The perceived impact of suicide-related internet use: A survey of young Australians who have gone online for suicide-related reasons

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Abstract

The aim of the present study was to examine the perceived impact of suicide-related Internet use, particularly of websites with potentially harmful attitudes towards suicide (encouraging suicide or discouraging help-seeking) or potentially helpful attitudes towards suicide (discouraging suicide or encouraging help-seeking), the online availability of suicide methods and online suicide communities The present study used a cross-sectional, anonymous online survey. Participants were 102 Australian citizens and permanent residents recruited from various, non-mental health-related websites, aged 18–24 years, who had gone online for suicide-related reasons within the past 12 months. Overall, there was a significant decrease in participants' retrospective ratings of their suicidal thoughts and behaviours from before they first went online for suicide-related reasons to the time of the survey. However, characteristics of websites did not significantly predict users' suicidal thoughts and behaviours. Participants reported both positive and negative online experiences, even for similar forms of suicide-related Internet use (e.g. reading information on suicide methods). The findings suggest that suicide-related Internet use is complex and its impact cannot necessarily be strictly attributed to specific types of websites or online content. The Internet may pose a risk to some vulnerable individuals but may also provide helpful, valuable support to others. Mental health professionals should therefore be aware of these potential risks and direct more efforts towards online suicide prevention.

Introduction

Researchers interested in the potential impact of the Internet on suicide have typically discussed the wide variety of content that is available online in terms of content that might discourage or prevent suicide or content that might encourage suicide. While online resources such as crisis intervention, screening, and support groups provide opportunities for suicide prevention, there are also possible dangers associated with so called 'pro-suicide' websites.[1–9] The term 'pro-suicide' has broadly been used to refer to websites that encourage suicide explicitly, through discouraging professional help, or by promoting the decision of suicide as an individual right.[1,7]

A number of studies have conducted research through online search engines to examine the availability of pro-suicide websites and the ease with which they can be accessed in order to understand the Internet's potential risk to users.[4,10,11] There is, however, a lack of evidence on their actual effect on individuals. Additionally, Till and Niederkrotenthaler[12] argued that the 'pro-suicide' and 'anti-suicide' categorisations of suicide-related websites in such studies were often heterogeneous and subjective. Rather, Till and Niederkrotenthaler[12] chose to assess websites based on harmful or helpful characteristics (drawing on recommendations for the media

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reporting of suicide). Indeed, search engine studies examining pro-suicide websites have varied with respect to their definitions of pro-suicide,[10,11] or have not provided explicit definitions.[4] It has also been argued that these categories are overly simplistic and do not adequately describe the nature of the majority of suicide-related content that is available online and how it may impact users.[13,14] Niezen,[14] instead, discussed the impact of the Internet in terms of the value of online communities. Online communities can reduce social isolation by providing individuals with a place to meet and receive support from others experiencing similar problems. The supportiveness of such online communities, he asserted, can lead to life-affirming experiences, even on websites advocating for suicide. Niezen[14] suggested that negative effects arise from hostile environments where users post inflammatory responses intended to upset or ridicule others.

There is some evidence to support the benefits of online suicide communities. Eichenberg[15] recruited users from a German suicide forum to participate in an online survey about their forum use. Participants were surveyed on their motivations and asked to rate the strength of their suicidal thoughts before they first visited the suicide forum and at the time of the survey on a scale from zero (absolutely no suicidal thoughts) to six (very strong suicidal thoughts). A factor analysis of their motivations revealed a constructive factor (e.g. help-seeking) and a destructive factor (e.g. to find details on suicide methods). Three user types were identified: those with primarily constructive motivations for going online, those with primarily destructive motivations for going online, and those who had neither strong constructive nor destructive motivations. In all three groups of users, Eichenberg[15] found significant decreases in suicidal thoughts from before the first forum visit to the time of the survey. These findings were replicated among a sample of Japanese suicide forum users.[16] However, as these studies were limited to users of a particular suicide forum, it was unclear whether online communities provided value above and beyond other forms of suicide-related Internet use.

Another study by Harris et al.[17] obtained a diverse sample of suicidal people by recruiting through a variety of online methods such as Google advertisements, blogs and email. The results of their online survey showed that of 165 participants who reported going online for suicide-related reasons, 60.0% reported feeling less alienated online, 57.0% found more support online, and 69.7% felt that they became less suicidal after going online. Despite 72.7% of the sample reporting that they visited online forums, with many finding them high in usefulness, no direct comparisons were made between those who used online communities against those who did not.

Conversely, in one longitudinal study with a sample of Japanese participants recruited from the general population, specific types of suicide-related Internet behaviours were associated with negative outcomes.[18] Lifetime and past month disclosure of suicidal ideation to an anonymous online other and browsing the Internet for information about suicide methods significantly predicted increases in suicidal ideation (measured by the Beck Scale for Suicidal Ideation) at follow-up one week from baseline. Consulting with an anonymous online person about mental health within the past month did not significantly predict scores at follow up.

The reasons for discrepancies in findings between Sueki and colleagues'[18] work (which found negative impacts of the Internet) and cross-sectional studies (which have found positive impacts of the Internet) are unknown due to differences in methodology. Additionally, although previous work has speculated about the potential impact of websites encouraging or discouraging suicide, or the potential benefits of online communities, studies have yet to compare the impact of specific types of online content on users. Thus, Niezen's[14] suggestion that supportive online communities can have significant benefits even in the presence of discussions advocating for suicide has not yet been explored. The present study therefore aimed to examine the perceived impact of suicide-related Internet use, with consideration for websites explicitly encouraging suicide or discouraging help-seeking, websites explicitly discouraging suicide or encouraging help-seeking, websites that provide information on suicide methods, involvement in online communities and the perceived level of supportiveness or hostility of the online environment.

Method

Participants and procedure

This study was approved by the University of Melbourne's Human Ethics Research Committee. Participants were recruited between November 2013–November 2014 from various non-mental health-related websites including the University of Melbourne student portal, free online classifieds websites such as Gumtree and Craigslist, online forums and Facebook. Notices were posted describing the purpose of the study and included a link to an anonymous online survey for participants to complete. Participants were eligible if they were Australian citizens or permanent residents aged 18–24 years and had experienced suicidal thoughts within the past year. Participants were advised that they consented to the study by beginning the survey.

Those who indicated that they had gone online for reasons relating to their own feelings of suicide within the past 12 months were classified as suicide-related

Internet users. Suicide-related users then completed questions assessing their suicide-related Internet use and its perceived impacts. Participants were asked a series of questions about the type of website that they had used for suicide-related reasons within the past 12 months. If they had used more than one, they were asked to describe the website that they had used most frequently. These questions included both quantitative and qualitative items.

Quantitative analyses

To examine the website's orientations or attitudes towards suicide, definitions of pro-suicide and anti-suicide websites within the existing literature were compiled into a list.[1,7,8,11] Given arguments against classifying websites as pro-suicide or anti-suicide, the present study instead focused on how potentially harmful orientations or attitudes towards suicide (explicit encouragement of suicide, discouragement of professional help-seeking) or potentially helpful orientations or attitudes towards suicide (discouragement of suicide, encouragement of professional help-seeking) could be associated with suicidal thoughts and behaviours. Participants were classified as having participated in online communities if they answered 'yes' to the question, 'Do you use the website to communicate with or to read communications between anonymous online people?'. Participants were also asked to rate how they perceived the atmosphere or environment of the website that they had used most frequently for suicide-related reasons within the past 12 months on a scale from one (friendly/supportive) to seven (hostile).

As with Eichenberg's[15] study, a seven-point rating scale was used to assess suicidal thoughts, as well as suicidal behaviours. Participants were asked to provide ratings for the strength of their suicidal thoughts from zero (no suicidal thoughts) to six (very strong suicidal thoughts) prior to first going online for suicide-related reasons and at the time of the survey. Similarly, participants were asked to rate the strength of their suicidal behaviours, where suicidal behaviours were defined as 'any self-injurious acts with at least some intent to die', on a scale from zero (no suicidal behaviours) to six (very lethal suicidal behaviours) prior to first going online for suicide-related reasons and at the time of the survey. In the present study, there were significant positive relationships between participants' ratings of their suicidal thoughts and behaviours before first going online for suicide-related reasons, $r = 0.23$, $p < 0.05$, and between their ratings of their suicidal thoughts and behaviours at the time of the survey, $r = 0.36$, $p < 0.001$.

Changes in ratings of suicidal thoughts and behaviours were then examined using paired samples *t*-tests. A series of multiple regressions assessed the predictors of participants' ratings of the strength of their suicidal thoughts and behaviours at the time of the survey, controlling for ratings of the strength of their suicidal thoughts and behaviours before first going online for suicide-related reasons.

Qualitative analyses

Due to potential limitations with the quantitative items (e.g. recall bias), a set of open-ended response questions, created by the researchers, was also included in the survey. These questions assessed participants' online experiences and how they perceived the impact of their suicide-related Internet use. There were seven questions in total:

- Would you say that the website you use for suicide-related reasons is pro-suicide, anti-suicide, both, or neither? What are your reasons for classifying it in this way?
- What are the good things about this website (if any)?
- What are the bad things about this website (if any)?
- In general, are you satisfied or happy with your suicide-related Internet use? Why or why not?
- What online activities do you typically engage in when you go on the Internet for suicide-related reasons?
- Describe how, if at all, your suicide-related Internet use has affected (positively or negatively) your suicide-related problems
- Describe how, if at all, your suicide-related Internet use has affected (positively or negatively) other aspects of your life

A content analysis, based on the steps outlined by Zhang and Wildemuth,[19] was conducted on participants' responses to the open-ended questions. The coding system was developed inductively by a single researcher. Participants' responses were compiled and read through and assigned codes that could potentially represent underlying themes. Using the constant comparative method, responses assigned the same codes were compared and codes were adjusted based on similarities and differences between responses. The coding system was then re-applied to participants' responses and further refined where necessary. Related or similar codes were subsequently organised into a set of broader themes reflecting the ways in which individuals used the Internet for suicide-related reasons.

Results

Descriptive information

A total of 102 suicide-related Internet users (26 male, 75 female and one other gender) were recruited, with a

Table 1. Website orientation and attitudes towards suicide.

Orientation/attitude towards suicide	n	%
Encouragement of seeking professional help/treatment	66	70.2
Discouragement of suicide attempts or suicidal behaviour	65	69.4
Believes that suicide is an individual choice	38	40.4
Information on or discussion of methods of suicide	37	39.4
Neutral stance on suicide	23	24.5
Encouragement of suicide	11	11.7
Does not view suicide as a problem	8	8.5
Rejection of professional help/treatment	2	2.1

mean age of 20.33 (standard deviation $(SD) = 2.11$). Participants were predominantly Caucasian (69.6%), single (77.5%) and had attained a highest level of education of high school or high school equivalent (45.1%). Over half of participants (53.9%) were recruited via the University of Melbourne student portal, suggesting that there may have been a high number of students in the sample.

Almost two-thirds of participants (63.2%) reported using online communities and 36.8% did not. Mean ratings of participants' perceptions of the atmosphere or environment of the website indicated that generally, participants found the website they used to be relatively friendly and supportive (mean $(M) = 2.69$, $SD = 1.28$). Participants also selected, from a list of descriptors of attitudes or orientations towards suicide, all that were applicable to the website that they had used for suicide-related reasons within the past 12 months. Table 1 shows the number and percentage of suicide-related users that endorsed each descriptor.

Websites that had potentially helpful attitudes were the most common. Descriptors such as 'believes that suicide is an individual choice' or 'information on or discussion of methods of suicide' were classed as being relatively neutral in nature (as they did not explicitly encourage nor discourage suicide). Potentially harmful attitudes (explicit encouragement of suicide and rejection of professional help/treatment) were among the least common. Three users (2.9%) used a website that only promoted potentially harmful attitudes towards suicide. In all other cases where participants used a website containing potentially harmful attitudes

towards suicide, they also reported the presence of potentially helpful attitudes.

Quantitative analyses

Suicidal thoughts. A paired samples *t*-test showed a significant difference in participants' ratings of the intensity of their suicidal thoughts from before first going online for suicide-related reasons ($M = 5.77$, $SD = 1.19$) to the time of the survey ($M = 3.68$, $SD = 1.66$), $t(94) = 11.42$, $p < 0.001$ (two-tailed), eta squared $= 0.58$. Participants were also asked to rate the extent to which they felt their ratings at the time of the survey were influenced by their suicide-related internet use. For ratings of suicidal thoughts, 44.2% felt that their ratings at the time of the survey were not influenced at all, 35.8% felt that they were slightly influenced, 16.8% felt that they were moderately influenced and 3.2% felt that they were strongly influenced.

Suicidal behaviours. Suicide behaviour ratings significantly decreased from before first going online for suicide-related reasons ($M = 3.32$, $SD = 1.84$) to the time of the survey ($M = 1.86$, $SD = 1.30$), $t(93) = 9.04$, $p < 0.001$ (two tailed), eta squared $= 0.47$. In terms of the perceived influence of suicide-related Internet use on ratings of suicidal behaviours at the time of the survey, 56.8% felt that their ratings at the time of the survey were not influenced at all by their suicide-related Internet use, 23.2% felt that they were slightly influenced, 10.5% felt that they were moderately influenced, 8.4% felt that they were strongly influenced and 1.1% felt that they were completely influenced.

Predictors of suicidal thoughts and behaviours. Multiple linear regressions were conducted to investigate whether website characteristics significantly predicted ratings of suicidal thoughts and behaviours at the time of the survey, controlling for participants' ratings of their suicidal thoughts and behaviours before first going online for suicide-related reasons. Several of the orientation descriptors were collapsed to form the predictors: potentially harmful orientation towards suicide (encouraging of suicide, rejection of professional help/ treatment) and potentially helpful orientation towards suicide (discouraging of suicide, encouragement of professional help/treatment). Providing information on suicide methods or discussions of suicide methods was included as an individual predictor to examine whether the availability of information on suicide methods alone posed significant risk to users. Whether participants participated in online communities and their ratings of the perceived supportiveness of the online environment were also included. Table 2 shows the results of the regression analysis for suicidal thoughts.

Table 2. Predictors of suicidal thoughts at time of survey, controlling for suicidal thoughts before first going online for suicide-related reasons.

Predictor	B	SE B	β	95% Confidence interval	
				Upper	Lower
Suicidal thoughts before	0.37	0.14	0.27[a]	0.09	0.66
Information on or discussion of suicide methods	0.11	0.39	0.03	−0.67	0.90
Harmful orientation towards suicide	0.06	0.52	0.01	−0.97	1.09
Supportiveness	−0.04	0.14	−0.03	−0.32	0.24
Helpful orientation towards suicide	−0.11	0.49	−0.03	−1.09	0.87
Community website	−0.64	0.35	−0.19	−1.34	0.07

SE: standard error of the mean.
[a]$p < .05$

Table 3. Predictors of suicidal behaviours at time of survey, controlling for suicidal behaviours before first going online for suicide-related reasons.

Predictor	B	SE B	β	95% Confidence interval	
				Upper	Lower
Suicidal behaviours before	0.39	0.06	0.55[b]	0.26	0.51
Harmful orientation towards suicide	0.58	0.35	0.16	−0.11	1.27
Supportiveness	0.05	0.09	0.05	−0.14	0.24
Information on or discussion of suicide methods	0.00	0.26	0.00	−0.52	0.52
Helpful orientation towards suicide	−0.11	0.33	−0.03	−0.77	0.54
Community website	−0.10	0.24	−0.04	−0.57	0.38

SE: standard error of the mean.
[b]$p < .001$

Individually, none of the website characteristics significantly predicted ratings of suicidal thoughts at the time of the survey, controlling for ratings of suicidal thoughts from before first going online for suicide-related reasons. Only participants' ratings of the estimated strength of their suicidal thoughts from before going online for suicide-related reasons significantly positively predicted their ratings at the time of the survey.

The regression results for suicidal behaviour ratings are shown in Table 3. As with the findings for suicidal thoughts, website characteristics did not significantly predict ratings of suicidal behaviours at the time of the survey, controlling for ratings of suicidal behaviours before first going online for suicide-related reasons. Only participants' ratings of their suicidal behaviours before first going online for suicide-related reasons significantly predicted their respective ratings at the time of the survey.

Qualitative analyses

Although only 21 participants (six male and 15 female) gave responses to the open-ended questions, they provided valuable information about their use of the Internet for suicide-related reasons and its perceived impact. Analyses revealed both positive and negative experiences and potential influences of the Internet. Two main uses of the Internet were found to be associated with both positive and negative online experiences and perceived influences: communicating with others and reading information on the Internet. The subthemes for each are included below.

Communicating with others. The most common theme related to connecting with others online, most often through online communities where participants could anonymously and freely discuss issues that they were not necessarily able to discuss offline. Individuals actively participated by posting their own thoughts or feelings and replying to other community members or passively participated by reading others' posts and comments.

Social support and reducing isolation. The opportunity to meet and connect with others who were facing similar problems and to read their experiences helped to reduce the isolation felt by some and gave participants a sense of support:

> I think I had support through this website to get me through a really tricky time and there were people that seemed to really care about me which made me feel appreciated.
> I think it made me feel less alone, because you read about other people who are going through similar things. You can also get people reaching out to you, saying that they're there if you need a chat. So I suppose it's positive.

Providing and receiving help. Reading other people's stories and how they had dealt with or overcame their problems inspired participants to deal with their own issues: *'It helped me to see the bigger picture, to talk to others who had gone through very dark times and see how they came out of it was a very hopeful thing to see'.* Not only did participants receive help, but they also offered help and support to others. For some, helping others was itself a positive experience: *'Their struggles gave a real sense of importance, to have someone be grateful for your advice and to make them smile or keep going for just a bit longer is a really special thing to do'.*

Triggering or reinforcing suicidal thoughts or behaviours. However, a number of participants also responded that they had been upset by the content found online. They tended not to elaborate on their answers or describe what they specifically found upsetting, but simply stated that it was 'distressing' or 'triggering'. Several responses suggested that this distressing content could reinforce or worsen suicidal thoughts, or potentially influence suicidal behaviours:

> Dissatisfied - keeps you thinking about suicide, thinking of things people have said, worries you about others, sometimes triggering.
> Sometimes the posts on the website can cause suicidal thinking to become slightly worse.

> My suicide-related Internet use negatively affected my suicide-related problems. It provides so much information and depressing content that can really contribute to a suicidal person's actions.

The lack of online moderation and users' ability to post any type of information online also led to the normalisation or the romanticisation of suicide and suicidal behaviours:

> Tendency to post pictures about suicide and eating disorders in a slightly romantic way if you are following certain groups of people.
> Because it is anonymous, it is open to abuse from outsiders looking for kicks. Sometimes when people post pictures of their self harm, it makes the act seem competitive.

Reading information. Participants reported going online to view information on a variety of topics, including mental health-related information, information on coping strategies and information on suicide methods. The mental health-related information assisted in increasing individuals' understanding of their own problems: *'But it was also looking at symptoms and indications of depression and mental illnesses, I wasn't sure if what I was feeling was normal or attention seeking or something to be genuinely concerned about'.*

Helpfulness of information on suicide methods. Additionally, despite going online to read information on suicide methods, this did not necessarily have a negative impact on participants or lead to destructive behaviour. The impartial nature of such content was viewed positively: *'Despite containing pages that discourage making suicide attempts, it is otherwise relatively impartial, and provides useful and enlightening information on suicide methods and statistics.'* For several participants, it appeared to have a suicide preventive effect:

> Seeing how ineffective common methods are (for example over dosing which I had attempted as a teenager) has stopped me from attempting using these methods. This knowledge enabled me to take a step back and think about what I was doing, ultimately giving me time to change my mind. So despite being a negative website, it lead (sic) to self-preserving behaviour.
> As I was able to find information that would allow me to prepare a relatively effective and painless method of suicide, it made me feel less trapped by living, in that it made living feel like an option rather than feeling forced to live.

Dangers of information on suicide methods. Although there were positive experiences described with going online to read information on suicide methods, there were also potentially negative experiences. The information on suicide methods available online provided users with the knowledge that they would need to carry out a suicide attempt in the event that they chose to do so:

> It has reassured me that, if I decide to attempt suicide, I will be able to prepare a relatively effective and painless method.
> Well, it has made me realize with my research how difficult it is to kill yourself by overdosing. I don't know if that's positive or negative.
> Scared me. Though, it did inform me lots of regular pain killer tablets probably would only make me feel sick.

Whether they perceived this to be positive or negative was not always clear. Although one participant viewed this in a positive light (*'I'm educated and I know that if I felt like that I would know how to act, but I think that this really is quite a positive thing; it would be better to die than be permanently incapacitated'*) such responses nevertheless demonstrate the potential dangers of the Internet in facilitating suicide. In fact, one participant explicitly stated that online information on suicide methods had contributed to a recent suicide attempt:

> I am not happy with my suicide-related Internet use. It only provided information about how I could kill myself that I may not have otherwise learned. My method of suicide when I attempted within the past 12 months was learned from the Internet.

Discussion

The variety of content that is available and easily accessible online has prompted concerns over its potential dangers to individuals experiencing suicidal thoughts. Although a number of existing studies have investigated the impact of suicide-related Internet use, the potential effects that different types of websites may have on users has not previously been studied. Therefore, the present study investigated the perceived impact of suicide-related Internet use, particularly taking into account whether websites explicitly exhibited potentially harmful attitudes towards suicide or potentially helpful attitudes towards suicide, the online availability of information on suicide methods, participation in online communities and the perceived level of supportiveness of the online environment.

Comparisons between participants' ratings of the strength of their suicidal thoughts and behaviours before first going online for suicide-related reasons and at the time of the survey showed a significant decrease for both suicidal thoughts and behaviours. However, the majority felt that their ratings for both suicidal thoughts and behaviours at the time of the survey were either not influenced at all or only slightly influenced, suggesting that their Internet use may not have contributed to these decreases. This was supported by the findings of the two multiple regression analyses assessing website characteristics as predictors of ratings of suicidal thoughts and behaviours, where none of the website's orientation towards suicide, the perceived supportiveness of the online environment or whether users participated in online communities significantly predicted ratings of suicidal thoughts and behaviours at the time of the survey. Results from the qualitative analyses might account for the lack of significant findings. Participants did not always perceive their suicide-related Internet use to directly impact their suicidal thoughts and behaviours, and it may be difficult to delineate the impact of suicide-related Internet use in terms of particular types of suicide-related content or websites.

For example, a major positive theme was the use of the Internet to communicate and connect with others, which gave individuals a sense of support and helped to reduce feelings of isolation. Participants did not only obtain help through actively or passively connecting with others online, but also gave help to others who were troubled, which subsequently gave themselves a sense of importance or value. These findings are consistent with existing studies that have found the value of connecting with others online, and the mutual help-receiving and help-giving process that can occur between users.[13,20,21]

However, the present study found that although the anonymity of the Internet and lack of moderation led to some individuals being able to freely and comfortably express themselves and receive support from others, it could also lead to negative consequences. Negative experiences were often not attributed to explicit encouragements towards suicide or suicidal behaviour, but rather to the overall negative environment that could arise due to a lack of moderation. Some users found that the content posted online was distressing or triggering, or that it normalised or glorified suicide and suicidal behaviour. Similarly, Whitlock et al.[22] found that adolescents were at risk of being exposed to content that normalised or encouraged self-harm behaviour on online self-harm forums, though they also found that the most common types of online exchanges were positive, informal support.

Despite previous literature typically associating potentially positive effects of the Internet with anti-suicide websites and potentially negative effects of the Internet with pro-suicide websites,[1,4,6–9] the present study showed, via the open-ended responses, that similar forms of suicide-related Internet use could be associated with both positive and negative experiences. The presence of both positive and negative experiences was not limited to informal online communities, but was also found among users who went online to read information about suicide methods. A number of individuals claimed that online information on suicide methods reassured them that they would have the knowledge to make an attempt if they chose to do so. Although they did not always frame this in a negative way, it highlights a significant risk of the Internet. For one participant, information on suicide methods found online directly contributed to a suicide attempt. At the same time, going online to read information on suicide methods allowed users to explore issues that could not normally be explored in a treatment or a professional help-seeking environment. For some, reading information on suicide methods encouraged them to continue living, indicating that there can be positive experiences paradoxically associated with material that might be considered dangerous.[14]

Nevertheless, while the Internet was a helpful source of informal help for some participants, it was clear that unmoderated, non-professional websites were unhelpful, and in some cases harmful, to others. Highly distressed individuals may benefit more from online environments where content is regulated by health care professionals or trained individuals. Informal online resources may also not be able to help users practically apply skills or coping strategies to their offline lives.[17,23,24] Miller and Gergen[21] found that messages posted on a suicide message board were supportive but could not replicate therapeutic techniques that can lead to recovery, demonstrating the need for online professional services for all individuals. Online professional resources cannot necessarily replace offline interventions, but they can act as a useful supplement that provides users with temporary relief and facilitates the process to seeking offline help. Previous reviews agree that the Internet can be useful for suicide prevention and that more efforts should be directed towards developing and evaluating professional online services.[25–27]

It is important to acknowledge the limitations of the present study. As the sample was limited to young Australians, and primarily comprised of university students, the findings lack generalisability. Participants' retrospective ratings of the strength of their suicidal thoughts and behaviours could have been affected by recall bias, particularly as they were asked to provide ratings for before they first went online for suicide-related reasons. Levine and Safer[28] described a number of factors that can influence participants' recall of their emotions, including their current emotional state, current interpretations of past experiences, and the exaggeration of past or previous difficulties in order to perceive improvement. Additionally, the significant decrease in ratings of suicidal thoughts and behaviours could also be attributed to a natural decrease over time, which would account for why the majority of individuals felt that their suicide-related Internet use was not related to their ratings at the time of the survey, and the lack of significant predictors in the regression equations. Furthermore, although ratings used to assess suicidal thoughts and behaviours were based on previous work, they were not validated. Questions assessing the characteristics of websites were based on participant recall and were also not validated, primarily due to the lack of research in the area. Future studies attempting to compare different types of suicide websites could recruit participants directly from those websites, which would allow the researchers themselves to assess website characteristics. Although longitudinal study designs with validated measures would be preferable, they are difficult to conduct in practice due to issues associated with privacy and anonymity. This is reflected in the previous research examining the impact of suicide-related Internet use, where the majority of the work has been cross-sectional and relied on retrospective ratings.[15–17] The longitudinal studies that are available recruit from the general population, rather than being restricted to individuals experiencing suicidal thoughts.[18,29]

Giving the limitations of the present study, further research is needed to investigate how suicide-related online content might affect users. Nevertheless, participants' open-ended responses provided valuable information about their online experiences and showed how some people might perceive the same content differently. Future research investigating the impact of suicide-related Internet use could quantitatively examine other outcomes beyond suicidal thoughts and behaviours, such as measures of general distress, as well as qualitatively explore users' online experiences.

Conclusion

The Internet has its risks and, as a result, it is important for mental health professionals to be aware of the types of content that is available online. However, it can also be used in a number of positive ways, including providing valuable support that may not necessarily be available offline, a finding which is consistent with existing research. Similar forms of suicide-related Internet use (e.g. communicating with others, reading information

on suicide methods) were found to be associated with both positive and negative experiences. No participants who reported negative experiences suggested that they were encouraged towards suicide, further supporting arguments against strictly viewing suicide-related online content as 'pro-suicide' or 'anti-suicide'. The present findings show the complexity of suicide-related Internet use and suggest that censoring online content is not necessarily a feasible response to what some view as potentially dangerous content. The Internet could be a powerful tool for suicide prevention. As such, more focus should be directed towards developing and increasing the availability of online professional help resources.

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