

SUICIDE AND SOCIAL MEDIA:

FINDINGS FROM A LITERATURE REVIEW, INTERNET SEARCH, AND STAKEHOLDER CONSULTATION

A report to the World Health Organization

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PREFACE

Since the invention of the World Wide Web in 1989, access and use of the Internet have expanded exponentially. It is estimated that today nearly half of the entire world population has access to the Internet. Nowadays teenagers spend much more time on the computer than watching television, and there is an entire generation of young adults that have no memory of a time pre-Internet.

As the authors of this report maintain, arguing against the use of technology in suicide prevention is most probably 'futile'. Computers are integral part of our daily life; they have become a 'natural' *addendum* by helping us with virtually everything we need, from writing and making complex calculations to watching movies and listening to music. Computers pilot planes and perform delicate surgical interventions; more commonly, they render communication among individuals easy and immediate. Perhaps the most obvious advantage of the Internet is its capacity to reach billions of individuals; this makes of it an unmatched opportunity for all sorts of interaction and information exchange.

Social media aggregate people through the Internet, connecting vast numbers of individuals. This unprecedented quality makes social media the amplifier of all sorts of messages: they may transfer 'good', useful messages but also 'bad', noxious information. Where the topic of suicide is concerned, social media may represent the channel through which to obtain information on where to go for help but also on suicide methods and how to obtain means. Social media can provide instructions for a 'safety plan', or they may show videos of people self-harming. Systematic research on phenomena related to social media and suicide has yet to provide firm conclusions on possible impacts. However, it would be unjustified to expect univocal results: there would be in any case both positive and negative aspects. Livingstone and Smith have recently provided a review of the literature on the negative effects on young people of what is conveyed by the Internet (Livingstone & Smith, 2014). In doing so, they have tried to systematize a complex scenario by disentangling two main pictures regarding the risks for young users: the chance of damage due to stimuli exposure, and damage as a real outcome result. While these two perspectives are rather easily identifiable in the offline world (as an example, the authors of the review highlight the various factors that may post a risk to a child's road safety), reading and interpretation of online interactions is still subject to personal opinions instead of conclusive data (Livingston & Smith, 2014).

Probably, the best-known form of damaging stimulation is represented by 'cyber bullying', a phenomenon that not only encompasses typical aspects of 'traditional' bullying, such as denigration and threats, but also new forms of abuse such as cyber-stalking and creating fake profiles, which are only possible online. Cyber bullying is reported as a very frequent phenomenon (up to 40% of schoolchildren –Tokunaga, 2010) and has been associated with mental disorders and suicide (Bauman, 2015). The case of Amanda Todd still resonates. Todd posted a video on YouTube depicting her experience of cyber bullying, which was viewed by millions teenagers. Todd took her own life a few weeks later (10 October, 2012).

No doubt, there are also positive impacts. Many young people feel more "themselves" online than offline; they speak more freely over the Internet, and for many it is easier to discuss sensitive issues online than in person (Livingstone et al., 2010). In her book, *Alone Together*, Turkle (2011) fears that these electronic 'facilitations' might actually result in a special type of loneliness in people, making them progressively less used to offline interaction. However, making predictions such as this seems to be an arduous task, given the continuous evolution of the Internet and social media and the significant role they have played in the growth of nearly the totality of present day's young individuals.

In relation to mental health, social media can equally have both positive and negative impacts. The challenge is to efficiently shape the positive potential and contain/control the negative in order to improve the mental health of individuals, especially of young people. Suicide is frequently associated with mental disorders and cyber health care can offer easy access to remarkable opportunities for suicide prevention. The authors of this report examine the available evidence relating to the use of social media in suicide prevention and the ways this is pursued; most interestingly, they analyze the views of stakeholders *"in order to determine current gaps in knowledge, the*

benefits and risks of using social media for suicide prevention, and future priorities for work in this field.” This report is important in what it provides: a comprehensive picture of lines of prevention that were not previously reviewed in a critical way. The authors have to be commended for this.

As no screen message would ever replace the touch of a human hand, E-Health will never substitute face-to-face medicine; however – as this report shows - cyber health offers unprecedented opportunities for large-scale interventions at minimal costs. Help can really be at hand.

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SUICIDE & SOCIAL MEDIA

EXECUTIVE SUMMARY

BACKGROUND

Suicide is a significant public health problem. It is estimated to account for approximately one million deaths per year and is the 13th leading cause of death worldwide (World Health Organization, 2009; World Health Organization, 2014).

The media has been widely reported as having an important role in the prevention of suicide. Indeed, certain types of media reporting of suicide have been shown to increase the risk of contagion among vulnerable individuals (Sisask and Varnik, 2012). This has led many countries to develop guidelines on the reporting of suicide in the media, resulting in higher quality reporting.

Social media, which extends the capacity of the Internet by enabling users to create and exchange their own content, presents a new set of challenges for the field of suicide prevention. For example, concerns have been expressed regarding the ways in which social media sites can be used for the expression of suicidal feelings and for the communication about suicide-related behaviour with others (Becker et al., 2004; Cash et al., 2013). This raises a series of questions regarding the ways in which we talk about suicide online and how this may affect others, as well as the potential for social media to be used as a preventative tool. Therefore the aims of this study were:

To examine current evidence relating to the use of social media for the purpose of suicide prevention
To examine the ways in which social media are currently used for the purpose of suicide prevention; and
To examine the views of stakeholders in order to determine current gaps in knowledge, the benefits and risks of using social media for suicide prevention; and future priorities for work in this field.

METHODS

LITERATURE REVIEW

A systematic search of the peer-reviewed literature was conducted. Articles were included if they related to suicide-related behaviour, including completed suicide, suicide attempt or suicidal ideation, and to social media. No restriction was placed on study design or publication date.

Studies were then classified and data were extracted according to study type and aims; target group; methods; key findings and overall conclusions and/or recommendations.

INTERNET SEARCH

An Internet search was conducted in April and May of 2013. Facebook, Twitter, Tumblr, and YouTube were searched in order to identify pages created on these sites that specifically talked about suicide prevention. The search took an iterative, rather than a pre-defined approach with the search terms “suicide prevention”, “suicide help”, and “I wanna kill myself” used. The top hits resulting from each were analysed qualitatively. Pages or videos that did not contain any suicide-related content were subsequently excluded from the analysis.

Two case studies were also conducted; these were the US-based National Suicide Prevention Lifeline and the Irish-based site Ó Lá Go Lá.

STAKEHOLDER CONSULTATION

A 12-week stakeholder consultation exercise was conducted with 1) people who conduct research into suicide and social media, 2) organisations and agencies that use social media for suicide prevention and 3) individuals (over the age of 18) who use social media.

Researchers and organisations were identified using a snowball sampling technique whereby an initial list of stakeholders was compiled from the literature review and the Internet search. This was supplemented by

individuals or organisations that were known to the research team. Stakeholders were also asked to identify others whom they consider to have relevant experience.

To identify individual users, we initially asked those organisations that were most likely to have users located in the Western Pacific Region to post a link to the survey either on their website or using any other form of social media that they use. In addition, an advertisement with a link to the survey was posted on the Orygen Youth Health Facebook page and Twitter account. Participants were then asked to re-post the survey on other forms of social media that they normally use.

Three specifically developed questionnaires were then administered online to each of these groups.

RESULTS

KEY FINDINGS FROM THE LITERATURE REVIEW

Forty peer-reviewed journal articles were included in the review. Of them, ten were reviews or editorials, eight analysed the content of social media sites, seven reported on individual case studies, six discussed the relationship between suicide and social media, five described the development of online support programs, two examined sites relating to suicide bereavement, and two examined the network pathways of social media sites. No studies reported on the development of, or findings from, an intervention study using social media for suicide prevention purposes.

The majority of studies did not specify a target group. Of those that did, most focused on young people followed by bereaved people.

Social media sites were, in general, multi-faceted, comprising a static website component supplemented by social media platforms either in the form of discussion boards or chat rooms. Most sites were moderated by trained volunteers.

Studies reported that people use these sites for a number of reasons, including to meet others with similar problems and to share their experiences in an anonymous and non-judgmental environment. For the most part people did not use social media to seek professional help or find a suicide partner. Overall, open discussion forums or blogs were reported to be more useful than commercial or professionally-run sites.

Advantages of social media included: their ability to reach large numbers of people; their ability to enable people to receive, and provide, emotional support in a number of ways simultaneously; their accessibility; their cost effectiveness. Other potential benefits included: the ability of social media to provide up-to-date information about sources of help; their ability to promote help-seeking; the provision of self-assessment scales; and the delivery of treatment such as online counselling. They also offer the opportunity for real-time intervention in certain cases.

However, challenges also exist. In particular, the case studies reported on a number of instances where individuals had used the social media to communicate about their suicidal intentions, sought information about suicide methods, or actually engaged in a suicidal act online. Other challenges included false message posts, participants abusing helpers, and technology failings. Ethical issues specific to providing support online were also raised. These included: difficulty controlling the participation of members who could cause distress to others; difficulty accurately assessing the emotional state of participants; and issues relating to the boundaries of clinical responsibility for mental health professionals when it comes to protecting clients from harming themselves.

KEY FINDINGS FROM THE INTERNET SEARCH

In total, 44 formally established organisations were identified plus a number of suicide prevention pages that were operated by individuals or groups.

FACEBOOK SEARCH

On Facebook, different search terms produced different results. Overall it appeared that people using the more colloquial terms to search Facebook (e.g. "I wanna kill myself") were less likely to connect to a page run by a formal organisation and were more likely to retrieve pages run by the informal care community. The informal care community operated two-thirds of the search hits that we sampled.

The most popular posts on Facebook made by organisations were those designed to promote organisational services and activities, followed by posts to raise awareness about suicide prevention. Organisations also used Facebook for the purpose of: marketing/communication; influencing public opinion; dissemination of resources; building communities of support; and facilitating peer support.

TWITTER SEARCH

Suicide prevention organisations used Twitter mainly to promote services and activities, provide tools and advice for suicide prevention, and share suicide-related information. Very few suicide prevention organisations utilising Twitter to facilitate peer support for those at risk.

TUMBLR SEARCH

Suicide prevention organisations use Tumblr for posting news and information about the organisation, posting inspirational and awareness-raising messages, and sharing stories and prompting dialogue. The Tumblr pages established by the informal care community appeared to be largely aimed at engaging emotionally distressed people in dialogue, with varying success.

YOUTUBE SEARCH

Our search produced 37 relevant videos, nine of which were posted by established suicide prevention organisations. From the hits retrieved by the search YouTube appeared to provide an outlet, for young people in particular, to combine audio, visual, and verbal media in order to express their thoughts and emotions surrounding suicide and its prevention.

CASE STUDIES

Lifeline's approach to social media appeared to be largely output-oriented, in that it used social media primarily as a way of "getting the word out", as opposed to gathering input or insight from users. Lifeline had a presence on all of the major social media outlets identified in this study. We found that Lifeline mainly used Facebook and Twitter to disseminate information on suicide prevention tools and to promote its telephone crisis line. Another element to Lifeline's social media strategy was that it appeared to use social media to link online and offline suicide prevention activities.

By contrast, Ó Lá Go Lá used only one social media platform, Facebook. This organisation provided an example of a social media strategy that was primarily input-oriented with a focus on peer support. The popularity and high volume of user-traffic gained by the Ó Lá Go Lá Facebook page – despite minimal advertising – indicated a strong demand for peer-to-peer support services using social media.

KEY FINDINGS FROM THE STAKEHOLDER CONSULTATION

Of the 44 questionnaires that were sent out to researchers, 11 were returned, giving a 25% response rate. For organisations, of the 69 who were invited to take part, 13 questionnaires were returned, giving a response rate of 19%. Seventy-six questionnaires were returned by users of social media.

In general, social media was seen as a useful means of delivering a range of suicide prevention activities by all three groups, and whilst risks were identified the benefits were seen to outweigh the risks.

VIEWS OF RESEARCHERS

Of the researchers that completed questionnaires, the majority described the primary focus of their work to be on suicide and the media, including social media. Twitter was the most frequently used social media platform followed by Facebook and YouTube.

Studies most commonly conducted by respondents were those that examined the ways in which users discuss suicide using social media, followed by studies that described the types of social media sites that are used to discuss suicide. All respondents indicated that there is currently insufficient research examining the effects of social media based interventions on either suicide risk or ways in which social media can be used to support people bereaved by suicide. The most commonly cited barriers to conducting research into suicide and social media were methodological and ethical challenges.

VIEWS OF ORGANISATIONS

Of the 13 organisations that returned questionnaires, ten stated that their primary purpose was suicide prevention. Forty-six per cent of organisations hosted discussion forums about suicide and its prevention and 31% hosted discussion forums about other mental health issues. Almost 40% hosted blogs discussing suicide prevention, and 31% hosted blogs about other mental health issues.

All of the organisations reported using social media for the purpose of raising awareness, and 39% for advocacy purposes. Almost one third provided online counselling and almost one quarter facilitated online peer support. The most commonly used social media site was Facebook. In 83% of cases the site was moderated at least once a day by a trained staff member or volunteer.

VIEWS OF SOCIAL MEDIA USERS

Of the 76 users of social media that returned questionnaires, 47 provided information about their demographic characteristics. Of them 66% were female and 34% were male. Just over half were aged 30 or under, 40% were aged 31-45 and 6% were aged over 45. Most reported having felt suicidal at some time and/or supported someone else who had been suicidal or bereaved by suicide. In terms of help-seeking offline, 79% had sought help from a friend for an emotional or mental health-related problem and 71% had received professional help.

The most commonly used social media site among respondents was Facebook, followed by Twitter. Thirty-seven per cent of respondents reported having used social media for an emotional problem, although this was not usually for the purpose of gaining professional help, rather, they were typically used to obtain emotional support from others. The ability to express one's feelings was reported to be the most helpful aspect of using social media when faced with an emotional problem, followed by receiving support from others, talking to others with a similar problem and the ability to help others.

DISCUSSION AND RECOMMENDATIONS

This report presents the results of a literature review, Internet search, and stakeholder consultation investigating the use of social media in suicide prevention.

The findings from all three studies generally concluded that social media holds potential for suicide prevention, and presents both risks and benefits that need to be acknowledged by health professionals. Whilst risks clearly exist, to condemn technology is futile; emergent media affords us as much opportunity for suicide prevention as it does for increasing suicide risk.

Social media platforms are currently being used effectively by suicide prevention organisations to further their objectives in a number of ways; however they may be most effective as a suicide prevention tool when used to facilitate support between users.

Social media has the distinct advantage of being highly accessible, and acceptable to young people, and because of its nature can reach large numbers of people who can often be hard to engage in treatment. Thus the potential for the provision of suicide prevention activities delivered via social media platforms are yet to be fully realised.

The findings of this report form the basis of the following recommendations.

RECOMMENDATIONS FOR HEALTH PROFESSIONALS:

Health professionals need to be aware of both the risks and benefits associated with social media use. Increased collaboration between the health sector and Internet media providers is required in order to reduce risks and increase the use of the Internet for prevention purposes. Health professionals should work with people who use suicide and self-harm websites so that professional expertise and electronic media can be safely and effectively combined over the long term. Health professionals could utilise social media for professional development and training purposes (i.e. allowing access to professional peer support and clinical supervision). This may be particularly relevant in rural or remote parts of the region.

RECOMMENDATIONS FOR ORGANISATIONS:

Organisations and entities with an interest in suicide prevention should collaborate on both a national and international level in order to fully harness the opportunities that social media offers the field of suicide prevention. Organisations that use social media for the purpose of suicide prevention should develop and adhere to strict safety protocols and/or codes of ethics; this should include guidelines on safe ways to discuss suicide via social media.

Organisations that use social media for the purpose of suicide prevention should use highly trained moderators.

Back-up plans need to be in place in case of technological failings on social media sites designed for suicide prevention.

Professional organisations should employ search engine optimisation strategies to ensure maximum visibility of their sites.

Site moderators should:

Be responsive to forum users, in particular those showing signs of distress.

Ensure that encouragement of self-harm and the posting of instructions on how to harm oneself are prohibited.

Ensure that moderators have the ability to obtain IP addresses of users and pass this information to emergency services in case of imminent risk.

Carefully moderate all comments and respond promptly when negative comments or incorrect information is presented.

Facilitate peer-peer discussion where appropriate.

Search engine operators should consider providing information or links to help-related resources if keyword searches suggest suicidal feelings.

Organisations should emphasise their relationships to other suicide prevention efforts by making frequent use of links, and by establishing a presence on other related sites.

RECOMMENDATIONS FOR RESEARCHERS:

Studies investigating the role of legislation in regulating social media-based sites are required.

Research examining the ethics and safety of delivering interventions via social media is required; this should include studies evaluating the implementation and effectiveness of ethical guidelines/safety protocols measures.

Researchers need to work closely with other stakeholders in order to develop interventions that are acceptable to users and can be administered safely.

Long-term studies examining the safety and efficacy of interventions that can be delivered to people at risk of suicide and people bereaved by suicide via social media are needed.

New methodologies that can be rigorously applied to research that utilises social media platforms are required.

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INTRODUCTION

Suicide is a significant public health problem. Globally, suicide is estimated to account for approximately one million deaths per year. The World Health Organization (WHO) estimates that suicide is the 13th leading cause of death worldwide, and is the second leading cause of death among those aged between 15 and 29. The prevalence of non-fatal suicide-related behaviour, such as suicide attempt, is more common and may be up to 20 times higher than fatal suicidal behaviour, with an estimated 10 to 20 million non-fatal attempted suicides occurring every year worldwide (World Health Organization, 2009; World Health Organization, 2014).

The media has been widely reported as having an important role in the prevention of suicide. Certain types of media reporting of suicide have been shown to increase the risk of contagion among vulnerable individuals (Sisask and Varnik, 2012), in particular articles that sensationalise suicide, contain explicit descriptions of means of suicide, or portray suicide as a legitimate solution to one's problems (Lee et al., 2002).

The last decade has seen the Internet become an increasingly powerful form of information media. The technological foundations of Web 2.0 extended the capacity of the Internet by enabling users to not only receive information, but to create and exchange their own content, leading to the advent of social media websites. As such social media has been defined as a group of Internet-based applications that allow the creation and exchange of user-generated contents (Kaplan and Haenlein, 2010). Social media can refer to different forms of web and mobile-based technologies used for communications and information sharing (Boyd and Ellison, 2007). Systematic categorisation of social media is difficult due to the fact that cyberspace is constantly evolving, however according to Kaplan and Haenlein (2010) at least six types of social media may be included:

- Collaborative projects (e.g. Wikipedia)
- Blogs and microblogs (e.g. Twitter)
- Content communities (e.g. YouTube)
- Social networking sites (e.g. Facebook)
- Virtual game worlds (e.g. World of Warcraft)
- Virtual social worlds (e.g. Second Life).

The growth of social media has presented a new set of challenges for the field of suicide prevention. Concerns have been expressed by some regarding the ways in which social media sites, in particular blogs and social networking sites, can be used for the expression of suicidal feelings and for the communication about suicide-related behaviour with others (Becker et al., 2004; Cash et al., 2013). This raises a series of questions regarding the ways in which we talk about suicide online and how this may affect others, and also regarding the potential for social media to be used as a preventative tool (Robinson and McGorry, 2009).

For the most part these questions remain unanswered. Therefore the aims of this study were:

- To examine current evidence relating to the use of social media for the purpose of suicide prevention
- To examine the ways in which social media are currently used for the purpose of suicide prevention; and
- To examine the views of stakeholders in order to determine current gaps in knowledge, the benefits and risks of using social media for suicide prevention; and future priorities for work in this field.

The study employed a number of methodological approaches in order to address these broad aims. These included:

- An examination of the peer-reviewed literature relating to suicide and social media
- An Internet search to identify the types of suicide prevention organisations that are using social media for suicide prevention
- A series of stakeholder surveys.

The study was conducted by researchers at Orygen, The National Centre of Excellence in Youth Mental Health and Community Works Associates. It was conducted on behalf of the World Health Organization Western Pacific Regional Office, and the Young and Well Cooperative Research Centre.

STUDY AIMS

SPECIFIC AIMS OF THE LITERATURE REVIEW

The aim of the literature review was to identify and synthesise current evidence pertaining to social media and suicide prevention in order to examine its potential to be used as a suicide prevention tool.

SPECIFIC AIMS OF THE INTERNET SEARCH

The aims of the Internet search were twofold:

To identify the ways in which both professional organisations and the informal care community use social media platforms for the purpose of suicide prevention
To conduct two in-depth case studies.

SPECIFIC AIMS OF THE STAKEHOLDER CONSULTATION

This was an exploratory exercise, the specific aims of which were to identify:

Ways in which stakeholders use social media for the purpose of suicide prevention
Stakeholder perceptions of the relationship between suicide and social media
Stakeholder perceptions of the potential risks and benefits when delivering suicide prevention activities delivered via social media platforms
Future directions and/or priorities for work in this field

METHOD

LITERATURE REVIEW

A literature search was conducted using the Cochrane Collaboration systematic review methodology (Higgins and Green, 2009). The titles of all retrieved articles were screened by two review authors, and the full text for any articles thought to be potentially relevant was downloaded and examined in order to determine whether or not they meet the inclusion criteria. A framework was developed for the classification of each study and data were then extracted and analysed according to this framework (see below).

The following databases were searched on 31st of December, 2012: Medline, PsycINFO, Embase, The Cochrane Library and the World Health Organisation (WHO) International Clinical Trials Registry Platform (ICTRP). Search terms were: (suicid* OR Self-Injurious Behavior* OR DSH OR deliberate self-harm) AND (web* OR online OR Internet OR computer* OR social media).

Included articles: Peer-reviewed journal articles were included if they related to suicide-related behaviour, including completed suicide, suicide attempt or suicidal ideation, and to social media. No restriction was placed on study design, or publication date.

Excluded articles: Letters to the editor or commentaries were not included unless they included new data. In addition, articles describing, or reporting upon, static Internet-based programs or interventions were not included unless they included a component that allowed users to interact with each other online, for example a discussion forum, in which case they were included.

Journal articles were first classified according to study type. Studies were classed as either:

Papers that reported on the relationship between suicide and social media, for example studies that examined social media as a risk factor for suicide-related behaviour
Studies that reported on the development of online suicide prevention support programs

Studies that examined and analysed the content of social media sites for suicide prevention, for example studies that analysed the linguistic content of suicide prevention discussion boards
Network analytical studies, for example studies that examined the accessibility of different types of social media sites and suicide-related websites
Individual case studies
Review articles or editorials that summarised the literature relating to suicide and social media
Studies that examined sites relating to suicide bereavement

Data were then extracted according to target group (the population that the article focused on, e.g. young people); study aims; study methods; key findings and the overall conclusions and/or recommendations.

INTERNET SEARCH

An Internet search was conducted in April and May of 2013. A qualitative approach was used for both data collection and analysis.

More specifically a series of searches were conducted using the mechanisms provided by key social media outlets themselves. This involved a detailed search within Facebook, Twitter, Tumblr, and YouTube to find pages created on these sites that specifically talked about suicide and its prevention. These sites were selected as they represent one example of the most commonly used social media platforms i.e. social media sites (Facebook), blogs (Tumblr), micro-blogs (Twitter), and content communities (YouTube).

Because each of these sites differs in structure and content, different search terms and strategies were employed according to the social media platform being examined. In this way the search took an iterative, rather than a pre-defined approach. Similarly because the number of “hits” obtained from each search varied significantly for each outlet, the number of subsequent pages that were examined closely by researchers also differed. Descriptions of how each social media platform was searched are provided below.

When formal organisations were identified through their page on a particular social media site, researchers visited each organisation’s official website to ascertain which other social media sites they utilised.

FACEBOOK AND TUMBLR

We used the search function within both Facebook and Tumblr to conduct a systematic search using three sets of search terms: “Suicide prevention”; “suicide help”; and “I wanna kill myself”. To ensure that our search results were not biased by the researcher’s own profile information, we created an alias Facebook profile for a young person of the opposite gender, living in a different Asian-Pacific country, and repeated the search through that account. In order to further investigate whether results might be biased based on location of our computer, we asked colleagues in two different Asian-Pacific countries to repeat the search through the alias account. While the results appeared in a slightly different order, the top 30 hits from each account were the same. All sites examined were English language sites.

TWITTER

Researchers set up a Twitter account for the study, and “followed” the first 50 accounts that were identified by entering the terms “suicide prevention” in the site’s search function. One account was subsequently excluded based on lack of relevance. All the “tweets” in the account’s newsfeed over approximately 12 hours on May 9th, 2013 were examined.

YOUTUBE

Three searches were conducted on YouTube on April 3, 2013 using the terms: “prevent suicide”; “suicide help”; and “I wanna kill myself”. A vast number of results were retrieved; only the top 20 hits for each search were examined.

CASE STUDIES

We focused on two established suicide prevention organisations for a more in-depth analysis. These were the US-based National Suicide Prevention Lifeline and Ó Lá Go Lá.

NATIONAL SUICIDE PREVENTION LIFELINE

In order to understand how Lifeline used social media, posts made by the organisation on Facebook, Twitter, and Tumblr over a 48-hour period in September 2013 were observed. Data collected from the three social media sites included the following:

The primary purpose of the post

The number of times it was “shared”, “retweeted”, or “reblogged”¹

The number of comments and “likes” the posts received

Whether the same material was posted by Lifeline on more than one social media outlet within the observed timeframe

Qualitative aspects of the organisation’s posts and user responses to posts.

To examine Lifeline’s use of YouTube, a different approach was taken. All videos posted by Lifeline were “sorted” according to popularity using the sorting function provided by YouTube. All videos that had been viewed more than 1,000 times per year since originally posted (or 500 times per six months in the case of posts made within the past year) were examined. This left the 12 most popular videos posted by Lifeline. Data were gathered from these videos on September 19th, 2013 and included:

Information about the subject of the video (i.e. who was featured);

The primary message delivered by the video;

The popularity of the video (number of views per year); and

Notes regarding the tone and content of the most recent user comments posted beneath the video.

Ó LÁ GO LÁ

To understand how Ó Lá Go Lá used their Facebook page (ÓLáGoLá, n.d.) for suicide prevention purposes, a mixed-methods approach was used. This comprised observations of posts made on the Ó Lá Go Lá Facebook page over a 24-hour time period in November 2013. In total, 20 posts were examined. Data collected by researchers included how many visitor comments the posts received, and how many comments site administrators added to the discussions. Qualitative information was also gathered, such as the primary content, voice, and purpose of posts. Secondly an interview was conducted with the CEO, Fiona Fitzpatrick.

STAKEHOLDER CONSULTATION

This was a 12-week stakeholder consultation exercise that involved the online administration of three specifically designed questionnaires. These were distributed to:

People who conduct research into suicide and social media;

Organisations and agencies that use social media for suicide prevention purposes; and

Individuals (over the age of 18) who use social media.

Participants were identified in two different ways.

Researchers and organisations were identified using a snowball sampling technique whereby an initial list of stakeholders was developed from the search of the peer-reviewed literature and the Internet search. This was supplemented by individuals, or organisations that were known to the research team. Each of these stakeholders received an email inviting them to participate in the survey and asking them to identify others whom they consider to have relevant experience. Those identified in this manner were also sent a direct email invitation to take part. This continued until data saturation was reached and no new information was emerging. In total 44 researchers and 69 organisations were invited to participate.

¹ Re-tweeting or re-blogging refers to the act of sharing a tweet or blog post that was posted by another person or organisation.

Individual users of social media were identified differently, using a two-stage respondent-driven sampling (RDS) process (Heckathorn, 2002). In stage one, we asked those organisations that were identified via the Internet search as most likely to have users located in the Western Pacific Region to post a link to the survey either on their website, or using any other form of social media that they use. An advertisement with a link to the survey was also placed on the Orygen Facebook page and via the Twitter account. In stage two, participants were asked to re-post the survey using any form of social media they normally use. All participants were asked to record how they heard about the survey. As an incentive, participants were given the option of providing their contact details to enter into a draw to win an iPad. All contact details were kept confidential.

RESEARCH QUESTIONNAIRES

Three online questionnaires were specifically developed for this study. They each contained a number of 'yes' or 'no' questions, a series of Likert-scales whereby participants were asked to rate their views using frequency or agreement scales, and some multiple choice questions. The first questionnaire was designed for people who conduct research into suicide and social media, and comprised four sections. Section One contained a series of demographic questions, including how they heard about the survey, the type of institution that they were based at, and a question regarding their use of social media. It also asked about the primary focus of their research. Section Two asked more detailed questions about the specific nature of their research relating to suicide and social media (for example, whether it was epidemiological or intervention research). Section Three asked about their views on research into suicide and social media in general, and included questions regarding whether or not they considered there to be sufficient research on this topic, and what challenges exist when researching this topic and how these might be overcome. Section Four asked for their views on social media and suicide in general. This section included questions such as 'Which types of social media hold the most potential when it comes to preventing suicide?' and asked them to identify some of the potential risks and benefits associated with different forms of social media.

The second questionnaire was designed for organisations and agencies that use social media for suicide prevention. This questionnaire comprised three sections. Section One contained a series of questions about the nature and purpose of the organisation itself. Section Two asked a number of questions about the ways in which the organisation used social media for the purpose of suicide prevention, the types of social media platforms used and the frequency with which they were used. It also contained questions regarding the perceived utility of using various social media platforms for suicide prevention purposes. Section Three asked for respondents' views on social media and suicide in general. As with the first questionnaire, this section asked respondents to rate which types of social media hold the most potential when it comes to preventing suicide and asked them to identify some of the potential risks and benefits associated with different forms of social media.

The third questionnaire was designed for individuals that use social media and comprised six sections. Section One asked respondents about the frequency and nature of their use of different social media platforms. Section Two focused on the use of different social media platforms for obtaining information, emotional support, and professional help for an emotional problem. This section also asked respondents to rate which aspects of using social media they found to be the most helpful. Section Three and Four focused on using social media to help others and help-seeking offline respectively. Section Five asked for their views on social media and suicide in general. As with the first two questionnaires this section asked respondents to rate which types of social media they considered to hold the most potential when it comes to preventing suicide and asked them to identify some of the potential risks and benefits associated with different forms of social media. Finally, Section Six collected some demographic information.

DATA ANALYSIS

Data were entered into SPSS and frequency tables generated for each variable. Percentages are reported to the nearest whole number.

ETHICS

Ethical approval for all consultation with stakeholders, including interviews conducted as part of the case studies, was obtained from the University of Melbourne Human Research and Ethics Committee.

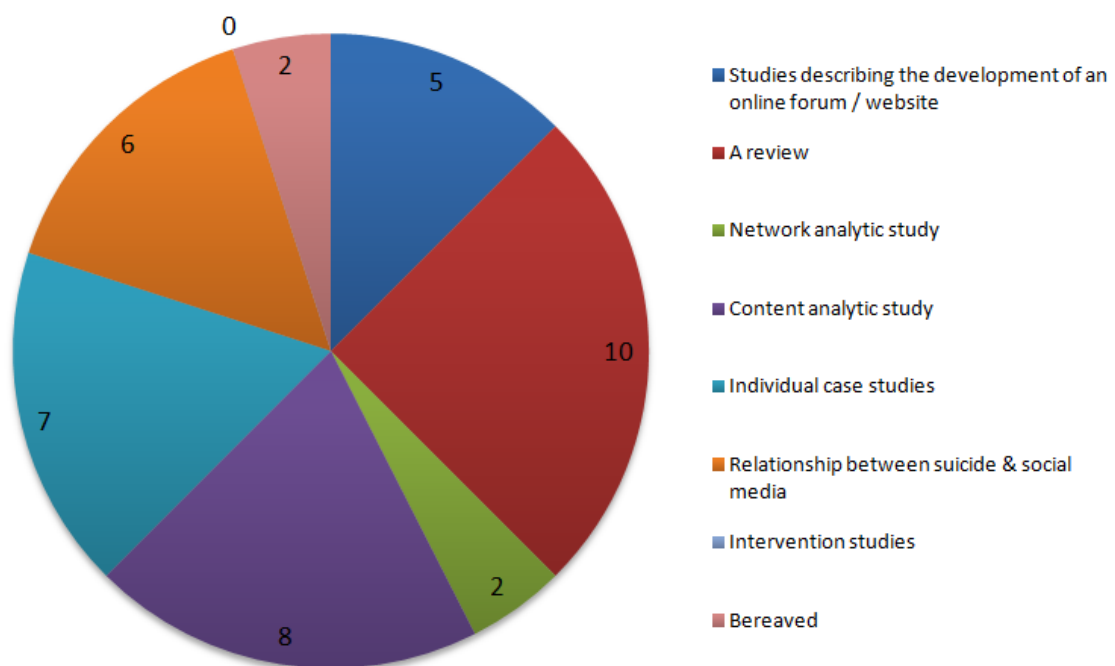
RESULTS OF THE LITERATURE REVIEW

SEARCH RESULTS

A total of 666 articles were retrieved by the search. A further seven studies were retrieved from the WHO portal, four were identified from reference lists of included articles, and one paper was sent to us by an author whose other papers were in Japanese. Of these, 162 were identified as duplicates and excluded, and a further 441 were excluded because they did not meet the inclusion criteria for the study. Twenty articles were excluded because they either had no abstract or the full text was inaccessible. Fifteen were excluded because they were not available in English, despite our attempts to contact the study authors. This left 40 peer-reviewed papers to be included in the review.

The breakdown of articles is shown in Figure 1. As can be seen the search identified no studies that reported on either the development of, or effectiveness of, interventions designed to reduce suicide risk using social media. The majority of studies did not specify a target group, however those that did focused on young people (n=12) or bereaved people (n=4).

Figure 1: Breakdown of articles according to the focus of the study



STUDIES THAT EXAMINED THE RELATIONSHIP BETWEEN SUICIDE AND SOCIAL MEDIA

Six studies examined the relationship between suicide and social media, four of which focused on young people. All but one study used a cross sectional survey design; the remaining study reported on interviews conducted with people who had previously participated in a national survey (Dunlop et al., 2011). All studies had relatively

large sample sizes with numbers ranging from 164 to 1,963. Please refer to Appendix A (Table 1) for a summary of all studies in this category.

Broadly speaking these studies reported that people use social media for a number of reasons, including to: communicate about a suicide death; meet others with similar problems; and to share their experiences in an anonymous and non-judgmental environment. For the most part people did not use social media to seek professional help or find a suicide partner. One study reported that participants used social media in order to obtain information regarding methods of suicide (Harris et al., 2009). Overall open discussion forums or blogs were reported to be the most useful sites, whilst commercial or professionally run prevention sites were perceived as least useful, often reported as being 'out of touch and patronising' (Harris et al., 2009).

With regard to risk associated with using social media, two studies reported that suicidal ideation appeared to decrease after using a suicide-related discussion forum (Harris et al., 2009; Eichenberg, 2008), although this decrease was not always attributed to the use of the forum (Eichenberg, 2008). One study examined the impact of hearing about a suicide online, and reported that whilst this was a relatively common occurrence, suicidal ideation only appeared to increase when the source of a suicide story was an online discussion forum (Dunlop et al., 2011).

Two studies looked specifically at the relationship between cyber-bullying and suicidal ideation among school and college students (Schenk and Fremouw, 2012; Hinduja and Patchin, 2010) and both reported a strong association between all forms of cyber-bullying and suicide-related behaviour, in particular for the victim (Hinduja and Patchin, 2010).

One study examined the relationship between a lifetime history of suicidal ideation, electronic media use and everyday personal communication (Katsumata et al., 2008), and results suggested an association between suicidal ideation and a history of searching the Internet for suicide-related information; distress and/or anxiety about email interactions with others or the content of messages online; and an absence of close trusted friends or adults. This was supported by a study that compared suicidal individuals who went online for suicide-related purposes with those who did so for other reasons (Harris et al., 2009). The authors reported the former were less likely to seek help offline, and had lower levels of perceived social support overall than non-suicide-related users. They were however more likely to seek help from online sources and generally reported feeling less alienated doing so (Harris et al., 2009).

STUDIES THAT DESCRIBED THE DEVELOPMENT OF AN ONLINE FORUM

Five studies described the development of an online community or forum. One of these sites specifically targeted young people (Webb et al., 2008), one targeted university staff and students (Manning and Vandeusen, 2011), one targeted bereaved parents (Jones and Meier, 2011) and two studies did not specify a target group (Gilat and Shahar, 2009; Barak, 2007). In general these studies describe the development, evolution and content of online support forums for people who are experiencing suicidal feelings or have been bereaved by suicide. See Appendix A (Table 2) for a summary.

For the most part the programs described were multi-faceted, comprising a static website component (which promote help seeking and contain information, links to fact sheets and resources, and emergency contact details), but were supplemented by social media platforms either in the form of discussion boards or chat rooms or via links to specialty pages on established social networking sites such as Facebook or MySpace. The study that targeted university staff and students also hosted an online course designed to assist in the recognition and management of suicide risk (Manning and Vandeusen, 2011). The site that targeted bereaved parents also hosted a memorial 'wall' for parents to honour their deceased children (Jones and Meier, 2011).

Authors described how the sites were accessed by large numbers of people. For example, the site created by Barak (2007) was accessed more than 10,000 times per month with approximately 200 new messages posted daily, many of which were made by suicidal adolescents. Site moderators had reportedly intervened in approximately 100 suicide attempts. Jones and Meier (2011) investigated a site for bereaved people and reported a large and increasing membership base, with almost 4,000 message board posts each month.

Of the four sites that hosted online discussion boards, all were moderated by trained volunteers (Barak, 2007; Gilat and Shahar, 2009; Jones and Meier, 2011; Webb et al., 2008), and two of the studies emphasised the need for clear policies and/or guidelines to ensure safe practice (Jones and Meier, 2011; Webb et al., 2008).

Online forums appear to be advantageous in their ability to provide one-on-one and group support simultaneously. This may be powerful in terms of instilling hope, reducing isolation and allowing for multiple perspectives to be shared (Gilat and Shahar, 2009). In addition, online support is accessible to large numbers of people at all times and is not restricted to working hours (Gilat and Shahar, 2009). It also appears to be cost effective (Manning and Vandeusen, 2011). A further advantage is that members who initially access a site for support may become empowered to be 'group leaders' or moderators themselves, a process which could be therapeutic in and of itself (Jones and Meier, 2011).

Challenges reported included fake 'callers', 'callers' abusing helpers, false message posts, and 'burn out' among helpers. Other challenges related to technology failings, and the fact that some people may find it hard to express themselves adequately in writing (Barak, 2007). Ethical issues specific to providing support online were also raised. These included: difficulty controlling the participation of members who could (either deliberately or inadvertently) cause distress to others; difficulty accurately assessing the emotional state of participants; and issues relating to the boundaries of clinical responsibility for mental health professionals when it comes to protecting clients from harming themselves (Gilat and Shahar, 2009).

STUDIES THAT EXAMINED THE CONTENT OF SOCIAL MEDIA SITES

Eight studies examined the content of user interactions on a number of different discussion forums (Baker and Fortune, 2008; Barak and Miron, 2005; Gilat et al., 2011; Greidanus and Everall, 2010; Horne and Wiggins, 2009; McSwain et al., 2012; Miller and Gergen, 1998; Sueki and Eichenberg, 2012); see Appendix A (Table 3).

Overall these studies aimed to: examine the ways in which people use online message boards, or forums, to talk about suicide; to look in detail at the nature of the content and user interactions (of both help-seekers and helpers); and to examine the therapeutic potential of such online conversations. One study investigated whether the 'Ten Warning Signs for Suicide' as outlined by the American Association of Suicidology (AAS), were useful in identifying suicide risk in online chat forums (McSwain et al., 2012) and one compared the writing styles of suicidal people on Internet support groups with the writing of non-suicidal people who use other types of forums (Barak and Miron, 2005). For the most part these studies employed qualitative techniques and one conducted an online survey that was posted on suicide-related message boards (Sueki and Eichenberg, 2012).

A number of themes emerged from these studies. Overall participants reported gaining a positive identity from using such forums; they felt supported, understood and socially valued in a way that they did not experience offline. In addition, participants reported gaining a sense of community from the forums, which were perceived to provide friendship, emotional support and information/advice (Baker and Fortune, 2008). These identities appeared to be dynamic, in that whilst many people went online in order to share their own experiences or seek advice, they frequently found themselves helping or supporting others, and this was reported as being therapeutic in and of itself (Greidanus and Everall, 2010).

Participants also reported that using the websites helped them cope with feelings of distress and suicidality, and in some cases actually gave them something to do with their hands as an alternative to self-harming (Baker and Fortune, 2008; Greidanus and Everall, 2010; Horne and Wiggins, 2009).

Exchanges were overwhelmingly positive in nature and were most frequently described as 'supportive' or 'empathetic', rather than giving advice (Miller and Gergen, 1998). Although forums were used by some as an alternative to professional therapy (Baker and Fortune, 2008), most authors concluded that whilst online forums appear to be a valid and safe source of support (Baker and Fortune, 2008; Gilat et al., 2011), they should not be seen as an alternative to more formal mental health services. Rather, it was suggested they could provide an adjunct to treatment, potentially offering some relief to frequently over-stretched professional services (Greidanus and Everall, 2010; Miller and Gergen, 1998).

Only one study examined the effects of using message boards on suicidal ideation and found no increase in suicidal ideation as a result (Sueki and Eichenberg, 2012). No studies reported any negative interactions or negative consequences associated with use of the messages boards under examination.

The study that examined writing styles found that the writing of suicidal people online reflects their mental state in the same way that off-line writing does, implying that the Internet is a legitimate social environment and that online writing could be a useful source of information about the writer's mental state (Barak and Miron, 2005).

STUDIES THAT EXAMINED THE NETWORK PATHWAYS OF SOCIAL MEDIA SITES

Two studies fell into this category (see Appendix A, Table 4). Kemp and Collings (2011) conducted a series of Internet-based searches to determine the prevalence and accessibility of pro-suicide, suicide prevention, and suicide support sites. Silenzio et al. (2009a) explored the online social networks used by lesbian, gay, bisexual and transgendered youth to determine the maximum number of people who could be reached using social media for future suicide prevention purposes.

The first study (Kemp and Collings, 2011) utilised a 'hyperlink network analysis', whereby traditional data collection methods are replaced by automated crawlers that allow the existence and accessibility of different sites to be detected. Search terms used were 'suicide' and 'suicide methods'. Using this methodology the authors found support and policy/advocacy sites were the most commonly detected when both search terms were used. Whilst pro-suicide sites were more commonly detected when only the term 'suicide methods' was used, these sites were uncommon, and information-based support sites were more visible and readily accessible.

The second study (Silenzio et al., 2009a) also employed a 'crawler' technique but focused on mapping individual social connections within the social networking site MySpace. The observed network was then subject to a series of Monte Carlo simulations designed to mirror the extent of the reach of a chosen intervention for example, a suicide prevention message. The results indicated that an intervention delivered in this way could reach tens of thousands of people who may otherwise be hard-to-reach for the purpose of treatment or research.

INDIVIDUAL CASE STUDIES

Seven of the articles retrieved reported on individual case studies (see Appendix A, Table 5). For the most part these studies described cases whereby an individual had used social media sites to communicate about their suicidality (Baume et al., 1997; Becker et al., 2004; Birbal et al., 2009; Ogburn et al., 2011; Ruder et al., 2011). One study described the response of a forum moderator to a suicide in an online community (Hsiung, 2007), and the final study described the case of a user of mental health services whose case worker became concerned for their safety after seeing pictures they uploaded onto Facebook (Lehavot et al., 2012).

A number of these studies described cases where individuals had used the Internet to communicate about their suicidal intentions, sought information about suicide methods, or engaged in a suicidal act whilst online. In general the authors of these studies discussed the potential dangers of the Internet, including the ability of consumers to seek information about suicide methods online (Becker et al., 2004), and the issue of 'group death instincts', whereby a suicidal person is encouraged to engage in a suicidal act by other suicidal people (Baume et al., 1997). Some authors, however, described how the social networking site Facebook and the micro-blog Twitter were used to post suicide notes, which, because of their immediate nature, enabled attempts to be made to intervene in the suicide attempt (Ruder et al., 2011; Ogburn et al., 2011), in one case successfully.

One study described in detail the response of a site moderator following the suicide of a forum member (Hsiung, 2007). Responses posted on the site by forum members were not dissimilar to those in real life: shock and sadness were expressed initially, followed by posts saying goodbye and moving towards acceptance of the death. The author described how, as the moderator, he attempted to facilitate mourning, yet reduce the risk of contagion, by starting a memorial page on an affiliated, but separate, site. Responses to the memorial page by members of the discussion forum were favourable.

The final study in this category described the case of a man suffering from mental health problems whose caseworker became concerned for his safety after viewing images of him on Facebook depicting various methods of suicide (Lehavot et al., 2012). This study focused on the ethical issues that arose from the case. For example, the worker was able to access information about the individual via Facebook without his knowledge or permission, raising concerns around privacy and confidentiality, clinical judgment and multiplicity of relationships.

REVIEWS AND EDITORIALS

Ten studies fell into the category of 'reviews' or editorials (Alao et al., 2006; Biddle et al., 2008; Collings and Niederkrotenthaler, 2012; Lipczynska, 2009; Luxton et al., 2011; Luxton et al., 2012; Mehlum, 2000; Ozawa-De Silva, 2008; Thompson, 1999; Ozawa-De Silva, 2010), although it is important to say that none were systematic reviews. See Table 6.

Overall these studies described both the risks and benefits associated with social media and suicide. Risks included the possibility of contagion, the opportunity for the development of suicide pacts, the provision of information regarding (often novel) suicide methods, the posting of suicide notes or suicide-related images, and the normalisation of suicidal behaviour via video sharing sites and online communities (Ozawa-De Silva, 2008; Mehlum, 2000; Luxton et al., 2012; Alao et al., 2006). In one study the author discussed the existence of numerous online message boards which 'advocate suicide', and actively 'discourage' people from seeking professional help (Thompson, 1999), and another noted that pro-suicide sites often presented within the first few hits of an online search, and thus are likely to be found easily by vulnerable people (Biddle et al., 2008).

Despite these risks, many potential benefits or opportunities for preventing suicide using social media were also discussed. These included the ability of social media to provide up-to-date information about sources of help and promote help-seeking generally, the provision of self-assessment scales, and the delivery of treatment such as online counselling. Other benefits included the ability of social media to enable people to express and share their feelings and coping strategies in such a way that can be normalising and empowering for people (Alao et al., 2006; Biddle et al., 2008; Collings and Niederkrotenthaler, 2012).

Two studies (Luxton et al., 2012; Luxton et al., 2011) presented examples of suicide prevention organisations that use social media. Examples include the use of Facebook by the National Suicide Prevention Lifeline by the American Foundation for Suicide Prevention. These pages provide links to suicide prevention helplines and organisations, and information about the warning signs for suicide. They also cite numerous blog groups dedicated to suicide prevention, enable users to interact and share information, and provide examples of YouTube videos devoted to suicide prevention. Advantages of these platforms include the ability to 'build community' and encourage support, as well as the ability to deliver preventative information instantly in a readily accessible format (Luxton et al., 2011).

These studies concluded that social media has potential benefits as well as risks with regard to suicide prevention, and that clinicians or other health professionals need to be aware of both (Lipczynska, 2009; Alao et al., 2006). In addition, efforts could focus on increased collaboration with Internet media providers in order to reduce risks and increase the use of the Internet for prevention purposes (Mehlum, 2000).

The final two studies in this category attempted to apply some meaning and understanding to the phenomena of Internet group suicide in Japan (Ozawa-De Silva, 2008; Ozawa-De Silva, 2010). The author suggested that existing models for understanding suicide do not account for the uniqueness of Internet group suicide. Rather, such an act arises from the need for social connectedness and a fear of social isolation, even in death and this needs to be accounted for in preventative efforts.

STUDIES THAT EXAMINED SITES RELATING TO SUICIDE BEREAVEMENT

Two studies fell into this category (Krysinska and Andriessen, 2010; Chapple and Ziebland, 2011); see Appendix A (Table 7).

The first explored how the availability of Internet support may be changing the experience of bereavement (Chapple and Ziebland, 2011). It was qualitative in nature: the researchers conducted interviews with 40 people who had been bereaved by suicide. Participants reported using the Internet for three main purposes. Firstly, it was used to inform others of the death in a way that felt less burdensome than doing so on the telephone or face-to-face. Secondly, the Internet was used to gain and provide support to others with a similar experience. This did not replace other forms of support; people sought help both online and offline, but reported valuing the anonymity, the 24-hour access and the judgment-free nature of receiving support online. Finally, participants used online platforms to establish memorials for their loved ones. No negative experiences were reported, although some acknowledged that spending time on chat-rooms can "take over" and could become "depressing".

The second study sought to examine the type and quality of online resources that were available for people who had been bereaved by suicide (Krysinska and Andriessen, 2010). The authors found that a range of information was available in a number of different formats, and that the majority of sites contained information on suicide and bereavement, referral information, resources, and links to other sites. Relatively few of the websites were created by professional organisations and the authors discussed the need for such organisations to employ search engine optimisation strategies to ensure maximum visibility of their sites.

RESULTS OF THE INTERNET SEARCH

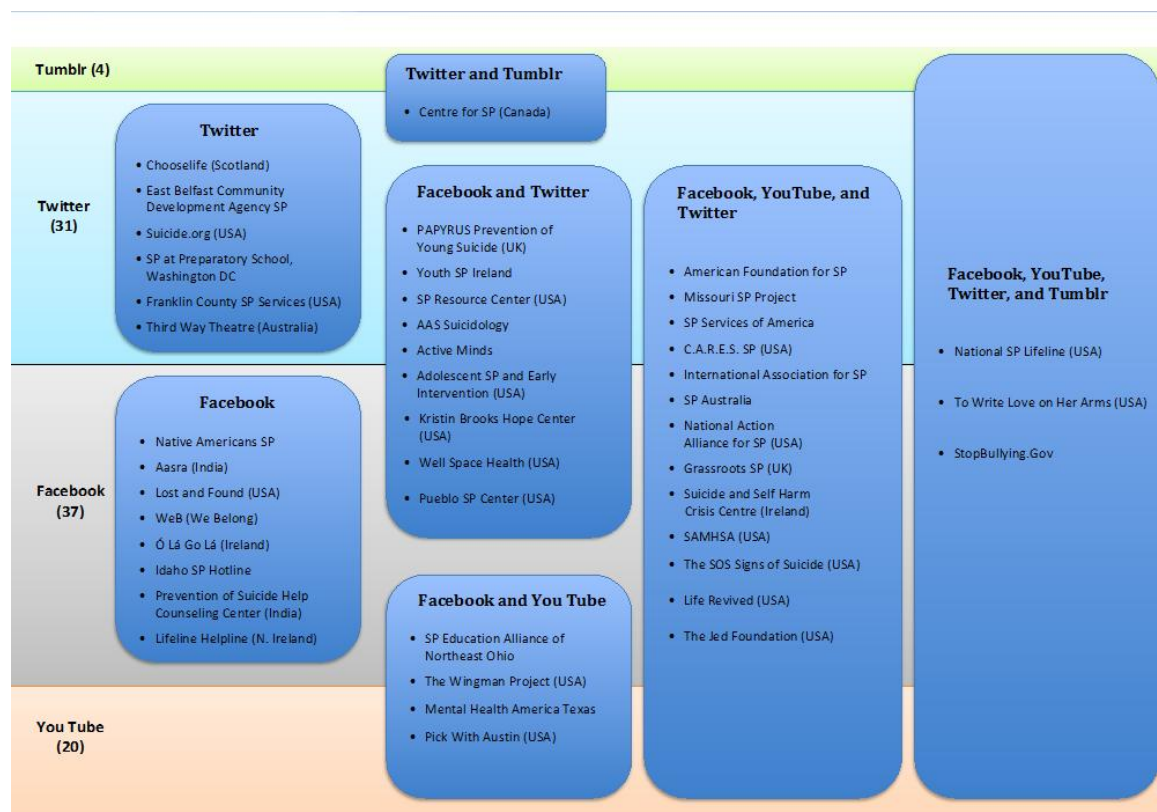
FORMAL ORGANISATIONS IDENTIFIED BY THE STUDY

In total, 44 formally established organisations were identified by the search. For a list of these organisations and their websites see Appendix B. Figure 2 illustrates the presence of these organisations across major social media platforms. The number beside each platform represents the total number of organisations that used the site. Most organisations used more than one form of social media; Facebook and Twitter were most popular. Whilst the search focused predominantly on these key social media outlets, several organisations also advertised their presence on Google+ (n=4); Blogspot (n=4); MySpace (n=3); LinkedIn (n=2); Pinterest (n=2); Issuu (n=1); Delicious (n=1); and Instagram (n=1). Three organisations advertised blogs published on their own website.

While some organisations specialised their efforts on only one outlet (n=14), the majority used more than one type of social media (n=30). Fourteen of the 44 organisations appeared on a combination of two of the major social media outlets (nine used Facebook and Twitter; four used Facebook and YouTube; and one used Twitter and Tumblr), 13 had established a presence on three outlets (Facebook, YouTube and Twitter), and three had a presence on all four major outlets included in the search (Facebook, YouTube, Twitter, and Tumblr).

As a general observation, the Internet search data suggest that organisations tend to use Twitter as a “connector” between communications across different online platforms. Of the 77 tweets included in our study, eight provided links to information contained on their other social media pages, including four Facebook posts; two blogs; and two YouTube videos. Other links provided by tweets included one audio recording; two news articles; six online reports and toolkits; and 28 websites.

Figure 2: The presence of suicide prevention organisations on key social media sites



* SP = suicide prevention

The ways in which organisations used different social media platforms varied according to the nature of the platform, as well as the aims and objectives of the organisations. A key question was **do suicide prevention organisations capitalise on the interactive format of social media outlets?** Our results suggested that very few organisations used social media in this way, but those that were facilitating peer support online targeted their social media presence specifically to serve this purpose.

The following section of this report describes how specific forms of social media are used for suicide prevention.

SOCIAL NETWORKING SITES

Social networking sites offer a platform by which people can link their information using novel means of communication that transcend simple text messages, and can include pictures, videos, and links to other sites on the Internet. Examples of social networking sites include both those designed specifically to enable scientific networks for knowledge-sharing (such as ResearchGate, and Vivo), and sites designed to share information for more general purposes, including Facebook, MySpace and Instagram.

Facebook is by far the most-used social networking tool, with its members exceeding the population of Europe (Nentworth and König, 2012). As of July 2014, Facebook had over 13 million Australian users (World_Health_Organization, 2014). Moreover, research has found that 93% of Australian youth online use Facebook (Burns et al., 2013). For this reason, we focused the social networking component of the study on a search of relevant Facebook pages.

FACEBOOK

Although Facebook is most commonly used by individuals for personal use, official pages can also be set up for businesses, public figures, and non-profit organisations. Official pages have one or more administrators that control the content of the page. Only administrators can post original material on the page's wall, but page visitors can leave comments on those posts. Administrators can also set up a feature enabling users to post to a small section on the right-hand side of the page. Page administrators have control over this content, including the power to delete posts.

Facebook pages can also be set up in the format of "communities" surrounding a particular cause or interest, or "groups", which allow people to communicate about a particular topic. Groups can be "open", allowing anyone to view its members and content, or "closed", in which people must request and be accepted to the page by an administrator before accessing its member list and conversation.

FACEBOOK SEARCH RESULTS

The search terms "suicide prevention" and "suicide help" produced over 200 Facebook pages and the top 30 hits from each search were examined. Two sites were subsequently excluded because they did not contain any relevant content. The search term "I wanna kill myself" produced 12 hits. All 12 were examined but were found not to demonstrate an intention to help people deal at risk of of suicide and so were subsequently excluded from the study. A total of 58 pages were included for analysis.

Of the 58 Facebook pages examined, 21 were convincingly linked to established organisations and the remaining 37 appeared to be operated by the informal care community. In some cases, however, it was difficult to distinguish whether a page was run by an organisation, or by the informal care community. Other pages listed themselves as a "Non-Profit Organisation", but did not provide evidence of a link to any formal entity. Generally speaking, sites were classified as part of the "informal care community" if they did not provide an external link or contact information that connected to a formally established organisation. The two exceptions were "Lost and Found Suicide Prevention" and "Native Americans Suicide Prevention Program", who had an established presence as organisations but operated through their Facebook pages rather than through an external website. These were classified as established organisations.

Different search terms produced different results in terms of whether the pages were operated by established organisations or the informal care community. Just over half of the top 30 hits for the search terms "suicide prevention" were pages run by established suicide prevention organisations, compared with 13% retrieved in the search "suicide help". These findings are significant because young people are presumably less likely to use the formal terminology of "prevention" when looking for help. People using the more colloquial terms to search Facebook are less likely to connect to a page run by a formal organisation, as the substantial majority of their top search results will likely be operated by the informal care community. At the time of the study, the informal care community operated two-thirds of the search hits that we sampled.

OBSERVATIONS OF FACEBOOK USE BY SUICIDE PREVENTION ORGANISATIONS

We categorised administrator posts on the established organisational pages based on the main purpose of the post. In most cases, all posts made between January and April 2013 were examined. Where this was not possible due to high volume, we ceased to examine posts once data saturation had been achieved.

A total of 21 posts were examined and in general these fell under the following broad strategies: marketing and communication; influencing public opinion; dissemination of resources/information; building supportive 'communities; and facilitating peer-to-peer support. However, these strategies were neither mutually exclusive nor exhaustive. While some of the observed pages neatly fit into a single category, others used a combination of strategies.

The most popular purpose of posts was to promote organisational services and activities, including events, conferences, help lines, and other mental health services (n = 19). The second most popular use of posts was to raise awareness about suicide and its prevention, often featuring statistics or quotes aimed at reducing the stigma associated with talking about suicide and emphasising the need to support those at risk (n = 17). Other popular uses of Facebook included sharing information about suicide and its prevention (n = 11); fundraising (n =

9); sharing inspirational quotes and images (n = 8); providing tools and advice for preventing suicide (n = 7), and political advocacy for people with mental illness and people belonging to high-risk populations (n = 6).

OBSERVATIONS OF FACEBOOK USE BY THE INFORMAL CARE COMMUNITY

Many of the informal care community pages were operated by young people. In some cases, the site administrators identified themselves as secondary school students or teenagers in the “about” section of their page. In other cases, this information was gleaned from either their profile pictures or other posts and photographs on their page.

Compared to Facebook pages operated by formal organisations, informal care community pages were much more likely to solicit personal stories from people contemplating suicide, and to encourage peer interaction and support. Many of the pages were advertised as a place people could turn to for support, either from the community at large or from the site administrators themselves.

As it was not possible to observe the private messages and e-mails exchanged on Facebook, it is hard to know what level of success these pages achieve in terms of encouraging people to share their stories and stay safe. From what could be gathered from the public forum, however, it appeared that informal sites received less traffic and less targeted conversation about suicide-related topics than the few pages operated by those formal organisations that facilitated online peer support. This suggests that, while both the supply and demand for peer support via social media is evident, people experiencing suicidal thoughts are more likely to use Facebook to connect with peers through pages run by established organisations, rather than the informal care community.

OBSERVATIONS OF FACEBOOK USERS RESPONSES TO SUICIDE PREVENTION PAGES

Despite the limited information available, we aimed to gain a sense of how visitors to suicide prevention Facebook pages used social media to talk about suicide. As only site administrators can post directly onto the main profile pages of organisations, the bulk of communication by site visitors took place via comments on administrator posts. By examining user comments on the 58 Facebook pages included in the study we were introduced to the wide variety of people and purposes these pages serve.

Visitors to the pages included suicidal people, people with a history of self-harm, bereaved friends and family members, people requesting help for a loved one, providers of suicide prevention services, and people expressing their concern and support for suicide prevention in general. While many comments simply expressed thanks, shared a story, or linked to a prevention resource, some specifically asked for help for either themselves or a loved one. For the most part site administrators responded to calls for help by referring people to offline services such as telephone help lines. In some cases other site visitors responded to calls for help with empathetic and supportive comments.

Facebook pages hosted by established organisations tended to receive very few posts from bereaved people or people seeking advice or support regarding suicide-related problems. Most visitor posts on these pages either shared inspirational pictures and quotes or promoted events, products, or other information related to suicide. Most pages also received occasional “thank you” posts expressing appreciation for the organisation’s work. The three main exceptions to this rule were the US-based National Suicide Prevention Lifeline and O Lá Go Lá (both discussed in further detail in the Case Studies section), and the Native American Suicide Prevention Program. The Facebook pages of these organisations received a significant number of comments from people seeking and offering support for suicide-related problems. Visitor comments on these three sites included notes from bereaved people, stories from suicide attempt survivors, messages from people discussing their problems (although not threatening suicide directly), people seeking suicide prevention help, either for themselves or for someone else, and short calls for support such as “I need help”.

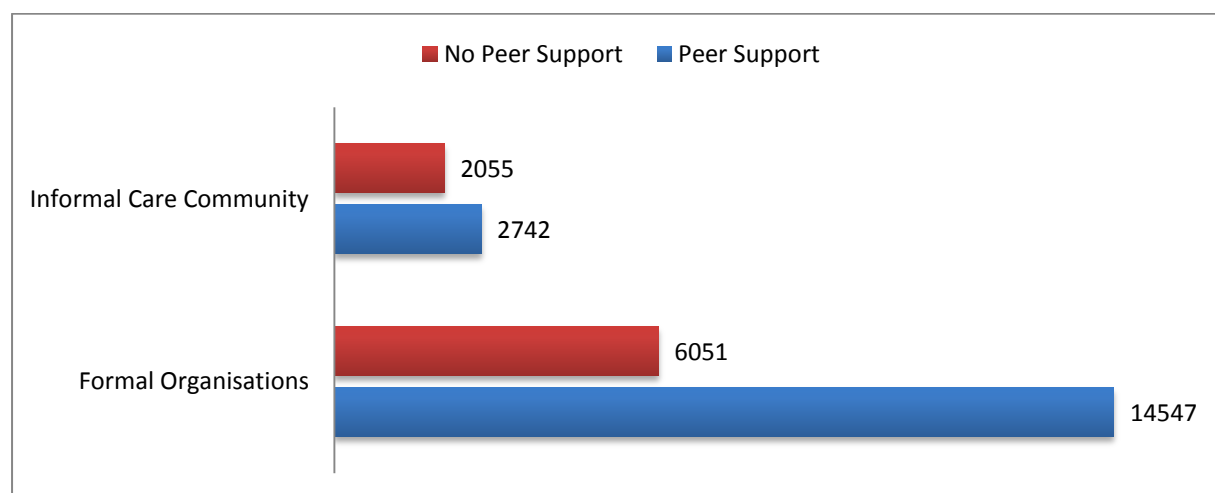
By far, the most user comments that we identified from bereaved individuals, suicide attempt survivors, and people seeking help were posted on pages operated by the informal care community. These comments did not tend to generate conversation. While some occasionally received one or two replies from page administrators or other visitors, most were left without response, at least in the publically viewable forum.

In order to understand whether Facebook users tended to favour suicide prevention pages that facilitate peer-to-peer support, we summed the total number of “likes” of pages offering peer support and of those that did not. For

further comparison we separated pages run by formal organisations from those run by the informal care community. As some of these pages were established earlier than others, we further distinguished pages according to the year they were founded. We divided the total number of “likes” for each group by the number of years they have been in operation, resulting in an average number of “likes” captured collectively by the different types of pages each year. These results are displayed in Figure 3. As can be seen, more Facebook users per year “liked” pages offering peer support. While this phenomenon held true for both pages run by the informal care community and established organisations, it was much more pronounced among the latter. The results also indicated that pages run by formal organisations – whether or not they facilitated peer support—were more popular than those run by the informal care community. In essence, these findings suggest that Facebook users favoured suicide prevention pages run by formal organisations that use their page to facilitate peer support.

It is important to recognise that it was not possible to ascertain whether these pages were popular *because* they offered peer support. Additionally, these numbers failed to tell us to what extent people were actually *using* the pages as it only takes one visit to a page to “like” it. Finally, these numbers offered no insight into the popularity of various types of pages among particular groups of Facebook users. For example, established organisations may be more popular on Facebook because they used the media as a networking platform. In this case, a significant portion of their “likes” would come from professionals in the field rather than people seeking help. This is an important distinction because professionals in the field may be clicking “like” not because they actually like the page or its approach to peer support but, rather, because they were obliged to do so due to professional ties or because they would like to keep an eye on how the page operates.

Figure 3: The popularity of Facebook pages: average number of “likes” per year



BLOGS AND MICROBLOGS

Blogs are public websites presented in a format similar to a journal, where entries by the author appear in reverse chronological order. Many blogs also allow readers to post comments beneath entries, enabling further discussion. Microblogs are small blogs in which entries are generally limited to a maximum of 500 characters.

Three of the organisations identified by our search advertised blogs hosted by their own website, and seven organisations advertised blogs hosted by Blogspot and Tumblr. Generally these blogs were written by staff members; sometimes blog posts were written by featured guest writers.

Some blogs were directed toward people experiencing suicidal ideation, and allowed users to communicate about these feelings. For example, the “What Happens Now” site, moderated by the American Association of Suicidology (AmericanAssociationofSuicidology, n.d.), had a blog that was updated several times monthly; each entry featured the story of a suicide attempt survivor.

TUMBLR

Websites such as Tumblr and Blogspot allow users to create their own blog free of charge and to search tags and posts by other bloggers. Tumblr is particularly popular among young people. Thirteen per cent of Internet users in the US aged 18-29 blog on Tumblr, as opposed to only 5% of those aged 30-49 (Madden et al., 2013), and 41% of Tumblr's visitors worldwide are aged 24 and under (Quantcast, n.d.). Tumblr also has more than 4.5 million users in Australia (World_Health_Organization, 2014). Due to its popularity, Tumblr was selected as a social media platform for closer examination in this study.

TUMBLR SEARCH RESULTS

The term "I wanna kill myself" produced four hits and none were help-oriented. The term "suicide help" produced seven hits, all of which were help-oriented blogs run by individuals from the informal care community. The terms "suicide prevention" produced 14 hits: three were not help-oriented; one was operated by a formal organisation. Seven additional Tumblr blogs dedicated to suicide prevention were discovered through other social media outlets targeted by the Internet search, including three blogs by established organisations. Of the 25 blogs we identified in total, seven explicitly identified their blogger(s) as teenagers, and only four were operated by formal organisations.

OBSERVATIONS OF TUMBLR USE BY FORMAL ORGANISATIONS AND THE INFORMAL CARE COMMUNITY

Suicide prevention organisations used Tumblr for distinctly different purposes. The Centre for Suicide Prevention (CSP) in Canada used its blog primarily to post news, pictures, and other information about the centre's services and activities. In contrast "To Write Love on Her Arms" (TWLOHA) posted mainly inspirational and awareness-raising messages.

The only formal organisation that used Tumblr to share stories and prompt dialogue was StopBullying.gov, a US government initiative that includes suicide prevention in its mandate. Several of their recent posts provided stories or information about bullying, mental health, or prevention tools, then concluded with a question such as, "*Have you been to therapy before?*". While many of these posts were tweeted, pinned, and re-blogged, we observed no comments responding to the questions posed. It is possible that these posts generated peer-to-peer dialogue on other social media platforms where they were re-posted, but our observations suggested that Tumblr is not yet a platform where organisations successfully engage young people in dialogue to prevent suicide.

The Tumblr pages established by the informal care community appeared to be largely aimed at engaging emotionally distressed people in dialogue, with varying success. The majority of these blogs invited readers to share their stories about suicide, bullying, and mental health problems. One blogger revealed a history of mental health problems, another discussed the loss of her sister to suicide, and another discussed a close friend who survived a suicide attempt. Two bloggers described their Tumblr page as an element of school projects.

Most Tumblr blogs operated by the informal care community were oriented toward sharing inspirational quotes and images, telling stories, providing words of support, and advertising suicide prevention resources. Although some limited dialogue does take place on Tumblr, posts seemed to receive very few reader comments and rarely developed into a conversation, at least in the public forum. However, this did not preclude the building of support communities. For example "*Tumblr Suicide Watch*" was "a running blog used to document and track those in need of aid" (2013e) whereby users shared information about Tumblr users with suicidal intentions, updated the community on "current happenings", and "liked" posts when they were thought to be helpful. Although the conversations prompted by posts took place mainly through private messages, the site clearly bound together a group of individuals who provided peer support for suicide prevention.

Tumblr differs from other social media platforms in that it allows bloggers to combine multimedia to express themselves visually, verbally, and orally. Suicide prevention Tumblr pages, particularly those established by the informal care community, were rich with imagery including photographs, videos, music, and short animated clips. Others were more verbally oriented, with much of the content comprising stories, quotes, and poems.

Tumblr was the first major social media site to ban content that promotes or glorifies suicide or self-harm (Kerr, 2012). The National Prevention Lifeline's Tumblr page, "*You Matter*", claims that Tumblr also has a Safety Team, which will send troubled users an e-mail with the Lifeline number in cases where suicidal posts have been reported (Womble, 2012). When we followed the link to this e-mail mechanism, however, we were lead to a

general Tumblr help page. We entered the term “suicide” and were encouraged to contact a law enforcement official if we were concerned for the safety of a Tumblr user. We were also directed to a list of suicide prevention organisations operating both within and outside the US (Lifeline, 2013)

Instructing social media users to contact relevant authorities in cases of suicide threats may be useful. In May 2013, for example, a teenager living in California responded to suicidal threats posted on a Tumblr blog by calling a suicide hotline and then the police (NewsCorpAustraliaNetwork, 2013). Police used information from the blogger’s Twitter feeds to identify her location, and were able to successfully intervene in a suicide attempt.

TWITTER

Twitter is currently the world’s most widely used microblogging site, with much of its user group comprising young people. In 2012, 27% of US Internet users aged 18-29 used Twitter. This number has likely risen since, considering that the percentage of internet users on Twitter doubled between 2010 and 2012 (Madden et al., 2013). In 2014, just under 3 million Australians were active Twitter users (World_Health_Organization, 2014). Twitter allows account holders to compose short “tweets” containing a maximum of 140 characters. Tweets can include multimedia or abbreviated links connecting readers to sites containing further information.

TWITTER SEARCH RESULTS

Of the 49 accounts we followed, 32 (65%) were linked to established organisations involved in suicide prevention. Most (22, or 69%) were based in the US, with others based in the UK (3), Ireland (2), Australia (2), and Canada (1). The remaining two organisations were international, with no specific country base.

Seventeen Twitter accounts were operated by individuals who were not linked to any established suicide-prevention organisation. Many of these individuals appeared, from their profile images, to be young, and most of their profiles expressed a desire to help prevent suicide. Five of the profiles specifically invited followers to discuss their emotions and experiences related to suicide and one profile expressed a history of self-harming behaviour.

During the 12 hours over which we examined all the tweets in our account’s newsfeed, the accounts we were following posted 64 original tweets, plus an additional 13 “re-tweets”. This amounted to 77 tweets in total, all of which were posted by formally established organisations.

OBSERVATIONS OF TWITTER USE BY FORMAL ORGANISATIONS

The popularity of the organisations’ Twitter accounts varied from small community-based organisations with 50-100 followers, to large, Internet-based organisations such as “To Write Love on Her Arms” (TWLOHA) which had over a quarter of a million followers. Excluding these outliers, the organisations had an average of around 5,700 Twitter followers. The most popular micro-blogs, after TWLOHA, were StopBullying.Gov (31,486 followers); the Substance Abuse and Mental Health Services Administration (SAMHSA; 29,555); and the American Foundation for Suicide Prevention or (AFSP; 17,988).

To examine how suicide prevention organisations used Twitter on the day of our search, we categorised each of the 77 tweets according to its primary purpose. The majority of tweets (36%) were aimed at promoting services and activities, including events, workshops, hotlines, and other social media sites related to suicide prevention. Other popular uses of Twitter included providing tools and advice for preventing suicide (21%) and the sharing of information related to suicide (17%), including mainly risk factors and statistics that support advocacy for prevention in certain populations. Remaining tweets were aimed at sharing stories about suicide; raising awareness and facilitating dialogue.

Suicide prevention organisations primarily used Twitter for promoting services and activities, sharing news and information, and providing tools and advice, often through a link to their website. Our observations suggested that there were still very few suicide prevention organisations using Twitter to facilitate peer support for those at risk.

CONTENT COMMUNITIES

Content communities allow users to share media content including text, images and videos. The most well-known and most used content community is YouTube, which is ranked by Alexa as the third most popular website in the world (Alexa, 2013).

YOUTUBE

YouTube provides a public viewing platform that allows users to both upload videos and view content contributed by others free of charge. It also allows users to post comments that appear in a public forum beneath the video window. This allows for conversations to emerge about the content of videos. There are “thumbs-up” and “thumbs-down” buttons allowing viewers to like or dislike videos, as well as a running tally of how many times the video has been viewed. YouTube videos also feature “share” buttons that make it easy for visitors to post links to YouTube content on Facebook, Twitter, and other social media outlets, attracting further viewers and commentary.

SEARCH METHODS AND RESULTS

The top 20 hits from the terms “prevent suicide” and “suicide help” produced 35 original results, and five duplicates. Three of the original videos were excluded because they were not about suicide prevention. Of the 32 remaining videos, nine were posted by established suicide prevention organisations. Of the top 20 hits for “I wanna kill myself”, 15 were excluded because the content was not relevant to this study. None of the five relevant hits were posted by established organisations. In total, the three searches produced 37 relevant videos, nine of which were posted by established suicide prevention organisations.

The primary content of suicide-related videos on YouTube were: personal stories (n=13); dramatisations (n=5); information (n=6); discussion (5); and arts, poetry, and music (n=3).

OVERARCHING THEMES IN SUICIDE PREVENTION VIDEOS ON YOUTUBE

A few key themes emerged from the videos we examined. Firstly, the majority of the videos generated by our search involved content directed at young people, including statistics, stories and images of young people experiencing suicidal thoughts and behaviours. Secondly, many videos either featured young people as the primary voice, or appeared to be either posted or created by them. Use of music was a strong feature in the majority of videos watched, particularly in those that appeared to be directed towards young people. These findings suggest that YouTube provides an outlet for young people to combine audio, visual, and verbal media to express their thoughts and emotions surrounding suicide and its prevention.

RISKS IDENTIFIED BASED ON YOUTUBE OBSERVATIONS

User comments posted in response to YouTube videos tended to be harsher than other platforms we observed. For example, one video that featured a teenager holding up a series of cards expressing her history of self-harm received comments making fun of her and accusing her of attention-seeking (2013d). We also noted a second risk inherent to the format of YouTube, in that inappropriate advertisements may be coincidentally paired with YouTube videos discussing suicide and its prevention. For example, a much-viewed video featuring a hip-hop song written to raise awareness about youth suicide was introduced with an advertisement for a James Bond film, leading in with the following conversation: “Bond, where have you been?” Bond: “Enjoying death” (THATSOJACK, 2012). It may be necessary for suicide prevention organisations using YouTube to request that their videos be exempt from advertising to avoid such unfortunate coincidences.

OBSERVATIONS OF YOUTUBE USE BY FORMAL ORGANISATIONS

Approximately one-quarter of the top videos produced by our search were posted by formally established organisations. Despite the relatively small sample, these videos provided some information about how suicide prevention organisations were using YouTube.

Seven of the nine videos sampled narrated stories (six focused on true stories and one presented a dramatisation). These generally included footage of survivors of suicidal thoughts or attempts talking about how they overcame their problems, or discussions with bereaved family and friends. The dramatisation video enacted the story of a US soldier describing his suicidal thoughts to a friend (also a soldier) who insisted on driving him to

a mental health clinic (WingmanProject, 2009). These videos suggested that suicide prevention organisations are using YouTube primarily as a way of showcasing stories of survival. Presenting stories such as these allows organisations to both model successful coping and helping behaviours, and to reach out to suicidal people with the message that they are not alone.

YouTube also offers organisations an opportunity to model awareness-raising and stigma-reducing behaviours. An example of this was the short piece posted by “Pick With Austin”, which depicted a number of young people screaming in an event designed to raise awareness about youth suicide (PickWithAustin).

Finally, YouTube offers organisations a platform through which suicide prevention professionals can share knowledge quickly and effectively regardless of their individual locations. SAHMSA’s training video provides an example of this (TedXTalks, 2010). Videos such as these allow suicide prevention workers to access knowledge from experts in their field free of charge, and in an audio-visual format that is often more accessible than academic journals. Following up such video broadcasts on other forms of social media, such as Twitter or an interactive blogspot, might allow organisations to engage experts in further discussion with viewers, thus maximising the learning experience.

VISITOR COMMENTS ON YOUTUBE VIDEOS

Visitor comments on YouTube videos included a number of “thank-you” posts from people claiming that the video helped them, or even saved their lives. The YouTube videos also received a small number of help-seeking comments. More often, however, videos tended to elicit harsh conversations about suicide and death. These comments suggest that YouTube videos are being watched and talked about by people, in particular young people, who are in need of suicide prevention support.

CASE STUDIES

NATIONAL SUICIDE PREVENTION LIFELINE

The National Suicide Prevention Lifeline was chosen for a case study because:

This organisation was one of only three that actively used all four of the major social media outlets we examined (Facebook, Twitter, YouTube and Tumblr).

It has achieved notable popularity on these social media platforms, with over 57,000 “likes” on Facebook; 17,000 “followers” on Twitter; and 12 YouTube videos with more than 1,500 views (2013a; 2013b).

Finally, it appeared to apply an overarching strategy to its social media use. As each social media platform appeals to a slightly different demographic, we hypothesised that this overarching strategy allowed Lifeline to effectively deliver suicide prevention tools to a variety of audiences.

A primary objective of this case study was to examine Lifeline’s use of social media across the various platforms they used in the hope that it would help us better understand how to harness the power of social media for suicide prevention purposes.

USE OF FACEBOOK, TWITTER, AND TUMBLR

Lifeline posted less frequently on its Tumblr blog than on the other two social media accounts, and the content of the posts was largely visual and inspirational in nature. In contrast, observations of Lifeline’s Facebook and Twitter accounts suggested that the organisation not only used these platforms to disseminate information on suicide prevention tools and to promote its telephone crisis line, but also to promote offline suicide prevention activities. Promoting Twitter discussions for Suicide Prevention Week, and using Facebook to connect people participating in an international candlelight vigil were both examples of how Lifeline used social media to engage its followers in both “virtual” and “real life” events.

Although we observed several examples of peer interaction and support taking place on Lifeline’s Facebook page, there was little evidence to suggest that providing a forum for peer support factored heavily into Lifeline’s social media strategy. We observed no Lifeline “posts” inviting people to discuss their problems or show their

support using Facebook comments; people who did seek help in this way did so mainly in response to posts advertising the Lifeline telephone crisis service. Very few instances of peer discussion were observed on Lifeline's Twitter account, and none were seen on its Tumblr blog.

USE OF YOUTUBE

Lifeline primarily used YouTube to share video content affords in terms of modeling positive behaviours and providing information to viewers in a way that is more vivid than using simple text or still images. The popular videos that we observed included short, accessible pieces demonstrating how and why people take the initial step of ringing Lifeline ("Reasons to Call") as well as more in-depth, content-rich examples of how people go about committing to recovery plans or supporting recovering family members ("Stories of Hope and Recovery").

Observations of Lifeline's use of YouTube revealed both opportunities and risks that this form of social media offers.

One of the key advantages to using YouTube was that it enabled Lifeline to share video content in a way that is more cost effective and readily accessible than television. YouTube also enabled Lifeline to present video content in a format that could be easily shared on other social media sites. A link to any of Lifeline's YouTube videos could easily be "tweeted" or posted on its Facebook page by the organisation and its followers. The ability of YouTube content to be shared and shared again provided an opportunity for Lifeline to reach a wide audience in a more cost effective way than buying television airtime for a one-off spot. That said producing good-quality videos that exude an air of professionalism can still be expensive. Compared with text and still-image content that is posted on other forms of social media, a single high-quality post on YouTube requires a bigger investment of time and resources.

We can only speculate, however, on how successful Lifeline was in targeting its YouTube audience and reaching those most in need of help. Judging from the "shares" of YouTube links we witnessed on its Facebook page, it seems that it was mostly other suicide prevention workers that were circulating this material. While professional networking and information-sharing are valuable in suicide prevention efforts, the ultimate value of the videos depends largely on whether they eventually connect with people in need. The success of social media "shares" in reaching those most in need will depend on how successfully these other organisations are reaching their own target audiences. There was some evidence from user comments that young people, bereaved people, and people at-risk were both watching and engaging with these videos, but it is impossible to conclude from our observations alone how successful Lifeline has been in using YouTube to reach people seeking help.

However, two key drawbacks of using YouTube for suicide prevention were also evident.

Firstly, this platform appeared to be less conducive to peer support than other forms of social media. Having said this, YouTube may provide a different opportunity for encouraging peer support – through modelling this behaviour. Lifeline's "Stories of Hope and Recovery" were examples of how providing peer support can factor in to a successful recovery strategy.

Secondly, the presence of inflammatory comments posted by "trolls" (individuals who deliberately use the Internet to create conflict by starting arguments or upsetting people), as well as insensitive and hurtful remarks directed at bereaved and otherwise distressed people was problematic. Similarly, the spread of misinformation through user comments was also an area of concern. Our observations suggested that Lifeline did a good job of managing these risks through careful moderation of comments and prompt responses when misinformation was presented.

SUMMARY

In summary, Lifeline's approach to social media appeared to be largely output-oriented, in that it used these new media primarily as a way of "getting the word out", as opposed to gathering input or insight from users. In

contrast, the organisation featured in the following case study, Ó Lá Go Lá, provides an example of a social media strategy that is primarily input-oriented.

Ó LÁ Go LÁ

Ó Lá Go Lá was selected as a case study because of its apparent popularity and the unique way in which it moderated peer interaction online.

Unlike most of the organisations identified, Ó Lá Go Lá used only Facebook. The Ó Lá Go Lá Facebook page, titled “Help Reduce Suicide, Depression and Stress Related Illnesses”, received a high volume of user traffic. The high volume of visitor comments and 109,000 “likes” for the page (as of November 2013) signal a strong demand for the service Ó Lá Go Lá provides. It is clear that the organisation’s focus on Facebook has allowed it to develop innovative methods for using this medium for suicide prevention activities, including a strong emphasis on peer support.

The **open encouragement and active moderation of peer support** on social media also set Ó Lá Go Lá apart from other suicide prevention organisations that we observed. Most of the organisations identified by this study focused their use of social media pages on output – that is, disseminating information about suicide, and its prevention, to the general public. In contrast, Ó Lá Go Lá clearly used social media to gain input from people at risk of suicide and those who wish to support them by eliciting dialogue between social media users.

The administrator posts and visitor comments indicated both wide and frequent usage of the Ó Lá Go Lá Facebook page (ÓLáGoLá, n.d.). The day’s worth of online discussion we observed included 462 visitor comments in response to 20 posts; this number may be lower than usual as many users reported technical glitches that prevented them from posting comments. Our observations also indicated that people using the Ó Lá Go Lá Facebook page placed great value on the service. Introduction and sign-off posts signalling the beginning and end of administrator shifts often received comments thanking the counsellors for their support, and a number of comments also referred to the helpfulness of information, advice, and peer-support provided by other site visitors.

There was also evidence to suggest that the Ó Lá Go Lá Facebook page helped some visitors build communities of support. Several comments we observed included specific enquiries about how particular site visitors were faring, indicating that some visitors and administrators knew each other from previous interactions on the site. In the course of one conversation, three site visitors eventually invited each other to send “friend requests” on Facebook, demonstrating that longer-term discussions and relationships could emerge from visitor comments. In this way, the organisation’s Facebook page appeared to serve as a virtual meeting-place where visitors could not only interact, but also get to know others.

In observing posts and comments made by administrators on the Ó Lá Go Lá Facebook page, researchers identified four key techniques used to engage visitors in peer support. The first involved minimising their own comments to help encourage peer discussion, particularly when it came to generating interaction between newer and older page visitors. Other techniques were: being responsive to visitor comments, particularly those displaying signs of distress; explicitly encouraging and praising respectful peer support; and initiating fun activities to draw in visitor participation.

SUMMARY

The popularity and high volume of user-traffic gained by the Ó Lá Go Lá Facebook page – despite minimal advertising – indicates a strong demand for peer-to-peer support services using social media.

In addition to the benefits described above, the study of Ó Lá Go Lá identified a number of potential risks that organisations should consider in their use of social media. These include the affects of negative comments made by page visitors, the safety and confidentiality issues posed by the public nature of social media formats, and the possibility of fostering an overreliance on social media-based interventions that may decrease site visitors’ motivation to pursue other important sources of formal and informal support.

RESULTS OF THE STAKEHOLDER CONSULTATION

RESPONSE RATES

Of the 44 questionnaires that were sent out to researchers, 11 were returned, giving a 25% response rate. However, only ten of these were sufficiently completed to be included in the analysis. For organisations, of the 69 who were invited to take part, 13 questionnaires were returned, giving a response rate of 19%. All of these questionnaires were included in the analysis. However not all questions were answered by each respondent. Therefore both numerator and denominator information are provided for each section. Seventy-six questionnaires were returned by users of social media.

The first part of the results section was broken down as follows: views of researchers; views of organisations; and views of users. The second part, which focuses predominantly on use of social media for suicide prevention more generally, compares responses across the three groups.

VIEWS OF RESEARCHERS

Of the ten researchers that completed questionnaires, eight were based at a university or other research institute. Of them, nine described the primary focus of their work to be on suicide and the media, including social media. Four respondents described their research to be mainly intervention research, and three described their research as program or policy evaluation.

USE OF SOCIAL MEDIA

With regard to the frequency of their use of social media, Twitter was used most frequently, with seven respondents reporting using it either 'quite often' or 'frequently'. This was followed by Facebook and YouTube, with six respondents reporting using both of these sites 'quite often' or 'frequently', and then by LinkedIn, with five respondents using this platform 'quite often' or 'frequently'. Other social media platforms such as MySpace, Flickr, Yahoo Answers, Google+, Vimeo, Tumblr, Research Gate and other blog sites were used less frequently.

RESEARCH UNDERWAY

Eight of the research respondents reported having previously conducted research into social media, six reported that they were currently conducting research into suicide and social media and six reported that they were planning to do so in the future. A breakdown of the specific type of work being conducted or planned is shown in Appendix C (Table 1).

All respondents indicated that there is currently insufficient research examining the effects of social media based interventions on either suicide risk or ways in which social media can be used to support people bereaved by suicide. Eight respondents indicated that there is also insufficient research into the relationship between suicide and social media; the ways people use social media to talk about their experiences of feeling suicidal; and the ways people use social media to talk about their experiences of being bereaved by suicide.

The most commonly cited barriers to conducting research into suicide and social media were methodological challenges (100%, n=10) followed by ethical issues (80%, n=8). Lack of funding, technological and safety issues were also highlighted.

FUTURE PRIORITIES FOR RESEARCH

With regard to future priorities, the following were rated as being either 'high' or 'very high' priority for future research: research examining the relationship between suicide and social media (90%, n= 9); research examining ways people use social media to talk about their experiences of feeling suicidal (80%, n=8); studies examining the effects of an intervention on suicide risk (80%, n=8); research examining the ethics or safety of delivering suicide prevention programs via social media (80%, n=8); research examining the ways in which

people use social media to talk about the experience of being bereaved by suicide (70%, n=7); and intervention studies examining the ways social media can be used to support people bereaved by suicide (60%, n=6).

VIEWS OF ORGANISATIONS

In total, questionnaires were returned from 13 organisations that used social media for the purpose of suicide prevention. Of those, one was government-based and the remaining 12 described themselves as 'not-for-profit'. Ten of the 13 organisations stated that their primary purpose was suicide prevention.

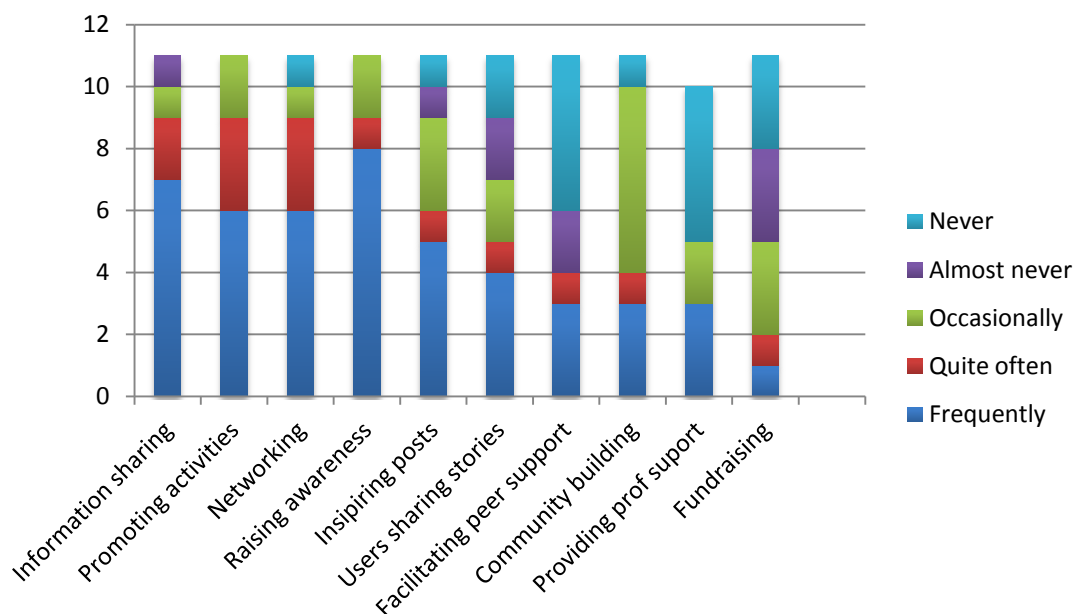
THE WAYS IN WHICH ORGANISATIONS USE SOCIAL MEDIA

With regard to the sorts of online activities conducted by participating organisations, 46% reported hosting online activities that allowed for user-user interaction. Forty-six per cent hosted discussion forums about suicide and its prevention and 31% hosted discussion forums about other mental health issues. Almost 40% hosted blogs discussing suicide prevention, and 31% hosted blogs about other mental health issues. None of the organisations hosted virtual game sites.

All of the organisations reported using social media for the purpose of raising awareness, and 39% for advocacy purposes. Almost one third (31%) provided online counselling and 23% facilitated online peer support.

Figure 4 shows the frequency with which organisations use social media for various purposes. It can be seen that the activities most frequently engaged in were promoting organisational services or events, networking with other organisations, raising awareness about suicide, and information sharing.

Figure 4. Frequency of social media use for various purposes



With regard to type of social media used, all of the organisations that responded reported using Facebook; 85% used Twitter; 77% used LinkedIn; 77% used YouTube; 23% used Blogspot and 8% used Research Gate. None of the organisations reported using Tumblr, MySpace or Wiki.

MANAGEMENT OF SOCIAL MEDIA SITES

Over half of the organisations (54%) employed a marketing professional to promote their social media site. Almost one quarter (23%) also used a marketing professional to keep their site up to date, a further 23% used a trained volunteer for this purpose, and in 46% of cases this was done by an internal staff member. In almost 70% of cases this was done each day.

All but one of the organisations reported having someone to clinically moderate their social media sites. In 83% of cases the site was moderated at least once a day, often by a trained staff member or volunteer.

With regard to other safety measures, 77% of organisations reported that their social media page prominently displayed details of a crisis line and/or other information regarding alternative emergency services in the host country; and 31% reported having a prominent link to directly connect site visitors with crisis response services. Forty-six per cent reported having a disclaimer on their site clearly stating the intent and purpose of the site; 39% had clear protocols; and 23% had a code of ethics.

Finally, respondents were asked a series of questions pertaining to how beneficial they considered their social media site(s) to be. Of the 11 organisations that responded to these questions, all reported social media to be either 'somewhat or very beneficial' to both their organisation and to the target audience and 91% considered the site to have been 'somewhat or very beneficial' to people at risk of suicide. Eighty-two per cent would like to see their organisation increase their use of social media in the future and 73% of organisations already had plans to extend their social media use.

VIEWS OF SOCIAL MEDIA USERS

Of the 76 users of social media that returned questionnaires, 47 provided information about their demographic characteristics. Of them 66% were female and 34% were male. Just over half of respondents (53%) were aged 30 or under, 40% were aged 31-45 and 6% were aged over 45. Fifty-seven per cent were engaged in either full time or part time work; 28% were full time students and the remainder were unemployed.

Seventy-one per cent of respondents reported having felt suicidal at some time and 70% reported having supported someone who had been suicidal or bereaved by suicide.

In terms of help-seeking offline, 79% had sought help from a friend for an emotional or mental health-related problem, 71% had received professional help; 41% had called a telephone helpline and 88% had encouraged a friend or peer to seek professional help.

USE OF SOCIAL MEDIA

The most commonly used social media site among respondents was Facebook (53%); this was followed by Twitter (47%); Tumblr (16%); and then YouTube (11%). Seventy-nine per cent of respondents reported using social media more than once a day, most frequently to communicate with family, friends and acquaintances.

Thirty-seven per cent of respondents reported having used social media for an emotional problem. The types of social media most frequently used by these respondents for different purposes are shown in Appendix C (Table 2). As can be seen, social media sites were not used frequently in order to obtain professional help, however some social media platforms, in particular Facebook, Tumblr and Twitter, were used to obtain emotional support from others.

Respondents were then asked to rate which aspects of using social media they found to be most helpful. Responses are shown in Appendix C (Table 3). The ability to express one's feelings was reported to be the most helpful aspect of using social media when faced with an emotional problem, followed by receiving support from others, talking to others with a similar problem and the ability to help others. Getting professional help was viewed as the least helpful aspect of using social media.

Overall, 64% of users reported feeling better having posted their feelings on social media. Eighty-one per cent reported using social media to provide support to others, most frequently by recommending they seek professional help, listening to someone's story and providing help and/or advice.

Thirty-five per cent had encountered sites that they considered to be unhelpful or harmful, and one quarter reported negative experiences when using social media for help-seeking or sharing purposes.

COMPARISONS ACROSS GROUPS: USING SOCIAL MEDIA FOR SUICIDE PREVENTION IN GENERAL

This section describes the views of each group of respondents with regard to the ways social media are used for suicide prevention in general, the importance of using social media in different ways, and the potential of different types of social media for preventing suicide. social media was seen as a useful means of delivering a range of suicide prevention activities by all three groups (see Appendix C, Table 4, for the percentage and number of respondents who endorsed either 'agree' or 'strongly agree').

Researchers and organisations were also asked to rate how strongly they agreed with the statement that 'the potential benefits of using social media for suicide prevention outweigh the risk'. Sixty per cent of researchers agreed or strongly agreed with this statement, compared with 73% of organisations. Users were asked the question slightly differently. They were asked to what extent they agreed or disagreed with the statement 'the risks of using social media for suicide prevention outweigh the potential benefits'. Of the 48 people who responded to this question, 21 (44%) either disagreed or strongly disagreed.

Appendix C (Table 5) provides information regarding the perceived importance of different uses of social media. Whilst all groups rated the provision of information and resources as highly important, some differences were also evident between groups. For example, researchers rated the promotion of activities, services, events or training programs as highly important, whilst organisations rated the ability of users to support each other as highly important. Users on the other hand rated the provision of tools for suicide prevention as highly important. Overall all groups rated the sharing of inspirational quotes and/or messages and fundraising as less important.

Overall Facebook was seen as holding the most potential as a platform for suicide prevention. This was followed by Twitter and then YouTube (see Appendix C, Table 6 for percentage and number of respondents who endorsed either 'moderate' or 'high potential' for each platform)

Finally, with regard to the potential risks associated with engaging in suicide prevention activities via social media, differences were evident across the three groups, although each group expressed concerns regarding the ability of site administrators to operate safe and effective interventions online (Appendix C, Table 7).

DISCUSSION

KEY FINDINGS

This report presents the results of a literature review, Internet search, and stakeholder consultation investigating the use of social media in suicide prevention. The findings from all three studies generally concluded that social media holds potential for suicide prevention, and presents both risks and benefits that need to be acknowledged by health professionals.

IMPLICATIONS

BENEFITS

A number of benefits of social media were identified in the literature search and further supported in the views of social media users in the stakeholder consultation. Specifically, results highlighted the ability of social media to facilitate the provision of peer support, with both receiving and giving support on online forums viewed as beneficial (Greidanus and Everall, 2010). The results of the Internet search also suggest this benefit, revealing that social media platforms are being used to build or strengthen “communities of support” that in many cases transcend geographical boundaries. The ability to talk to others with similar experiences and to express feelings in a safe environment were additional benefits identified by social media users surveyed and supported by the results of the literature review (Miller and Gergen, 1998; Horne and Wiggins, 2009; Baker and Fortune, 2008).

SOCIAL MEDIA AND TRADITIONAL TREATMENT

The overall consensus from the three studies was that although social media platforms do not replace professional treatment, they do have the potential to provide a useful adjunct to it. The findings from the Internet search revealed that social media platforms lend themselves to variety of different communication strategies and forms of self-expression that are used to talk about suicide prevention. In this way, different social media platforms provide means of giving and seeking support that differ in nature, and are more flexible than those offered by traditional services. The results of the literature review suggested that although online platforms were viewed as preferable to professional treatment, online support was unlikely to replace face-to-face help. This was supported by the stakeholder consultation, in that social media users reported having sought help from professionals for an emotional problem but did not report using social media in this way.

A number of studies in the literature review concluded that health professionals should look for ways to further a dialogue with people who use suicide and self-harm websites so that professional expertise and electronic media can be combined over the long term (Greidanus and Everall, 2010; Miller and Gergen, 1998; Baker and Fortune, 2008). Indeed, one study suggested that delivering support online may in fact take some of the pressure off mainstream mental health services (Chapple and Ziebland, 2011). It was felt, however, that mental health professionals may feel threatened by this in terms of “de-professionalism” and being forced to acknowledge that in some cases people find traditional services inaccessible, ineffective or even aversive (Baker and Fortune, 2008; Chapple and Ziebland, 2011).

INTERVENTION IN SUICIDE ATTEMPTS

Another key advantage of social media that emerged was its ability to facilitate prompt intervention if someone expresses suicidal feelings or posts a suicide note online. This was identified by stakeholders and supported by two case studies identified by the literature review (Ogburn et al., 2011; Ruder et al., 2011). The Internet search revealed that some social networking sites developed for suicide prevention contain contact numbers of local mental health or emergency services, which may further facilitate such an intervention.

SAFETY ISSUES

These studies also revealed a number of safety issues inherent to the use of social media for talking about suicide. These issues were mainly identified through the literature review and included the potential for cyber bullying to occur or the ability for vulnerable individuals to share information about suicide methods, although in

most studies no empirical data were provided. Further, the studies that did examine the associations between using social media for suicide-related purposes and suicidal ideation, found no subsequent increase in suicidal ideation as a result (Sueki and Eichenberg, 2012). Additionally, contagion was not a significant concern for stakeholders. Rather, the major concern held by survey respondents centred on the ability of site moderators to effectively monitor the content of their sites. Indeed, the Internet search revealed that although the majority of organisations that facilitated user-user interaction via their social media sites did utilise trained moderators, few had clear safety protocols or a code of ethics underpinning their work. Overall this suggests that when it comes to using social media for suicide prevention, organisations should adhere to safety protocols and/or codes of ethics, in addition to using highly trained moderators.

Several studies in the literature review recommended extra measures that could be taken to protect the safety of social media users. These included site moderators taking steps to ensure that encouragement of self-harm and the posting of instructions on how to harm oneself are prohibited, ensuring moderators have the ability to obtain IP addresses of users and pass this information to emergency services in case of imminent risk (Hsiung, 2007). Suggestions for suicide prevention organisations to increase their visibility were also raised, and included utilising search optimisation strategies (thus maximising the likelihood that helpful, rather than harmful sites, are the first to come up on a search) and emphasising their ties to other suicide prevention efforts by making frequent use of links, and by establishing a presence on other related sites (Krysinska and Andriessen, 2010; Biddle et al., 2008). Search engine operators should also consider providing information or links to help resources if keyword searches suggest suicidal feelings (Luxton et al., 2012). We witnessed evidence of this in practice on the blog site Tumblr: when the term “suicide” is entered into the help page search bar in Tumblr, an automated message appears that contains links to a number of counselling and prevention resources. Finally, it was also questioned whether website materials could be censored or used to somehow track at-risk individuals, although no suggestions were made as to how this could be done (Thompson, 1999). Despite all these suggestions having promise, ethical and practical issues prevent them being readily implemented. Further, where such measures are in place, there is a lack of evidence investigating their utility. So whilst these are clearly all important, researchers should prioritise evaluation of such measures in order that they are implemented.

A number of authors advocated for the development of guidelines or legislation governing suicide-related internet content, including the reporting of suicide online (Birbal et al., 2009; Biddle et al., 2008). Work is underway developing guidelines to underpin this type of work, both in Australia (Young and Well Cooperative Research Centre and Hunter Institute of Mental Health, 2013) and the United States (Reidenberg, 2013), and their implementation will be an important step towards enhancing the safe delivery of suicide prevention initiatives using the Internet.

RESEARCH IMPLICATIONS

A key finding from this study concerned the lack of evidence in this area, particularly with regard to intervention studies. Specifically, the researchers we surveyed articulated a need for intervention studies for both people at risk and people bereaved by suicide, and for research examining the ethics and safety of delivering interventions via social media. This supported the findings of the literature review, which identified no published studies that tested the effects of a social media-based intervention. Indeed, there is a lack of intervention research in suicide prevention generally, and among young people (Robinson and Pirkis, 2013; Robinson et al., 2008), and this extends to research examining the effects of Internet-based interventions on suicide risk. To the best of our knowledge only one study has tested the effects of an Internet-based intervention on suicide risk among adults (Van Spijker et al., 2014), and two articles recently published by our research group examined the safety, acceptability and efficacy of an Internet-based program on suicidal adolescents (Robinson et al., 2014a; Robinson et al., 2014b). These studies reported positive findings suggesting that using the Internet for suicide prevention purposes can be both safe and effective. Even so, none of these studies used a social media platform, therefore the potential for suicide prevention interventions to be delivered via social media remains untested.

The amorphous and anonymous nature of social media undoubtedly presents both methodological and ethical challenges for researchers and this was reflected in the responses given by survey respondents. However these same qualities give social media its appeal and the ability to reach large numbers of young people who are traditionally hard to engage in other forms of treatment or research. The development of new methodologies that can be rigorously applied to research that utilises social media platforms is therefore a necessary next step. Related to this would be the implementation and rigorous evaluation of those guidelines referred to above

(Reidenberg, 2013; Young and Well Cooperative Research Centre and Hunter Institute of Mental Health, 2013), in order to determine their acceptability, utility and efficacy. This could involve working closely with organisations that use social media for the purpose of suicide prevention, where the implementation of such protocols or guidelines appears to be lacking.

Finally, the social media users we surveyed reported that information sharing and the receipt and provision of user-user support were the most useful aspect of social media. Whilst the literature review identified a significant number of studies that examined users' experiences of social media, many of these studies were hampered by methodological limitations. Whilst this is not uncommon in suicide research (Goldney, 2005) it reiterates the need for researchers to work closely with other stakeholders in order to develop interventions that are acceptable to users, can be administered safely and can be rigorously tested.

Other research priorities identified in the stakeholder consultation included research examining the relationship between suicide and social media and studies examining the ways people use social media to talk about their experiences of feeling suicidal and/or being bereaved by suicide. Given that the use of social media is becoming increasingly popular, and that evidence is emerging supporting the acceptability, efficacy and cost effectiveness of delivering depression prevention and treatment programs online (Calear and Christensen, 2010), testing the use of such platforms for suicide prevention purposes is warranted (Hsiung, 2007) and is a logical next step. This is of particular importance given the potential of social media sites to reach audiences who have typically been difficult to reach and engage in traditional forms of treatment (Hunt I et al., 2006; Silenzio et al., 2009b).

RECOMMENDATIONS FOR HEALTH PROFESSIONALS:

Health professionals need to be aware of both the risks and benefits associated with social media use

Increased collaboration between the health sector and Internet media providers is required in order to reduce risks and increase the use of the Internet for prevention purposes

Health professionals should work with people who use suicide and self-harm websites so that professional expertise and electronic media can be safely and effectively combined over the long term

Health professionals could utilise social media for professional development and training purposes (i.e. allowing access to professional peer support and clinical supervision). This may be particularly relevant in rural or remote parts of the region.

RECOMMENDATIONS FOR RESEARCHERS:

Studies investigating the role of legislation in regulating social media-based sites are required.

Research examining the ethics and safety of delivering interventions via social media is required; this should include studies evaluating the implementation and effectiveness of ethical guidelines/safety protocols measures.

Researchers need to work closely with other stakeholders in order to develop interventions that are acceptable to users and can be administered safely.

Long-term studies examining the safety and efficacy of interventions that can be delivered to people at risk of suicide and people bereaved by suicide via social media are needed.

New methodologies that can be rigorously applied to research that utilises social media platforms are required.

RECOMMENDATIONS FOR ORGANISATIONS:

Organisations and entities with an interest in suicide prevention should collaborate on both a national and international level in order to fully harness the opportunities that social media offers the field of suicide prevention.

Organisations that use social media for the purpose of suicide prevention should develop and adhere to strict safety protocols and/or codes of ethics; this should include guidelines on safe ways to discuss suicide via social media.

Organisations that use social media for the purpose of suicide prevention should use highly trained moderators.

Back-up plans need to be in place in case of technological failings on social media sites designed for suicide prevention.

Professional organisations should employ search engine optimisation strategies to ensure maximum visibility of their sites.

Site moderators should:

- Be responsive to forum users, in particular those showing signs of distress
- Ensure that encouragement of self-harm and the posting of instructions on how to harm oneself are prohibited
- Ensure that moderators have the ability to obtain IP addresses of users and pass this information to emergency services in case of imminent risk
- Carefully moderate all comments and respond promptly when negative comments or incorrect information is presented
- Facilitate peer-peer discussion where appropriate

Search engine operators should consider providing information or links to help-related resources if keyword searches suggest suicidal feelings.

Organisations should emphasise their relationships to other suicide prevention efforts by making frequent use of links, and by establishing a presence on other related sites.

LIMITATIONS

When considering the implications of this research, certain limitations must be borne in mind. Firstly, it was difficult to apply a systematic and consistent search methodology to both the literature search and Internet search. As a result, the quality of included studies varied significantly and the Internet search took an iterative, rather than a pre-defined approach. That said, we acknowledge that social media settings are amorphous and fast changing, and to conduct rigorous research in these environments presents methodological as well as ethical challenges. We believe that the approaches taken allowed us to review all identified literature on suicide prevention using social media, regardless of study design, and also allowed for a rich and in-depth discussion of the social media platforms examined.

Secondly, we were unable to examine studies or websites written in languages other than English, and thus our results may not be generalisable to countries where English is not the first language.

LITERATURE REVIEW

The main limitation of the literature review was that some studies did not neatly fall into the categories developed by the research team, and in some cases it was extremely hard to classify the articles retrieved. However, we believe the classification system developed is sound and will make sense to the reader.

INTERNET SEARCH

With regard to the Internet search, although it was our intention to examine each of the social media platforms described above (Kaplan and Haenlein, 2010), this was not possible within the time available. Therefore priority was given to the more popular forms of social media, and to those where suicide prevention activities were already clearly observable. Therefore, collaborative projects such as Wikipedia, virtual social worlds and virtual game worlds were not included. While the researchers found little evidence of suicide prevention activities taking place through these forms of media at present, they could hold potential for engaging youth and as such should be a topic for future investigations.

A further limitation of the Internet search concerns the representativeness of the sample. Specifically, we acknowledge that the number and nature of tweets and Facebook posts analysed here may not be representative of the number and nature of these had the search been conducted at a different time. However, this is likely to be inherent in any research of this nature simply due to the amorphous nature of the Internet and social media.

We also note that our ability to observe the use of social media for suicide prevention was limited to publically

available information and dialogue. Occasionally, information was visible on a social media page one day but not the next. In addition, it is likely that a significant amount of dialogue takes place through the private messaging functions hence research such as this, conducted from “the outside” of the social media pages, will always be missing this part of the dialogue.

STAKEHOLDER CONSULTATION

Finally, the stakeholder consultation was a small study with relatively low response rates. Whilst low response rates are not unusual in survey-based research (Slade et al., 2009) caution must still be exercised when interpreting the findings. Additionally, although the method used to recruit participants to the user group has the capacity to reach a large number of people, we could not tell how many people saw the link to the survey and therefore could not calculate a response rate for this group. Another option would have been to use a voucher tracking system, however this is expensive and more complex to implement (Heckathorn, 2002) and we did not have the resources to employ this strategy. As a result of the recruitment strategy employed, and the low response rate, there is the potential for bias within our sample. In addition, there were some questions that were answered by too few people to provide meaningful results.

CONCLUSIONS

In summary, this report demonstrates that social media platforms have potential to be used successfully for suicide prevention. Whilst risks clearly exist, to condemn technology is futile; emergent media affords us as much opportunity for suicide prevention as it does for increasing suicide risk (Collings and Niederkrotenthaler, 2012).

Social media platforms are currently being used effectively by suicide prevention organisations to further their objectives in a number of ways; however they may be most effective as a suicide prevention tool when used to facilitate support between users.

Social media has the distinct advantage of being highly accessible, and acceptable to young people, and because of its nature can reach large numbers of people who can often be hard to engage in treatment (Silenzio et al., 2009b). Thus the potential for the provision of suicide prevention activities delivered via social media platforms are yet to be fully realised.

REFERENCES

- Alao A. O., Soderberg M., Pohl E. L., et al. (2006) Cybersuicide: review of the role of the Internet on suicide. *Cyberpsychology and Behavior* 9(4): 489-493.
- Alexa. (2013) *Sight overview: YouTube.com*. Available at: <http://www.alexa.com/siteinfo/youtube.com>
- American Association of Suicidology. (n.d.) *What Happens Now?* Available at: <http://attemptsurvivors.com/about/>.
- Baker D. and Fortune S. (2008) Understanding self-harm and suicide websites: a qualitative interview study of young adult website users. *Crisis* 29(3): 118-122.
- Barak a. (2007) Emotional support and suicide prevention through the Internet: a field project report. *Computers in Human Behavior* 23(2): 971-984.
- Barak A. and Miron O. (2005) Writing characteristics of suicidal people on the Internet: a psychological investigation of emerging social environments. *Suicide and Life-Threatening Behavior* 35(5): 507-524.
- Bauman S. (2015). Cyberbullying and suicide. Is there a link? What are the roles of traditional bullying and the media? In P. Goldblum, D. L. Espelage, J. Chu & B. Bongar (Eds.), *Youth Suicide and Bullying: Challenges and Strategies for Prevention and Intervention*. (pp. 77-89). New York: Oxford University Press.
- Baume P., Cantor C. H. and Rolfe A. (1997) Cybersuicide: the role of interactive suicide notes on the Internet. *Crisis* 18(2): 73-79.
- Becker K., Mayer M., Nagenborg M., et al. (2004) Parasuicide online: can suicide websites trigger suicidal behaviour in predisposed adolescents? *Nordic Journal of Psychiatry* 58(2): 111-114.
- Biddle L., Donovan J., Hawton K., et al. (2008) Suicide and the Internet. *British Medical Journal* 336(7648): 800-802.
- The Big White Wall*. (2013a) Available at: <http://www.bigwhitewall.com/my-account/login.aspx?ReturnUrl=%2f>.
- Birbal R., Maharaj H. D., Birbal R., et al. (2009) Cybersuicide and the adolescent population: challenges of the future? *International Journal of Adolescent Medicine and Health* 21(2): 151-159.
- Boyd D. M. and Ellison N. B. . (2007) Social network sites: definition, history, and scholarship. *Journal of Computer-Mediated Communication* 13(1): 210-230.
- Burns J., Davenport TA, Christensen H, et al. (2013) Game On: Exploring the Impact of Technologies on Young Men's Mental Health and Wellbeing. Findings from the first Young and Well National Survey. Melbourne, Australia: Young and Well Cooperative Research Centre.
- Calear A. L. and Christensen H. (2010) Review of Internet-based prevention and treatment programs for anxiety and depression in children and adolescents. *Medical Journal of Australia* 192(11 Suppl): S12-14.
- Cash S. J, Thelwall M., Peck S. N, et al. (2013) Adolescent suicide statements on MySpace. *Cyberpsychology, Behavior and Social Networking* 16(3): 166-174.
- Chapple A. and Ziebland S. (2011) How the Internet is changing the experience of bereavement by suicide: a qualitative study in the UK. *Health* 15(2): 173-187.
- Collings S. C. and Niederkrotenthaler T. (2012) Suicide prevention and emergent media: surfing the opportunity. *Crisis* 33(1): 1-4.
- Dunlop S. M., More E. and Romer D. (2011) Where do youth learn about suicides on the Internet, and what influence does this have on suicidal ideation? *Journal of Child Psychology and Psychiatry* 52(10): 1073-1080.
- Eichenberg C. (2008) Internet message boards for suicidal people: a typology of users. *Cyberpsychology and Behavior* 11(1): 107-113.
- Gilat I. and Shahar G. (2009) Suicide prevention by online support groups: an action theory-based model of emotional first aid. *Archives of Suicide Research* 13(1): 52-63.
- Gilat I., Tobin Y. and Shahar G. (2011) Offering support to suicidal individuals in an online support group. *Archives of Suicide Research* 15(3): 195-206.
- Goldney R. (2005) Suicide prevention: a pragmatic review of recent studies. *Crisis* 26(3): 128-140.
- Greidanus E. and Everall R. D. (2010) Helper therapy in an online suicide prevention community. *British Journal of Guidance & Counselling* 38(2): 191-204.
- Harris K. M., McLean J. P. and Sheffield J. (2009) Examining suicide-risk individuals who go online for suicide-related purposes. *Archives of Suicide Research* 13(3): 264-276.
- Heckathorn D. (2002) Respondent-driven sampling ii: deriving valid population estimates from chain-referral samples of hidden populations. *Social Problems* 49(1): 11-34.
- Higgins J. P. T. and Green S. (2009) *Cochrane Handbook for Systematic Reviews of Interventions*. 5.0.2 [updated September 2009] ed.: The Cochrane Collaboration.

- Hinduja S. and Patchin J. W. (2010) Bullying, cyberbullying, and suicide. *Archives of Suicide Research* 14:206-221.
- Horne J. and Wiggins S. (2009) Doing being 'on the edge': managing the dilemma of being authentically suicidal in an online forum. *Sociology of Health and Illness* 31(2): 170-184.
- Hsiung R. C. (2007) A suicide in an online mental health support group: reactions of the group members, administrative responses, and recommendations. *Cyberpsychology and Behavior* 10(4): 495-500.
- Hunt I, Kapur N, Robinson J, et al. (2006) Suicide within 12 months of mental health service contact in different age and diagnostic groups: National clinical survey. *British Journal of Psychiatry* 188(2): 135-142.
- Jones A. and Meier A. (2011) Growing www.parentsofsuicide: A case study of an online support community. *Social Work with Groups: A Journal of Community and Clinical Practice* 34(2): 101-120.
- Kaplan A. M. and Haenlein M. . (2010) Users of the world, unite! The challenges and opportunities of social media. . *Business Horizons* 53(1): 59-68.
- Katsumata Y., Matsumoto T., Kitani M., et al. (2008) Electronic media use and suicidal ideation in Japanese adolescents. *Psychiatry and Clinical Neurosciences* 62(6): 744-746.
- Kemp C. G. and Collings S. C. (2011) Hyperlinked suicide: assessing the prominence and accessibility of suicide websites. *Crisis* 32(3): 143-151.
- Kerr D. (2012) *Tumblr tackles pro-anorexia and suicide blogs*. Available at: http://news.cnet.com/8301-1023_3-57384227-93/tumblr-tackles-pro-anorexia-and-suicide-blogs/.
- Krysinska K. and Andriessen K. (2010) On-line support and resources for people bereaved through suicide: what is available? *Suicide and Life-Threatening Behavior* 40(6): 640-650.
- Lee D. T. S., Chan K. P. M. and Yip p. S. F. (2002) Burning charcoal: a novel and contagious method of suicide in Asia. *Archives of General Psychiatry* 29(3): 293.
- Lehavot K., Ben-Zeev D. and Neville R. E. (2012) Ethical considerations and social media: a case of suicidal postings on facebook. *Journal of Dual Diagnosis* 8(4): 341-346.
- Lipczynska S. (2009) Suicide. *Journal of Mental Health* 18(2): 188-191.
- Livingstone S., Haddon L., Görzig A., et al. (2010). Risks and safety for children on the internet: the UK report. *EU Kids Online*. London, UK: London School of Economics & Political Science.
- Livingstone S. & Smith P. K. (2014). Annual Research Review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry* 55: 635-654.
- Luxton D. D., June J. D. and Fairall J. M. (2012) Social media and suicide: a public health perspective. *American Journal of Public Health* 102 (Suppl 2): S195-200.
- Luxton D. D., June J. D. and Kinn J. T. (2011) Technology-based suicide prevention: current applications and future directions. *Telemedicine and e-Health* 17(1): 50-54.
- Madden M., Lenhart A., Cortesi S., et al. (2013) Teens, Social Media, and Privacy. *Pew Research Center's Internet & American Life Project*. Washington, DC: Pew Research Centre.
- Manning J. and Vandeusen K. (2011) Suicide prevention in the dot com era: Technological aspects of a university suicide prevention program. *Journal of American College Health* 59(5): 431-433.
- McSwain S., Lester D. and Gunn J. F. 3rd. (2012) Warning signs for suicide in Internet forums. *Psychological Reports* 111(1): 186-188.
- Mehlum L. (2000) The internet, suicide, and suicide prevention. *Crisis* 21(4): 186-188.
- Miller J. K. and Gergen K. J. (1998) Life on the line: the therapeutic potentials of computer-mediated conversation. *Journal of Marital and Family Therapy* 24(2): 189-202.
- National Suicide Prevention Lifeline '1-800-273-TALK (8255)'. (2013b) Available at: <https://www.facebook.com/800273TALK?fref=ts>.
- National Suicide Prevention Lifeline: *Help Someone Else Online*. (2013c) Tumblr. Accessed September 20, 2013.
- National Suicide Prevention Lifeline. (2013) *Sunitha's Reason to Call*. Accessed September 12, 2013
- Nentworth M and König R. (2012) *Cyberscience 2.0*, Frankfurt-on-Main, Germany: Campus Verlag GmbH.
- NewsCorpAustraliaNetwork. (2013) *Jackie Rosas 'saves' suicidal Tumblr user*. Available at: <http://www.news.com.au/technology/jackie-rosas-saves-suicidal-tumblr-user/story-e6frfo0-1226644131704>.
- Ogburn K. M., Messias E. and Buckley P. F. (2011) New-age patient communications through social networks. *General Hospital Psychiatry* 33(2): 200.
- ÓLáGoLá. (n.d.) *Help Reduce Suicide, Depression and Stress Relates Illnesses*. Available at: <https://www.facebook.com/olagola>.
- Ozawa-De Silva C. (2008) Too lonely to die alone: internet suicide pacts and existential suffering in Japan. *Culture, medicine, and psychiatry* 32(4): 516-551.

- Ozawa-De Silva C. (2010) Shared death; self, sociality and Internet group suicide in Japan. *Transcultural Psychiatry* 47(3): 392-418.
- PickWithAustin. *Scream to Prevent Suicide*. YouTube. Accessed April 3, 2013
- Quantcast. (n.d.) *Tumblr Blog Network*. Available at: <https://www.quantcast.com/tumblr.com#!demo>.
- Reidenberg D. . (2013) Best practice tools for online safety. *International Association for Suicide Prevention 2013 World Congress*. Oslo, Norway.
- Robinson J and McGorry P. . (2009) Time to break the silence on a last taboo. *The Age*. Melbourne, Australia: Fairfax Media.
- Robinson J., Hetrick S., Cox G., et al. (2014a) The safety and acceptability of delivering an online intervention to secondary students at risk of suicide: Findings from a pilot study. *Early Intervention in Psychiatry* 10.1111/eip.12136.
- Robinson J., Hetrick S. E., G. Cox, et al. (2014b) Can an Internet-based intervention reduce suicidal ideation, depression and hopelessness among secondary school students? Results from a pilot study. *Early Intervention in Psychiatry* 10.1111/eip.12137.
- Robinson J. and Pirkis J. (2013) Research priorities in suicide prevention: An examination of Australian-based research 2007–11. *Australian Health Review* 38(1): 18-24.
- Robinson J., Pirkis J., Kryszinska K., et al. (2008) Research priorities in suicide prevention in Australia: a comparison of current research efforts and stakeholder-identified priorities. *Crisis* 29(4): 180-190.
- Ruder T. D., Hatch G. M., Ampanozi G., et al. (2011) Suicide announcement on Facebook. *Crisis* 32(5): 280-282.
- Schenk Allison M. and Fremouw William J. (2012) Prevalence, psychological impact, and coping of cyberbully victims among college students. *Journal of School Violence* 11(1): 21-37.
- Silenzio Vincent M. B., Duberstein Paul R., Tang Wan, et al. (2009a) Connecting the invisible dots: Reaching lesbian, gay, and bisexual adolescents and young adults at risk for suicide through online social networks. *Social Science and Medicine* 69(3): 469-474.
- Silenzio Vincent MB., Duberstein Paul R., Tang Wan, et al. (2009b) Connecting the invisible dots: Reaching lesbian, gay, and bisexual adolescents and young adults at risk for suicide through online social networks. *Social Science and Medicine* 69469-474.
- Sisask M. and Varnik A. (2012) Media roles in suicide prevention: a systematic review. *International Journal of Environmental Research and Public Health* 9(1): 123-138.
- Slade T., Johnston A. K., Oakley Browne M. A., et al. (2009) 2007 National Survey of Mental Health and Wellbeing: methods and key findings. *Australian and New Zealand Journal of Psychiatry* 43594-605.
- Sueki H and Eichenberg C. (2012) Suicide bulletin board systems comparison between Japan and Germany. *Death Studies* 36(6): 565-580.
- Suicide Help* (2013d). Available at: <http://www.facebook.com/pages/Suicide-Help/247500278608241>.
- TedXTalks. (2010) *TEDxCanberra - Dawn O'Neill - Suicide prevention*. YouTube. Accessed April 3, 2013
- THATSOJACK. (2012) *It Gets Better (Suicide Prevention)*. YouTube. Accessed April 3, 2013
- Thompson S. (1999) The Internet and its potential influence on suicide. *Psychiatric Bulletin* 23(8): 449-451.
- Tokunaga R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior* 26: 277-287.
- Turkle S. (2011). *Alone Together*. New York: Basic Books.
- Tumblr Suicide Watch* (2013e). Available at: <http://tswatch.tumblr.com>.
- Van Spijker B., Van Straten A and Kerkhof A. (2014) Effectiveness of online self-help for suicidal thoughts: Results of a randomised controlled trial. *PLOS One* 9(2).
- Webb M., Burns J. and Collin P. (2008) Providing online support for young people with mental health difficulties: challenges and opportunities explored. *Early Intervention in Psychiatry* 2(2): 108-113.
- WingmanProject. (2009) *Intervention to Prevent Suicide - Wingman Project: YOU are the Wingman?* YouTube. Accessed April 3, 2013
- Womble Ashley. (2012) *Prevent Suicide by Helping Friends and Followers Online*. Available at: <http://www.youmatter.suicidepreventionlifeline.org/2012/08/15/prevent-suicide-online/>.
- World Health Organization. (2009) *World Suicide Prevention Day Media Release: Suicide Prevention (Supre)* Available at: http://www.who.int/mental_health/prevention/suicide/suicideprevent/en.
- World Health Organization. (2014) *Preventing Suicide: A Global Imperative*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2009) *World Suicide Prevention Day Media Release: Suicide Prevention (SUPRE)* Available at: http://www.who.int/mental_health/prevention/suicide/suicideprevent/en.
- World Health Organization. (2014) *Preventing suicide: A global imperative*.

Young and Well Cooperative Research Centre and Hunter Institute of Mental Health. (2013) Outcomes report:
National roundtable on social Media, suicide prevention and young people in Australia. Melbourne,
Australia: Young and Well Cooperative Research Centre and the Hunter Institute of Mental Health.

APPENDIX A

TABLE 1: STUDIES EXAMINING THE RELATIONSHIP BETWEEN SUICIDE AND SOCIAL MEDIA (N=6)

Study	Target group	Study aims	Methods	Key findings	Conclusions / recommendations
Dunlop et al, 2011: Where do youth learn about suicides on the Internet, and what influence does this have on suicidal ideation?	Young people	To examine exposure to stories shared via interpersonal communication, traditional media outlets and online, in order to determine: 1) the characteristics of youth exposed to suicide stories in each forum; 2) the extent to which youth who knew someone who had attempted or died by suicide had heard about it from each source; and 3) to investigate the relationship between exposure to these stories and SI.	Interviews were conducted with 719 young people who had previously participated in a national survey.	Almost 60% of respondents reported learning of a suicide online - via online news sites (44%) social networking sites (25%); discussion forums (15%) & video sharing websites (15%). Younger respondents were more likely to hear of suicides via social networking and video sharing sites. Males were more likely to learn about a suicide from video websites, and females from interpersonal sources. The only source of stories that predicted later SI was online forums.	Social networking sites have become an important means of obtaining info about SRB. Overall exposure to this information did not appear to lead to an increase in SI & may provide greater opportunities for social support. However participation in online forums seemed to be associated with increased SI. <u>Recommendations:</u> 1) Site owners should follow recommendations for preventing suicide contagion in media coverage and discussion of suicide. 2) Sites that promote effective coping strategies and support those experiencing SI could be better promoted on forums and 3) MH providers, teachers etc could provide better education of the potential for risk that the Internet affords.
Eichenberg, 2008: Internet message boards for suicidal people: a typology of users	Not specified	To examine the relationship between users' reasons for using suicide forums and the effects on their suicidality.	An online survey of 164 users of a suicide message board. Most respondents were young adults (59% were under 21; 88% were under 30).	Nearly half used the website > once a day. Reasons were: to meet others with similar problems (81%) & to share problems with others (62%). Relatively few used it to obtain info about professional help or to find a suicide partner. SI appeared to decrease over the	Most forum users were seeking constructive help in the form of communication with people who would understand them, and not to obtain info about suicide methods or to make a suicide pact. There was also no indication that participating in the forum increased

				time users were on the forum - although users did not always attribute this the forum. Of those that used the forum mainly for help-seeking 43% attributed reduced SI to the forum, compared to 23% of those who use the forum for less specific reasons.	SI - in fact for most the opposite was the case. Overall the authors conclude that there are no epidemiological data to suggest that suicide rates have gone up since the increased role of the Internet; and we need to focus our attention on "ways to network the self-help activities of suicidal Internet users with sufficient professional help (on and off the Internet)" (p112).
Harris et al, 2009: Examining suicide-risk individuals who go online for suicide-related purposes	Adults	1) To examine the characteristics of people who go online for suicidal purposes and 2) to examine what they are doing online.	An online survey to collect data from: 1) People at risk of suicide who go online for suicide-related purposes and 2) People at risk of suicide who go online for non-suicidal purposes. Participants were recruited via a range of means including a Google ad, blogs, newsgroups, email and undergraduate psychology students. The survey was completed by 1016 people, of whom 290 were at risk of suicide. Age range: 18-71.	<u>Characteristics:</u> Suicide-related users spent more time online per week than controls. They were more likely to: be unemployed, live alone, report a history of mental illness, have greater suicidal/depressive symptoms. They were less likely to seek help from friends & reported lower levels of perceived social support from friends/family but were more likely to make friends on line. <u>Online behaviour:</u> People went online for support, communication & info about suicide methods. Open discussion forms/blogs were reported as the most useful sites and commercial or prevention sites were perceived as least useful. Users liked communicating anonymously with others like themselves (less stigmatizing) as opposed to family or professionals. Most people reported feeling less alienated online, and felt less	Suicidal users of the Internet appear to prefer peer-to-peer interactions than professionally run prevention sites. Future websites developed by professionals should offer open, anonymous peer-to-peer contacts; moderation plus other forms of direct communication with users.

				suicidal afterwards.	
Hinduja, & Patchin, 2010: Bullying, cyber-bullying, and suicide	Young people	To examine the relationship between cyber-bullying and suicidal ideation.	A random sample of high school students were surveyed (n=1963) and asked about their experiences of being bullied and bullying others, both on and offline, and thoughts of suicide.	20% reported thinking about SA; 19% reported a SA. 9-23% reported cyber-bullying others; 5.7-18% reported having been cyber-bullied. All forms of bullying were associated with increased SI and SA, and being a victim was a stronger predictor of SI than offending.	There was a strong association between cyber-bullying and suicidal behaviour indicating that all forms of bullying including cyber bullying must be taken seriously. As such professionals should monitor the online behaviour of young people as well as their offline behaviour. A suicide prevention component should form part of a bullying response program in schools.
Katsumata et al, 2008: Electronic media use and suicidal ideation in Japanese adolescents	Young people in Japan	To examine the relationship between a lifetime history of suicidal ideation, electronic media use and personal communication in everyday life.	A survey was conducted among 590 Japanese junior high school students	Results point to an association between SI and (a) history of searching the web for suicide info; (b) anxiety about not getting immediate replies to emails from friends; c) having been hurt by a message seen on the Internet and d) a lack of trusted friends or reliable adults close to them.	It would be helpful to create anti-suicide websites that provide supporting information to young people experiencing SI; and educational programs should be developed to increase media literacy in order to help young people build trustful relationships both online and in their daily lives. Limitations include a sampling bias.
Schenk & Fremouw; 2012: Prevalence, psychological impact, and coping of cyber-bully victims among college students	Young people	To examine the prevalence of cyber-bullying, its psychological impact, and coping strategies utilized by cyber-bully victims.	865 US college students were surveyed. The prevalence of cyber-bullying among the sample was 8.6%. Significantly higher suicidal behaviour and ideations were found in cyber-bully victims compared to the control group.	The prevalence of cyber-bullying among the sample was 8.6%. Significantly higher suicidal behaviour, in particular in terms of suicide planning; attempts and frequency of SI were found in cyber-bully victims compared to the control group.	Cyber-bullying is not just a problem in schools, but is also an issue for college students, with victims endorsing more suicidal behaviour than controls. College students are currently being overlooked in both research and legislation. Interventions to prevent cyber-bullying in college students are required. More research is required but examples programs could include awareness campaigns advertising a zero tolerance policy

towards cyber-bullying &
highlighting the effects it can have,
as well as criminal sanctions for
perpetrators.

TABLE 2: STUDIES THAT DESCRIBED THE DEVELOPMENT OF AN ONLINE FORUM (N=5)

Study	Target group	Study / program aims	Site content	Key findings	Conclusions / recommendations
Barak, 2007: Emotional support and suicide prevention through the Internet: A field project report	Not specified	To describe the development and usage of an Internet based support forum for suicidal people	<p><i>Program:</i> SAHAR http://www.sahar.org.il</p> <p>The website provides information, personal communication with users via synchronous and asynchronous support and online forums for group communication. The site uses trained volunteer helpers</p>	The website is accessed > 10,000 times per month. Approximately 1000 personal contacts by distressed individuals occur per month; 50% of which are by suicidal people. The forums receive over 200 new messages a day and this is increasing. Approximately 70% of contacts are adolescents. Referrals come from people who are shy and lack confidence but also from high profile members of the public who wish to remain anonymous. SAHAR has directly intervened in approx. 100 suicide attempts. User feedback has been positive. Challenges have included fake 'callers', callers abusing helpers, fake message posts, & burn out among helpers. Other challenges relate to technology failings and the fact that some people find it hard to express themselves adequately in writing.	The authors conclude that contrary to the opinions held by some, the Internet is an effective medium for delivering psychological help to people who are suicidal.
Gilat & Shahar, 2009: Suicide prevention by online support groups: an action theory-based model of emotional first aid	Not specified	This study presents 1) A literature review of online support groups for suicidal individuals, and 2) A practical model of emotional first aid via an online support group moderated by paraprofessionals	The authors present a model of ' <i>Emotional First Aid for Suicide Prevention Online</i> ' that they argue exploits the benefits of online support groups whilst addressing ethical challenges. The model is based on 4 components: 1) <i>Emotional support</i> is offered by a variety of sources: online support	The authors present a number of benefits unique to online support groups. <u>Group process</u> : social support offered online by a group may be more powerful especially in terms of instilling hope, universality, group cohesiveness and catharsis. <u>Mutual experience of participants</u> : The ability to meet with others experiencing the same situation may reduce isolation	The authors argue that the model underpinning this forum may generate a sufficiently supportive environment that it can counter the reluctance of many suicidal people to seek help. However, there is a lack of evidence evaluating online support groups. Further research is needed looking at the therapeutic value of paraprofessionals in online

			<p>group, personal chat, email and telephone hotline. 2) <i>Use of paraprofessionals</i> - messages are responded to by trained volunteers who also function as moderators 3) <i>Professional supervision</i> - A mental health professional supervises all aspects of the service 4) <i>A professional and ethical code</i> has been developed - callers may remain anonymous; volunteers are anonymous; no endorsements or announcements of suicide; all possible measures are taken to save a life; help offered is emotional first aid and not professional help; and callers are encouraged to seek professional help if necessary.</p>	<p>which may help reduce emotional pain. <u>Altering the suicidal perspective</u>: May help reframe cognitive distortions associated with suicidality due to the multiple perspectives available on an online support group as opposed to one individual helper. <u>Availability of help</u>: The asynchrony of online support groups means that help and support can be available at all times and not restricted to working hours. <u>Writing</u>: Suicidal people often find it helpful to express themselves in writing - may contribute to reduced emotional pain. The authors raise a number of potential ethical issues: 1) difficulty controlling the participation of members which could cause distress to others 2) can be difficult to accurately assess the emotional state of participants 3) Mental health professionals have a responsibility to protect clients from harming themselves, however due to the anonymity of the Internet this is a challenge</p>	<p>settings. Other research questions include: How do suicidal individuals interact with their environment to receive support? What are the characteristics of messages that elicit effective responses from group volunteers and lay participants in the group? And, do paraprofessionals employ different response strategies from ones used by lay participants?</p>
<p>Jones & Meier, 2011: Growing www.parentsofsuicide: A case study of an online support community</p>	<p>Bereaved parents</p>	<p>To examine and document how the e-community 'Parents of Suicide' (POS) developed and evolved.</p>	<p>Information was gathered from a number of sources including communication with the founder, interviews with community leaders, nonparticipant observation of selected activities, website components, membership records and community documents and policies. Data</p>	<p>POS has undergone 3 stages of development 1) Formation 2) Expansion 3) Secure / stable. 1) <u>Formation</u>: Founded following the suicide of the founder's daughter, in response to the absence of either a real life or other virtual group. The group had few rules and these were not formally recorded. It was a small group and a culture of mutual caring</p>	<p>POS has survived for over a decade. This is attributed to its ability to adapt and utilise new technology and the way it has empowered members to become new leaders. Increasingly people are turning to the Internet for support. The main challenges for social workers are seen to be twofold - firstly staying current with</p>

were analysed using a content and thematic approach.

& safety was developed. 2) Expansion - within a year the group entered a period of rapid growth. In 2000 technological developments allowed the transition from a text-based mailing list to a web-based discussion forum. They also introduced a separate website that provided a memorial wall. A 'Family and Friends of Suicides' site and an online community newsletter were also developed. A private, password protected chat-room was then developed, enabling synchronous exchange facilitated by volunteer moderators. A virtual library was developed containing articles and personal writings by group members. It also provides information on awareness events. Over 3 years membership grew from 10 > 400, with an average of 3,800 posts per month. The increase in membership brought increased diversity and triggered the formalisation of policies and community rules, plus the development of small subgroups and the development of face-to-face gatherings, to try and maintain intimacy. New leaders also came on board. 3) Secure / stable stage - By 2009 membership was around 900 but posts per month decreased. Policies were established to cope with crises and a number of alternative websites & Facebook pages have been created to provide support and

technological advances and secondly being able to adapt and effectively apply professional social work group skills to web-based forums. They can also support lay volunteers who are e-community leaders to fine tune their skills e.g. managing conflict and recognizing emotional problems that may require intervention, and to help them ensure the long-term viability of their e-organisations, including developing more formal structures and policies and to help obtain funding.

				/or information. There are 25 volunteer leaders who moderate the chat-room and discussion boards, update e-newsletters and maintain the memorial wall.	
Manning & Vandeusen, 2011: Suicide prevention in the dot com era: technological aspects of a university suicide prevention program	University students and staff	This paper describes the development and content of a University-based online suicide prevention program.	The program comprises a <u>website</u> containing information, links to fact sheets and resources plus emergency contact information. A 1-2 hour <u>online course</u> for faculty and staff members about recognising and managing suicide risk. <u>Social networking</u> component: Facebook and MySpace are used to communicate with students and to promote the online program.	The authors report that the use of technology in suicide prevention programming has been 'instrumental', and a cost effective way to increasing awareness of the problem of suicide, risk factors & warning signs, knowledge of ways to intervene, and of existing resources, to large numbers of staff, students, parents and community members. Social media sites were an effective way of disseminating information, with large numbers of 'likes' and friends. Rates of participation in the online course have been low.	Technology has provided an efficient, and cost effective way of providing information about suicide prevention to students, staff, parents and community members, in a way that is familiar and accessible to people. The website and social networking sites were the most effective components of the program.
Webb et al, 2008: Providing online support for young people with mental health difficulties: challenges and opportunities explored	Young people	To describe the development of the Reach Out! Online Community Forum, a moderated bulletin board for young people.	http://www.reachout.com.au The Online Community Forum is one aspect of the Reach Out service. It is a bulleting board developed in consultation with, moderated and facilitated by young people aged 16-25. Comments can only be posted between 6 and 10pm during which time it is moderated and trained staff are on call. It aims to improve mental health literacy, reduce stigma and promote help seeking.	Three elements underpinned the development of the forum. 1) Use of guidelines for the safety of all members 2) Facilitated discussion streams on the following: the Inspire Foundation; school, university & work; relationships; health; chatterbox; mental health issues and feedback and 3) Trained supervisors and moderators to promote a safe and supportive environment. Moderators are aged 18 or over and participate in a 2-day training course; they are supported by peer supervisors. Posts describing methods or intentions to self-harm or suicide are deleted and	The Reach Out forum could be used by MH professionals alongside treatment, as part of a collaborative care model. Hence reducing demand placed on clinicians. This could include a section dedicated to a MH professional with users able to post questions and receive advice; an increase in clinically-based discussion threads (e.g. using CBT techniques) and the use of guests (e.g. young people or celebrities) designed to reduce stigma. However, while evidence from young people and mental health

the user is contacted directly.

professionals suggests that the Reach Out! Online Community Forum is a positive and helpful experience for young people, there is a need for further research to determine its effectiveness and to ensure that use of the forum does not have negative effects on young people's mental health.

TABLE 3: STUDIES THAT EXAMINED THE CONTENT OF SOCIAL MEDIA SITES (N=8)

Study	Target group	Study aims	Methods	Key findings	Conclusions / recommendations
Baker & Fortune, 2008: Understanding self-harm and suicide websites: a qualitative interview study of young adult website users	Young adults	To seek information on 1) participants' use of websites, message boards and chat-rooms, and 2) their understandings of self-harm and suicide in general.	A qualitative study that conducted in-depth email interviews (with 10 young adults (aged 18-33) who are users of self-harm and suicide websites.	Three main themes emerged: 1) Empathy and understanding i.e. receiving a positive & socially valued identity from the websites; being understood by others & being able to provide understanding to others; (often uncommon because of the negative stigma and secretive nature of SH). 2) A sense of community/belonging: the websites provided friendship, emotional support & info/advice. 3) Coping: participants described the websites as something to do to help cope with severe distress, which provided an alternative to self-harm. Seen by some as an alternative to professional therapy.	Overall participants seem to find these sites beneficial. However, negative effects were not examined. One negative consequence could be that use of these sites could further marginalize users from wider society or reduce the likelihood of them seeking professional help offline. However, the study provides an alternative to the view that these sites are 'dangerous'. The authors suggest that the negative view of these sorts of websites promoted by traditional services may serve to protect them from the possibility that some people find traditional treatment inaccessible, ineffective or aversive, compared to the accessibility and acceptability of online support. Further dialogue between health professionals and people who use suicide and SH websites is needed.
Barak, & Miron, 2005: Writing characteristics of suicidal people on the Internet: a psychological investigation of emerging social environments	Not specified	To compare the writing styles of suicidal people on Internet support groups to the writings of non-suicidal people who use other types of forums.	Three studies were conducted. Study 1 examined the attributional style of suicidal people compared to non-suicidal people in online forums. Study 2 examined communication style	Results show that the free writing of suicidal people online reflects their mental state in the same way that off-line writing does – i.e. characterised by depressive themes, self-focused communication, expressions of unbearable emotional pain & cognitive constriction. This supports the idea that online	Examining text written in online support forums can provide an avenue for assessing individuals in terms of risk and diagnostically. These writings are not as random as is often thought and are being used as a way of communicating suicidality. This could lay the groundwork for the development of Internet-assisted assessment

			and study 3 examined the presence of suicidal themes and expressions of emotional pain, cognitive constriction and interpersonal problems.	writing provides useful information about the writer's mental state and that the Internet is a legitimate social environment.	procedures. It also supports the idea that the Internet may be a useful means of studying suicidal people - although ethical issues exist.
Gilat et al, 2011: Offering support to suicidal individuals in an online support group	Not specified	1) To examine the response strategies employed by volunteers in an online support group and 2) To examine the relationships between the response strategies and the characteristics of the suicidal messages	A qualitative approach was taken to analysing 120 suicidal interactions from an online support group.	Phase 1 identified 8 strategies used by volunteers, which fell into 3 categories: emotion-focused; cognitive-focused and behaviour-focused responses. These were applied differently to different types of message. Emotion-focused (whereby the objective was to establish an emotional bond with the suicidal person) and cognitive-focused (which aimed to adapt and broaden the perspective of the participant) were applied most frequently. Specific cognitive-focused responses were delivered depending on the cognitive distortions evident.	Overall volunteers employed emotionally supportive strategies to almost all of the suicidal messages. Emotion-focused and cognitive-focused were the response-types most frequently applied, which may represent the most appropriate approaches to suicide prevention since they interact with 2 of the most common psychological states seen in suicidal people - acute isolation and cognitive constriction. The findings demonstrate that the online support group provided conditions that promoted adaptive interpersonal processes useful for suicide prevention.
Greidanus & Everall, 2010: Helper therapy in an online suicide prevention community	Young people	To analyse the content of online postings made by suicidal adolescents, in order to provide a detailed snapshot of an online message board called 'suicide'.	The content of 10 series of postings were analysed, using qualitative techniques (content analysis) that emphasised the experience of helping.	Three main roles were identified: 1) Help-seekers who disclosed SA/SI/SH, or concern about someone close to them being suicidal. One person reported that writing posts kept her hands busy instead of cutting. All expressed feelings of depression/ anxiety but only some had sought professional help. All described SI as a result	The results showed that supportive comments, advice, personal stories and questions are common in online forums. Emotional support was more common than informational support. The findings also demonstrate that message boards provide the context for an online community that develops over time and creates the opportunity for users to feel understood and supported in a way

				<p>of life stressors. 2) Trained volunteers: These messages were all similar in content and tone conveying the sense that the participants' feelings were understandable and that they were not alone. They included positive statements, prompts to seek help from other sources, and information about available resources. 3) Help-provider responses encouraged help-seekers to keep writing on the message boards & conveyed the sense that they were valued members of the online 'community'. These messages were supportive but less consistent and more personal than those provided by the trained volunteers. The roles of help-seeker and help-provider were often dynamic overlapping i.e. people moved between the 2 roles.</p>	<p>that they do not experience offline. Here users could seek, receive and provide social support safely. The authors note that the ability for users to also be able to provide help (as well as seek and receive it) is therapeutic in and of itself. Help-seekers valued the anonymity, accessibility, asynchronicity, and access to peers who understood their experience as useful aspects of online help. They also reported finding it easier to disclose some feelings online than offline. Such forums may be a valuable adjunct to face-to-face MH treatment.</p>
Horne & Wiggins, 2009: Doing being 'on the edge': managing the dilemma of being authentically suicidal in an online forum	Not specified	To examine the content of suicide posts on online forums/message boards from both authors and responders	All messages and replies posted on 2 suicide message boards, over a 4-week period, were examined. In total 42 threads and 329 posts, were analysed using qualitative techniques with a focus on how participants' identities were developed and	The authors present a series of extracts from the postings in order to demonstrate how users 'work up their own and other's identities' online, and demonstrate authenticity.	The study demonstrated ways in which users of Internet forums construct their identities as authentically suicidal yet rational. The authors suggest that a forum is not necessarily the place to ask for help, but is a place where users can receive validation of their status. Members of the forum described their suicidal feelings as something that people may experience from time to time, but felt could be kept at bay

			the ways in which the replies responded to the immediacy or authenticity of other user's claims.		through writing or talking online, or face-to-face. Conclusions: it is important for professionals to treat people who are suicidal as individuals with individual problems, and to validate their suicidal identity rather than to problem-solve.
McSwain, 2012: Warning signs for suicide in Internet forums	Not specified	To examine whether the 10 warning signs for suicide as outlined by the American Association of Suicidology (AAS), are useful in identifying suicide risk in online chat forums.	The authors examined 309 posts on 2 forums – one suicide forum (n=215) and one for SH forum (n=94) in order to detect the presence or absence of the AAS warning signs, and hence examine their utility in detecting risk in an online forum.	Mean scores for the 10 signs in the suicide posts was 2.00 ($SD=1.20$) and 1.50 ($SD=0.96$) for the SH posts. Significant differences were found for 6 out of the 10 warning signs: 'suicidal ideation, purposelessness, trapped, hopelessness, withdrawal, and recklessness'.	Overall the current findings support the use of AAS's 10 warning signs as an aid for recognising suicidal individuals and distinguishing them from those who are not. Future research should explore whether current findings are generalisable to other online forums.
Miller & Gergen, 1998: Life on the line: the therapeutic potentials of computer-mediated conversation	Not specified	To examine the therapeutic potential of online conversation and to compare it to face-to-face contact in a therapeutic setting.	The authors selected a suicide bulletin board that they considered was most closely comparable to the therapeutic context. Conversations over an 11-month period were tracked, transcribed and coded according to the following: 1) Help-seeking interchange 2) Informative interchange 3) Supportive interchange 4) Growth-promoting interchange 5) Punitive interchange	During the 11-month study period there were 98 contributors to the bulletin board who made a total of 232 posts. About 1/4 posted 2/3 of the posts, and 61 participants posted only a single message. <u>Help seeking interchange</u> : Only 17 posts were direct expressions of help seeking; more complex expressions of self-disclosure were more common. <u>Informative interchange</u> : reactions to help seeking posts were generally reliable and quick. Participants offered a wide range of useful and practical advice. <u>Supportive</u>	Much therapeutic work now occurs on the Internet - although most is the provision of empathic support as opposed to psychological growth work. Advantages include the open-ended richness of online dialogue as opposed to traditional forms of therapy, which are often constrained by formats and time limitations. Disadvantages include the transient nature of online environments; communication can lack the subtlety and richness of face-to-face communication; people cannot rely on other members and people do not really know how genuine others are being. Conclusions: online therapy is unlikely to replace face-to-face

				<p><u>interchange</u>: The most frequent type of discourse was supportive & empathic understanding. Participants also expressed gratitude for each others' responses. <u>Growth-promoting interchange</u>: There were very few of these. Of the 564 discursive acts recorded only 3 could be classed as an attempt to provide any form of psychological interpretation. There were 13 criticisms of existing institutions or authority including therapists. Therefore not only did participants not employ traditional therapeutic techniques in their interactions but they also questioned the authority of traditional therapy. <u>Punitive interchange</u>: did not occur often. Participant feedback highlighted the value of being able to help others.</p>	therapy however it may provide supplementary valuable support. We should look for ways professional expertise and electronic media can be combined in the long term.
Sueki & Eichenburg, 2012: Suicide bulletin board systems	Not specified	To analyse the cross-cultural influence of the use of bulletin boards in Germany and Japan.	An online survey was posted on the most frequented suicide message boards, resulting in 137 completed questionnaires from Japan and 164 from Germany. Ages ranged from under 15 - >51.	Participants used the boards for mutual help and to prepare for suicide. Users were then classified into the following groups according to their motivation for using the bulletin boards: self-help; unspecifically motivated; and ambivalent. More users fell into the self-help category in Japan than Germany. SI did not increase with use of the message board; there was greater reduction in SI	The findings from this study indicate that suicide message boards are not necessarily harmful. The self-help group used the board most effectively, sharing their own feelings and helping others. SI also decreased for the ambivalent group who generally used the site to recruit partners for a double suicide and to seek information on suicide methods. However they also used the site for consultative purposes, which may have contributed to the decreased SI.

among those who used the boards for self-help.

The unspecifically motivated group also showed reduced SI - they did not seek help or help others but they did read the posts of others, which may have reduced SI.

TABLE 4: STUDIES THAT EXAMINED THE NETWORK PATHWAYS OF SOCIAL MEDIA SITES (N=2)

Study	Study aims	Methods	Key findings	Conclusions / recommendations
Kemp, & Collings, 2011: Hyperlinked suicide: assessing the prominence and accessibility of suicide websites	1) To conduct suicide related information searches online to assess the sites easily accessible to those at risk 2) To assess the prevalence and accessibility of "pro-suicide, suicide prevention, and suicide support sites by measuring their network structure	A 'hyperlink network analysis' was conducted, whereby traditional data collection methods are replaced by automated crawlers that allow the existence and accessibility of different types of site to be detected. A Google search was conducted using the terms 'suicide' and 'suicide methods' and links were harvested from the first 3 pages of each search. This provided the 'seed set'. This was then 'crawled' to identify & document site content and outbound links. Sites were classified according to country of origin, purpose and type.	In the ' <i>suicide</i> ' search US-based sites were most common, followed by New Zealand (NZ; the search was conducted in NZ and used Google.com.nz). Suicide support sites and policy / advocacy sites were most commonly detected. In the ' <i>suicide methods</i> ' search US-based sites were even more dominant and NZ sites disappeared. Information / education sites were again the most commonly detected. Pro-suicide sites were more common here than in the ' <i>suicide</i> ' search although they still were not common; all were based in the US.	Pro-suicide sites were found to be 'rare and marginal' while sites dedicated to prevention and the provision of information were more visible and more readily accessible. Recommendations include: 'support sites should emphasise their ties to other suicide prevention efforts by making frequent use of links' and by establishing a presence on other related sites. Pro-suicide sites were marginalised by a lack of links from more prominent sites and 'can be made more so by sustained networking efforts on the part of suicide prevention sites'.
Silenzio et al, 2009: Connecting the invisible dots: reaching lesbian, gay, and bisexual adolescents and young adults at risk for suicide through online social networks	To explore the online social networks used by LGBTI* youth in order to determine the maximum number of people who could be reached using this method for future suicide prevention research purposes.	The study used a 'crawler' technique to map social connections between LGBTI youth via MySpace. This allows for the complete exploration of a network starting with one member and then exploring all neighbouring connected members. The same process if followed for each connected member. The observed network was subject to a series of 100 Monte Carlo simulations designed to mirror the diffusion process of a chosen intervention e.g. a suicide prevention message. Recruitment chains were started	Starting from the seed node the study team mapped relationships between 100,014 self-identified LGB individuals. They reported that when the number of potential peer recruitments increased from 5 to 10, the eventual sample size increased dramatically. If there is less of an incentive the starting sample size needs to be larger. The simulations indicate that a peer-driven preventive intervention has the potential to reach up to 18,409 individuals. Varying the number of peers that can be recruited is more important than	The study demonstrates the potential for online social networks to be used as a potential platform to access traditionally hard-to-reach individuals for the purpose of suicide prevention interventions or research. The method has the potential to recruit larger samples into suicide prevention research than has previously been possible. Whilst this study examined a LGB population the findings could be readily applied to other hard to reach groups for research or prevention purposes.

using up to 15 individuals who were then used to recruit additional participants using a coupon voucher system to track people. The process also utilizes incentives. The simulations continued until no new people were identified.

increasing the number of randomly selected starting individuals.

*LGBTI = lesbian, gay bisexual, transgendered and intersex

TABLE 5: INDIVIDUAL CASE STUDIES (N=7)

Study	Study aims	Case description(s)	Outcomes / conclusions
Baume et al, 1997: Cyber-suicide: the role of interactive suicide notes on the Internet	This paper presents 3 cases in order to highlight the ways in which a discussion forum (alt.suicide.holiday) has been used to communicate about suicide, in particular to post suicide notes.	<p><u>Case 1:</u> A 26-year old male who posted a series of messages on a discussion forum in the 2 weeks leading up to his suicide. They initially included expressions of suicidality and queries about accessing and using a firearm. He later stated that he had purchased a firearm and was preparing for death. Following his death a number of messages were posted, some expressing support for his choice whilst others expressed sadness at his death and criticized his 'lack of compassion for others' in the group.</p> <p><u>Case 2:</u> A male (age not reported). He posted a farewell message on the forum, and also sought information about a particular substance for the purpose of taking an overdose. Three replies provided this information and offered positive support. His final message included specific details of the time he intended to take his life and his chosen method.</p> <p><u>Case 3:</u> A male (age not reported). He posted a series of messages expressing his intention to take his life and seeking advice regarding the best method. He made a suicide attempt but did not die as a result. His subsequent posts on the forum urged others to reconsider 'thoughts of suicide'.</p>	The authors discuss the potential danger of the Internet, in particular the issue of 'group death instincts', whereby a suicidal person is encouraged to act by the other suicidal people using the same website. They acknowledged that [at the time of publication] it was too early to determine what the impact of the Internet may be on suicide rates. However they suggest that it may be stronger than other forms of media because of the ability for users (who may often be socially isolated) to establish relationships with other suicidal people and hence be more strongly influenced by their suicide. They also suggest that new approaches are required in order to analyse suicide clusters as clustering may now occur differently, via online social networks than simply face-to-face contacts. They also state that the Internet poses a number of dilemmas for those involved in suicide prevention – e.g. if a suicidologist observes a suicidal interaction is there an obligation to intervene and this may be challenging given the amorphous and anonymous nature of the Internet. They acknowledge that new communication technologies could be used for suicide prevention but can also promote suicide. Work is needed to develop new strategies to use the Internet for good, whilst at the same time minimizing it's potential negative impact.
Becker et al, 2004: Parasuicide online: Can suicide websites trigger suicidal behaviour in	This paper presents a case study of an adolescent girl who	A case study of a 17-year old female adolescent girl who made a suicide attempt is presented. She reported that her friends did not understand her feelings so she	The case presented demonstrates the negative effects of Internet use for a suicidal young person. Although the Internet was partly described as positive by the young person – i.e. for use communicating with others, ultimately it was the

predisposed adolescents?	used a chat room to express her suicidal feelings.	sought people to talk to in online chat rooms. Initially she used the chat rooms when feeling down for reading and writing poetry and for communicating about her feelings in an anonymous setting. She later used an alternative, unmoderated, site for searching for suicide methods and ultimately was able to purchase medication plus poison that could be used to end her life. She survived the attempt and became engaged in treatment.	vehicle through which she accessed the means to end her life. The authors speculate that the opinions expressed on the second forum she visited may have influenced her to attempt suicide. Owners of suicide websites should follow the same guidelines as other media outlets when it comes to talking about suicide i.e. no information on suicide methods, no acceptance of meetings for joint suicides and no publication of a suicide should be permitted. Sites should also include links to sources of help and professional treatment should be promoted. Parents, clinicians and teachers should be aware of children's use of the Internet. Finally the authors call for a national and international discussion regarding the possible legal options that may prevent copycat suicides and other criminal activity on such sites.
Birbal et al, (2009): Cybersuicide and the adolescent population: challenges of the future?	This study reviewed a number of case studies of suicides and examined suicide method; reasons for the suicide; and the possible influence the death had on others.	The authors present 3 case studies detailing 8 'cyber-suicides' identified via an Internet search. <u>Case study 1:</u> A 19-year old US male stated his suicidal intentions on an Internet forum. He was not taken seriously because he had done this on several occasions previously. He took an overdose of medication while being viewed by forum members - some of whom encouraged and others discouraged him. He left a suicide note on MySpace. <u>Case study 2:</u> A 42-year old British male hung himself while being filmed by a webcam and connected to an Internet chat room. Bloggers did not believe he would complete the act and initially encouraged him. <u>Case study 3:</u> This case study details the deaths of 6 people in a car in Japan. The people had died of charcoal poisoning in a	The authors state that people with suicidal ideas seek encouragement online and can be "influenced by internet resources on suicide". They also discuss the ways in which the Internet has 'revolutionised' the ways in which suicide pacts are organised. They make particular reference to Japan and the fact that charcoal burning has become a popular method of Internet suicide. They state that cyber-suicide, suicide pacts and 'death-casting' are becoming increasingly popular, meaning that we need to reconsider the role of contagion. Just as with mainstream media we need guidelines for the reporting of suicide online. In addition 'website managers and moderators must be held liable' and appropriate legislation is required in order to curb suicide-related behaviour online.

Hsiung, 2007: A suicide in an online mental health support group: reactions of the group members, administrative responses, and recommendations	<p>The aim of this study was to describe the responses of group members and the moderator following the suicide of a member of the online forum 'Psycho-babble'.</p>	<p>car. The victims had met online.</p> <p>The person who died was a forum member for around 1 year and posted 905 messages during that time (approx. 70 per month). A group member who knew the person who died outside of the forum posted that she had died. Group members expressed shock, sadness and anger, at her death. They posted poems and supported each other, referring to each other as 'family'. In one thread the desire to 'emulate' her was expressed. In addition to the forum some members communicated via online chat, email and telephone. Two days after the announcement the moderator started a memorial thread to which there were several replies. Members continued to express sadness, guilt and anger, they reviewed her old posts and posted poems and farewell messages. Later questions arose regarding boundaries inside and outside of the group i.e. if people knew her outside the group should they post her real name or attend her funeral? Over time the nature of posts changed - expressing concerns about others, reflecting on their own suicidality, educating each other about grief after a suicide. After 3 months a static memorial page was implemented on a related site. The moderator also created a 'memorial' folder, which included all the links and posts related to her death as well as links on coping in crisis. One year after her death a poster created a new thread expressing continued anger and sadness. The death was not glamorized. A further</p>	<p>Responses posted on the site were not dissimilar to those in real life, with shock and sadness expressed initially, followed by posts saying goodbye and moving towards acceptance. The moderator attempted to facilitate mourning by starting the memorial thread on an affiliated but separate site - so as to reduce the risk of contagion, and this was well received. The author concluded that suicides on such forums are inevitable, just as they are in real life. Even though the group developed online it was a 'real group' whereby people formed relationships with each other and mourned the deceased person together. The diffusion of dependency, a searchable archive of posts and threaded asynchronous discussion may facilitate mourning, although the anonymity may mean online groups are vulnerable to hoaxes. Both the memorial thread and the later page were felt to be beneficial and mimic real life mourning. <u>Recommendations</u>: whilst it is not possible to regulate the Internet, site owners should regulate their own sites. Sites should not allow the encouragement of self-harm, the posting of instructions or false reports of a suicide. They should allow for self-expression, provide support and education - including resources and treatment where necessary. They should be able to obtain IP addresses in case of imminent risk in which case emergency services can be notified. Such advice relies on sites being moderated. With regard to responding to a suicide - sites should have threaded asynchronous discussions or separate chat rooms, and searchable archives for people to 'work through' their grief. Memorial threads or distinct pages are useful and should follow the recommendations for print media in order to minimise contagion. More research is needed, as well as the development and testing of interventions.</p>
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Lehavot, 2012: Ethical considerations and social media: A case of suicidal postings on Facebook	<p>This paper presents a case involving a man with serious mental health problems and a clinician from his treating team. It presents a number of ethical considerations raised.</p>	<p>board was later developed that focused specifically on grief and mourning, which attracted 211 posts in its first month.</p> <p>This is a case study of a man in his 20's with mental health problems. In the case presented the man's mental health worker became concerned about his safety as a result of viewing images of him on Facebook depicting various methods of suicide. Because his privacy settings were such that she was able to view his page without being his friend, he did not know she had seen the images. This led to a hospital admission. The client denied suicidal intent and was repeatedly able to guarantee his safety despite the images. He felt that it was a violation of his rights to admit him on the grounds of the images, although he agreed to additional subsequent support. The worker did not believe that the therapeutic alliance had been compromised as a result of these events.</p>	<p>The authors raise several ethical issues that relate to use of social media. <u>Beneficence and maleficence</u>: The clinician's behaviour was motivated by concern for the client's safety. If a clinician is aware of potential risk to the client failure to act could be seen as negligent and have potentially negative consequences for the client. However, taking action relied upon information not directly assessed by the clinician, hence the client may lose trust in the clinician and subsequently disengage from therapy. <u>Privacy and confidentiality</u>: Given that the client had no privacy settings on his FB page and that the Internet is a public domain, his privacy was not breached in a legal sense. However, he may have believed that it was private and as a consequence feel that his privacy was compromised as a result of the clinician searching him without consent. <u>Multiple relationships</u>: Contact with a client via FB can be seen as interacting outside the agreed therapeutic exchange. This may not necessarily be unethical as long as the client is not at risk of exploitation or potential harm, however it must be agreed and may be difficult for clients who have problems with boundaries. It may also harm the therapeutic alliance - leading to boundary issues and lack of trust. <u>Clinical judgment</u>: Social media allows for the development of an online or social identity and information portrayed may not always be accurate. It is also hard to assess how seriously to take a depiction of risk in a social networking environment. <u>Informed consent</u>: A clear policy for using the Internet for such purposes and obtaining informed consent could enhance transparency and prevent confusion. FB now has a service whereby someone can report a suicidal comment by a friend who will then receive an email encouraging them to seek help, or to click on a link to begin a confidential chat session with a crisis worker. Such innovations allow for immediate intervention and suggest that</p>
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			<p>online technologies used responsibly can have an important role to play in the suite of options available to people in need. Recommendations include: developing policies regarding Internet searches of clients that involve informed consent forms and other documents. Professionals need to be prepared that they may inadvertently come across a client online. Finally even when legal breaches of privacy are not a concern, protecting the therapeutic alliance should always be a primary concern.</p>
<p>Ogburn et al, 2011: New-age patient communications through social networks</p>	<p>This paper reports a case study of a young woman who attempted suicide by overdose and draw a number of themes or lessons form the case</p>	<p>This paper reports a case study of a young woman who attempted suicide by overdose. A few hours after taking the pills she posted on Twitter and her mother received the message via Facebook. The patient reports that after posting about her ordeal she received a positive response from family and friends via social networks.</p>	<p>Three key themes are presented: 1) <u>Hand-written vs web-based notes</u>: The Internet may change the concept of a suicide note - a suicide note posted online will be instantly seen by a variety of people who may not have been left a hand-written note. As such these notes may be seen as a way to seek help and as a potential means via which to intervene. 2) <u>Privacy and logging on for treatment</u>: If done with consent a clinician could access a client's social networking site which may afford a doctor the opportunity to monitor the patient and identify early signs of relapse. 3) <u>Other challenges</u>: Social networking sites can facilitate friendships and communication without the need for direct contact. However an adverse effect may be the lack of mature, in-depth relationships. Additionally there is the possibility that if someone posts a suicide note and receives a positive / warm response, this may lead them to engage in similar behaviour in the future in order to elicit a similar positive response.</p>
<p>Ruder et al, 2011: Suicide announcement on Facebook</p>	<p>1) To present the case of a young man who announced his intention to take his life on a social networking site 2) To discuss the potential consequences of</p>	<p>This paper presents a case study of a 28-year old man who posted his intention to take his life on Facebook (FB). The post was seen by a friend who tried unsuccessfully to intervene.</p>	<p>Several suicide notes have been posted on FB. FB now provides contact information for helplines and services for people who feel suicidal or want to help others. They also offer a link via which suicidal content can be reported. FB pages can be turned into a memorial page or removed on request. Concerns are presented that such posts may have a contagion effect although this has not been empirically investigated. The authors also speculate that (unless the FB user is famous) any form of contagion effect would be minimal compared to the potential effect of the wider reach of</p>

this form of suicide
note

print and TV media (given that any FB user will have a finite number of friends) – however this is yet to be studied empirically. This said, there appears to be a positive effect of posting a suicide note on FB, in that they are instantly available to a larger audience, which in turn provides an opportunity for intervention. The present case illustrates that FB users do actively intervene to prevent suicide attempts. Posting suicide notes on social networking sites is a relatively new phenomenon, and clinicians need to be aware of this. To date it is unclear if the effect of such notes will lead to greater encouragement of suicide or opportunities for prevention, and careful evaluation is required.

TABLE 6: REVIEWS AND EDITORIALS (N=9)

Study	Study aims / summary	Key findings	Conclusions / recommendations
Alao et al, 2006: Cyber-psychology & behavior: The impact of the Internet, multimedia and virtual reality on behavior and society	1) To review how the Internet can be used to obtain information about suicide 2) To examine cases whereby patients got information from the Internet and went on to attempt suicide 3) To explore how the Internet could be used as a source of help to suicidal patients. A summary of 9 cases in which the Internet may have played a role in a suicidal act is provided.	The study describes ways the Internet and, in particular, chat rooms have been used to post suicide notes, images of suicidal acts, information on (unusual) ways of attempting suicide and for facilitating suicide pacts. They also discuss the potential for suicide prevention - in terms of providing information on sources of help, self-assessment scales, delivery of treatment, facilitating communication e.g. by email, online counselling.	The Internet has potential benefits as well as hazards with regard to suicide prevention; clinicians working with mentally ill patients need to be aware of both.
Biddle et al, 2008: Suicide and the Internet	An Internet search was conducted in order to identify sites that contained instructions or information about methods of suicide. Four key search engines were used and the first 10 sites identified via each search were examined.	240 sites were identified. Just under 1/5 were dedicated suicide sites; half of these were judged to be encouraging, promoting or facilitating suicide. 43 contained personal accounts of suicide methods, providing information but not encouraging suicidal acts. 2 portrayed suicide in 'fashionable terms'. A further 44 hits provided information about suicide methods in a factual or in a partly, or fully, joking manner. 12 hits were chat rooms or discussion boards that talked about, or provided information on, methods of suicide. Sites providing factual information, pro-suicide sites and chat rooms occurred most often within the first few hits of the search meaning that they are likely to be found easily.	In terms of risks, the authors speculate that contributors to chat rooms can exert peer pressure to commit suicide, can idolise those who have died by suicide and can facilitate suicide pacts. However they also note that the Internet may have beneficial effects in terms of promoting help-seeking and allowing people to express and share their feelings. Some sites provide screening questionnaires and advice regarding treatment. They note that Internet based interventions have been used to help people cope with depression, and supportive message boards can allow people to share coping strategies, normalise experiences and empower people who self-harm. They note that in England rates of suicide among the age groups who mostly use the Internet have been declining over the period that Internet use has been growing, suggesting that the positive effects may outweigh the negative ones. They discuss the possibility of legislating regarding Internet content as has been done in Australia, to ensure that less harmful content is available. They also advocate for service providers to pursue website optimisation strategies to maximise the likelihood that helpful, rather than harmful sites, are the first to come up on a search.

<p>Collings, & Niederkrotenthaler, 2012: Suicide prevention and emergent media: surfing the opportunity</p>	<p>1) To review the literature on the effects of the Internet on suicide; 2) To highlight some of the challenges conducting research in this environment; 3) To highlight some key features of new / emergent media which could help researchers to build a strong evidence base in this area.</p>	<p>The study reports that whilst some Internet sites (in particular message boards) that provide information on suicide methods, others offer help to suicidal people - either in the form of information on professional help or by providing opportunities for people to support each other. The authors argue for use of the term 'emergent media' as opposed to 'new media'. They also argue that technology is neither content nor behaviour, rather it is the means someone uses to engage in a behaviour (e.g. bullying). They state that condemning technology is futile, and that emergent media affords us as much opportunity for suicide prevention as it does for increasing suicide risk, making the point that a suicide that is thought to have been influenced by the Internet receives a disproportionate amount of media attention.</p>	<p>Emergent media are now an integral part of life and the authors urge the suicide prevention community to act now in terms of using these technologies in suicide prevention. They suggest that we need to build knowledge regarding how best to provide support in an online environment, in order that site moderators can manage antisocial behaviours and enhance helpful behaviours. We need to investigate the nature of online content communities, "by monitoring content trends and networking structures and processes; by applying linguistic analysis to communications and by investigating the nature and extent of suicide-permissive as well as suicide-dissuading behaviours" (p3). We also need to develop new research methodologies that combine the technological opportunities with relevant research questions. Finally they call for a balanced approach, where both the harmful and potential beneficial aspects of emergent media are considered, proposing that, if used skillfully, the benefits of emergent media may outweigh the risks when it comes to suicide prevention.</p>
<p>Lipczynska, 2009: Suicide</p>	<p>To identify websites related to suicide, with specific reference to sites for people who are suicidal or have been bereaved by suicide. No methods were reported.</p>	<p>Sites identified fell into 3 broad categories: 1) Support sites for the bereaved. Two of these are profiled. The first <i>Survivors of Bereavement by Suicide</i> is a UK-based self-help organisation. The website offers information, help and support. However, there is no user-user interaction. The second, <i>Suicide Grief</i> is US-based. It contains awareness and prevention information and houses a series of message boards and online forums. There are different message boards for different kinds of issues and remembering different people e.g. sons / daughters / brothers /sisters etc. 2) Support sites for those with suicidal feelings. These were similar to those above, with websites offering static forms of information and forums</p>	<p>The author suggests that it is easy to jump to conclusions about suicide-related websites and the problems they can cause. However there was also a sense that users find support and acceptance on these sites that they do not find elsewhere. Whilst there were discussions regarding suicide methods, there were also many posts encouraging help seeking. Overall the author concluded that "these sites ...appear to cause damage and offer help in equal measure" (p190).</p>

		<p>that offer interactive support to people at risk. One example cited is the <i>Suicide Forum</i>, which houses a number of boards covering all sorts of issues - most of which are for members only. Some of the more sensitive boards that may have a triggering effect are clearly labeled as such. 3) 'Pro suicide' forums and pages. The author cites a number of websites that fall into this category. People used these sites to talk about their suicidal feelings and to receive and provide support to / from others in similar situations. However there were also posts about people's intentions to take their own life. One site provided information on suppliers of suicide means, information on dosage, preparation and equipment that may be required to end a life.</p>	
<p>Luxton et al, 2011: Technology-based suicide prevention: current applications and future directions</p>	<p>1) To discuss the role of different technology outlets in suicide prevention with a focus on primary and secondary prevention programs; 2) To raise awareness of such programs, provide information, and encourage evaluation.</p>	<p>Web-Based Suicide Prevention: This has the advantage of allowing people to access information anytime, while remaining anonymous. They describe the increase of interactive multimedia, using the example of the National Suicide Prevention Lifeline's website which includes suicide survivor stories presented using avatars. The increasing popularity of social networking, also enables individuals to interact with peers experiencing similar problems. Particular pages may help to 'build community' and encourage support, however exposure to other pages may leave vulnerable people more at risk. The same can be said about YouTube and podcasts, with the availability of both positive and negative videos or recordings on the topic of suicide prevention.</p> <p>Outreach via e-mail: Authors note the advantage of suicide prevention programs using email, which can reach a large numbers of people instantly regardless of location. Mobile</p>	<p>This review outlines the increasing and evolving methods of suicide prevention using technology. Such methods can help to overcome barriers to location, and time, and users can remain anonymous. This is particularly important when traditional methods of help seeking are limited to business hours. Issues to address include confidentiality and privacy, as well as user expectations in regards to response times. Although online venues can be positive in supporting users, vulnerable people may also be at risk of suicide behaviour - therefore, regulation of sites is important. Limitations: technology is constantly changing and does not reach everyone. It is important that such sites are continuously culturally relevant and reaching the right target groups.</p>

		<p>Devices and Smartphones: These can deliver suicide prevention information instantly, as they are generally accessible at all times. Applications designed for monitoring symptoms can help clients record thought patterns and appointment reminders more discretely than before. SMS messaging is also being used in suicide prevention, as demonstrated by the 'Samaritans' in the UK. Other forms of technology: Authors describe the increasing use of virtual worlds, computer and online gaming, and text analysis, as potential, although less popular, methods of suicide prevention.</p>	
<p>Luxton et al, 2012: Social media and suicide: a public health perspective</p>	<p>To discuss the role of social media in suicide-related behaviour. A review of the relevant literature, and a number of examples of public health initiatives of suicide prevention via social media are provided. A brief discussion of relevant legal issues in included.</p>	<p>Social media and suicide risk: The authors summarise the literature regarding availability of suicide-related information on the Internet, concluding that it is easy to find pro-suicide information. They list the following as mechanisms by which social media could increase suicide risk: cyber-bullying; contagion; suicide pacts; provision of information on methods of suicide (including novel methods) and via normalising suicidal behaviour via video sharing sites e.g. YouTube, and online communities. The authors conclude that there is increasing evidence that social media can influence pro-suicide behaviour. Social media and suicide prevention: Here the authors provide a summary of suicide prevention-related activity via social media platforms. Examples include the use of Facebook by organisations such as the National Suicide Prevention Lifeline and the American Foundation for Suicide Prevention, both of which provide links to suicide prevention helplines and organisations as well as information about the warning signs for suicide. They also cite numerous blog</p>	<p>The review presented evidence regarding some of the potential risk associated with social media and suicide, and a number of initiatives that employ social media platforms for suicide prevention. More research is needed to examine both the positive and negative role of social media with regard to suicide, and to evaluate the effectiveness of initiatives. They call for a focus on young people given that suicide is a leading cause of death in this group and that they have a high likelihood of being exposed to suicide-related content on the Internet. They acknowledge the specific difficulties conducting this sort of research, for example, the variability of social media format and its amorphous nature make it hard to examine rigorously. Legal issues to be considered include monitoring and filtering online content, and whether or not there should be ways of restricting or regulating internet content. Because the content of social media is created and controlled by users, these sorts of responsibilities need to be extended to all users, which could be facilitated by simple-to-use methods for reporting negative content and activities. The public promotion of help seeking avenues and public awareness campaigns through social media</p>

groups that are designated as suicide prevention. These enable users to interact and share information. YouTube also has a number of videos devoted to suicide prevention, including public service announcements regarding help seeking and announcements promoting suicide prevention awareness programs. Other videos, created by users, featured supportive messages, personal stories of help-seeking and memorials for loved ones. The National Suicide Prevention Lifeline's website features a social media platform in which survivors can create their own avatar to tell and share their stories, providing an anonymous, personalised and interactive experience aimed at preventing suicide. They also describe features used by search engines that provide a message about the National Suicide Prevention Lifeline if keyword searches suggest suicidal feelings. Similarly Facebook houses a page, which is specifically intended to facilitate the removal of pro-suicide sites and links. Social networking sites Facebook, MySpace and Bebo have collaborated with relevant organisations to increase awareness of and facilitate the reporting of cyber-bullying. Facebook has also partnered with Samaritans in the UK and Ireland to launch a suicide-alert reporting system so that users can report concerns they have about other users. Finally the US military has used social media to provide suicide outreach information via social networking and blog sites. However, there is a lack of published literature evaluating the effectiveness of any of these programs / platforms.

platforms is a logical step and should be a priority.

Mehlum, 2000: The Internet, suicide, and suicide prevention	1) To discuss some of the risks associated with the Internet in relation to suicide; 2) To discuss how the Internet could be used for suicide prevention; 3) To summarise the work being done by the International Association for Suicide Prevention (IASP) online.	This paper discusses both the benefits and risks of using social media for suicide prevention. In terms of risks, the Internet could provide a vehicle for contagion and a case is cited where 2 young people met online and then took their lives together. There is a specific mention of the pros and cons of online discussion groups (for example pros include the opportunity to express and share emotional pain; whilst the cons include the development of suicide pacts and the potential for contagion. In terms of benefits - efforts could focus on increased collaboration with Internet media providers to reduce risks and increased use of the Internet for prevention purposes, including providing positive messages and resources.	The paper concludes that whilst the Internet will produce new risk scenarios it will also create new opportunities for prevention. In terms of IASP, the organisation has committed itself to better use of the Internet for prevention purposes through it's own website and through the evaluation of other Internet-based resources that are available.
Ozawa-de Silva, 2008: Too lonely to die alone: Internet suicide pacts and existential suffering in Japan	The paper discusses the rise in suicide rates in Japan and Internet suicide pacts. A selection of ethnographic findings from a sample of Japanese suicide-related websites is presented. This is discussed in the context of social transformation in Japan. Methods of search: the word 'suicide' was entered into a Japanese version of Google, and 40 of the sites retrieved were closely monitored via 'participant observation'.	This paper presents a number of examples of suicide pacts that occurred in Japan. An online search retrieved a large number of suicide-related hits, 40 of which were visited and examined more closely. The majority of sites contained the following elements: a site guide; a bulletin board; a chat area; links to other sites and information about the site moderator. Over the course of the study levels of moderation increased, and by the end of the study period information designed to facilitate a group suicide was not available on the websites. Most suicide sites present themselves as functioning for the purpose of suicide prevention - as places where people can share their feelings, but negative consequences are acknowledged. The sites had large numbers of visitors, many of whom identify as being young (ages reported ranged from 14-20). The visibility of the moderator varies. The author focused heavily	People can use these sites in order to feel less alone, which can provide a sense of comfort and may help people stay alive. For others however it provides a vehicle not to die alone. However, the author suggests that Internet suicide may not in fact be something completely new, but rather a new manifestation of 'psychological pain in a different guise'. Finally, the author reflects on the Westernisation of Japan and the rise in individualism, and the need for a whole of society approach to reducing the factors associated with suicide.

		<p>on the bulletin boards where, unlike chat rooms, posts are made in full view of everyone. Forums contained poems, sustained discussions about a theme or topic and monologues by individuals. Themes included loss of meaning in the world, loneliness, being bullied, having lost a job or separated from a partner.</p>	
<p>Thompson, 1999: The Internet and its potential influence on suicide</p>	<p>This is an editorial, which aimed to:</p> <ol style="list-style-type: none"> 1) Describe the existing literature that examines the effects on the Internet on suicidal behaviour; and 2) Examine ways in which the Internet influences suicide. A series of case studies were also presented. 	<p>The author discusses the existence of numerous online message boards which 'advocate suicide', and 'discourage' people from seeking professional help. A series of case studies were also presented in which the Internet was used to research suicide methods, as well as to intervene in suicide attempts. The author also refers to studies that report the existence of suicide clusters following media reporting of suicide, and suggests that this may also occur following discussion of suicide online.</p>	<p>The authors concluded that the existing literature points to the conclusion that the Internet can have a negative impact on suicidal behaviour. Young people are often vulnerable and questions should be asked as to whether website materials could be censored, or used to track at risk individuals.</p>

TABLE 7: STUDIES THAT EXAMINED SITES RELATING TO SUICIDE BEREAVEMENT AND 'GROUP' SUICIDE (N=3)

Study	Target group	Study aims	Methods	Key findings	Conclusions / recommendations
Chapple, & Ziebland, 2011: How the Internet is changing the experience of bereavement by suicide: a qualitative study in the UK	Bereaved people	To explore how the availability of Internet support may be changing the experience of people who have been bereaved by suicide	This was a qualitative study. Narrative interviews were conducted with 40 people who had been bereaved by suicide. Thematic analysis was conducted.	Participants reported using the Internet for 3 main things 1) Informing others of the death – using email and social networking sites for this purpose enabled news to be spread faster, and was less burdensome than making a phone call or telling people face-to-face 2) Gaining support from others – many participants belonged to an online support or email group. People valued the anonymity, the 24-hour access and the fact that they could seek information and share experiences without being judged. It also gave some the opportunity to help others, which was helpful. In some cases people reported that talking online to others with the same experience was more helpful than professional help. The majority also used other forms of help. 3) Setting up online memorials - some people reported using the Internet to create a memorial in addition to a physical memorial. No participants reported any negative experiences regarding using the Internet following their bereavement, however some acknowledged that in addition there could be negative aspects such as sites may exist that encourage suicide, that spending time on chat-rooms can "take over" and it could become	Many participants found the Internet a valuable source of support and a useful means of communication following a death. Online support was not found to be replacing off-line support; most people who sought online help also used other forms of support. Face -to-face contacts were often supplemented by email, and people who made friends online often became friends in 'real life'. The authors discuss the possibility of online support taking some of the pressure off mainstream mental health services. However they postulate that mental health professionals may feel threatened by this, in terms of "de-professionalism". Despite media reports of the negative effects of talking about suicide online, participants reported very few negative experiences and generally found the Internet beneficial in terms of gaining, and giving, support to others.

				depressing.	
Krysinska & Andriessen, (2010): Online support and resources for people bereaved through suicide: what is available?	Bereaved people	1) To examine the types of resources that were available for people who had been bereaved by suicide online; and 2) To examine the quality of these resources.	The authors used 4 search engines to search for the sort of material bereaved people could find on the Internet. Results were classified according to a number of categories (e.g. suicide bereavement website; local mental health service; survivor support group), and then analysed against 17 criteria, such as information provided about the site author; availability of professional help via the site; availability of resources; and the existence of an interactive section e.g. a chat function or a link to a social media platform such as Facebook.	The search identified 145 distinct websites. The majority were general suicide bereavement sites and sites for specific groups of survivors e.g. bereaved parents. There were many local survivor support groups, as well as sites set up by local services or under the auspices of national programs. Also retrieved (albeit less frequently) were sites developed by national or regional suicide prevention or crisis intervention services, that provided information or support to bereaved people (e.g. the Salvation Army in Australia). The top 15 websites were then assessed against the quality criteria. Of them 8 had an interactive component - these were: 1) www.survivorso suicide.com; 2) lifegard.tripod.com; 3) The Suicide Paradigm; 4) suicide.org; 5) The American Foundation for Suicide Prevention; 6) www.iasp.info; 7) amazon.com; 8) www.amazon.com. No further information on this aspect is provided.	A range of information is available for people bereaved by suicide on line in a number of different formats. The content and quality analysis showed that although there were differences between sites, the majority contained information on suicide and bereavement, referral information, resources, and links to other sites. Around half had interactive components although no further analysis of these was conducted. The authors report finding a relatively small number of websites created by professional organisations and they discuss the need for such organisations to employ search engine optimisation strategies to ensure that people can find the sites when searching. They also recommend the development of quality standards for online materials plus further research into the effectiveness of suicide bereavement sites.
Ozawa-De Silva, 2010: Shared death: self, sociality and Internet group suicide in Japan	Internet group suicide	To apply a different analytical approach to the existence of Internet group suicide	The author draws from the ethnography of suicide websites as well as two social commentaries in Japanese culture and developmental psychology in order to apply some meaning to the existence of Internet group suicide.	The author suggests that existing models for understanding suicide do not account for the uniqueness of Internet group suicide. Rather such an act arises from the need for social connectedness and a fear of social rejection and isolation, even in death. Hence, a key difference between Internet group suicides, and individual suicides, is the role of sociality in the	The author suggests that certain 'root causes' need to be addressed in suicide prevention in Japan, including 'a lack of affiliation and a strong need to affiliate. In the case of Internet group suicide, this takes the form of seeking affiliation with other suicidal people who find themselves in a similar situation'. If this interpretation is correct, approaches to addressing

suicide act and the events leading up to it, e.g. the establishment of contact, the planning of the suicide, and the meeting and carrying out of the plan. This affords the potential for 'reciprocity, the creation of shared meanings and experiences, and the creation of a relationship', which gives this type of suicide its distinctiveness.

suicide in Japan must take this into consideration.'

APPENDIX B

ORGANISATIONS IDENTIFIED IN THE INTERNET SEARCH AND THEIR CORRESPONDING WEBSITES.

Organisation	Website
AAS Suicidology	http://www.suicidology.org/home
Aasra	http://www.aasra.info/index.html
Active Minds	http://www.activeminds.org
Adolescent Suicide Prevention and Early Intervention (ASPEN)	http://wvaspen.com
American Foundation for Suicide Prevention (AFSP)	http://www.afsp.org
C.A.R.E.S. Suicide Prevention	http://www.caresprevention.org
Centre for Suicide Prevention (CSP)	http://suicideinfo.ca
Chooselife Edinburgh	http://www.chooselife.net/index.aspx
East Belfast Community Development Agency	http://ebcda.org
Franklin County Suicide Prevention Services	http://suicidepreventionservices.org
Grassroots Suicide Prevention	http://www.prevent-suicide.org.uk
Idaho Suicide Prevention Hotline	http://www.idahosuicideprevention.org/#&panel1-1
The Jed Foundation	http://jedfoundation.org
International Association for Suicide Prevention (IASP)	http://www.iasp.info
Kristin Brooks Hope Center	http://hopeline.com
Lifeline Helpline (Ireland)	http://www.lifelinehelpline.info/?gclid=CIL53ua4m7UCFdLJtAodGxgAfQ
LifeRevived	http://www.life-revived.com/forums/
Lost and Found	http://www.facebook.com/pages/Lost-and-Found-Suicide-Prevention/190316377681446
Mental Health America Texas	http://www.mhatexas.org
Missouri Suicide Prevention Project	http://dmh.mo.gov/mentalillness/suicide/prevention.htm
National Action Alliance for Suicide Prevention	http://actionallianceforsuicideprevention.org
National Suicide Prevention Lifeline	http://www.suicidepreventionlifeline.org
Native Americans Suicide Prevention (NASPORG)	http://www.facebook.com/NASPORG
Ó Lá Go Lá	http://www.olagola.org
PAPYRUS Prevention of Young Suicide	http://www.papyrus-uk.org
PickWithAustin	http://www.pickwithaustin.com
Prevention of Suicide Help Counseling Center	http://www.facebook.com/SuicideHelpCounsellingCenter
Pueblo Suicide Prevention Center	http://www.pueblospc.org/index.html
SOS Signs of Suicide	http://www.mentalhealthscreening.org/programs/youth-prevention-programs/sos/
StopBullying.Gov	http://www.stopbullying.gov
Substance Abuse and Mental Health Services Administration (SAMHSA)	http://www.samhsa.gov
Suicide and Self Harm Crisis Centre	http://www.pieta.ie
Suicide Prevention at Preparatory School, Washington DC	https://Twitter.com/PrepDC

Suicide Prevention Australia	http://suicidepreventionaust.org
Suicide Prevention Education Alliance of Northeast Ohio	http://www.speaneohio.org
Suicide Prevention Resource Center (SPRC)	http://www.sprc.org
Suicide Prevention Services of America	http://www.spsamerica.org
Suicide.org	http://Suicide.org
Third Way Theatre	http://thirdwaytheatre.org
To Write Love on Her Arms (TWLOHA)	http://twloha.com
WeB (We Belong)	http://www.facebook.com/pages/WeB-Timaru/467145106637056
Well Space Health	http://www.theeffort.org
The Wingman Project	http://ca.wingmanproject.org/en
Youth Suicide Prevention Ireland (YSPI)	http://www.yspi.eu

APPENDIX C

TABLE 1. TYPE OF RESEARCH INTO SUICIDE AND SOCIAL MEDIA

	Type of research previously conducted	Type of research currently being conducted	Type of research planned
	% (n=8)	% (n=6)	% (n=6)
A literature review	50.0% (4)	33.3% (2)	50.0% (5)
A study examining the relationship between suicide & social media	12.5% (1)	16.7% (1)	40.0% (4)
A study describing social media sites used to discuss suicide	75.0% (6)	66.7% (4)	50.0% (5)
A study examining the ways in which users discuss suicide using social media	87.5% (7)	83.3% (5)	50.0% (5)
An intervention study	25.0% (2)	33.3% (2)	50.0% (5)
A case study	37.5% (3)	16.7% (1)	40.0% (4)

TABLE 2. THE FREQUENCY WITH WHICH DIFFERENT FORMS OF SOCIAL MEDIA ARE USED FOR OBTAINING DIFFERENT TYPES OF HELP

Percentage and number of respondents who endorsed either 'quite often' or 'frequently'

	To obtain emotional support from others (n=22)	To obtain professional help (n=22)	To obtain information (n=22)
Facebook	36% (8)	-	5% (1)
MySpace	-	-	-
Google+	-	-	-
Yahoo Answers	9% (2)	-	14% (3)
YouTube	-	-	5% (1)
Twitter	23% (5)	-	14% (3)
Tumblr	32% (7)	-	27% (6)
Blogspot	5% (1)	-	-
Personal blogs	9% (2)	-	9% (2)
Media blogs	-	-	5% (1)

TABLE 3. THE MOST HELPFUL ASPECTS OF USING SOCIAL MEDIA FOR AN EMOTIONAL PROBLEM

Percentage and number of respondents who endorsed either 'somewhat helpful' or 'very helpful'

	% (n=22)
Expressing your feelings	91% (20)
Receiving emotional support from others	82% (18)
Talking to people with a similar problem	73% (16)
Helping others	73% (16)
Receiving information about your problem	55% (12)
Connecting with a community that understands your problem	55% (12)
Receiving information regarding how to obtain professional help	46% (10)
Receiving information about events, services or activities related to your problem	23% (5)
Getting professional help	5% (1)

TABLE 4. SUICIDE AND SOCIAL MEDIA IN GENERAL

Percentage and number of respondents who endorsed either 'agree' or 'strongly agree'

	Researchers % (n=10)	Organisations % (n=11)	Users % (n=54)
Social media has the potential to be a useful tool for delivering suicide prevention activities	100% (10)	82% (9)	87% (47)
Social media is a useful way for people to communicate with others about their suicidal feelings	60% (6)	73% (8)	70% (38)
Social media provides an opportunity to intervene early if someone expresses suicidal thoughts or feelings	70% (7)	82% (9)	85% (46)
Social media is a useful way for people who have felt suicidal to support others	70% (7)	73% (8)	82% (44)
Social media is a useful way for people who have been bereaved by suicide to share their experiences	60% (6)	82% (9)	87% (47)
Social media is a useful way for people who have been bereaved by suicide to support others	60% (6)	82% (9)	85% (46)
Social media is a useful way for people who feel suicidal to seek/receive professional help	60% (6)	64% (7)	56% (30)

TABLE 5. THE IMPORTANCE OF DIFFERENT USES OF SOCIAL MEDIA

Percentage and number of respondents who endorsed either 'important' or 'very important'

	Researchers % (n=10)	Organisations % (n=11)	Users % (n=50)
To promote activities, services, events or training programs	100% (10)	82% (9)	86% (43)
Awareness raising	90% (9)	73% (8)	82% (41)
The provision of information/resources	100% (10)	100% (11)	94% (47)
The provision of tools for suicide prevention (e.g. risk assessment tools)	50% (5)	64% (7)	88% (44)
For advocacy purposes	90% (9)	73% (8)	76% (38)
To allow users to share experiences	60% (6)	82% (9)	67% (33)
To share inspirational quotes/messages	40% (4)	46% (5)	62% (31)
To allow users to support each other	70% (7)	100% (11)	80% (40)
For fundraising purposes	40% (4)	55% (6)	62% (31)
For volunteer recruitment	60% (6)	36% (4)	64% (32)
For the provision of professional support or treatment	50% (5)	73% (8)	64% (32)

TABLE 6. THE POTENTIAL OF DIFFERENT USES OF SOCIAL MEDIA FOR SUICIDE PREVENTION

Percentage and number of respondents who endorsed either 'moderate' or 'high potential'

	Researchers % (n=10)	Organisations % (n=11)	Users % (n=50)
Social networking sites (e.g. Facebook)	70% (7)	100% (11)	82% (41)
Blogs and micro-blogs (e.g. Twitter)	60% (6)	91% (10)	72% (36)
Content communities (e.g. YouTube)	50% (5)	73% (8)	66% (33)
Collaborative projects (e.g. Wikipedia)	20% (2)	27% (3)	34% (17)
Virtual game worlds (e.g. World of Warcraft)	40% (4)	18% (2)	16% (8)
Virtual social worlds (e.g. Second Life)	50% (5)	18% (2)	16% (8)

TABLE 7. THE POTENTIAL RISKS ASSOCIATED WITH USING SOCIAL MEDIA FOR SUICIDE PREVENTION

Percentage and number of respondents who endorsed either 'moderate' or 'high risk'

	Researchers % (n=10)	Organisations % (n=11)	Users % (n=48)
Site visitors at risk of suicide may expect support that the organisation is not able to provide via social media	60% (6)	73% (8)	79% (38)
Site visitors may inadvertently harm other visitors at risk of suicide	80% (8)	46% (5)	83.3% (38)
Site visitors may deliberately harm other visitors at risk of suicide	70% (7)	46% (5)	71% (34)
Site visitors may develop unhealthy relationships with other visitors to the site	60% (6)	46% (5)	69% (33)
Incorrect information related to suicide might be spread via the site	80% (8)	46% (5)	65% (31)
Interaction between people at risk of suicide via social media may normalise or encourage the behaviour	50% (5)	36% (4)	67% (32)
Site administrators lack the skills to operate safe and effective interventions online	80% (8)	82% (9)	73% (35)
People may use social media to seek information regarding methods of suicide	80% (8)	64% (7)	60% (29)