the support available), which encourages journalists to critically reflect on in their reporting process. A workshop teaching media students using the RSR model through storytelling and problem-based learning reported greater understanding and familiarity with the practical actions for responsible reporting (Duncan and Luce, 2020a).

Some of the items that improved significantly post-intervention came from participants who were not aware of the existence of Malaysian media guidelines. Various studies worldwide have shown that even with the existence of media guidelines, many challenges arise in implementing them (Gandy and Terrion, 2015; Yaqub et al., 2020). Although guidelines are viewed as useful information, the reality of media culture and its core values in maintaining press freedom and the rights to discuss issues deemed as public interest seemed to be in contrast to the 'restrictive' style of suicide reporting. The perception that guidelines are developed via one-way communication with questionable relevance in the mainstream media, since the increase in blogs and social media made implementing guidelines all the more challenging (Gandy and Terrion, 2015). The coverage of suicide stories in episodic, event-centered frames is not motivated for educational purposes and journalists may take an approach of these as being social issues, and not comply with media guideline recommendations. While some struggle with professional values and social responsibilities, others may hold deeply to their journalistic values to 'tell it all' (Yaqub et al., 2020). These factors, in addition to low penetrance and dissemination of information and knowledge, are similarly postulated to be the reasons why our local media guidelines are left unheeded. There are also differing perspectives at the individual level on what it is important to report (Pirkis and Machlin, 2013). As such, awareness of the existence of any media guidelines does not automatically translate to compliance with its content.

Most participants with or without lived experience agreed that reporting had a negative impact on them, with a mean score of 3 and above in the pre-evaluation questionnaire. Further to this, media workers with lived experiences of suicide may provide insights into its effects in the workshop, providing assessable information via their real-life experience. They would most likely be aware of the exact location of suicide and the reasons (cause) behind the death of their loved ones and thus be able to perceive that it was inappropriate (unsafe) to report this information. These items on the cause and location of suicide had statistical improvement in the post-intervention mean score on it being unsafe to report. However, the overall effectiveness of the media workshop is more pronounced in those without lived experience of suicidal behavior. The impact of the media workshop on the participants with lower exposure to suicidal behavior potentially addressed the limitations in their understanding of the impact of suicide contagion and the importance of safe reporting. Hence, the direction of future media workshops could be targeted to benefit more people with no lived experience.

To the best of our knowledge, this is the first study to highlight that the knowledge and intrinsic factors covered by a media workshop may improve the effectiveness of training the media community and professionals on the safe reporting of suicide-related content. The other strength of our study is the benefit of

TABLE 2 | Participants' pre post intervention effects.

No.	Question items	Pre-intervention scores		Post-intervention scores		Intervention effect		
		Mean	SD	Mean	SD	T	*df*	*p* value
1	Reports about suicide should not mention specific details about the method of suicide.	4.07	0.944	4.33	0.884	1.246	29	0.223
2	Reports about suicide should include graphic details of suicide.	4.53	0.629	4.57	0.568	0.372	29	0.712
3	Reports about suicide should include contents of any suicide note.	3.67	1.093	4.23	0.858	3.084	29	0.004*
4	A celebrity suicide should be reported in detail.	4.13	0.776	4.07	0.785	−0.441	29	0.662
5	The word "suicide" should not be included in the headline or search term in reporting cases of suicide.	2.93	0.907	3.20	1.095	1.490	29	0.147
6	Headlines should include the method of suicide.	4.07	0.884	4.48	0.688	2.703	28	0.012*
7	Headlines should include the location of suicide.	3.53	1.106	4.07	0.828	3.764	29	0.001*
8	A suspected suicide should be reported as suicide even before the cause of death is confirmed.	4.20	0.961	4.63	0.615	3.496	29	0.002*
9	Media portrayal of suicide can lead to copy-cat suicide.	4.27	0.640	4.40	0.855	0.941	29	0.354
10	Suicide-related stories are written to cater to readers' interest.	2.66	1.111	3.21	1.207	2.339	28	0.027*
11	Stories of recovery from suicidal crisis can be helpful.	4.40	0.132	4.43	0.124	0.372	29	0.712
12	Media should portray suicide as an acceptable response to life's problems.	4.33	0.205	4.37	0.212	0.183	29	0.856
13	A cause for suicide should always be reported in cases of suicide.	2.70	1.119	3.23	1.073	3.247	29	0.003*
14	Including help-seeking information to stories about suicide is not helpful.	4.27	0.980	4.50	0.682	1.882	29	0.070
15	Reports should include the location of a suicide death.	3.00	0.947	3.70	1.055	3.881	29	0.001*
16	People in the media can be negatively affected when reporting on suicide.	3.97	0.850	4.23	0.817	2.112	29	0.043*
	Total scores (d = 0.9)	60.50	8.249	65.60	8.122	4.936	29	<0.001*

*$p < 0.05$ significant findings.
*d is Cohen's d.

better participant engagement when the media workshop is led by someone (QC) with dual expertise in suicide prevention and industry experience. It is safe to conduct the media workshop with participants pre-screened by the post-intervention modified Patient Health Questionnaire (PHQ), indicating that discussing suicide in the workshop was unlikely to cause psychological distress to the participants. However, whilst all 15 items in our evaluation questionnaire showed improvement in mean score post-intervention, there was one item that had a notably lower mean score post-intervention, though it was not statistically significant. This item is related to detailed reporting of a celebrity suicide, which may have not been highlighted adequately in the workshop, possibly due to its infrequent occurrence in our local setting. Nevertheless, future workshops should work toward addressing this pertinent point.

There were a further eight items for which participants' scores on their awareness and knowledge of safe reporting of suicide improved after participating in the media intervention workshop. They were related to reporting on: (i) the specific details of the method of suicide; (ii) the inclusion of graphic details of the suicide; (iii) detailed reports of celebrity suicide; (iv) use of the word "suicide" in headlines or search terms; (v) media portrayal of suicide leading to copy-cat suicide; (vi) stories of recovery; (vii) portrayal of suicide as an acceptable response to life's problems; and (viii) the inclusion of help-seeking information. However, the difference between pre and post-scores were not statistically significant, possibly due to the type II error contributed by the study's small sample size.

LIMITATIONS

One of the main limitations of our study is the small sample size, which predominantly included English-language media in Malaysia. The participants were not randomized, and no control group was used. Future research could use randomized trials for better comparison and to rule out other factors that may be involved in such a workshop. Our study focused on awareness and knowledge of safe reporting on suicide-related content in the media. Suicide is a complex and multifactorial phenomenon, and the scope of our study does not address other equally important challenges facing the media or the news reporting process, such as competing professional values and perceived social responsibilities to report the truth with full disclosure of information (Yaqub et al., 2020). Furthermore, due to time factors and lack of resources, the findings in our study were limited to short-term evaluation. Further studies should examine whether this knowledge is better able to be translated into safe journalistic practice when reporting on suicide.

The evaluation questionnaire in this study, which was adapted and modified from The Response Ability Project (Skehan et al., 2009), was not locally validated. The Response Ability Project (MediaWise, 2006) is a collaboration between mental health professionals and journalism educators in Australia which seeks to exert a positive influence on the education of journalists, enabling them to appropriately respond to and report on issues relating to suicide and mental illness by incorporating these core skills into the journalism curricula. The Mindframe National Media Initiative in Australia, under which the Response

Ability project sits, has expanded to support and develop resources for journalists on reporting suicide and mental illness. Before the study, a face validity of the questionnaire was performed in consultation with experts from Mindframe (Everymind, 2021), which utilized the original questionnaire.

CONCLUSION

Our study showed preliminary evidence that a media intervention workshop is a potentially effective way of improving awareness and knowledge of safe suicide reporting among media professionals. The workshop has a more pronounced effect on those who do not have lived experiences of suicidal behavior. The implications of our study findings include enhancing advocacy efforts and capacity building of media community professionals as a means to improve the safety of suicide reporting as a suicide prevention strategy. Future larger, randomized controlled, and more representative studies would be welcome to investigate the effectiveness of such workshops in the longer term, as well as studies examining how such workshops influence the ways in which suicide-related content is reported and exploring the potential impact on suicide rates.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by University Kebangsaan Malaysia Medical Centre Ethics Committee (UKMPPI/111/8/JEP-2019-093). 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

LC and JTYL conceptualized the study. LC, JTYL, RP, YN, KP, QC, JS, and SB were involved in the design of the study. JTYL, LC, KP, and SS analyzed the data. JTYL drafted the manuscript which all authors reviewed and approved the final draft for submission.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2021.666027/full#supplementary-material

REFERENCES

Armitage, C. J., Panagioti, M., Abdul Rahim, W., Rowe, R., and O'Connor, R. C. (2015). Completed suicides and self-harm in Malaysia: a systematic review. *Gen. Hosp. Psychiatry* 37, 153–165. doi: 10.1016/j.genhosppsych.2014.12.002

Bohanna, I., and Wang, X. (2012). Media guidelines for the responsible reporting of suicide: a review of effectiveness. *Crisis* 33, 190–198. doi: 10.1027/0227-5910/a000137

Cerel, J., Brown, M. M., Maple, M., Singleton, M., van de Venne, J., Moore, M., et al. (2019). How many people are exposed to suicide? Not six. *Suicide Life Threat Behav.* 49, 529–534. doi: 10.1111/sltb.12450

Cerel, J., Roberts, T. A., and Nilsen, W. J. (2005). Peer suicidal behavior and adolescent risk behavior. *J. Nerv. Ment. Dis.* 193, 237–243. doi: 10.1097/01.nmd.0000158377.45920.0a

Chan, L. F., Ibrahim, N., Rahman, N. A. A., Bartlett, S., Ng, Y. P., and Amer Nordin, A. S. (2018). Media reporting of suicide in the era of "Malaysia Baru". *Malays. J. Psychiatry* 27, 67–73.

Cheng, Q., Fu, K. W., Caine, E., and Yip, P. S. (2014). Why do we report suicides and how can we facilitate suicide prevention efforts? Perspectives of Hong Kong media professionals. *Crisis* 35, 74–81. doi: 10.1027/0227-5910/a000241

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. New York, NY: Academic Press, Inc.

Department of Health Tag (2007). *Living is for Everyone (LIFE) Framework in Life in Mind*. Available online at: https://www1.health.gov.au/ (accessed February 6, 2021).

Duncan, S., and Luce, A. (2020b). Using the responsible suicide reporting model to increase adherence to global media reporting guidelines. *Journalism* 1–17.

Duncan, S., and Luce, A. (2020a). Teaching responsible suicide reporting (RSR): using storytelling as a pedagogy to advance media reporting of suicide. *Journal. Educ.* 9, 18–31.

Everymind (2021). *Mindframe*. Available online at: https://everymind.org.au/programs/mindframe (accessed February 6, 2021).

Faul, F., Erdfelder, E., Lang, A. G., and Buchner, A. G. (2007). *Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39, 175–191.

Fink, D. S., Santaella-Tenorio, J., and Keyes, K. M. (2018). Increase in suicides the months after the death of Robin Williams in the US. *PLoS One* 13:e0191405. doi: 10.1371/journal.pone.0191405

Fong, Y. L. (2021). *Reporting on Suicide in Malaysia: Problem Characterization and Solution Advocacy by Media*. Sepang: The Hungarian Communication Studies Association.

Gandy, J., and Terrion, J. L. (2015). Journalism and suicide reporting guidelines in Canada: perspectives, partnerships and processes. *Int. J. Ment. Health Promot.* 17, 249–260. doi: 10.1080/14623730.2015.1077613

Hassan, R. (1995). Effects of newspaper stories on the incidence of suicide in Australia: a research note. *Aust. N. Z. J. Psychiatry* 29, 480–483. doi: 10.3109/00048679509064957

Hooper, R. (2019). *Justifying Sample Size for a Feasibility Study*. Available online at: https://www.rds-london.nihr.ac.uk/wpcms/wp-content/uploads/2019/

02/Justifying-sample-size-for-feasibility-study-updated-22-Feb-2019.pdf (accessed February 6, 2021).

Institute of Medicine Committee on Prevention of Mental Disorders (1994). in *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research*, eds P. J. Mrazek and R. J. Haggerty (Washington, DC: National Academies Press).

Jenner, E., Jenner, L. W., Matthews-Sterling, M., Butts, J. K., and Williams, T. E. (2010). Awareness effects of a youth suicide prevention media campaign in Louisiana. *Suicide Life Threat Behav.* 40, 394–406. doi: 10.1521/suli.2010.40.4.394

Jobes, D. A., Berman, A. L., O'Carroll, P. W., Eastgard, S., and Knickmeyer, S. (1996). The Kurt Cobain suicide crisis: perspectives from research, public health, and the news media. *Suicide Life Threat Behav.* 26, 260–271.

Johari, M. A., Shukri, M. Z. M., Abd, M. A. S., Karim, M., Khazali, A. K., Nasarudin, A. A., et al. (2017). Perception of media in reporting suicide cases in Malaysia. *Akad. Baru. J. Adv. Res. Soc. Behav. Sci.* 7, 59–67.

Kroenke, K., Spitzer, R. L., and Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *J. Gen. Intern. Med.* 16, 606–613.

Law, Y. W., Yeung, T. L., Ip, F. W. L., and Yip, P. S. F. (2019). Evidence-based suicide prevention: collective impact of engagement with community stakeholders. *J. Evid. Based Soc. Work* 2019, 1–17. doi: 10.1080/23761407.2019.1578318

Ministry of Health Malaysia (2004). *Guidelines for Media Reporting on Suicide*. Available online at: https://www.moh.gov.my/index.php/database_stores/attach_download/554/56 (accessed May 2011).

Mustaffa, N., Sannusi, S. N., Hasan, A. S. A., and Saad, M. Z. M. (2017). Journalism and news industry in Malaysia: new media, new challenges. *e-Bangi* 14, 73–80.

Ng, Y. P., Pheh, K. S., Panirselvam, R. R., Chan, W. L., Lim, J. B. Y., Lim, J. T. Y., et al. (2021a). Malaysian stakeholder perspectives on suicide-related reporting: findings from focus group discussions. *Front. Psychol.* 12:673287. doi: 10.3389/fpsyg.2021.673287

Ng, Y. P., Ravivarma, R. P., and Chan, L. F. (2021b). "Media, suicide and contagion-safe reporting as suicide prevention," in *Suicide by Self-Immolation, Biopsychosocial and Transcultural Aspects*, eds C. A. Alfonso, P. S. Chandra, and T. G. Schulze (Cham: Springer International Publishing).

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., et al. (2020). Association between suicide reporting in the media and suicide: systematic review and meta-analysis. *BMJ* 368:m575.

Niederkrotenthaler, T., Fu, K. W., Yip, P. S., Fong, D. Y., Stack, S., Cheng, Q., et al. (2012). Changes in suicide rates following media reports on celebrity suicide: a meta-analysis. *J. Epidemiol. Commun. Health* 66, 1037–1042. doi: 10.1136/jech-2011-200707

Niederkrotenthaler, T., and Sonneck, G. (2007). Assessing the impact of media guidelines for reporting on suicides in Austria: interrupted time series analysis. *Aust. N. Z. J. Psychiatry* 41, 419–428. doi: 10.1080/00048670701266680

Niederkrotenthaler, T., Till, B., Kapusta, N. D., Voracek, M., Dervic, K., and Sonneck, G. (2009). Copycat effects after media reports on suicide: a population-based ecologic study. *Soc. Sci. Med.* 69, 1085–1090. doi: 10.1016/j.socscimed.2009.07.041

Niederkrotenthaler, T., Voracek, M., Herberth, A., Till, B., Strauss, M., Etzersdorfer, E., et al. (2010). Role of media reports in completed and prevented suicide: werther v. Papageno effects. *Br. J. Psychiatry* 197, 234–243. doi: 10.1192/bjp.bp.109.074633

Oliver, R. J., Spilsbury, J. C., Osiecki, S. S., Denihan, W. M., Zureick, J. L., and Friedman, S. (2008). Brief report: preliminary results of a suicide awareness mass media campaign in Cuyahoga County, Ohio. *Suicide Life Threat Behav.* 38, 245–249. doi: 10.1521/suli.2008.38.2.245

Phillips, D. P. (1985). The werther effect. *Sciences* 25, 32–40.

Pirkis, J., Blood, W., Sutherland, G., and Currier, D. (2018). *Suicide and the News and Information Media: A Critical Review*. Canberra, ACT: The Australian Government Department of Health.

Pirkis, J., and Machlin, A. (2013). Differing perspectives on what is important in media reporting of suicide. *Br. J. Psychiatry.* 203, 168–169.

Pirkis, J. E., Burgess, P. M., Francis, C., Blood, R. W., and Jolley, D. J. (2006). The relationship between media reporting of suicide and actual suicide in Australia. *Soc. Sci. Med.* 62, 2874–2886.

MediaWise (2006). *Reporting Suicide Worldwide: Media Responsibilities - Guidelines, Training and Ethical Issues Raised by the Latest Review of Research About the Impact of Media Coverage on Suicidal Behaviour, Compiled by Bill Norris and Mike Jempson (The MediaWise Trust) with Lesley Bygrave (Befrienders International) in 2001 and Updated by Einar Thorsen in 2006 [Internet]*. Available online at: http://www.mediawise.org.uk/wp-content/uploads/2011/03/Covering-Suicide-Worldwide-Updated-06.pdf (accessed February 6, 2021).

Samaritans (n.d.). *Samaritans' Media guidelines for Reporting Suicide*. Available online at: https://www.samaritans.org/about-samaritans/media-guidelines/ (accessed February 6, 2021).

Scherr, S., Markiewitz, A., and Arendt, F. (2019). Effectiveness of a workshop intervention on responsible reporting on suicide among swiss media professionals. *Crisis* 40, 446–450.

Serafini, G., Canepa, G., Adavastro, G., Nebbia, J., Belvederi Murri, M., Erbuto, D., et al. (2017a). The Relationship between childhood maltreatment and non-suicidal self-injury: a systematic review. *Front. Psychiatry.* 8:149. doi: 10.3389/fpsyt.2017.00149

Serafini, G., Gonda, X., Canepa, G., Pompili, M., Rihmer, Z., Amore, M., et al. (2017b). Extreme sensory processing patterns show a complex association with depression, and impulsivity, alexithymia, and hopelessness. *J. Affect. Disord.* 210, 249–257. doi: 10.1016/j.jad.2016.12.019

Sherina, M. S., Arroll, B., and Goodyear-Smith, F. (2012). Criterion validity of the PHQ-9 (Malay version) in a primary care clinic in Malaysia. *Med. J. Malays.* 67, 309–315.

Sisask, M., and Värnik, A. (2012). Media roles in suicide prevention: a systematic review. *Int. J. Environ. Res. Public Health* 9, 123–138. doi: 10.3390/ijerph9010123

Skehan, J., Sheridan Burns, L., and Hazell, T. (2009). The response ability project: integrating the reporting of suicide and mental illness into journalism curricula. *Journal. Mass Commun. Educ.* 64, 191–204.

Taibi, M., and Na, T. Y. (2020). The changes of media landscape in Malaysia: how citizen journalism poses threats to traditional media. *J. Komun. Malays. J. Commun.* 36, 369–380. doi: 10.17576/jkmjc-2020-3601-21

Tully, J., and Elsaka, N. (2004). *Suicide and the Media: A Study of the Media Response to 'Suicide and the Media: The Reporting and Portrayal of Suicide in the Media-A Resource'*. Christchurch: University of Canterbury.

Victor, J., Heng, J., Govindaraju, G. M., Ling, T. P., Rajaratnam, U. D., and Fong, Y. L. (2019). Media reporting of suicide: a comparative framing analysis of Malaysian newspapers. *Search J. Media Commun. Res.* 11, 73–88.

Weiss, M. L. (2013). Parsing the power of "new media" in Malaysia. *J. Contemp. Asia* 43, 591–612. doi: 10.1080/00472336.2012.759332

WHO (2016). *Preventing Suicide: A Global Imperative [Internet]*. Available online at: https://www.who.int/mental_health/suicide-prevention/world_report_2014/en/ (accessed February 6, 2021).

Yaqub, M. M., Beam, R. A., and John, S. L. (2020). 'We report the world as it is, not as we want it to be': journalists' negotiation of professional practices and responsibilities when reporting on suicide. *Journalism* 21, 1283–1299. doi: 10.1177/1464884917731957

Yip, P. S., Cheng, Q., Chang, S. S., Chau, N., and Lee, E. (2015). *Recommendations on Suicide Reporting and Online Information Dissemination for Media Professionals*. Hong Kong: The Hong Kong Jockey Club Centre for Suicide Research and Prevention.

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CONCEPTUAL ANALYSIS
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Mentally Ill and Cute as Hell: *Menhera* Girls and Portrayals of Self-Injury in Japanese Popular Culture

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Over the last few decades, self-injury has gained wide visibility in Japanese popular culture from *manga* (graphic novel), *anime* (animation), to digital games and fashion. Among the most conspicuous is the emergence of *menhera* (a portmanteau of "mental health-er") girls, female characters who exhibit unstable emotionality, obsessive love, and stereotypical self-injurious behaviors such as wrist cutting. Tracing the expansion of this popular cultural slang since 2000, this conceptual article explores three narrative tropes of *menhera*—the sad girl, the mad woman, and the cutie. Within these *menhera* narratives, self-injury functions as a self-sufficient signifier of female vulnerability, monstrosity, and desire for agency. These *menhera* tropes, each with their unique interpretation of self-injury, have evolved symbiotically with traditional gender norms in Japan, while destabilizing long-standing undesirability of sick/detracted female bodies. The *menhera* narrative tropes mobilize cultural discourses about female madness and subsequently feed back into the social imaginaries, offering those who self-injure symbolic resources for self-interpretation. We argue that popular cultural narratives of self-injury like *menhera* may exert as powerful an influence as clinical discourses on the way we interpret, make sense of, and experience self-injury. Being attentive to cultural representations of self-injury thus can help clinicians move toward compassionate clinical practice beyond the medical paradigm.

Keywords: *menhera*, self-injury, Japanese popular culture, female madness, representations

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INTRODUCTION

Self-injury, intentional damaging of one's body without a clear suicidal intent, is an enigmatic behavior that breaches boundaries between sanity and madness, physical and mental health (Chandler, 2014). Images of self-injury now surround us, along with voluminous narratives of mental ill-health[1]

[1]In this article we selectively use "mental ill-health" rather than "mental illness" or "mental disorder" to avoid unnecessary pathologization and infer that anyone could temporarily experience worsening of mental health in their life. Our use of this terminology is informed by our positionality that mirrors that of critical health communication and disability studies. It is also reflective of our experience working with people with lived experiences of self-injury.

in popular media. Studies have documented the growing number of self-injury portrayals across popular media including films (Chouinard, 2009; Trewavas et al., 2010; Danylevich, 2016; Bareiss, 2017), TV shows (Whitlock et al., 2009), young adult fiction (Miskec and McGee, 2007) and comics (Seko and Kikuchi, 2020). Alongside mass media, interactive and visual-rich social media platforms have enabled instant sharing of user-generated self-injury content at an unprecedented speed and scale (Seko, 2013; Seko and Lewis, 2016; Alderton, 2018).

While self-injury, with its enhanced visibility, touches many people's lives, the perceived meanings ascribed to this practice vary widely. Research on media portrayals of self-injury has revealed a range of implicit and explicit meanings attached to this practice, including emotional regulation, self-punishment, coping mechanism, interpersonal manipulation, self-affirmation, or resistance to oppression (Danylevich, 2016; Bareiss, 2017; Seko and Kikuchi, 2020). Although what self-injury *means* to the person varies across media narratives, there is a recognizable pattern in *who* engages in this practice. Studies indicate that self-injuring characters in popular media are predominantly female adolescents who self-cut (Whitlock et al., 2009; Trewavas et al., 2010; Radovic and Hasking, 2013). This portrayal reflects and reproduces the medical discourse that has historically associated self-injury with young women and an act of cutting (Brickman, 2004; Millard, 2013).

A body of critical sociological research illuminates the long-standing association between self-injury and femininity in clinical literature in which female mental fragility and irrationality is contrasted to the aggressive and violent male pathology (e.g., Millard, 2013). Statistical "facts" have cemented this "gendered paradox" in suicide (Canetto and Sakinofsky, 1998), namely, women have higher rates of suicidal ideation and non-fatal suicidal behaviors, whereas suicide mortality is higher for men than women. In modern psychiatry, female self-cutting has thus been framed as a "delicate," non-fatal self-injury (Brickman, 2004) that resonated closely with gendered cultural norms on how women should act with and through their bodies. Chandler and Simopoulou (2021), in their arts-based participatory study, contend that self-inflicted injuries on a female body are often read differently than the same injuries on a male body. Violence acted by women on their bodies elicits "shock, disbelief, disgust," thereby leading to immediate pathologization (p. 8).

To date, published research in English on media representations of self-injury has focused almost exclusively on the Anglophone content, paying little attention to non-Anglophone portrayals of self-injury and the role popular media may play in shaping cultural understanding of this practice. However, self-injury has been explicitly thematized in Japanese popular culture over the last few decades. In a previous study, we conducted an extensive search of slice-of-life[2] *manga* (graphic novels) published between 2000 and 2017 portraying self-injury in everyday life context (Seko and Kikuchi, 2020). Across 15 *manga* we examined, the characters engaging in self-injury were predominantly young women cutting themselves to cope with feelings of despair, loneliness, or emotional numbness, replicating research on Anglophone media. However, there were two contrasting perspectives toward young girls who self-injure. On one hand, in *manga* targeting young girls (*shōjo manga*), characters engaging in self-injury were primarily protagonists of the narrative who choose self-injury as a maladaptive coping strategy against external pressures (e.g., bullying, oppressive parents). On the other hand, *manga* targeting adult male readers (*seinen manga*) portrayed women who self-injure as mentally vulnerable, attractive, and helpless mistresses waiting to be rescued by male protagonists. Notably, many of those female characters in *seinen manga* were called *menhera* (a portmanteau of "*men*tal *heal*th-*er*") that exhibited unstable emotionality, impulsivity, and sexual promiscuity, along with stereotypical self-injurious behaviors, most often recurrent wrist cutting without a clear suicidal intent (Seko and Kikuchi, 2020).

It was around 2014 that we became aware of *menhera*'s growing visibility in the Japanese popular cultural landscape, not only in *manga*, but also across *anime* (animation) video games, fashion, and character merchandise. Building on our previous study (Seko and Kikuchi, 2020) and our continuous observation of Japanese popular culture over the past decade, this article provides an initial thought on the emergence of *menhera* narrative tropes, focusing on how self-injury is constructed, appropriated, and repurposed as a metonymy of female madness. We offer a typology of *menhera* by describing the three prevailing narrative tropes: the sad girl who adapts the *menhera* label to self-pathologize their mental angst, the mad woman who exhibits pathetic obsession over her love interest, and the cutie who playfully performs subcultural "sick-cute" aesthetic through fashion. As we will be discussing, these narrative tropes are not mutually exclusive nor occurring discretely; instead, they often converge and inflect one another within one single character and across diverse popular cultural products. We contend that these *menhera* tropes, each with their unique interpretation of self-injury, have evolved symbiotically with the long-standing gender norms in Japan, weaving a complex net of meanings within which female madness is pathologized, fetishized, and performed.

Although this article focuses on a Japanese cultural slang as a case in point, our aim is not to ignite an Orientalist discourse around Japanese culture as exotic or peculiar. Rather, given that Japanese *manga, anime,* games, fashion and other popular cultural texts and artifacts have now reached far beyond Japan and exercise significant influences on the cultural landscapes of Asia, North America, and Europe, we aim to ponder on representations of self-injury in popular culture and extrapolate their potential clinical and research implications. In so doing, this article aims to join the growing critical discussion on popular culture's contribution to "pathologization from below" (Brinkmann, 2014), a process in which popular culture provides a set of semiotic and material practices that shape people's interpretations, feelings, and experiences of mental ill-health. We argue that popular cultural narratives of self-injury like *menhera* may exert as powerful an influence as clinical discourses on

[2]Slice-of-life *manga* (*nichijō-kei in Japanese*) *refers to a narrative genre that features realistic depictions of everyday, mundane life.*

the way we interpret, make sense of, and engage with self-injury.

TYPOLOGY OF *MENHERA*

The Origin

The slang *menhera* was reportedly spawned on the *mentaru herusu ban* (mental health board)[3], one of the anonymous discussion boards at a massive online community *2-channel*[4]. The mental health board facilitated discussions featuring a wide range of mental health issues including depression, mania, mood disorders, and trauma, among others. Regular users of the discussion board exchanged information about medications, therapies, or local healthcare providers, vented their pent-up feelings, and shared emotional support through anonymous postings. In October 2016, 090, a columnist for an online support network *menhera.jp*, conducted extensive archival research on *2-channel* to trace the origin of the term *menhera*. The earliest use of the term dated back to August 2000 when the regulars of the board started describing their community as *menheru ban*, using an abbreviation of *mentaru herusu* (mental health) (090, 2016a). The abbreviation quickly spread among the board members who started calling themselves "*menhera*" (*men*tal *health-er*) with the suffix "-er" to indicate their membership to the board. The initial use of the term "*menhera*" thus referred to the board members who self-identified themselves as living with some form of mental ill-health regardless of their diagnosis, gender, and age.

Since the onset of the mental health board, the topic of self-injury has been discussed sporadically among the members. Our observation of the oldest 6,907 threads on the *2-channel* mental health board (between November 1999 and July 2001)[5] suggests that there were at least 40 threads featuring the topic of self-injury, with the most prominent topic being *risuka* (wrist cutting). The messages posted on these threads entailed a complex set of cutting-related disclosures and advice: some turned to the board to report that they had just self-injured, while others asked for tips to hide scars. Some looked for advice on how to suppress the urge to cut, how to cut safely, or how to support significant others engaging in self-cutting. Notably, none of the 3,792 posts to the 40 threads featuring self-injury included the term *menhera*, which indicates that the link between self-injury and *menhera* was not explicitly established at the dawn of this online slang.

Later, the term *menhera* extended from the mental health board to the broader *2-channel* community. According to 090 (2016a), users of other *2-channel* boards began using the term around 2003 to refer to the regulars of the mental health board or persons living with mental ill-health in general. By 2005, the term appeared on one of the most popular boards *nyūsoku VIP ban* (newsflash VIP board)—notorious for vibrant discussions filled with insider jokes, slander, hate speech, and misogynist remarks. It was likely on the *nyūsoku VIP ban* when the term *menhera* was first explicitly linked to women in a pejorative manner. 090 (2016b) identified the emergence of a term *menhera onna* (*menhera* woman) on the *nyūsoku VIP ban* which disparagingly referred to women who engage in "pathetic" acts such as extreme mood swings, risky sexual behaviors, and self-injurious acts. One potential reason for this pejorative and gendered connotation was the perceived equation of *menhera* with persons living with borderline personality disorder (BPD) 090 (2016b). BPD is predominantly diagnosed in females (Grant et al., 2008) and is highly stigmatized within medical communities as "manipulative," "demanding," and "attention seeking" (Aviram et al., 2006). By 2008, the term came to derogatively refer to women with "BPD-like" behaviors as troublesome attention seekers from whom "normal" people should keep their distance 090 (2016b).

With the rapid growth of the Japanese digital landscape, the term *menhera* and its gendered connotation has expanded from the *2-channel* subculture to a wider sea of the internet and merged into the mainstream popular culture[6]. In May 2021, we searched the term "*menhera*" in three digital databases for Japanese *manga*, *anime*, and games: the Japan National Diet Library's online catalog (http://www.ndl.go.jp/), the Japanese Agency for Cultural Affairs' media arts digital archive (https://mediaarts-db.bunka.go.jp), and Kyoto International Manga Museum's Manga Repository (http://mmsearch.kyotomm.jp/index_j.html). We also searched the term on the App Store (iOS) and Google Play Store (Android) to identify potential gaming apps and visited several online communities featuring Japanese popular culture including 5-channel. Our search identified 27 unique books (14 *manga*, 7 novels, 6 non-fictions) and 5 gaming apps with the term "*menhera*" in their titles, all of which were published in or after 2012. This echoes the study by Terada and Watanabe (2021) who assessed public interest in *menhera* using Google Trends to evaluate how frequently the term was queried on Google's search engine. They identified that the number of searches rose significantly during 2010-2011 and continued steadily increasing until the time of their writing (January 2021). Despite the fast-paced changes on the internet, this slang has stuck around for a decade and become part of everyday lexicon in Japan, generating three narrative tropes to which we now turn.

[3]In 2017, along with the transfer of ownership, all 2-channel past logs were opened to the public for free. According to the *2-channel* archives (https://mevius.5ch.net/utu/kako/kako0000.html), the mental health board was launched on November 21, 1999 by Nishimura Hiroyuki, the founder of 2-channel as "*sou-utsu ban*" (manic-depressive board). As of May 18, 2021, there were 75,987 threads posted under the mental health board with each thread hosting up to 1,000 posts.

[4]*2-channel* changed its name to *5-channel* in 2017.

[5]Since 1999, the mental health board has been hosted on 16 different servers. Most of the oldest threads were on a server named "piza" (https://piza.5ch.net/utu/kako/) that hosted a total of 6907 threads between November 1991 to July 2001. We went through the titles of 6907 threads and took a closer look at posts made to the 40 threads that include "*risuto kat* (wrist cutting)" "*risuka* (a portmanteau of ***risu****to* ***kat****)*" or "*jisho* (self-injury)" in their titles.

[6]Around the same time, the term *menhera* also generated art subculture among artists living with mental ill-health. Between 2014-16, a group of artists in Tokyo started applying this label to their work and organizing a yearly art fair called "*Menhera* Exhibit" to display and sell their "outsider art" (TAV Gallery, 2016).

The Sad Girl

The first *menhera* narrative trope is the sad girl[7], a young woman who struggles with feelings of anxiety, low self-esteem, hopelessness, and loneliness. This narrative focuses on the inner turmoil of girls living with mental angst expressed through a first-person narration of some kind. The sad girl narrative itself pre-dates *menhera*. Since the 1990's, when the Japanese economy suffered a prolonged recession, narratives of psychosocial angst have manifested widely in Japanese popular culture. The term *ikizurasa* (pain of living) has been used to denote anxiety experienced by many Japanese Millennials struggling with a sense of disconnectedness and self-blaming (Nae, 2018), caused by a vast array of issues from unemployment, poverty, family problems to bullying, social withdrawal and mental ill-health (Kido, 2016). The internet, with its relative anonymity, has provided a haven for people living with life struggles, including those who engage with self-injury. The advancement of user-friendly social media platforms has further provided a fertile ground for *ikizurasa* monologs to grow and multiply.

The term *menhera,* with its association with femininity, has a considerable appeal to young women struggling with *ikizurasa. One* of the earliest examples is an indie *manga* titled *Menhera-chan* written by then 14-year-old Kotoha Toko[8] who started posting an autobiographical *manga* on her personal website around 2010. With the support from a professional editor who discovered her website, Kotoha published the *manga* in two-volume book format (Kotoha, 2012). In this coming-of-age *manga*, the female protagonist *Menhera-chan* ("the *menhera* girl") is a junior high school student experiencing long-term school refusal and social withdrawal due to undiagnosed depression. Two other main characters, *Kenkou-kun* ("the healthy boy") and *Byoujaku-chan* ("the frail girl"), become friends with *Menhera-chan* and offer her emotional support and encouragement. Although *Menhera-chan* does not engage in self-injury, there are repeated references to suicide by overdose and self-strangulation that provides a strong link between *menhera* and self-destructive acts.

When asked why she wrote *Menhera-chan*, Kotoha commented in an interview:

> "When I looked around myself, I realized that there were quite a few people who easily cry or feel hurt. People who live normally may wonder about these people like 'Why do you cry over such a small thing?' or tell them 'Don't feel hurt by such a thing!' But even those who think they have nothing to do with '*menhera*' never know who would become the one, and indeed some people may step in the realm before they know it. This is why I wrote *Menhera-chan* with the hope that readers would think 'Ah, I can relate' or 'I can understand *Menhera-chan*'s feelings"' (Da Vinci News, 2013).

For Kotoha who has personally experienced bullying and social withdrawal, *menhera* is a liminal state of being that anyone can "step in" at any time. This subtle normalization proposes an antithesis to the prevailing marginalization of social misfits who, due to various reasons, deviate from the mainstream Japanese career and life path of getting a stable job, having a family, and becoming a responsible citizen (Nae, 2018). Nevertheless, by naming the protagonist *Menhera-chan*, the author explicitly pathologized the prevailing *ikizurasa* among young women. *Menhera* girls "easily cry or feel hurt" because of their morbid individual pathology, which should be frowned upon and discouraged by "people who live normally." It is also noteworthy that this *manga* ends with the protagonist overcoming her long-term school refusal and attending a part-time high school. By describing the protagonist's gradual return to the normative social trajectory, Kotoha (2012) frames the mentally unhealthy girlhood as part of the passage to adulthood—which can be managed with time and optimal support from significant others.

Another notable sad girl narrative comes from a series of graphic narratives posted on Twitter by a young illustrator Momose Asami under the username *@menherashoujo* (*menhera* girl). Since 2013 Momose has tweeted one illustration a day, featuring a mouthless girl in a sailor suit (school uniform). Unlike Kotoha (2012) *manga* which is drawn in a comic strip format, Momose's work is a single panel comic that depicts a girl suffering loneliness, sadness, and despair. Most images are accompanied with a few spoken lines of the *menhera* girl's monolog or a short dialogue between her and anonymous others who seemingly do not understand what the girl is struggling with. Although it is not described whether the *menhera* girl has a diagnosable mental disorder or what is causing her angst, self-injury (wrist cutting) is depicted as a way for the *menhera* girl to cope with inner pain or to manage a dissociative feeling to make sure she is still alive (**Figure 1**). As of May 2021, Momose's Twitter account has over 85,000 followers and the collection of her illustrations was published in a book titled "The Voice of a Gray Girl" (Momose, 2016).

These sad girl narratives indicate that the slang provided the creators with a relatively neutral and all-encompassing label to portray contemporary Japanese girls struggling with the pain of living. It deserves attention that the sad girl *menhera* embodies stereotypical Japanese femininity, such as submissiveness, self-control, and free of selfishness. Momose (2016) mouthless character eloquently suggests that the *menhera* girl suffers in silence; everything we see and hear about her is through her inner monolog filled with despair and distress, but she has no voice to raise. Self-injury is depicted as a means to externalize and cope with her inner pain, rather than communicating her angst to others. Momose's depiction of the *menhera* girl as a "gray girl" is particularly telling in this regard. In her study on media portrayals of eating disorders and self-harm among Japanese women, Hansen (2011)

[7]The term "sad girl" may remind some readers of the Sad Girls movement that had gone viral across North American social media around 2014-15. Digital artist Audrey Wollen (@tragicqueen), who is credited with coining the term "Sad Girl Theory" in 2014, claimed that the sadness of girls should be re-historicized as an act of resistance (Tunnifliffe, 2015). Wollen's online performance of sadness, chronic illness, and depression can be considered a protest against the liberal feminist ideal of "Girl Power" that emphasizes women's will-power despite patriarchal social structures. By framing women/girls as responsible for their own success, the Girl Power discourse was criticized as denying and pathologizing women's sadness (Mooney, 2018). Although there are certainly commonalities between the (White) Sad Girl movement and the sad girl *menhera*, the latter is oriented more toward pathologization of female fragility and conformity to cultural norms rather than resistance to and disruption of such norms.

[8]In this article we present Japanese names in the Japanese convention – the family name (surname) followed by the given name (first name).

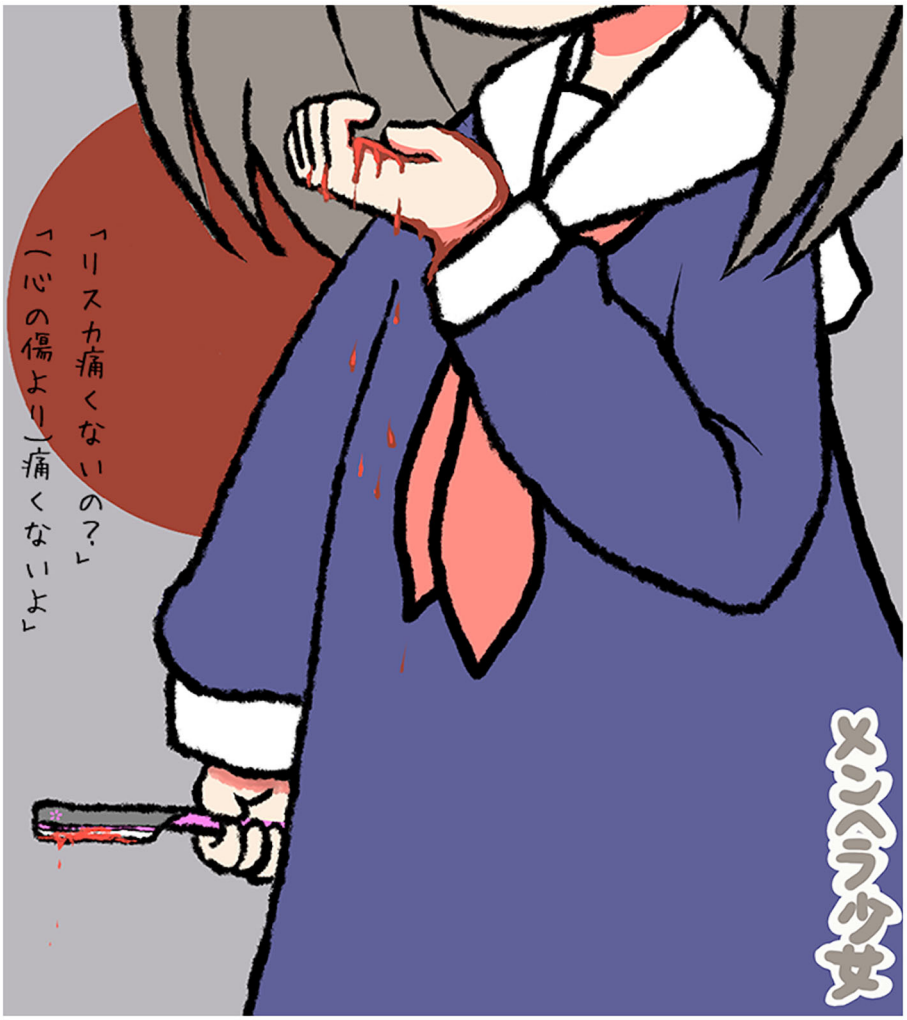

FIGURE 1 | "Doesn't wrist-cutting hurt?" "It doesn't hurt (as much as my heart)." A graphic narrative posted on Twitter by Momose Asami (@menherashoujo). Image reproduced with permission from the author.

asserts that women in contemporary Japan often face "the paradox of navigating contradictive femininity in a gray zone between the normal and the disordered" (p. 57). To be "the good and clean girl" requires Japanese women to exercise rigid self-control over their bodies to "suppress the evil" in themselves (Hansen, 2011, p. 61). In the sad girl narratives, self-harming actions such as self-induced regurgitation, starvation, and self-cutting are portrayed as a borderline disordered act performed by young women attempting to navigate the contradictive femininity.

Paradoxically, the link between *menhera* and stereotypical femininity has resulted in *menhera*'s sudden upsurge in popularity, particularly within *manga/anime* targeting male audiences. For example, *Last Menhera* (Amano and Ise, 2016) is a *seinen manga* (young male comic) that follows a high school boy falling in love with a beautiful classmate who self-cuts (**Figure 2**). Throughout the story, the heroine engages in recurring wrist slashing to "endure the pain of living" and "postpone the decision [to commit suicide]" (Amano and Ise, 2016, p. 56) which leads other characters to label her *menhera.* The male protagonist pretends that he, too, self-injures to attract her attention and affection. Through the protagonist's male gaze, the heroine's scarred body becomes the object of affective consumption wherein self-injury symbolizes her vulnerability, helplessness, and deformity, which altogether constitutes a twisted sexual appeal (Seko and Kikuchi, 2020).

The Mad Woman

Whereas, the sad girl narrative domesticates female madness as vulnerable and potentially erotic, the mad woman exaggerates her abnormality and derangement, particularly in the context of romantic relationships. In this narrative, the *menhera* is obsessed with her love interest and makes devastating efforts to be with this person. Intriguingly, in many *manga*, *anime*, and games, *menhera* girls are first introduced as cute, loveable, and nurturing to their love interests. However, when a third person

FIGURE 2 | *Last menhera* (Amano and Ise, 2016) features a male protagonist who falls in love with a *menhera* girl. Image reproduced with permission from the publisher Futaba-sha.

gets into the equation, their insecurity manifests as possessive thoughts and actions, overprotectiveness, and extreme jealousy that appears eccentric and terrifying to others (Kato, 2018). Unlike the sad girls who walk a tightrope between the normal and the disordered, the mad woman firmly inhabits the realm of madness.

In the mad woman *menhera* narrative, self-injury is often depicted as an act of interpersonal manipulation. For example, in her autobiographical self-help book titled "All Girls are *Menhera*," self-identified "former" *menhera* Suisui (2020) reflects her wrist cutting as motivated by an intense fear of abandonment. Whenever she needed reassurance, she self-cut in front of her boyfriend or sent him photos of her bleeding wounds. Although Suisui (2020) does not specify whether she had a diagnosable disorder, this self-mockery reflects the long-standing negative stereotype attached to people with BPD, the connotation first established in popular *2-channel* threads and expanded to mainstream popular culture—*menhera* as troublesome attention seekers (090, 2016b). The mad woman may also commit violence toward others, from verbal aggression to physical expressions, to perform her devotion to the beloved. Across recent *manga*, *anime*, and games, *menhera* girls are frequently portrayed as holding a sharp weapon indicating that their jealous aggression can be easily turned onto others (for an example of this caricature, see Kurii, 2016)[9].

Another salient and stereotypical caricature of the mad woman takes the form of her obsessive communication style. *Menhera* girls are often portrayed as engaging in digital stalking through relentless texting and social media monitoring to check their lovers' whereabouts and make sure they are always within reach. This "pathetic" behavior has become the subject of mockery and even gamification. For example, in 2016 rock band Mio Yamazaki released an Artificial Intelligence (AI) named *Menhera* Girlfriend as part of a promotional campaign for their new album (http://ai-girl-mio.jp/). This program allowed users to chat with a bot that sends sarcastic and depressive messages representative of *menhera* personality. If a player does not respond quickly, the AI would text "Why don't you respond?" "Don't you love me?" or "Do you mean I should die?" imitating a *menhera* girl going emotionally awry.

Similarly, a mobile gaming app named "*Menhera* Girlfriend and One Million Text Messages" features obsessive texting between a *menhera* girl and her boyfriend (**Figure 3**). In this game, the player takes the role of a *menhera* girl and sends an excessive amount of text messages to her boyfriend. The player earns points as they send a text and can exchange points for items and decorations. Items are saturated with satire and dark humor, including surveillance cameras that help monitor the boyfriend 24/7, or an assassin to eliminate any person who has a crush on the boyfriend. Launched in February 2014, the gaming app has reached 500,000 downloads in <1 year (Happy, Gamer Inc, 2015)[10].

In these examples, the narrative trope is deployed in ways that disdain and embellish the girl, isolating "pathetic" behaviors within the individual. Whether she is struggling with mental ill-health no longer matters—the emotional blackmailing, obsessive texting and manipulative self-injury alone prove she *is* a *menhera*. Further, the mad woman embodies a dualism between gender norms and deviation from them. On one hand, she opposes normative gender constructions by exhibiting aggression and violence historically associated with stereotypical masculinity. Her obsessive and assertive behavior appears frightening, immoral, and unfeminine. Yet on the other hand, her character trait still resonates with normative femininity in that her obsession with the beloved, albeit distasteful, can be seen embodying a feminine value of selfless devotion. In this regard, the mad woman *menhera* trope represents what Chouinard (2009) calls "postmodern monstrosity" associated with female madness. Analyzing film portrayals of mad womanhood, Chouinard (2009) argues that mad women are depicted as horrific because they evoke deep-seated fears that "the monstrous other is always already inside the self" (p. 799). Similarly, the *menhera* girl simultaneously embodies the menace long associated with mental ill-health and the all-too-human desire to love, care for, and nurture. With the innate moral and aesthetical ambiguity, she becomes a postmodern monster.

The Cutie

The final narrative trope is the cutie who embodies an emergent aesthetic of *yami-kawaii* (sick-cute), a subculture originating in Harajuku, a district in Tokyo known as the mecca of youth countercultures (Refinery29, 2018). As a portmanteau combining *yami* (sick, dark) with *kawaii* (cute), *yami-kawaii* mixes traditional cute elements with dark and grotesque motifs; pink hearts, strawberries, fluffy stuffed animals are juxtaposed with knives, blood splatters, hangman's nooses, syringes, pills, as well as suicidal slogans and swearwords (Refinery29, 2018). Practitioners of *yami-kawaii* fashion often feign injury by wearing bandages and eye patches or carrying syringes and needles as accessories. *Yami-kawaii* makeup emphasizes a mental illness motif, including "sickly pale" foundation and red blush-lined eyes to make them "look like swollen from crying" to express the mental angst and "the need of comfort" (Terada and Watanabe, 2021). At the heart of this girl's subculture lies a proposition: *menhera* is cute.

Illustrator Ezaki Bisko is often credited to have popularized the *yami-kawaii* movement through his character *Menhera-chan*. Created in 2013 as a simple doodle posted on Twitter, the character has quickly gained popularity and expanded into a *manga* series on Pixiv, an illustration-based online community

[9]In Japanese subculture, this caricature is sometimes called "*yandere*," a portmanteau of "*yanderu*" (sick) and "*deredere*" (lovestruck), referring to a deranged girl who uses violence or brutality to express her obsessive love. Kato (2018) argues that *yandere* embodies borderline personality disorder, while *menhera* is "in the type of narcissistic personality disorder" (p. 47). Although we disagree with this blunt and pseudo-medical dualism, it is worth noting that *yandere* girl is an exaggerated caricature of *menhera* girl with strong emphasis on her brutality.

[10]In June 2015, the company changed the game title to "*Yuru-yami* girlfriend and one million messages" where the term *yuru-yami* (loosely sick) replaced *menhera*. While Happy Gamer Inc. did not specify the reason for this decision, the game's official twitter alluded that Apple's app store policies might have led to the title change. (https://twitter.com/Sendergirlgame/status/607784210602983425).

FIGURE 3 | A screenshot of mobile game "*menhera* girlfriend and one million messages." The green speech bubbles represent excessive amounts of text messages from the *menhera* girlfriend character. Image reproduced with permission from Happy Gamer Inc.

(Ezaki, 2018). The *manga* features a group of schoolgirls who transform into justice heroines by slashing their wrists with a magical box cutter. The protagonist *Menhera Pink* and other "*risuka senshi* (wrist cut warriors)" are big-eyed, lovely-faced girls in pastel-colored sailor suits with their wrists bandaged (indicating self-injury). They fight evil spirits that lure people into derangement, while concealing their real identities (i.e., ordinary schoolgirls) during the day (Ezaki, 2018). It imitates the magical girl fantasy, a well-established *manga/anime* genre that features metamorphosis that turns an ordinary girl into a super powered alter ego.

Although it follows the convention of the magical girl genre, the cutie *menhera* strategically disrupts traditionally innocuous *kawaii* culture through its encapsulation of mental angst and re-appropriation of self-injury. The portrayal of wrist cutting as a ritual for transformation is deliberate and provocative, oozing with dark humor. It is neither a red-flag symptom of mental morbidity nor a gesture of interpersonal manipulation, but a simple means of magical transformation to defeat evil spirits/mental illness. The *menhera* girls are not mad or deranged, because mental illness has been detached and externalized as villains and it is their mission as justice warriors to defeat the evil. Rather than romanticizing or pathologizing self-injury, they calmly slash their arms to do their job.

From its onset, the cutie *menhera* narrative has been accompanied by a unique material culture. Ezaki Bisko has produced various character merchandise featuring *Menhera Pin*k and fellow wrist cut warriors since 2014. Many of the frilly, pastel-colored clothing and kitsch accessories carry provocative messages like "kill you," "sick," or "death" representing the duality of *yami kawaii* aesthetic (Refinery29, 2018). Among the *Menhera*-chan merchandise, the most controversial was the "*risuka* bangle" (wrist-cut bracelet) that emulated gaping wounds caused by self-cutting. Produced by an indie brand Conpeitou in collaboration with Ezaki in October 2014, the bracelet was sold out quickly. The brand then made an announcement of a resale on Twitter in June 2015 (Conpeitou, 2015a). However, this time it caused a storm of criticism on social media, resulting in immediate discontinuation of the product (Conpeitou, 2015b). On the company's blog, the designer commented that they, too, had a long-term experience with self-injury and apologized to those who were offended by the idea of treating self-injury as a fashion item (Conpeitou, 2015b).

Whereas, the wrist-cut bracelet and other *Menhera*-chan merchandise have stirred criticism as trivializing self-injury and other "serious" issues behind the act, the idea of wearable/removable self-cuts paradoxically suggests the subversive potential of cute aesthetics. In the cutie *menhera* trope, the *yami-kawaii* outfits and accessories can work as a sugar-coating layer to communicate one's inner turmoil and social discomfort in a playful and exaggerated manner. Drawing attention to its superficial materiality, the cutie *menhera* plays resistance to a "symptomatic" reading, which assumes a text's truest meaning is not immediately apprehensible and must be unveiled by an expert interpreter (Best and Marcus, 2009). Against the medico-political proposition that there must be a "real" issue buried beneath one's self-injury, the wrist-cut bracelet reduces self-injury to the depthless surface, rendering it commodifiable, consumable, and thus controllable body work through the façade of cuteness.

This assertive, in-your-face cuteness of the cutie *menhera* embodies what Sharon Kinsella (1995) calls a "rebellious, individualistic, freedom-seeking attitude" (p. 229) of Japanese *kawaii* culture. However, whereas Kinsella (1995) puts an emphasis on the infantile, escapist dimension of *kawaii* by equating being cute with behaving childlike, *Menhera Pin*k and wrist cut warriors engage in aggressive social commentary through their bloody fight against mental illness (evil spirits). Likewise, the practitioners of *yami-kawaii* fashion refute the premises of the medical model that casts self-injury as a self-evident sign of pathology. The scars and wounds could be read as a removable accessary, rather than unwanted marks of individual morbidity. Regarding the subversive potential of cute, Brzozowska-Brywczyńska (2007) contends that cute aesthetic embodies the Foucauldian heterotopia—"the place outside the norm, the site of revolutionary potential to change, to post an alternative order, where the coherence between words and reality is no more possible, where the paradox is structuring rule" (p. 225). As a heterotopic being, the cutie *menhera* may perform the agentic self by pushing back against the pathologization long associated with female self-injury.

DISCUSSION

Over the past few decades, the slang *menhera* has gained unique versatility to travel across the Japanese popular cultural landscape. Even though the term initially referred to a self-label for a person living with mental ill-health, a multitude of interpretations have emerged over time, transforming *menhera* into a multivocal discourse. All three narrative tropes examined in this article are entangled with sociocultural constructions of mad womanhood in Japan. *Menhera* girls in some ways reproduce and reinforce traditional gender norms, while in other ways disrupt the framing of women with mental ill-health as abnormal others. Pejorative connotations associated with self-injury, such as attention-seeking, manipulative, and obsessive, mobilize the normative discourse that demonizes female aggression. Simultaneously, *menhera* embody traditional femininity such as submissiveness, silence, and selfless devotion, which paradoxically enhances the desirability of *menhera* girls as an object of affective consumption.

Eventually, *menhera* has become part of what cultural critic Azuma (2009) metaphorically calls a postmodern "database" of cultural imaginaries. The database offers content creators an attractive caricature, a dramatic tool, and a source of plots with handy narrative tropes to draw from, while providing audiences with a rich repository of affective stimuli to satisfy their drives (Azuma, 2009). Within the database, *menhera* becomes an archetype of contemporary female madness that can be consumed with little need of backstories and contextual knowledge. A series of personality traits attached to the slang *menhera* (e.g., preoccupied attachment style, insecurity, excessive jealousy) are essentialized, caricatured, and sexualized,

shaping the collective understanding of what *menhera* girls *are* and *do*. Self-injury is framed as an iconic act that confirms *menhera* girls' abnormality, which in turn triggers a series of pre-packaged responses from contempt, pity, abhorrence, to attraction and fetish.

Once integrated into this ever-expanding database, the *menhera* tropes play a powerful role in shaping one's experience with self-injury. Just as psychiatric diagnoses provide those facing life problems with "languages of suffering" to narrate their experiences (Brinkmann, 2014), the *menhera* tropes may mobilize a set of understandings and potential actions distinct from clinical conceptualizations. In her study with female college students in Tokyo, Matsuzaki (2017) found that 13% of survey respondents had used the word *menhera* in daily conversation to refer to themselves. Matsuzaki posits that mental health slangs like *menhera* may provide people with a convenient frame of reference to understand and describe subjective experiences of mental ill-health. Here, the label *menhera* may work metonymically to protect the persons who adapt it, since wearing it enables them to instantly perform a "mentally unhealthy" identity without disclosing actual medical diagnoses (if any) or the reason for their angst. For women who self-injure, it may be at times easier to call themselves *menhera* to self-pathologize their abject self than to ponder root causes of their mental angst pertinent to the contemporary Japanese society – such as the patriarchal social system, the lack of equality caused by a widening socio-economic gap, and the pressures of economic deprivation (Nae, 2018).

This process can be understood as what Ian Hacking has called "classifications of people" in that a system of classification formulates general truths about people's suffering (Hacking, 2004). Drawing on Hacking's work, Millard (2013) argues that gendered pathology of self-cutting may exert powerful influence over women who self-injure. Millard notes: "as self-harm becomes further entrenched as 'female cutting,' the more people gendered as female have access to a resonant behavioral pattern said to signify 'distress'" (p. 136). Similarly, through the *menhera* tropes, self-injury can be culturally recognized as a mean for women to externalize *ikizurasa* (pain of living), which simultaneously frames self-injury as a self-sufficient act to classify a woman as *menhera*. However, Hacking (2004) further argues that the dialectic between classifications and people classified is rather dynamic and cyclical. When people interact with systems of classification, those who classified "cause systems of classification to be modified in turn" (p. 279), a feedback mechanism that he coined "looping effects."

In the light of this looping effect, the intersection of mental health and female counterculture is worth further exploration. We have argued that the cutie *menhera* embodies an inherent tension associated with the cute aesthetics between reproducing and subverting the existing social order. Although there is an understandable concern that their sarcastic, tongue-in-cheek attitude toward self-injury and mental illness may trivialize or fetishize the issue, the cutie *menhera*'s impulse to "cute-ify" the socially abject self—as a commodity amenable to change—can potentially disrupt pathological judgment ascribed to them. The cutificaction process may provide the opportunity for people who self-injure to open spaces for vocality and performance apart from the medical model that renders a clinical approach as the only appropriate way to make sense of self-injury. We thus echo Kato (2018) proposition that *yami-kawaii* (sick-cute) culture may destabilize the long-standing undesirability of sick/detracted female bodies. The practitioners of *menhera* fashion seem to thrive on dialectical oppositions: cute and ugly, engaged and apathetic, wild and tame, subordination and resistance to chauvinist fantasies. With the ambivalence at the heart of their aesthetics, the cutie *menhera* cheekily questions: What's wrong with being mentally ill?

Nonetheless, the politically subversive potential of the *menhera* subculture requires a cautious observation to avoid blind celebration or denigration. The cutie *menhera*'s social commentary is considerably limited to the realm of cisgender and heterosexist normativity. Their aesthetic focuses primarily on an idealized feminine cuteness and deviance from it, while little attention is paid to social class, race, ethnicity, sexuality, dis/ability, and other identity makers that may ascribe different meanings to self-injury and female madness. It would be fruitful for future research to apply an intersectional lens that takes into account material and discursive socio-political contexts that inform theorization of mad womanhood. Moreover, the *menhera*-the-cutie subculture is deeply entangled with consumerism that equates empowerment with the capacity to purchase. As Mooney (2018) comments on girls' digital subcultures, subversive identity performances by youth sometime end up swallowed by mainstream consumer culture. Given the widening socio-economic gap in Japan, future theoretical work should interrogate who has access to the subversive readings of self-injury and mental health, while others may fall into the prey of poverty and poverty shaming.

CONCLUSION

Today, *menhera* girls abound in Japanese popular culture in many forms and manifestations. One may encounter them in *manga, anime*, games as well as clothing, makeup, and other character merchandise. Within the three narrative tropes examined in this article—the sad girl, the mad woman, and the cutie—self-injury functions as an iconic signifier of women's vulnerability, monstrosity, and desire for control over their bodies. Even though the act is strongly associated with one's mental ill-health, in these narrative tropes it also represents a deviant performance and a tongue-in-cheek statement of agency that troubles the pathological reading of the practice.

Given the ongoing dialectic between popular cultural classification and people classified, developing an intersectional, cross-disciplinary understanding of how popular culture represents self-injury has implications for clinical practice and research. Just like any other human behavior, clinical practices do not exist in a cultural vacuum. When people use cultural slangs like *menhera* to explain their engagement with self-injury, they may attempt to narrate their pain of living that cannot be captured by a medical frame of reference. Their vernacular

illness narrative can then feed back into the clinical system of classification and shape clinical providers' understanding of what self-injury *is* and *does*. In this regard, we concur with Chandler (2014) assertion that attending to the diverse ways in which self-injury is understood and narrated "should comprise an important aspect of compassionate clinical practice" (p. 5). Exploring the cultural milieu wherein people explain, perform, and make sense of self-injury can illuminate important conversations occurring outside of the clinical practice that have considerable influence on people who self-injure and those who are affected by it.

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Both authors have made a substantial and intellectual contribution to the work and approved the submitted manuscript.

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REFERENCES

090 (2016a). '*Menhera' to iu kotoba no rekishi: 2-channel de 'menhera' ga tanjo surumade.* [Japanese] (An early history of the term '*menhera*' on 2-channel). Available online at: https://menhera.jp/975 (accessed May 21, 2021).

090 (2016b). *Utsuri kawaru 'menhera' no imi: kono 10-nen de 'menhera' no shiyohou wa donoyouni kawattanoka.* [Japanese] (The changing meaning of 'menhera': how the use of the term 'menhera' has change over the past 10 years). Available online at: https://menhera.jp/1095 (accessed May 21, 2021).

Alderton, Z. (2018). *The Aesthetics of Self-Harm: The Visual Rhetoric of Online Self-Harm Communities*. New York, NY: Routledge. doi: 10.4324/9781315637853

Amano, S., and Ise, K. (2016). *Last Menhera*. Tokyo: Souyou-sha.

Aviram, R. B., Brodsky, B. S., and Stanley, B. (2006). Borderline personality disorder, stigma, and treatment implications. *Harv. Rev. Psychiatry* 14, 249–256. doi: 10.1080/10673220600975121

Azuma, H. (2009). *Otaku: Japan's Database Animals.* Minneapolis: University of Minnesota Press.

Bareiss, W. (2017). Adolescent daughters and ritual abjection: narrative analysis of self-injury in four US films. *J. Med. Human.* 38, 319–337. doi: 10.1007/s10912-015-9353-5

Best, S., and Marcus, S. (2009). Surface reading: An introduction. *Representations* 108, 1–21. doi: 10.1525/rep.2009.108.1.1

Brickman, B. J. (2004). 'Delicate' cutters: Gendered self-mutilation and attractive flesh in medical discourse. *Body Soc.* 10, 87–111. doi: 10.1177/1357034X04047857

Brinkmann, S. (2014). Languages of suffering. *Theory Psychol.* 24, 630–648. doi: 10.1177/0959354314531523

Brzozowska-Brywczyńska, M. (2007). "Monstrous/cute. Notes on the ambivalent nature of cuteness," in *Monsters and the Monstrous: Myths and Metaphors of Enduring Evil*, ed N. Scott (Brill Rodopi). doi: 10.1163/9789401204811_015

Canetto, S. S., and Sakinofsky, I. (1998). The gender paradox in suicide. *Suicide Life-Threat. Behav.* 28, 1–23.

Chandler, A. (2014). Narrating the self-injured body. *Med. Humanit.* 40, 111–116. doi: 10.1136/medhum-2013-010488

Chandler, A., and Simopoulou, Z. (2021). The violence of the cut: gendering self-harm. *Int. J. Environ. Res. Public Health* 18:4650. doi: 10.3390/ijerph18094650

Chouinard, V. (2009). Placing the 'mad woman': troubling cultural representations of being a woman with mental illness in Girl Interrupted. *Soc. Cult. Geography* 10, 791–804. doi: 10.1080/14649360903205108

Conpeitou (2015a). [*Tweet]. Twitter. Menhera chan corabo: Riska banguru nyushu shimashita.* [Japanese] (Collaboration with Menhera-chan: Wrist cut bracelet now on sale). Available online at: https://twitter.com/_conpeitou_/status/613563672187682816 (accessed June 13, 2021).

Conpeitou (2015b). *Risuka banguru hatsubai chushi no oshirase. Ameba Blog.* Available online at: https://ameblo.jp/0-conpeitou-0/entry-12043269584.html (accessed June 28, 2021).

Da Vinci News (2013). *Gen-eki joshi kousei ga kaita manga 'Menhera-chan': Kotoha Toko interview*. Available online at: https://ddnavi.com/serial/99169/a/ (accessed June 12, 2021).

Danylevich, T. (2016). De-privatizing self-harm: remembering the social self in how to forget. *J. Bioeth. Inq.* 13, 507–514. doi: 10.1007/s11673-016-9739-8

Ezaki, B. (2018). *Yamikawa Senshi Menhera-chan: Official Fan Book*. Tokyo: Kadokawa

Grant, B. F., Chou, S. P., Goldstein, R. B., Huang, B., Stinson, F. S., Saha, T. D., et al. (2008). Prevalence, correlates, disability, and comorbidity of DSM-IV borderline personality disorder: results from the Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions. *J. Clin. Psychiatry* 69, 533–545. doi: 10.4088/JCP.v69n0404

Hacking, I. (2004). Between michel foucault and erving goffman: between discourse in the abstract and face-to-face interaction. *Econ. Soc.* 33, 277–302. doi: 10.1080/0308514042000225671

Hansen, G. M. (2011). Eating disorders and self-harm in Japanese culture and cultural expressions. *Contemp. Japan* 23, 49–69. doi: 10.1515/cj.2011.004

Happy, Gamer Inc (2015). *Menhera Kanojo Kyuzou chu*. Available online at: https://happygamer.co.jp/post/113224874165 (accessed June 12, 2021).

Kato, G. (2018). A New Meaning of Mental Health in Japanese Net World. *Bull. Fac. Sociol.* 12, 43–55.

Kido, R. (2016). The angst of youth in post-industrial Japan: A narrative self-help approach. *New Voices Japan. Stud.* 8, 98–117. doi: 10.21159/nvjs.08.05

Kinsella, S. (1995). "Cuties in Japan," in *Women, Media and Consumption in Japan*, eds L. Skov and B. Moeran (Honolulu: University of Hawaii Press).

Kotoha, T. (2012). *Menhera-chan*. Tokyo: East Press.

Kurii, C. (2016). *Mememememememememenhera*. Tokyo: Square Enix.

Matsuzaki, M. (2017). Definition of "Mental Health Slang" from the study among young women in Tsuda College. *Bull. Tsuda College* 49, 197–216.

Millard, C. (2013). Making the cut: the production of 'self-harm' in post-1945 Anglo-Saxon psychiatry. *Hist. Human Sci.* 26, 126–150. doi: 10.1177/0952695112473619

Miskec, J., and McGee, C. (2007). My scars tell a story: Self-mutilation in young adult literature. *Child. Literat. Assoc. Q.* 32, 163–178. doi: 10.1353/chq.2007.0031

Momose, A. (2016). *Haiiro Shoujo no Koe [Japanese]*. (The voice of a gray girl). Tokyo: Ichijin-sha.

Mooney, H. (2018). Sad girls and carefree Black girls: Affect, race, (dis)possession, and protest. *Women Stud. Q.* 46, 175–194. doi: 10.1353/wsq.2018.0038

Nae, N. (2018). QUO VADIS? Japanese youth and the burden of living. *Euro. J. Stud. Educ.* 9, 15–25.

Radovic, S., and Hasking, P. (2013). The relationship between portrayals of nonsuicidal self-injury, attitudes, knowledge, and behavior. *Crisis* 34:324. doi: 10.1027/0227-5910/a000199

Refinery29 (2018). *Style Out There: The Dark Side of Harajuku Style You Haven't Seen Yet*. Available online at: https://www.refinery29.com/en-ca/yami-kawaii-fashion-harajuku-style-dark (accessed June 27, 2019).

Seko, Y. (2013). Picturesque wounds: a multimodal analysis of self-injury photographs on flickr. *Forum* 14:2. doi: 10.17169/fqs-14.2.1935

Seko, Y., and Kikuchi, M. (2020). Self-injury in Japanese manga: a content analysis. *J. Med. Human.* 2020, 1—15. doi: 10.1007/s10912-019-09602-9

Seko, Y., and Lewis, S. P. (2016). The self—harmed, visualized, and reblogged: Remaking of self-injury narratives on Tumblr. *New Media Soc.* 20, 180–198. doi: 10.1177/1461444816660783

Suisui (2020). *Subete no joshi wa menhera de aru*. [Japanese] (All Girls are Menhera) [Japanese]. Tokyo: Asuka Shin-sha.

TAV Gallery (2016). *Menhera Ten: Dream* (*Menhera Exhibition: Dream)*. Available online at: https://tavgallery.com/dream/ (accessed May 17, 2021).

Terada, H., and Watanabe, M. (2021). A study on the history and use of the word "Menhera." [Japanese] *Hokkaido University Bull. Counsel. Room Dev. Clin. Needs* 4, 1–16. doi: 10.14943/RSHSK.4.1

Trewavas, C., Hasking, P., and McAllister, M. (2010). Representations of non-suicidal self-injury in motion pictures. *Arch. Suicide Res.* 14, 89–103. doi: 10.1080/13811110903479110

Tunnifliffe, A. (2015). *Artist Audrey Wollen on the Power of Sadness: Sad Girl Theory Explained. Nylon*. Available online at: https://www.nylon.com/articles/audrey-wollen-sad-girl-theory (accessed June 17, 2021).

Whitlock, J., Purington, A., and Gershkovich, M. (2009). "Media, the Internet, and nonsuicidal self-injury," in *Understanding Nonsuicidal Self-Injury: Origins, Assessment, and Treatment*, ed M. Nock (Washington, DC: American Psychological Association). doi: 10.1037/11875-008

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