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Suicide and Life-Threatening BEHAVIOR

ORIGINAL ARTICLE

Effect of helping suicidal people using text messaging: An evaluation of effects and best practices of the Canadian suicide prevention Service's text helpline

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Abstract

Background: Empirical research on best practices in suicide prevention text intervention is scarce. We present analyses of exchanges concerning suicide on the Canadian Suicide Prevention Service (CSPS) text helpline.

Objective: To describe the users of the CSPS text service, explore the perceived impact of the service, and identify intervention characteristics associated with a greater likelihood of positive or negative effects of the exchanges.

Methods: We analyzed data from 112 transcripts using quantitative content analysis, counselor assessments of the calls, and responses by callers to pre-call questionnaires.

Results: Counselors infrequently conducted a complete suicide risk assessment, but almost always thoroughly explored resources and discussed possible solutions to callers' problems. An operational action plan was rarely developed. Only one technique, reinforcing a strength or a positive action of the caller, was a significant predictor of positive effects of the call. The number of words exchanged during the intervention was positively correlated with the completeness of explorations of resources and solutions and the development of an action plan.

Conclusions: High-quality effective interventions can be delivered via text messages. Using reinforcement of strengths and encouraging longer calls is recommended. Intervention effects were comparable to those reported in studies of telephone and chat services.

KEYWORDS

best practices, helpline, SMS, suicide, texting

Suicide prevention helplines exist worldwide, with thousands of suicidal people calling daily. Although helpline practices have evolved since their development in the 1950s and 1960s (Mishara, 2012; Mishara & Daigle, 1992), until recently the technology has changed little, apart from improvements in abilities to locate at-risk callers. However, in the last 20 years, there has been exponential growth in also providing help using text messages (SMS) and in internet chat sessions. Providing help by SMS and chat was motivated by the desire to better meet the needs of young people who increasingly use text and chat as a main means of communication. Despite the rapid expansion of chat and text services, there has been little research on which approaches, or characteristics of the help provided are associated with more positive outcomes. This paper presents an analysis of exchanges concerning suicide

on the Canadian Suicide Prevention Service (CSPS) text helpline. We describe the users of the CSPS text service, explore the perceived impact of the service, and identify characteristics of interventions that are associated with a greater likelihood of positive or negative effects of the exchanges.

BACKGROUND

Many studies have investigated the impact of telephone helplines with suicidal clients. There is evidence that helplines can significantly decrease distress, despair, and suicide risk, as well as help callers identify other resources in their community (Gould et al., 2007; King et al., 2003; Mishara et al., 2007b; Mishara & Daigle, 1997). Follow-up studies conducted by Gould et al. (2007) indicate that callers often experience reduced distress for at least 3 weeks after they receive telephone help. However, one-third of the callers reported they were still considering suicide after their contact, and one in five still had a plan for how they could kill themselves.

Research by Mishara and colleagues (Mishara et al., 2007a, 2007b) found that telephone interventions are more likely to have positive outcomes when the counselor is empathetic and respectful and establishes a good relationship with the caller at the beginning of the call. However, interventions that use a collaborative problem-solving model in which alternative resources and coping skills are identified, more frequently have positive outcomes, when compared to approaches that use only non-directive active listening.

Research on the effectiveness of chat and text help in suicide prevention is scarce. Barak and Bloch (2006) analyzed the content of 60 chat transcripts from an Israeli helpline. They found that the number of typed words, for both client and helper, positively correlated with helper's ratings of perceived helpfulness. Mokkenstorm et al. (2017) analyzed the content of 526 transcripts of chat interventions at the Netherlands helpline 113Online, using the classification methodology developed by Mishara et al. (2007b). They then compared the effects of different techniques with changes in several outcome variables (e.g., ambivalence about suicide, hopefulness, sadness, and self-confidence), between the first and last 10 min of each intervention. However, they did not identify any intervention characteristics that were associated with differences in the outcomes. Sindahl et al. (2019) analyzed post-intervention questionnaires from 444 youths with suicidal ideation who contacted a child helpline in Denmark by SMS. They also conducted a content analysis of 102 intervention transcripts. They found that 35.9% of the service users said they felt better immediately after the intervention, and over half said that by the end the conversation they had identified things they could do to improve their situation. Positive effects of the exchanges were associated with the counselor expressing empathy, talking about feelings, and encouraging the youth to talk to someone they know about their situation. Negative effects were more likely when the counselor imposed limits on the callers.

Williams et al. (2021) analyzed 838 questionnaires completed by callers to the Australian Lifeline text service. They found significant decreases in reported levels of distress and increases in feelings of connectedness and increased confidence in the callers' ability to cope with their situation. Callers were generally satisfied with the service they received. However, a minority felt that the counselors' responses seemed to follow a formula and not be authentic. Gould et al. (2021) analyzed data from 13,130 post-intervention surveys of users of the National Suicide Prevention Lifeline's chat service. 31.5% said they had more hope, 26.8% said they were less depressed, 37.5% said they felt less overwhelmed by their situation, 45% said they felt less suicidal, and 51% indicated they had agreed on an action plan.

The present study consists of an evaluation of the new text service offered by the Canadian Suicide Prevention Service (CSPS). This service, initiated in 2017, is the first pan-Canadian network of suicide prevention and distress centers offering help by chat and text. We analyzed data from their text transcripts using methodologies derived from Mishara et al. (2007b), counselor assessments of the calls, and responses by callers to pre-call questionnaires.

METHOD

Participants

We assessed the first 112 text exchanges received after the April, 1, 2020 that met the inclusion criteria: conversations at least 20 min long, some part of the exchange concerns suicide, and the exchange is with the person in distress (third-party conversations concerning others were excluded).

Procedures and instruments

The CSPS automatically records the verbatim transcripts of interventions. Callers are asked to complete a short questionnaire before they begin the text exchange. At the time

the study was conducted, there were no post-intervention questionnaires. However, the counselors completed a report on each session. These data are stored on a secure server, and service users are informed that anonymized transcripts and information on their text exchanges would be retained and may be analyzed to improve services and for quality assurance.

Pre-intervention questionnaire

Before having access to the wait room for text exchanges, CSPS requires callers to complete a short questionnaire. The questionnaire asks the caller's age, sex, level of distress ("how upset are you now?" 1 = OK to 5 = extremely upset), and about suicidal ideation ("Do you have thoughts of suicide?" Yes or no). These questions were part of the CSPS's practice before the researchers became involved.

Intervention reports completed by counselors

All counselors use the same computer program to respond to callers. This program includes an online report where counselors rate caller emotional intensity at the beginning and the end of the exchange (1 = emotionally comfortable to 5 = overwhelmed and not functioning), and they note indications of suicide risk explored by the counselor or spontaneously reported by callers (suicidal ideation, attempt in progress, attempt survivor, imminent risk, suicide plan, loss survivor). These reports indicate the counselor's observations and impressions of the caller and changes during their intervention.

Characteristics of text exchanges

We compiled technical characteristics of exchanges, including their duration, total number of words sent by the counselor and caller, number of letters sent by each and the total number of letters in the exchange.

The reasons for the calls were classified by the first author using the 18 categories developed by Mishara et al. (2007b). After the primary reason for the contact or precipitating event for the call was identified, additional or secondary preoccupations and stressors mentioned by the caller were noted.

The observation tools developed by Mishara et al. (2007b) were adapted to assess text interventions. Besides indicating the presence of seven factors associated with suicide risk, research assistants rated the presence of 15 intervention techniques commonly used and promoted in training for telephone and text interventions in suicide prevention. Drawing inspiration from the work of Chardon et al. (2011), we developed three scales to assess the completion of three steps that are supposed to be part of each intervention: evaluation of suicide risk, exploration of resources and solutions, and development of an action plan for after the exchange ends. Table 1 lists the topics classified by the research assistants. More details may be found in Mishara et al. (2007b) or by contacting the authors. The effects of the exchange were assessed using a modified

TABLE 1 Interrater reliability ($N = 20$ calls)

Intervention techniques	ICC	κ	95% CI
Validation	0.941	—	0.976 (0.888)
Moral support	0.898	—	0.957 (0.811)
Reinforcing a strength or a positive action	0.865	—	0.942 (0.757)
Reformulation	0.884	—	0.951 (0.785)
Exploration of needs	0.653	—	0.832 (0.462)
Questions about past and present resources	0.841	—	0.931 (0.719)
Empowerment: resources and solutions	0.869	—	0.944 (0.763)
Suggestions: resources and solutions	0.855	—	0.937 (0.741)
Exploration of precipitating events	—	0.670	0.796 (0.543)
Encourage to talk to someone—a confidant	—	0.631	0.757 (0.504)
Encourage to talk with a professional	—	600	0.726 (0.473)
Seeks acceptance of an action plan	—	0.536	0.662 (0.409)
Degree of completion of steps in the intervention			
Exploration of suicide risk	—	0.758	0.890 (0.597)
Exploration of resources and solutions	—	0.643	0.826 (0.444)
Elaboration of an action plan	—	0.483	0.719 (0.279)

version of the Crisis Call Outcome Rating Scale (CCORS) (Bonneson & Hartsough, 1987). This scale was developed to assess the success of telephone help with suicidal callers. Some items were modified to reflect the reality of text exchanges.

Research assistants and interrater reliabilities

Six research assistants were trained to code all variables, based upon their reading of the call transcripts. Three were final-year Bachelors students in psychology, and three were psychology doctoral students. After training, in which they independently assessed 30 transcripts and discussed their disagreements, they each coded three transcripts per week, and each week met with the first author and a professional suicide prevention trainer to discuss any disagreements and to reach a consensus. This continued for 3 months, during which some of the coding classification descriptions were modified to ensure high interrater reliability. They used Nvivo to calculate interrater reliability and to classify the intervention components of the transcripts. When the training was completed, a subsample of 20 transcripts from the final sample was used to assess interrater reliability, using intra-class correlation and Fleiss' Kappa.

Interrater reliability on CCORS was assessed for 39 transcripts. The intra-class correlations on CCORS individual items ranged from 0.634 to 0.919, and the total CCORS score had an intra-class correlation of 0.962 (C.I.: 0.928 to 0.980) and a Cronbach Alpha of 0.981.

RESULTS

Callers' characteristics and presenting problems

Of the 98 users for whom age was known, the mean was 24.83 years (median = 22.5, SD = 10.86; range = 14–62). Most (68.8%; $N = 77$) were women, 25% ($N = 28$) men and 6.3% ($N = 7$) identified as "other." For callers age 25 and under, there were 4.6 women for each man, and for those over age 25, the ratio of women to men was 1.4 for each man (significant difference, $\chi^2 = 5.845$, df = 1, $p = 0.016$).

Besides discussing suicide, callers mentioned an average of 2.63 other problems (median = 2; SD = 1.54; range = 0–7) (see Table 2). The most frequent problem was mental health concerns (i.e., symptoms of anxiety or depression; having follow-up by a mental health professional), which was present in 64.3% of calls. Other frequent problems were as follows: family difficulties (42%), relational difficulties (37.5%), school or professional problems (33%), and loneliness or isolation (29.5%). There were no significant differences between men and women or between age groups in the nature of problems.

TABLE 2 Presenting problems

Nature of the problems	Total (n.112) *n* (%)	Males (n.28) *n* (%)	Females (n.77) *n* (%)	≤25 years (n.65) *n* (%)	≥26 years (n.33) *n* (%)
Family relationship	47 (42)	6 (21.4)	39 (50.6)	31 (47.7)	10 (30.3)
Peer or partner relationship	42 (37.5)	9 (32.1)	30 (39)	27 (41.5)	10 (30.3)
School or professional problems	37 (33)	8 (28.6)	26 (33.8)	23 (35.4)	11 (33.3)
Legal issues	1 (0.9)	– (–)	1 (1.3)	1 (1.5)	– (–)
Physical or verbal violence perpetrator	3 (2.7)	1 (3.6)	2 (2.6)	2 (3.1)	– (–)
Pregnancy or abortion	1 (0.9)	– (–)	1 (1.3)	– (–)	– (–)
Mental health problems symptoms	72 (64.3)	19 (67.9)	48 (62.3)	37 (56.9)	24 (72.7)
Self-harm	20 (17.9)	3 (10.7)	16 (20.8)	14 (21.5)	3 (9.1)
Substance abuse	3 (2.7)	2 (7.1)	– (–)	– (–)	3 (9.1)
Bereavement	12 (10.7)	5 (17.9)	7 (9.1)	4 (6.2)	5 (15.2)
Intimidation	4 (3.6)	– (–)	4 (5.2)	4 (6.2)	– (–)
Victim of verbal or physical violence	11 (9.8)	– (–)	12 (15.6)	10 (15.4)	– (–)
Loneliness or isolation	33 (29.5)	11 (39.3)	19 (24.7)	19 (29.2)	10 (30.3)
Physical illness	7 (6.3)	2 (7.1)	4 (5.2)	3 (4.6)	3 (9.1)

According to the pre-test questionnaire, 61.6% reported they were either "very" or "extremely" upset, and the vast majority (94.1%) indicated that they had thoughts of suicide. The counselors indicated that 73% of the exchanges concerned suicidal ideation (see Table 3). Counselors noted that 19.8% had previously attempted suicide, 2.7% were bereaved by someone who died by suicide, 25.2% had a suicide plan, and 8.9% were in imminent danger of attempting suicide. Overall, two-thirds (66%) had only suicidal ideation. The other third also either had a plan about how they would kill themselves or were considered to be in imminent danger of initiating an attempt. There were no significant differences in suicide content associated with the sex or age group.

Call duration and characteristics of the exchanges

On average, callers waited 19.25 min before they obtained a response and initiated the session (median = 7.46; SD = 25.45; range = 0.22–123.97). The average length of exchanges was 76.73 min (median = 72; SD = 33.71; range = 21–228). On average, the callers sent 34.75 unique messages (median = 32; SD = 18.73; range = 6–147) and the counselors sent about the same on average (mean = 35.33; median = 31; SD = 15.77; range = 6–102). There was much variation in the mean number of caller words per session (mean = 470.23; median = 405; SD = 139.81; range = 61–1896) and counselor words (mean = 626.19; median = 595; SD = 299.76; range = 114–1970). Counselors sent more lengthy messages; on average, they replied with 1.75 words for each caller word.

Intervention techniques used by counselors

Table 3 indicates the mean frequency of occurrence of intervention techniques in each session. The most frequently used techniques were as follows: validation, moral support, asking about caller's resources, reformulation and suggesting resources and solutions. Counselors almost universally (88.4%) asked about precipitating events. In 42% of the sessions, they encouraged the caller to talk with someone they know and trust about their problems. In 36.6%, they encouraged the caller to talk with a professional and 38.4% of calls ended with a request that the caller adhere to an action plan after the call.

Comprehensiveness of the interventions

We assessed the extent that suicidality and suicide risk were explored during the exchanges and classified the risk evaluation as absent, superficial, adequate, or exhaustive

TABLE 3 Intervention techniques used by counselors

Intervention techniques	Min.	Max.	Mean	Median	SD
Validation	0	23	7.69	8	4.029
Moral support	0	19	6.36	6	3.596
Reinforcing a strength or a positive action	0	13	2.88	2	2.744
Reformulation	0	14	3.43	3	2.574
Exploration of needs	0	5	0.64	0	0.985
Questions about past and present resources	0	12	4.59	4	2.933
Empowerment: resources & solutions	0	5	0.73	0	1.004
Suggestions: resources & solutions	0	12	3.49	3	2.691

TABLE 4 Degree of completion of steps in the intervention

	Steps in the intervention		
Degree of completion	Suicide risk assessment	Exploration of resources and solution	Establishment of an action plan
Absent	4 (3.5%)	10 (8.9%)	77 (68.8%)
Superficial	64 (56.6%)	23 (20.5%)	11 (9.8%)
Adequate	30 (26.5%)	23 (20.5%)	16 (14.3%)
Exhaustive	15 (13.3%)	56 (50.3%)	8 (7.1%)

(see Table 4). Most of the assessments were classified as superficial (56.6%) or absent (3.5%), because they did not provide precise information on suicide planning. In only 26.5% of sessions, the counselor obtained information on the three elements of planning (how, where, and when), or determined the user did not have a suicide plan. Only 13.3% assessed the three planning elements and also assessed the other risk factor: previous suicide attempts, intoxication, and if someone is nearby who knows the person is considering suicide.

We classified the exploration of callers' resources as absent, superficial, adequate, or exhaustive (see Table 4). In half of the calls, there was an exhaustive exploration of resources, with multiple resources explored as well as discussion of several means for using resources. In 20.5%, only one resource was explored, including discussion of how to use that resource. In another 20.5%, a resource was identified but there was no discussion about how the resource could be used, and in the remaining 8.9%, there was no information or discussion about the caller's resources.

One of the goals is to end the exchange with suicidal callers by the establishment of an action plan for ensuring that after the exchange ends, the caller will remain secure and has identified actions to help improve the situation. This was not accomplished in most sessions. There is no mention or presence of what can be considered an action plan in 68.8% of sessions (see Table 4). In 9.8%, a plan was made but there was no discussion about when or how the plan would be initiated. In 14.3%, a precise plan was discussed with the caller (what, how, when). In 7.1%, a precise plan was discussed, as well as details about how to manage at least one potential obstacle to realizing the plan.

The duration of the exchanges was significantly correlated with the degree of completion of the exploration of resources and solutions ($r_s = 0.217$, $p = 0.022$, $n = 112$). The number of words exchanged during the conversations was correlated with the degree of completion of the exploration of resources and solutions ($r_s = 0.470$, $p < 0.001$, $n = 112$) and the development of an action plan ($r_s = 0.319$, $p = 0.001$, $n = 112$).

Outcomes of the calls

According to counselors' reports, there was a significant decrease in emotional intensity from the beginning (M = 3.6; SD = 0.849) to the end (M = 2.28; SD = 9.93) of calls ($t = 14.727$; $p < 0.001$). According to counselors, 48.2% of callers said they were better able to deal with their situation because of the intervention. Counselors indicated that in 23% of calls, callers explicitly said that they felt better and 25% said things indicating that there was improvement. There were no significant differences in who improved in caller sex or age.

The mean CCORS score was 101.96 (median = 101.5; SD = 27.6; range = 51–172), which is comparable to the CCORS scores reported in similar studies when standard deviations are taken into account (Mishara et al. (2007b); M = 102.4; SD = 18.5; Mokkenstorm et al. (2017); M = 114.1; SD = 16.8). There were no significant differences by sex or age group in the scores. The exchange duration was not correlated with CCORS scores. However, the number of words exchanged was correlated with the sum of positive CCORS items ($r_s = 0.554$, $p < 0.001$, $n = 112$), but not with the sum of negative items.

The total CCORS scores had a normal distribution, but scores on negative and positive impacts were not normal. Therefore, in order to normalize scores for the analyses, the negative impact scores were transformed by $\log^{10}$, and a square root transformation was applied to the positive scores. Mahalanobis distance analysis did not identify any extreme multivariate score, and the normality of the distribution was confirmed by examinations of the residuals in the linear multiple regression. Only the regression using positive CCORS indicators had significant findings ($F[8,102] = 2.744$; $p < 0.01$) with r^2 of 0.177 and an adjusted r^2 of 0.113. The only technique that was statistically significant was reinforcing a strength or a positive action of the caller (see Table 5).

DISCUSSION

The results indicate that people who use CSPS text service are similar to users of other suicide prevention chat and text services. They have risk factors that are common among suicidal people who contact helplines. Like most telephone, chat, and text helplines, their most common problems were mental health issues, relational problems, family difficulties, school and work difficulties, loneliness, and isolation. Counselors generally asked about suicide if it was not spontaneously discussed. However, they infrequently explored suicide plans in detail, even after asking about the presence of a plan. They generally did not conduct a complete risk assessment, which they were "required" to do. These findings concur with other research on chat and text help with suicidal callers (Mokkenstorm et al., 2017; Predmore et al., 2017; Sindahl et al., 2019). Drexler (2013) noted that it is difficult to conduct a complete suicide risk assessment with written message exchanges. However, those who did ask additional questions to complete the risk assessment almost invariably obtained answers to all questions. Therefore,

TABLE 5 Impact of intervention techniques on the CCORS positive impact scores

Intervention techniques	B (SE)	B	*T*	*p*
Validation	0.070 (0.051)	0.159	1.362	n. s.
Moral support	−0.017 (0.066)	−0.033	−0.250	n. s.
Reinforcing a strength or a positive action	0.174 (0.077)	0.269	2.260	0.026
Reformulation	0.088 (0.073)	0.128	1.214	n. s.
Exploration of needs	−0.114 (0.181)	−0.063	−0.628	n. s.
Questions about past and present resources	−0.117 (0.064)	−0.192	−1.833	n. s.
Empowerment: resources & solutions	−0.238 (0.177)	−0.135	−1.342	n. s.
Suggestions: resources & solutions	0.052 (0.071)	0.078	0.724	n. s.

it is important that counselors receive training that encourages them to not refrain from asking all the necessary questions to completely evaluate suicide risk. An alternative would be to include risk assessment questions in presession questionnaires.

A positive aspect of the text service is that counselors almost always explored callers' resources and discussed potential solutions. Mishara et al. (2007a) concluded in their telephone help study that exploration of resources and solutions was associated with greater likelihood of positive outcomes. However, despite CSPS having an intervention model where calls should end with agreement on an action plan, action plans were infrequently elaborated. This concurs with other research on chat and text that found it difficult to make an action plan at the end of calls because of time constraints (Bambling et al., 2008; Chardon et al., 2011; Drexler, 2013). Nevertheless, we found that when an action plan was elaborated, the caller usually agreed to it. Developing an action plan should be emphasized during counselor training. It should be noted that the confidence intervals of the kappa coefficients for the interventions related to the development of an action plan were large. These results should therefore be interpreted with some caution. Discussions revealed that the disagreements about what constitutes an action plan concerned the extent that certain activities agreed to at the end of the intervention were sufficiently important to constitute an action plan. For example, when the plan involved the use of mental health services, there was agreement that this was an action plan. However, when the plan involved taking a walk and planning to see friends the next day, some felt this was an agreed action plan, while others did not, since it did not directly address the root problems. Future research should better define what constitutes an action plan, and possibly differentiate between action plans that address the root problems and action plans that have the objective of helping the caller feel better in the short term.

There were both positive and negative indicators call impacts. Positive effects were distributed in a normal curve. However, the negative effects had a bimodal distribution, with the majority of callers having few negative effects and a small minority having many negative effects. This suggests that there is a small subgroup of callers who may not benefit from text or chat services, or who may be "difficult" to help in this context. It is important for future research to identify the characteristics of clients who do not get help and callers who are helped less, in order to determine ways that counselors may better meet their needs.

This study aimed at identifying promising text-based intervention practices for suicidal persons. Regression models indicated that the frequency of use of different techniques had little impact on the efficacy of the interventions. Only one technique, reinforcing a strength or a positive action, was a significant predictor of positive effects. This result highlights the relevance of this component of the solution-focused approach to suicide prevention. One of the postulates of this approach is that counselors need to validate the strengths and past successes of suicidal people in order to stimulate their resilience (Fiske, 2012).

The number of words exchanged during the interventions was positively correlated with positive CCORS items, the extent of explorations of resources and solutions, and developing an action plan. The number of words exchanged was a better indicator of the quality of the interventions than the length of the sessions. This probably reflects the asynchronous nature of texting communications and suggests that limiting the duration of exchanges to a short period of time is contraindicated.

LIMITATIONS

This is a preliminary study with a relatively small sample, which was necessitated by the limited financial resources

available to conduct this investigation. It is possible that if the sample were much larger, this would have increased the power of the statistical analyses so that other findings would have been observed.

The study methodology involved detailed analyses of the content of written text exchanges. However, callers may not express their feelings in the exchanges that focus upon solving problems. Callers may not spontaneously express whether they benefited from the session. It is important in future research to validate observations from content analyses with other data, including interviews and questionnaires that ask a range of questions about callers' experiences of the session and its impact, and from follow-up studies of the longer-term impact of the session.

One of the weaknesses in observational research of helpline sessions is the sparsity of validated indicators of positive and negative outcomes. The CCORS is probably the most widely used outcome measure. It has the advantage of indicating actual behaviors, that is, what the caller said or wrote. However, sometimes it may be difficult to determine whether it is actually measuring effects of the call, or characteristics of the individual who called. For example, items like "the caller talked about irrelevant tangents rather than focusing on the problem" may be the result of a counselor who does not focus the exchange on what is relevant. However, it may be a characteristic of the caller who is impervious to the counselor's efforts to get the caller to focus on the problem. Again, it is important to include multiple indicators of outcomes to validate measures such as the CCORS and to differentiate between general caller characteristics and indicators of the outcome of the counselor's intervention.

The interrater agreements for the techniques related to the development of an action plan were lower than for the other techniques. We have suggested that there is a need to better delineate what constitutes an action plan, with the possibility of defining and studying the impact of action plans that aim to help resolve root problems and action plans that focus on the hours and day after the intervention with the goal of helping the caller feel better in the short term.

CONCLUSIONS

In general, what the counselors did was helpful to the vast majority of clients, according to the indicators available to us. Counselors appear to be using a generally helpful approach. Only one technique, reinforcing a strength or a positive action of the caller, was a significant predictor of positive effects of the call. This finding is interesting, since one of the theoretical orientations in suicide prevention is the solution-focused approach, which emphasizes the need to validate the strengths and past successes of suicidal people in order to stimulate their resilience (Fiske, 2012). Although this component of the solution-focused approach has been shown to be helpful, further evaluations should be undertaken to validate the helpfulness of other aspects of this approach. Mokkenstorm et al. (2017), in their study of chat services, warned that it is important to use this approach in a careful manner. They were concerned that putting too much emphasis on what is going well may give the impression that the counselor is minimizing the client's real problems. This topic warrants further exploration. Since longer exchanges were associated with the completeness of the explorations of resources and solutions and the development of an action plan, encouraging longer interventions may be warranted. We hope that this study will stimulate more research on the effectiveness of text and chat services in order to develop and validate best practices models.

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CONFLICT OF INTEREST

None of the authors have any competing interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are not publicly available due to privacy and ethical restrictions.

ETHICS APPROVAL STATEMENT

Approved by University of Quebec in Montreal ethics committee; certificate no 2788_e_2020.

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