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Is a person thinking about suicide likely to find help on the Internet? An evaluation of Google search results.

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Running head: Google and Suicide

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Abstract

It is unclear whether individuals searching the Internet for assistance with thoughts of suicide are likely to encounter predominantly helpful or harmful resources. This study investigated websites retrieved by searching Google for information and support for suicidal thoughts. Google searches retrieved a high percentage of irrelevant websites (26%, n=136). Of the 329 relevant websites retrieved the majority were suicide preventive (68%), however a considerable proportion of sites expressed mixed (22%) or neutral (8%) suicide attitudes, and 1% were explicitly pro-suicide. The results also highlight a need for suicide prevention organization websites to be made more easily accessible. In the meantime, clinicians should be aware of appropriate websites to recommend to clients.

Keywords:

Search Engine, Google, Suicide, Suicidal Ideation

Introduction

Help-seeking for suicidal thoughts and behaviours is infrequent, despite suicide being a leading cause of death in many developed countries (Michelmores & Hindley, 2012). The Internet is becoming a major source of health information, including suicidal ideation and previous research has highlighted the array of potentially dangerous resources currently available online (e.g. Biddle, Donovan, Hawton, Kapur, & Gunnell, 2008; Recupero, Harms, & Noble, 2008; Sakarya, Gunes, & Sakarya, 2013). A Turkish study by Sakarya et al. (2013) found that 42% of websites that appeared in a Google search of suicide-related terms had properties that were pro-suicide, while only 13% were considered suicide preventive. Likewise, a UK study found that half of the websites dedicated to the topic of suicide presented a pro-suicide view (Biddle et al., 2008). These findings indicate that a vulnerable individual who uses the Internet to search for information related to suicide may be presented with a range of potentially harmful resources.

These previous studies, however, were designed to specifically explore search results when “pro-suicide” search terms were employed, and have been criticized for being biased (Grohol, 2008). In contrast, Westerlund et al (2012) and Wong et al (2013), found far fewer pro-suicide websites when using only the search-term ‘suicide’. However their use of this single term means their results are likely to be limited. It therefore remains unclear how commonly potentially harmful resources appear in generic or “suicide preventive” searches, such as when an individual uses the Internet to search for assistance with suicidal thoughts. The current research aims to investigate the search results for a wider range of neutral and suicide preventive terms. We also explored how easily accessible online treatments for mental health problems are to lay people who may not search specifically for them. This research takes an Australian focus for the first time.

Methods

Between 11th and 29th August 2014 a series of Google searches were performed using terms related to suicidal thoughts. Google was chosen as it is the most commonly used search

engine in Australia (Alexa.com, 2015; ROI.com.au, 2011). Thirteen search-terms were generated via considering previous studies, discussions between the authors, and consultation with experts in the field. Each term was also combined with the term 'help', thus creating an additional 13 terms. The internet browser history was cleared before each search was conducted and the authors ensured that they were not logged into any personal online accounts e.g. Gmail, Google plus etc.

A data extraction plan was developed and piloted on a random selection of 10 websites (see Table 1). Websites were considered to be irrelevant if their content made no mention of suicide or any other mental health or wellbeing topic. Irrelevant websites were not analysed further. Similarly news stories and academic articles were not assessed further, as these sources of information change regularly according to the latest publications or news in this area. Based on previous research (Eysenbach & Kohler, 2002), the first two pages (20 websites) of search results for each term were recorded and analysed.

[Table 1 about here]

Statistical Analysis

The proportion of search results relevant to suicide and meeting a range of criteria (e.g. offered information about suicide, offered online treatment) were calculated. The mean page-ranks of relevant websites were also calculated to determine if relevant websites are likely to appear high up in the search results provided by Google (and therefore would be more likely to be accessed by searchers). Independent samples t-tests and chi-square tests were used to compare the mean ranks and the proportion of relevant and helpful search results retrieved using searches including the term 'help' or not.

Results

In total 520 search results were obtained. Two websites were unable to be rated as the links were no longer valid. Of the remaining 518 websites (See Table 2), 26.25% (n=136) were irrelevant, 9.46% (n=49) were newspaper stories and 0.77% (n=4) were academic articles (Total = 36.49%, n = 189). The majority of the remaining 329 relevant websites were deemed to be suicide preventive (n=225, 68.39%), and only six (1.16%) were explicitly pro-suicide. However a considerable proportion of sites expressed either mixed (n=72, 21.88%) or neutral (n=26, 7.90%) suicide attitudes. Only thirteen websites were Australian; Lifeline, Beyondblue and Suicide Prevention Australia each appeared only four times, while Living is for Everyone had one appearance.

Less than a quarter of search results addressed suicide as the primary topic. Other topics included: general wellbeing and support; mental health in general; Depression and Anxiety; Bipolar Disorder; health and medicine; music; and philosophy. Many websites retrieved were general 'how to' sites like AskYahoo or WikiHow. Two websites discussed suicide methods as their primary topic.

[Table 2 about here]

As can be seen in Table 3, the type of websites retrieved using each of the 26 search terms varied widely. For example the terms 'better off dead' and 'better off dead AND help' retrieved only one result relevant to suicide. The proportion of relevant websites retrieved via other terms varied between 20% for 'wish I was dead' and 100% for the terms 'suicidal AND

help' and 'suicide AND help'. Similarly 'suicidal AND help' and 'suicide' retrieved the highest percentage of sites offering online treatment (20%). Pro-suicide websites were only retrieved using the terms 'how to kill myself', 'I want to kill myself' and 'wish I was dead AND help'.

[Table 3 about here]

A significantly higher proportion of websites retrieved using original search terms only were irrelevant, compared to those also including the term 'help' (Search term only =43.46%, Search term + help = 29.46%. Chi Squared (1) =10.959, $p < .001$). There were no significant differences between the mean ranks of websites meeting the above criteria that were retrieved using search terms only or search terms plus 'help'.

Eight search terms ("suicide", "suicide AND help", "suicidal", "suicidal AND help", "how to kill myself", "I want to kill myself", "I want to die", "take my own life") prompted an automatic response from Google encouraging the searcher to seek assistance from Lifeline (Figure 1).

[Figure 1 about here]

Discussion

This study is the first to examine how likely a person in Australia, using suicide-related search terms, is to encounter helpful or potentially dangerous resources online. A considerable proportion of the websites retrieved were suicide preventive, and only a minority explicitly expressed pro-suicide attitudes.

Perhaps the most pertinent finding of this study was the number of irrelevant websites (websites whose content made no mention of suicide or any other mental health or wellbeing topic) that appeared in the search results. Similarly, the large proportion of websites expressing mixed or neutral attitudes towards suicide is concerning and could be also harmful when accessed by a person experiencing suicidal ideation. These results suggest that a lay person seeking help for suicidal thoughts or behaviours online may be unlikely to find useful resources if conducting a general internet search. Although there is a multitude of suicide-related resources and treatments available online, their accessibility to the general population appears to be currently limited and without pre-existing knowledge of these organizations, it would be unlikely that someone searching Google for support for suicidal thoughts would come across these websites. As such, there is a clear and urgent need for Australian suicide prevention organizations to adapt their search optimization strategies so that their websites can be found more easily.

Also of concern was the finding that only eight of the 26 search terms prompted an automated response from Google. In particular, only two of the terms that included the word “help” received this response. This suggests that a small alteration in the wording used by a potentially vulnerable individual may be the difference between receiving access to crisis counselling details and generic search results only. Adjusting the automated response system to be more sensitive to a wider range of suicide-related terms may result in useful referral information being communicated to a wider range of vulnerable people.

A limitation of the current work, and much existing literature in this area, is that the search terms used were generated by the research team, and thus may not represent the search terms a person experiencing suicidal ideation would actually use. However this study improves

upon previous research by including a broad range of generic and suicide preventive search terms rather than limiting terms to ‘pro-suicide’ keywords. Future work should extend upon this research to examine the full range search terms likely to be used by this population.

The Internet has become an integral part of many people’s lives and research from the US suggests that the majority of adults look for health information online (Fox & Duggan, 2013). As such, it is highly likely that a large number of people experiencing suicidal ideation, will have, or plan to, search the Internet for information or support. For the time being, it may be important for clinicians to guide clients’ Internet use by suggesting specific sites that they may wish to visit. Fortunately, there are a number of good quality websites that provide online support, information and treatment for people experiencing suicidal ideation, however the current study suggests that increasing the promotion and accessibility of these resources is a key step for the future. A comprehensive list of international and Australian based online tools and resources are available from the Australian Psychological Society’s website (<https://www.psychology.org.au/ATAPS/resources/>), ‘Unsuicide’ (<http://unsuicide.wikispaces.com/Online+Suicide+Help#.Va9DwOKqpBc>) and the International Association for Suicide Prevention (https://www.iasp.info/resources/Online_Crisis_Intervention_Services/).

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Conflicts of Interest

None declared

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Table 1. Data Extraction Plan

Variables extracted
URL
Title (as it appeared in the Google search results)
Page rank (1-20)
Relevance to the topic of suicide (Relevant/ Irrelevant)
Country of origin
Ownership type (commercial, health service, health professional, consumer, government)
Website provided information about suicide (Yes/No)
Website provided treatment e.g. online counselling (Yes/No)
Website offered group support e.g. discussion board, online forum (Yes/No)
Website provided links to external support (Yes/No)
Primary topic addressed by website e.g. suicide, depression, well-being
Secondary topic addressed by website
Attitude towards suicide (suicide preventive, pro-suicide, neutral, presented a mix of attitudes towards suicide)

Table 2. Characteristics of retrieved websites (n=518)

Website Characteristics	n	%
Relevant websites reviewed in full	329	63.51
Relevant websites from Australia	68	13.13
Relevant Blog or Discussion site	155	29.92
Included relevant information	197	38.03
Offered treatment	29	5.60
Had a support group (e.g. discussion board or online community)	137	26.45
Primary topic of suicide	125	24.13
Links to external support provided	173	33.40

Table 3. Characteristics of websites retrieved from the 26 individual searches

Search Term	Relevant Website %	Relevant Australian Website %	Contained relevant Information %	Offered online treatment %	Provided links to external support %	Offered online support group %	Suicide Preventive %	Pro Suicide %
Better off dead	0	0	0	0	0	0	0	0
Better off dead and help	5	0	0	0	0	0	0	0
Do away with myself	30	0	10	0	10	25	10	0
Do away with myself and help	30	0	20	5	15	25	15	0
End my life	45	10	15	10	20	30	30	0
End my life and help	75	15	25	15	30	55	45	0
How to kill myself	90	5	45	0	20	35	30	20
How to kill myself and help	90	5	60	0	50	35	70	0
I don't want to live	45	0	15	5	20	35	30	0
I don't want to live and help	60	5	15	0	15	40	35	0
I want to die	60	5	45	5	40	20	50	0
I want to die and help	95	5	50	5	45	45	75	0
I want to kill myself	90	5	55	0	50	25	60	5
I want to kill myself and help	95	5	60	0	50	35	70	0
No reason to live	70	5	30	10	25	35	35	0
No reason to live and help	85	10	35	10	30	45	50	0
Suicidal	85	65	80	15	70	10	80	0
Suicidal and help	100	30	100	20	90	5	100	0
Suicide	85	75	85	20	80	10	80	0
Suicide and help	100	85	95	15	100	0	100	0
Take my own life	60	5	30	5	25	25	45	0
Take my own life and help	60	5	45	0	35	25	50	0
Thoughts of death	55	0	35	0	20	30	30	0
Thoughts of death and help	50	50	15	0	5	30	10	0
Wish I was dead	20	0	0	0	5	15	0	0
Wish I was dead and help	65	0	20	5	15	50	25	5

Figure 1. Screenshot of automated Lifeline message

