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Evaluation of Outcomes for Help Seekers Accessing a Pilot SMS-Based Crisis Intervention Service in Australia

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Abstract

© 2020 Hogrefe Publishing. Background: In July 2018, Lifeline Australia launched Australia's first short message service (SMS) crisis support service. Lifeline Text aims to reduce psychological distress and increase coping and social connectedness among help seekers, particularly those who prefer text-based communication. Aims: We aimed to independently evaluate the pilot SMS service over a 240-day period. Method: The service evaluation used operational data, pre and postconversation automated questions, and an online survey to assess outcomes. Results: There were 7,315 contacts during operational hours, of which 5,266 progressed to the queue and 99.2% were answered. Suicide was actively being considered by 1,554 help seekers, and 171 were assessed at imminent risk. Commonly discussed topics were mental health problems, issues relating to the self and identity, and family relationship difficulties. Limitations: This was an evaluation of a pilot service focusing on demand and short-term outcomes. Conclusion: The service succeeded in reaching some under-served groups. On average, help seekers were significantly less distressed, felt more confident in their ability to cope and felt greater connection to others, following the text intervention. The demand for Lifeline Text and the high level of suicidality of help seekers show it is meeting urgent needs in the community.

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Evaluation of outcomes for help seekers accessing a pilot SMS-based crisis intervention service in Australia

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Abstract

Background. In July 2018, Lifeline Australia launched Australia's first short message service (SMS) crisis support service. Lifeline Text aims to reduce psychological distress and increase coping and social connectedness among help seekers, particularly those who prefer text-based communication.

Aims. To independently evaluate the pilot SMS service over a 240-day period.

Method. The service evaluation used operational data, pre- and post-conversation automated questions, and an online survey, to assess outcomes.

Results. There were 7,315 contacts during operational hours, of which 5,266 progressed to the queue and 99.2% were answered. Suicide was actively being considered by 1,554 help seekers, and 171 were assessed at imminent risk. Commonly discussed topics were mental health problems, issues relating to the self and identity, and family relationship difficulties.

Limitations. This was an evaluation of a pilot service focusing on demand and short-term outcomes.

Conclusion. The service succeeded in reaching some under-served groups. On average, help seekers were significantly less distressed, and felt more confident in their ability to cope and greater connection to others, following the text intervention. The demand for Lifeline Text, and the high level of suicidality of help seekers, show it is meeting urgent needs in the community.

Introduction

In recent years, the academic literature has reflected interest in text messaging as a health care tool. Text messaging has been used for suicide prevention and with substance abuse, schizophrenia, and affective disorders, and has been largely effective for these purposes (Berrouiguet, Baca-Garcia, Brandt, Walter, & Courtet, 2016). Its effectiveness may be partially due to the online disinhibition effect described by Suler (2004). This posits that people feel more comfortable disclosing mental health issues and suicidality in online communications because of anonymity, invisibility, capacity to answer questions in their own time, and absence of facial cues promoting a feeling of safety and reduced social judgement (Suler, 2004). Younger help seekers, especially young men, may prefer text-based crisis support (Bradford & Rickwood, 2014, 2015a, 2015b). The privacy and convenience associated with text may encourage help seeking from groups currently under-served by crisis support services (Bradford & Rickwood, 2015b; Evans, Davidson, & Sicafuse, 2013). For example, in Australia, Aboriginal and Torres Strait Islander people prefer text to avoid judgemental attitudes

(Evans et al., 2013; Verstege, Hawkins, & Milne, 2011). However, the evidence on group preferences for text-based communication is mixed (Crosby Budinger, Cwik, & Riddle, 2015). Therefore, text-based services are not seen as a replacement for telephone services or face-to-face counselling (Crosby Budinger et al., 2015) but may serve as a valuable initial contact for further services (Evans et al., 2013). In summary, the literature indicates that a text-based service shows promise as an addition to existing modes of crisis support, to reach people in need of help who otherwise may not be reached.

Text-based services have not been well utilised in rural areas (Thompson, Sugg, & Runkle, 2018); however, much of the previous research has focused on online chat services and poor internet coverage may be a barrier. Mobile short message service (SMS) technology only requires basic service coverage and is more accessible. Given the widespread access to mobile phones in the Australian population, the use of SMS for crisis support would be feasible (Bureau of Communications Research, 2016).

Mental health services and programs across the Australian government, private and non-government sectors were reviewed and strategic directions for mental healthcare reform identified, including improvements in access via innovative technologies (Burns, Liacos, & Green, 2014). In response, the Australian Government funded Lifeline Australia to develop Lifeline Text, Australia's first SMS-based crisis support service. Lifeline Australia is a not-for-profit organisation that offers free, 24-hour telephone crisis support and an online crisis support chat service (7:00pm to midnight).

The objectives of Lifeline Text were to improve help seeker outcomes in four areas:

- Reduced psychological distress;
- Increased capacity for self-care, improved confidence in one's ability to cope, and an enhanced sense of empowerment ("coping");
- An enhanced sense of belonging, and reduced feelings of loneliness and isolation ("connectedness");
- Increased safety and reduced risk from suicidality, self-harm, and other issues such as domestic and family violence and substance abuse.

The Lifeline Text trial was independently evaluated. This article focuses on outcomes for help seekers; formative and economic evaluation findings are reported elsewhere (Williams et al., 2019). Relevant evaluation questions were:

- Who used the service?
- Why did they use SMS rather than another mode of service delivery (phone or online chat)?
- How satisfied were help seekers with the service?
- What were their short-term outcomes?

Method

Procedure

The evaluators were not involved in the development or implementation of Lifeline Text but worked with Lifeline Australia to design the evaluation framework and methods. The evaluation was informed by data from the operational platform: text volumes, post-conversation summary sheets completed by the crisis supporters, and help seekers' responses to automated text questions (chat-

bot). An online survey accessed via a link at the end of the chat-bot provided data on help seeker outcomes. The evaluation took place over a continuous period of eight months, from the first day of service delivery on 4 July 2018 until 28 February 2019, a total of 240 days. The pilot service did not close at that time, but continued with additional funding from various sources.

The evaluation was approved by the University of Wollongong Social Sciences Human Research Ethics Committee on 26 June 2018 (2018/226).

Service model

During the pilot, Lifeline Text was delivered from two call centres, staffed by 13 crisis supporters and six in-shift supervisors, 6:00pm to 10:00pm daily. The launch was preceded by considerable planning, design, training, and testing to ensure the new service complied with National Standards for Mental Health Services (Commonwealth of Australia, 2010) and the Quality Framework for Telephone and Internet Services (Commonwealth of Australia, 2009). Co-design work with help seekers established that all support would be provided solely via text, as those using SMS would be uncomfortable with the service attempting to move them into verbal conversations. Marketing was initially designed to limit demand to Lifeline's capacity and to encourage use by Indigenous people and residents of rural/remote areas. Wallet cards and posters were distributed via primary/community health networks in South Australia and the Northern Territory. Due to slow uptake, there were changes to the marketing strategy. Social media advertising in the more populous, eastern States of Australia was introduced and demand subsequently grew quickly.

Participants

No participants were actively recruited for this study. Help seekers spontaneously accessed Lifeline Text, which is freely available in Australia to those with mobile phones (including models without smartphone capabilities).

A total of 8,342 individuals tried to contact Lifeline Text and 3,236 individuals engaged in at least one text conversation (others received "out of hours" or "ending soon" messages). Most (2,680, 82.8%) used Lifeline Text once; a smaller group (432, 13.3%) used the service two to four times. The remaining 124 help seekers were more frequent users, including 19 people who made contact 20 or more times.

Materials

Automated Text Questions (chat-bot). Help seekers were asked questions before (pre-bot) and after (post-bot) the text conversation. They were informed that the service was a trial being evaluated, and their feedback would be sought. Completion of the automated text questions implied (tacit) consent to take part in the evaluation. Help seekers were able to discontinue participation by texting FINISH during the text conversation. They could also opt out of individual questions by texting NA or selecting "prefer not to disclose", where applicable.

A simulation study conducted by Lifeline Australia established the feasibility and acceptability to help seekers of this data collection method for internal evaluation and quality assurance purposes. The final set of automated text questions was adapted from those used in the feasibility study, and comprised:

- Demography, measured pre-bot (state/territory, age, gender) and post-bot (sexual identity, Aboriginal and Torres Strait Islander identity, disability, postcode);

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- Preference for SMS-based crisis support, measured post-bot with the question, “If text was not available, would you have used another Lifeline service (phone or online chat)?” (response options: yes, no, don’t know, prefer not to disclose);
- Overall satisfaction with the service, measured post-bot on an 11-point scale from zero (not helpful) to 10 (extremely helpful);
- Current levels of distress, connectedness/belonging, and confidence in ability to cope, measured pre-bot and post-bot (one item for each outcome) on an 11-point scale from zero (not at all) to 10 (extremely).

Online survey. The final post-bot question asked help seekers whether they wished to take part in an online survey and provided the option of clicking a link to the survey, hosted by Qualtrics®. Participation was voluntary. The link took help seekers to a participant information sheet and consent process which, once completed, led to the questionnaire.

The survey questions focused on the usability and effectiveness of Lifeline Text and collected additional demographic information in order to assess whether the service had reached under-served groups. The topics covered by the survey are outlined in Box 1.

Box 1

Online Survey Questions

- Main reason/motivation for contacting Lifeline Text
- Self-identified safety risks
- Feelings of safety after the Lifeline Text conversation
- Rating of how easy the Lifeline Text service was to use
- Why the help seeker chose Lifeline Text instead of another crisis support mode (open)
- Employment status
- Relationship status
- Culturally and linguistically diverse (CALD) group identity
- Previous experiences of help seeking for suicidal ideation (based on a questionnaire developed by the Samaritans (Pollock, Armstrong, Coveney, & Moore, 2010))
- Whether the help seeker would recommend Lifeline Text to others
- Comments about Lifeline Text

Post-conversation summary sheet. Each help seeker contact with Lifeline Text resulted in a post-conversation summary sheet completed by the crisis supporter. Data from the summary sheets was used to address evaluation questions relating to:

- the risk profile of help seekers as identified by the crisis supporter (e.g., degree of suicidality);
- the types of needs addressed by the service (e.g., topics discussed).

Data analysis

Data extracted from the summary sheets and linked to the chat-bot responses by Lifeline Australia were provided to the evaluation team in a de-identified form. This dataset was then linked with the online survey using a unique Conversation ID code (generated by Lifeline Australia) that contained no identifying information about the help seeker. After cleaning and checking, the dataset was

imported into IBM SPSS Statistics 24 for analysis. The number of responses varied by question, therefore the denominators vary in the results reported below. The range for each collection method was: pre-bot 5386-5713; post-bot 686-1027; online survey 226-248. Frequency tables and relevant descriptive statistics were generated. Differences in frequency distributions were tested using Chi-square statistics. After checking assumptions, repeated measures t-tests were used to test for change in the outcome variables: distress, coping, and connectedness.

For psychological distress, it was important to establish a connection between scores on the scale and meaningful improvement in terms of reduced distress. Numerical rating scales using an 11-point scale are commonly used in health care to measure symptoms and there are established ways of interpreting the patient-rated scores and guidance on how to respond in terms of clinical management. For example, the Edmonton Symptom Assessment System (ESAS) is a well-established, psychometrically validated measure used internationally since 1991 (Hui & Bruera, 2017). Over time it has evolved into a numerical rating scale from zero (no symptom) to 10 (worst possible). It is widely used to measure a variety of symptoms including pain, anxiety, depression and general well-being. There is a set of accepted, clinically relevant cut-off scores (Hui & Bruera, 2017).

The 11-point distress scale used in the current study is analogous to the ESAS and similar numerical rating scales. Therefore, similar cut-off scores were used to create three categories for distress: 0-3 (absent/mild); 4-7 (moderate); 8-10 (severe). The pre-bot and post-bot distress categories were cross-tabulated to create a frequency distribution of interventions that resulted in improvement, no change, or worsening of distress. This was used to estimate the proportion of help seekers who benefited from Lifeline Text in terms of clinically meaningful reduction in distress.

Results

Who used the service?

Demand. A “contact” is defined as an initial SMS which may or may not result in a conversation. During the first 240 days of the Lifeline Text trial, the service received 15,122 contacts, including 7,315 (48.4%) during operational hours. Of the 5,266 contacts that progressed through the pre-bot to the Lifeline Text queue, 5,223 (99.2%) were answered and became “conversations”.

Crisis supporters classified 4,808 conversations and the vast majority (4,575, 95.2%) were recorded as “crisis” conversations. Help seekers were connected to Lifeline Text for an average of 93 minutes (SD 118 minutes), including waiting time and, where relevant, post-bot questions. The average conversation length was 45 minutes.

Demographics. The mean age of respondents was 26.1 years (SD 9.6, range 11-71). More than half of the respondents (2,892/5,386¹, 53.7%) were younger than 25 years of age, including 913 who were under 18. The vast majority (4,549/5,713, 79.6%) identified as female, 933 (16.3%) identified as male, 112 (2.1%) identified as other than male or female and 119 (2.2%) did not disclose their gender.

The post-bot included items on sexuality, Indigenous status, disability, and postcode. More than two thirds (645/931, 69.3%) identified as heterosexual. The representation of Aboriginal and Torres Strait Islander people (53/991, 5.3%) was almost double the proportion in the Australian population (2.8%;

¹ This included 120 contacts during which the pre-bot question on age was completed but the contact did not subsequently progress to the queue.

ABS, 2017). A large proportion of respondents (421/991; 42.4%) had a disability. A key (Australian Bureau of Statistics, 2012) was used to classify postcodes into location types. Most conversations originated from major cities or inner regional areas, with 70/686 (10.2%) from outer regional, remote, or very remote areas, which matches the proportion of the Australian population living in these areas (Australian Bureau of Statistics, 2019).

There were 247 responses to the online survey demography questions. Nineteen (7.7%) said they spoke a language other than English at home (a common measure of cultural and linguistic diversity in Australia). Over half were single (149; 59.1%); 120 (48.6%) were employed or self-employed, 54 (21.9%) were students, and 73 (29.5%) gave another response, including 17 looking for work and 39 unable to work.

Nature of current crisis. Crisis supporters noted the main topic of discussion on the summary sheet at the conclusion of 1,439 conversations. The most commonly discussed topics were mental health problems, issues relating to the self and identity, and family relationship difficulties. Other topics included abuse/trauma and bereavement.

Suicide was actively being considered in 1,554 conversations (29.8%). During 171 conversations (3.3%), crisis supporters assessed help seekers as having an imminent risk of suicide attempt. These cases were referred to the in-shift supervisor, who made a decision whether to initiate an emergency response; in 78 (45.6%) of these cases, police were called. In the remaining 93 cases (54.4%), crisis supporters were able to prevent an emergency call-out.

Other safety issues were also identified by the crisis supporters, including non-suicidal self-injury, threatened suicide by another person, and family and domestic violence. A total of 692 conversations involved safety issues. In 15 cases, the crisis supporter alerted the in-shift supervisor, and eight of these cases led to police being informed.

In the online survey, help seekers were asked to explain briefly what prompted them to contact Lifeline Text, and 245 people provided open text responses. These confirmed the high levels of suicidality assessed by the crisis supporters, with many respondents stating that they needed help with thoughts of suicide or self-harm. Many help seekers wrote of feeling isolated, lonely, overwhelmed or “out of control”. Some mentioned symptoms of mental illness such as anxiety, depression, or auditory hallucinations. Example comments are provided below.

Because I was feeling triggered and unsafe. I have complex trauma and other mental illness struggles. No one in my life felt safe to talk to.

To get help with strong feelings of anger and frustration.

I looked up ways to kill myself and I seen that lifeline came up. I thought about it and thought that maybe they have a way to help me.

Distress and fear around intrusive thoughts and suicidal ideation

I was struggling with everything and I knew I needed to talk to someone before it got too dangerous.

Why did help seekers choose text?

Help seekers who responded to the post-bot were asked whether, had Lifeline Text not been available, they would have used another Lifeline crisis support service (i.e., phone or online chat). Just over one quarter (273, 26.6%) of the 1,027 respondents said they would, 430 (41.9%) said they would not, and the remainder did not express a preference. In the online survey, 198 of the 226 respondents (87.6%) preferred Lifeline Text over other options.

Reasons given by help seekers for their preferences included the long waiting times for online chat and the relative ease of texting compared with telephone conversations. Some stated that they were too distressed to use the telephone service or preferred text for other reasons, including hearing or speaking difficulties. Advantages included being able to have a private conversation, the opportunity to think about responses before sending them, and a feeling of greater control over emotional distress. Example comments are provided below.

The last thing I want to do when I'm feeling like this is physically speak to someone. I have used online chat on my mobile but text is so much better

I find texting easier than talking as it gives me a chance to think about what I want to say

I wanted to keep it more private. I don't think I could've said the things I was talking about aloud

You feel less vulnerable

How satisfied were help seekers with Lifeline Text?

In the post-bot, 1,000 respondents rated the support they received. The median rating was 8, the mean 7.3 (SD 2.8, range 0-10). The vast majority of online survey respondents (217/247, 87.9%) rated the service as easy or very easy to use and 205/244 (83.0%) said they were likely or highly likely to recommend it to others. At the end of the online survey, help seekers were invited to make additional comments, which provided insight into sources of satisfaction and dissatisfaction. Many help seekers appreciated the privacy and convenience of SMS. Some found the response times too slow and/or the hours of service too limited. A few found responses from crisis supporters somewhat formulaic. On the whole, however, comments were positive and many respondents asked for the service to continue and expand.

What were help seekers' short-term outcomes?

Distress, connectedness and coping. On average, help seekers were significantly less distressed, felt more confident in their ability to cope, and felt a greater sense of social connection following the text intervention (Table 1).

Table 1 Pre- and post-conversation self-rated distress, connectedness and coping

	n	Pre-Bot Mean (SD)	Post-Bot Mean (SD)	Mean difference (95% CI)
Distress	838	7.01 (2.0)	5.11 (2.5)	1.90 (1.73 to -2.07) ***
Connectedness	941	2.53 (2.5)	3.49 (2.7)	-0.95 (-1.11 to -0.79) ***
Coping	871	4.13 (2.5)	5.00 (2.6)	-0.87 (-1.04 to -0.71) ***

Note. *** p<.001

In order to understand whether Lifeline Text may be more effective for certain groups of people, sub-group analyses were conducted on all available demographic variables. The outcome variables (distress, connectedness, coping) were re-classified into two categories (worse or no change; improved) to reduce the likelihood of small cell sizes and increase the power of the Chi-square tests.

There were few significant demographic differences. Married help seekers were more likely than other help seekers to report reduced distress (p=0.03). Non-heterosexual help seekers were more likely than heterosexual help seekers to report improved coping (p=0.01). Help seekers of Aboriginal and/or Torres Strait Islander origin were less likely than other help seekers to report improved coping (p=0.04). Students were more likely than unemployed help seekers to report improved coping (p=0.04).

Table 2 shows clinically meaningful changes in distress among those who completed the pre-bot and post-bot. Grey shaded cells (diagonal) indicate no change; pale grey cells (lower left) indicate an improvement (reduction) in distress; and black cells (upper right) indicate distress has worsened. A total of 394 (47.0%) of these conversations resulted in a positive change in distress.

Table 2 Reduction of distress in the Lifeline Text trial cohort

Pre-conversation distress	Post-conversation distress			Total n (%)
	Absent/mild n (%)	Moderate n (%)	High n (%)	
Absent/mild	36 (67.9)	10 (18.9)	7 (13.2)	53 (100)
Moderate	149 (35.7)	241 (57.8)	27 (6.5)	417 (100)
High	51 (13.9)	194 (52.7)	123 (33.4)	368 (100)
TOTAL	236 (28.2)	445 (53.1)	157 (18.7)	838 (100)

Safety. Crisis supporters identified 22 conversations in which help seekers were at imminent risk of non-suicidal self-injury. In the online survey, help seekers' self-identified safety issues included thoughts of suicide (152/248, 61.3%) and deliberate self-harm (28/248, 11.3%). Almost three quarters of help seekers said they felt safer after the Lifeline Text conversation (183/246, 74.4%).

Discussion

Lifeline Text was launched to address a gap in crisis support services in Australia, particularly for help seekers who prefer text-based communication. During the pilot period the service supported more than 3,000 individuals and attracted help seekers from under-served groups including Indigenous

Australians, people with disabilities, and people of LGBTIQ sexual identities. Further research is needed to understand the needs of these and other groups and how they can best be served by crisis support services.

According to crisis supporters, suicide was actively being considered in 30% of conversations, and in 3% there was imminent risk. Emergency call-out was prevented in almost 55% of imminent risk cases, demonstrating that help seekers can be supported successfully via SMS. The high prevalence of suicidality is consistent with findings that help seekers may be more willing to disclose and discuss highly personal topics in an online or text-based environment (Bradford & Rickwood, 2015a; Suler, 2004).

Following the text intervention, help seekers reported statistically significant change in all three outcome measures. On average, they felt less distressed, more socially connected and more confident in their ability to cope. Almost half reported reduced distress from a higher to a lower level on a clinically meaningful scale. This is a respectable achievement, given that the service aims to provide immediate crisis support rather than extended counselling or professional therapy. These findings are consistent with the positive outcomes previously reported from the use of text messaging for suicide prevention and mental health issues (Berrouiguet et al., 2016).

A key objective of Lifeline Text was to reach help seekers who would not otherwise have accessed a crisis service. Feedback from help seekers demonstrates that this was achieved, with more than 40% of those who completed the post-bot questions indicating they would not have used another type of crisis support service. This was an important finding, reinforcing the view that text-based services may improve access and complement existing telephone services or face-to-face counselling (Crosby Budinger et al., 2015). More than half of the individuals who contacted Lifeline Text did so at times when the service was not available, indicating that a 24-hour service may be needed.

Limitations

The design of this study does not lend itself to establishing the efficacy of SMS-based crisis support compared with other interventions. Instead, the intention was to evaluate the short-term outcomes of a newly established crisis support service. Patterns of demand may change as the service becomes more widely known. Numbers and percentages reported represent conversations, rather than individual help seekers. Certain individuals who used the service multiple times may have had an undue influence on the results, although this seems unlikely with the large volume of conversations.

The number of responses varied according to whether the data were obtained from the summary sheets, pre-bot, post-bot, or online survey, which affects interpretation of findings. A relatively small number of help seekers (approximately 1,000) completed both the pre-bot and post-bot questions, and fewer (approximately 250) went on to complete the online survey. Although these are acceptable response rates for quality improvement surveys, it cannot be assumed that data are representative of help seekers. Similarly, findings on differences in outcomes for sub-groups should be treated with caution, due to small cell sizes.

Conclusion

The demand for Lifeline Text, and the high level of suicidality of help seekers to this service, indicates it is meeting an urgent need in the community.

Acknowledgements and Declaration

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