Research Trends

Title

Who goes online for suicide-related reasons?: A comparison of suicidal people who use the Internet for suicide-related reasons and those who do not

Abstract

Background: Suicidal people who go online for suicide-related reasons have been found to report significantly higher levels of suicidal and depressive symptoms than those who do not.

Aims: To examine the differences between suicidal people who use the Internet for suicide-related reasons and those who do not

Method: Participants were 205 Australian citizens and permanent residents aged 18-24 who had felt suicidal within the past year. Participants were recruited online through non-mental health-related websites and asked to complete an anonymous online survey.

Results: In univariate analyses, suicide-related users reported significantly higher levels of social anxiety and lifetime and past year suicidal ideation than non-suicide-related users, as well as a higher likelihood of future suicide, and overall higher risk for suicide. There were no differences on depressive symptoms and perceived social support. Both groups were unlikely to anticipate seeking help from any source and generally perceived similar barriers to offline help-seeking. Multivariate analyses showed that past year suicidal ideation and likelihood of future suicide significantly predicted suicide-related Internet use.

Conclusions: Individuals may choose to go online for alternative methods of coping when their suicidal feelings become more severe, demonstrating the need for more online suicide prevention efforts.

Keywords: suicide, Internet, online, suicide-related Internet use,

Introduction

In 2000, there were over 300 million Internet users around the world. By 2014, this number had increased to over three billion (Internet World Stats, 2015). Individuals experiencing mental health problems can easily turn to the Internet to look for information or to discuss their problems with friends or anonymous strangers. Research shows that individuals who engage in suicide-related Internet use, referring to going online for any reasons relating to suicide such conducting suicide-related online searches, looking at suicide-related information or discussing suicidal feelings with others, exhibit more severe psychological symptoms. For example, among Japanese high school students, having accessed suicide or self-injury information on the Internet significantly predicted lifetime suicidal ideation (Katsumata, Matsumoto, Kitani, & Takeshima, 2008). Those who reported searching for information about suicide or self-injury online were over five times more likely to report a history of suicidal thoughts. In another study, Sueki (2013) recruited a sample of Japanese adults aged in their 20s and 30s through an Internet research company. He found that participants who reported going online to consult about mental health, search for suicide methods, and view suicide methods were significantly more likely to report higher levels of suicidal ideation. Additionally, searching and viewing suicide methods were significantly positively associated with depression/anxiety tendency.

These studies, however, were conducted among both individuals with and without suicidal ideations. Individuals not experiencing suicidal ideations may have no motivation to go online for suicide-related reasons, which could account for findings that those who engaged in suicide-related Internet use were more likely to report higher levels of suicidal

ideation. Harris, McLean, and Sheffield (2009), nevertheless, reported similar findings when their sample was restricted to participants identified as at-risk for suicide (scoring about the cut-off on a suicide risk scale), comparing those who had gone online for suicide-related reasons (suicide-related users) against those who had not (non-suicide-related users). They recruited participants through various online means including email, newsgroups, blogs, and Google advertisements, and did not restrict their sample by country or age. Suicide-related users reported significantly more depressive symptoms, lifetime suicidal ideation/attempts, past year suicidal ideation, and a higher likelihood of future suicide. Compared to non-suicide-related users, they also reported significantly lower perceived social support from friends, lower perceived social support in general, and were more likely to anticipate seeking help online or from no one and less likely to anticipate seeking help from friends.

The fact that suicide-related users reported more severe psychological symptoms might be indicative of a negative effect of the Internet. However, existing research shows mixed findings. Cross-sectional studies of suicide forum users have found that participants report feeling less suicidal at the time of the survey compared to first going online for suicide-related reasons (Eichenberg, 2008; Kral, 2006; Sueki & Eichenberg, 2012). Conversely, a longitudinal study showed that various suicide-related online behaviours at baseline (e.g. consulting with an anonymous person on the Internet about their mental health, browsing the Internet for information on suicide methods) significantly predicted higher suicidal ideation at follow up. The reasons for the differences in findings are unclear due to different samples and methodologies.

Nevertheless, evidence suggesting that suicide-related Internet users may form a higher-risk subgroup of individuals experiencing suicidal thoughts has important implications for suicide prevention. Suicide prevention strategies require tailoring to particular populations based on the needs of different groups (World Health Organization, 2010), and as a result, there may be specific issues that need to be addressed for suicide-related online users. Thus, it is important to examine factors associated with suicide-related Internet use, as well as differences in help-seeking needs between suicidal people who go online for suicide-related reasons and those who do not. However, few studies have investigated the characteristics of suicide-related users, particularly in comparison to suicidal people who do not go online for suicide-related reasons. As a result, it is unclear what factors might influence some suicidal people to go online for suicide-related reasons. Lower perceived social support among suicide-related Internet users (Harris et al., 2009) might indicate that these individuals seek out others online to feel a sense of belonging that is not available to them offline (Hagerty & Williams, 1999). Significant relationships have also been found between loneliness (a construct related to social support) (Newcomb & Bentler, 1986) and a preference for going online for a variety of reasons, including emotional support and meeting and talking to others online (Morahan-Martin & Schumacher, 2003). However, Caplan (2006) suggested that individuals who are more socially anxious prefer going online due to the reduced social risks (e.g. making a negative self-impression), rather than loneliness. Conducting a series of regression analyses, Caplan (2006) found that social anxiety and loneliness were both significant predictors of a preference for online social interaction, with social anxiety predicting 9% of the variance in addition to the variance shared with loneliness. Loneliness was no longer a significant

predictor once social anxiety was controlled for. Whether suicidal people who engage in suicide-related Internet use have higher levels of social anxiety than those who do not has yet to be investigated.

The aim of the present study was to therefore explore the differences between suicidal people who go online for suicide-related reasons and suicidal people who do not go online for suicide-related reasons and to examine the factors associated with suicide-related Internet use. The two groups were compared on measures of depressive symptoms, risk for suicide, perceived social support, social anxiety, anticipated help-seeking behaviours and perceived barriers to offline help-seeking.

Method

Participants and Procedure

Data were collected online between November 2013 and November 2014. Advertisements for the study were posted on various websites including the University of Melbourne student portal, free online classifieds websites such as Gumtree and Craigslist, online forums and Facebook. The advertisements contained a short description of the study and a link to the online survey. The study was not advertised on mental health or suicide-related websites in order to avoid biasing the sample towards suicide-related Internet users. Additionally, in order to avoid potential bias due to factors such as age and culture, the sample was limited to Australian citizens and permanent residents aged 18-24 who had felt suicidal within the past year.

Participants who answered “never” to the question “How often have you thought about killing yourself within the past year” and who obtained a total score lower than 7 on the Suicide Behaviors Questionnaire-Revised ($n = 56$) or who were outside of the age range ($n = 18$) were excluded from analyses. In total, 205 eligible participants were recruited (156 females, 45 males and 4 other gender) with a mean age of 20.17 years ($SD = 1.98$). As the survey was available to all individuals who viewed the online advertisement, an accurate response rate could not be calculated.

To assess suicide-related Internet use, participants were asked “Have you, in the past 12 months, used the Internet for suicide-related reasons?”, where “suicide-related reasons” was defined as going online for reasons relating to their own feelings of suicide, including looking for information or communicating with anonymous online partners, such as individuals whose real life identities they did not know and/or whom they had never met face to face. There were five possible response options, “Yes”, “Yes, to communicate with offline friends only (e.g. Facebook)”, “Yes, but only briefly because I did not find it helpful”, “Yes, but only to find offline sources of help” and “No”. Given the rise of social media, those who solely used the internet to discuss their suicidal problems with family and offline friends were not considered to be suicide-related Internet users. Therefore, only those who answered “Yes” alone were classified as suicide-related Internet users.

Missing values on scale items were replaced using the person mean substitution method, where values are imputed based on the mean of each participant’s available items. The person mean substitution method has been recommended for Likert-item scales where

over half of the items have been completed and where all individual items assess the same underlying construct (Hawthorne & Elliott, 2005).

Measures

Patient Health Questionnaire (PHQ-9) (Spitzer, Kroenke, & Williams, 1999) The PHQ-9 comprises a list of nine depressive symptoms, and participants are asked to indicate the frequency with which they had experienced the symptoms over the past two weeks. Items are rated on a scale of 0 (not at all), 1 (several days), 2 (more than half the days) and 3 (nearly every day). The nine items are summed, with total scores ranging between 0 and 27. Cut-off scores of 5, 10, 15, and 20 represent mild, moderate, moderately severe, and severe depression, respectively (Kroenke & Spitzer, 2002). The PHQ-9 can discriminate well between people with and without major depression, with an area under the curve of .95, and has good internal consistency with $\alpha = .89$ (Kroenke, Spitzer, & Williams, 2001). The internal consistency for the present study was $\alpha = .86$.

Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998) The SIAS is a self-report instrument consisting of 20 items (e.g., "I become tense if I have to talk about myself or my feelings") rated on a 5-point scale. Individuals rate the extent to which the items are characteristic or true of them from 0 (not at all characteristic or true of me) to 4 (extremely characteristic or true of me). Total scores have a range of 0-80, where higher scores indicate higher severity of social interaction anxiety (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1993). Peters (2000) recommended a cut off score of 36 as an indicator of social anxiety.

The SIAS correlates significantly with other social interaction measures, including the social interaction subscale of the Liebowitz Social Phobia Scale ($r = .69$) and the Social Avoidance and Distress Scale ($r = .74$) (Heimberg et al., 1993). Internal consistency is high with Cronbach's alphas of $\alpha = .96$, $\alpha = .90$ and $\alpha = .85$ for clinical, community, and undergraduate samples, respectively (Heimberg et al., 1993). Internal consistency was also high in the present study, with $\alpha = .92$.

Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988) The MSPSS is a self-report scale designed to assess perceived social support. It comprises three subscales assessing perceived social support from friends (e.g., "I can talk about my problems with my friends"), family (e.g., "My family really tries to help me"), and significant others (e.g., "There is a special person who is around when I am in need"). There are 12 items in total, and each is rated on a 7-point rating scale from 1 (very strongly disagree) to 7 (very strongly agree). Scores are obtained by summing the ratings, producing scores for each subscale as well as a score for the overall scale. The MSPSS yields good psychometric properties. The internal consistency coefficients for the subscales and the total scale are high, ranging from $\alpha = .85$ to $\alpha = .91$ (Zimet et al., 1988). For the present study, the reliability for the family, friends, significant others and total scale were $\alpha = .90$, $\alpha = .90$, $\alpha = .94$ and $\alpha = .90$, respectively.

Suicidal Behaviors Questionnaire – Revised (SBQ-R) (Osman et al., 2001). The SBQ-R is a short form version of the original 34 item SBQ. It has four items assessing four areas of suicide risk: lifetime suicidal ideation and attempts, past year suicidal ideation, disclosure of suicidal feelings or intent and the likelihood of future suicide. Each item is assessed on a

different rating scale. For example, past year suicidal ideation is assessed on a 5-point scale from 1 (never) to 5 (very often), whereas likelihood of future suicide is assessed on a 7-point scale from 0 (never) to 6 (very likely). Possible total scores range from 3-18. A cut-off score of 7 or higher on the total scale has been recommended for non-clinical samples (Osman et al., 2001).

The SBQ-R has demonstrated adequate to moderately high internal consistency, with alpha coefficients ranging from $\alpha = .76$ to $\alpha = .88$ among inpatient and undergraduate samples (Osman et al., 2001). Internal consistency for the present study was $\alpha = .62$.

General Help-Seeking Questionnaire (GHSQ) (Wilson & Deane, 2005) The GHSQ assesses intentions to seek help from a variety of formal and informal sources. It provides a list of possible help sources and asks participants to rate how likely they would be to seek help from each source in the event they were experiencing a particular problem (where the problem is specified by researchers). In this study, participants were asked how likely they would seek help if they were experiencing suicidal thoughts.

The likelihood of help-seeking from each source is obtained based on their individual ratings, where 1 = extremely unlikely, 3 = unlikely, 5 = likely and 7 = extremely likely. Help sources can also be added or edited based on the area of interest. For the present study, “online forum or message board”, “online mental health professional” and “anonymous online social media” were added to the scale.

Barriers to Help-Seeking (adapted from Cigularov, Chen, Thurber, and Stallones (2008) and Downs and Eisenberg (2012)) Help-seeking barriers were adapted from two studies that examined barriers to formal sources of help (Downs & Eisenberg, 2012) and

informal sources of help (Cigularov et al., 2008). Where there were similar barriers between the two studies, only one was retained. Barriers from Cigularov et al.'s (2008) study that were deemed irrelevant to a non-high school population were eliminated (e.g., "I would not know what to say about my problems if I contact a school counsellor or a teacher" and "Other students would see me going into the counselling office and make fun of me later"). There were 28 listed barriers in total.

Statistical Analyses

Data were analysed using SPSS 22. Independent samples t-tests assessed between-group differences. For non-interval or non-ratio data (gender, perceived barriers to help-seeking), between-group differences were tested using chi square tests of independence. A logistic regression was conducted to test for significant predictors of suicide-related Internet use. Whether or not participants had reported going online within the past 12 months formed the dependent variable.

Results

Table 1 presents the general characteristics of the sample.

[Table 1 here]

Overall, the majority of the sample was Caucasian, had achieved a highest level of education of high school or high school equivalent and was single and unemployed. The majority of the sample (53.7%) was recruited through the University of Melbourne student portal, indicating that many participants were students.

There were 102 (49.8%) participants classified as suicide-related users and 103 (50.2%) participants classified as non-suicide-related users. There were no significant differences between the two groups on any of the sociodemographic variables (age, gender, race, education, marital status, employment status). Table 2 shows the descriptive statistics for suicide risk, depressive symptoms, social anxiety and perceived social support and the results of the independent samples t-tests.

[Table 2 here]

Generally, the sample reported moderate levels of suicide risk and perceived social support. Participants were unlikely to report that they had disclosed their suicidal thoughts to others, shown by the low means for SBQ3. Means for the SIAS suggested the probable presence of social phobia, while means for the PHQ-9 were indicative of moderately severe levels of depression among both groups.

Between-groups analyses showed that suicide-related users reported significantly more lifetime suicidal ideation/attempts, past year suicidal ideation, a higher likelihood of future suicide and an overall higher risk for suicide. Suicide-related users also reported significantly higher levels of social anxiety. There were no significant differences on any other measures.

Based on these findings, a logistic regression was conducted to examine the factors that predicted whether or not an individual used the Internet for suicide-related reasons within the past 12 months (Table 3). Lifetime suicidal ideation/attempts (SBQ1), past year suicidal ideation (SBQ2), likelihood of future suicide (SBQ4), and social anxiety (SIAS) were entered as predictors.

[Table 3 here]

The model containing all predictors was statistically significant, $\chi^2 (4, N = 205) = 36.30, p < .001$, explaining between 16.2% and 21.6% of the variance in suicide-related Internet use. The model correctly classified 64.9% of all cases. Only past year suicidal ideation and likelihood of future suicide emerged as significant predictors, about equally predicting whether someone used the Internet for suicide-related reasons. Those who reported higher levels of past year suicidal ideation and those who reported a higher likelihood of future suicide were 1.52 times more likely to use the Internet for suicide-related reasons.

Help-seeking

The GHSQ assessed suicide-related and non-suicide-related users' likelihood of seeking help for their suicidal problems from a variety of sources. Table 4 presents the means and standard deviations for each help source, noting the sources for which significant differences were found.

[Table 4 here]

Suicide-related users scored significantly lower (lower likelihood of seeking help) on friend and minister or religious leader help sources but scored significantly higher on all online help-seeking sources. A score of 5 on the GHSQ indicates that participants are likely to anticipate seeking help from that particular source. However, mean GHSQ scores for both groups did not reach or exceed 5, suggesting that they were either unlikely or undecided on seeking help from any source for their suicidal problems.

The full list of help-seeking barriers to offline help-seeking is shown in Figure 1, comparing the proportions of suicide-related and non-suicide-related users that endorsed each barrier.

[Figure 1 here]

Chi square tests of independence with Yates' Correction for Continuity showed no significant differences between suicide-related and non-suicide-related users on perceived barriers, with the exception of "I worry my actions will be documented in my academic record". Significantly more non-suicide-related users selected this as a help-seeking barrier $\chi^2(1, n = 195) = 6.09, p < .05, \phi = .19$, compared to suicide-related users.

Discussion

The present study investigated the differences between suicidal people who reported having used the Internet for suicide-related reasons and suicidal people who did not. Consistent with Harris et al.'s (2009) findings, suicide-related users reported significantly higher levels of lifetime and past year suicidal ideation, a higher likelihood of future suicide and an overall high risk for suicide, but not disclosure of suicidal thoughts. Conversely, there were no differences in depressive symptoms or perceived social support from any source. Methodological differences could have accounted for these discrepancies. The sample in the present study was limited to Australians aged 18-24 who had felt suicidal within the past year. Participants were classified as suicide-related Internet users if they had gone online for suicide-related reasons within the past year, where suicide-related reasons was defined as reasons relating to their own feelings of suicide. Furthermore, participants were specifically asked about offline social support, rather than

general social support, to examine the possibility that suicide-related users went online due to a lack of offline support. Harris et al. (2009), by contrast, did not appear to include such restrictions in their study.

Suicide-related users were more likely to anticipate seeking help from all of the online sources, indicating that the Internet may be particularly useful for targeting these individuals for the purposes of suicide-prevention. However, despite differences in help-seeking scores, both types of users were unlikely to anticipate seeking help from any source. This is consistent with the low levels of help-seeking typically found in people experiencing suicidal thoughts (Barnes, Ikeda, & Kresnow, 2002). A positive finding was that participants were also unlikely to anticipate seeking help from no one, suggesting that their overall low GHSQ scores may not necessarily be due to a lack of desire for help.

Indeed, suicide-related and non-suicide-related users reported a wide variety of reasons that discouraged them from seeking offline help, demonstrating the complex nature of the help-seeking process. Both groups perceived similar barriers to seeking help, with the most common being the preference to deal with issues on their own, questioning how serious their needs are, not knowing what to say about their problems and worrying about what others would think of them. Suicide prevention strategies targeted at the entire community can assist people in recognising their own need for help or someone else's need for help, and reduce stigma through raising awareness and education of mental health problems (World Health Organization, 2014).

Although suicide-related users reported significantly higher levels of social anxiety, social anxiety did not significantly predict whether participants used the Internet for

suicide-related reasons. Lifetime suicidal ideation/attempts was also not a significant predictor, but individuals were more likely to use the Internet for suicide-related reasons if they were experiencing higher levels of past year suicidal ideation and reported a higher likelihood of future suicide. These findings suggest that as suicidal thoughts become more severe and immediate, individuals may seek out additional sources of help or ways of coping. The variety of resources available online, the option to communicate anonymously, and the ease of access, can make the Internet a particularly attractive or convenient option for individuals.

More efforts should therefore be directed towards online suicide prevention. For example, Recupero, Harms, and Noble (2008) suggested that mental health professionals should make use of search engine algorithms to ensure that their pages are more likely to appear when people conduct suicide-related online searches. There are several examples of potential suicide preventative online resources that have been described in the literature, including online risk-screening, crisis intervention, information websites, support groups and professional counselling (Durkee, Hadlaczky, Westerlund, & Carli, 2011; Gilat & Shahr, 2009; Krynska & De Leo, 2007; Lester, 2008-2009; Peterson, 2009). However, much of the work describing online suicide prevention is descriptive and lacks evidence of their impact on measurable outcomes (Jacob, Scourfield, & Evans, 2015; Lai, Maniam, Chan, & Ravindran, 2014). A recent review found that the Internet can potentially have an important role in suicide prevention efforts. Informal online suicide communities can act as support groups, users of online suicide forums staffed by trained volunteers have reported positive experiences, and participants in professional online-based interventions targeted towards reducing suicidal ideation have reported a significant reduction in suicidal

thoughts from pre-test to post-test (Mok, Jorm, & Pirkis, 2015). Although the review found that more work needs to be done, the findings were promising.

A limitation of the present study was that it was restricted to young Australian citizens and permanent residents. Though the findings contribute to an under-researched area, further research should be conducted among different populations. For example, given their lower rates of Internet use (Zickuhr & Madden, 2012), older individuals suffering from more severe suicidal thoughts may prefer offline means of coping. While individuals experiencing more severe suicidal thoughts appeared more likely to go online for suicide-related reasons (indicated by higher levels of suicide risk significantly predicting suicide-related Internet use), it is unclear whether individuals went online for help or for potentially harmful reasons (e.g., looking for suicide methods). It is also possible that the Internet has a negative impact on users, leading to their higher risk for suicide. Thus, the online behaviours of these users need to be further examined. Nevertheless, online suicide prevention should be targeted towards both individuals looking for help and individuals looking to die by suicide.

Conclusion

The present study found no differences between suicidal people who went online for suicide-related reasons and those who did not on measures of depressive symptoms and perceived social support. Both groups were unlikely to seek help from any source and generally perceived the same barriers to offline help-seeking. Suicide-related users exhibited significantly higher levels of lifetime and past year suicidal ideation, and higher likelihood for future suicide, with the two latter variables significantly predicting suicide-

related Internet use. This indicates that individuals may seek out additional forms of help as their suicidal feelings become more severe. Given the lack of research in the area, however, more studies should compare suicide-related and non-suicide-related users in different populations.

The Internet can be a particularly useful coping tool for suicidal people. Regardless of whether these individuals go online for constructive or destructive reasons, mental health professionals should seek to increase their online presence by providing and promoting helpful online resources. The potential of the Internet to offer opportunities for suicide prevention and intervention should be embraced.

Conflict of interest

The authors declare no conflicts of interest.

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