Suicide and Life-Threatening BEHAVIOR
THE OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION OF SUICIDOLOGY

Suicide and Life-Threatening Behavior 48 (1) February 2018 75

DOI: 10.1111/sltb.12339

Follow-up with Callers to the National Suicide Prevention Lifeline: Evaluation of Callers' Perceptions of Care

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Continuity of care for suicidal individuals engaged with a variety of health and mental health care systems has become a national priority, and crisis hotlines are increasingly playing a part in the risk management and continuum of care for these individuals. The current study evaluated a national initiative to have crisis centers in the National Suicide Prevention Lifeline network provide follow-up care to suicidal callers. Data were obtained from 550 callers followed by 41 crisis counselors from 6 centers. Two main data sources provided the information for the current study: a self-report counselor questionnaire on the follow-up activities completed on each clinical follow-up call and a telephone interview with follow-up clients, providing data on their perceptions of the follow-up intervention's effectiveness. The majority of interviewed follow-up clients reported that the intervention stopped them from killing themselves (79.6%) and kept them safe (90.6%). Counselor activities, such as discussing distractors, social contacts to call for help, and reasons for dying, and individual factors, such as baseline suicide risk, were associated with callers' perceptions of the impact of the intervention on their suicide risk. Our findings provide evidence that follow-up calls to suicidal individuals can reduce the perceived risk of future suicidal behavior.

The enhancement of continuity of care for suicidal individuals is a priority of the U.S. National Strategy for Suicide Prevention (U.S. Department of Health and Human Services, 2012) and a recommendation of the Joint Commission's 2016 Sentinel Event

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This project was funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) through a subcontract from ICF Macro, Inc.

Correction added on 15th, July 2021 after the first Online publication: Copyright has been updated with open access legal statement.

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Alert (The Joint Commission, 2016). There is evidence that the period following a suicidal crisis—for example, the first month after a psychiatric discharge—is a time of heightened risk of completed suicide (Goldacre, Seagroatt, & Hawton, 1993; Hunt et al., 2009; Kan, Ho, Dong, & Dunn, 2007; Qin & Nordentrof, 2005). One strategy for enhancing safety during this high-risk period involves postdischarge follow-up contact.

A number of groundbreaking studies to date (Beautrais, Gibb, Faulkner, Fergusson, & Mulder, 2010; Carter, Clover, Whyte, Dawson, & D'Este, 2007; De Leo, Dello Buono, & Dwyer, 2002; Fleischmann et al., 2008; Motto & Bostrom, 2001; Vaiva et al., 2006;) have used state or national mortality data, client and/or informant self-report, and/or medical record data to demonstrate the impact of nondemand, postcrisis follow-up contacts with suicide attempters on subsequent rates of attempted and/or completed suicide. Follow-up strategies with demonstrated impact on either repeat attempts or deaths by suicide include the sending of caring letters (Motto & Bostrom, 2001) or postcards (Carter, Clover, Whyte, Dawson, & D'Este, 2013) for up to a year after hospital discharge, a telephone contact 1 month after hospital discharge (Vaiva et al., 2006), a series of telephone contacts and/or in-person visits for 18 months after hospital discharge (Fleischmann et al., 2008), and biweekly telephone contacts with elderly people at risk of suicide (De Leo et al., 2002). A recent study supports the business case for payers, particularly Medicaid, to invest in postdischarge follow-up calls made by crisis center staff (Richardson, Mark, & McKeon, 2014). Evidence such as this led to the inclusion of postcrisis follow-up contact as one of the four components of evidence-based clinical care practice recommended by the National Action Alliance for Suicide Prevention's Clinical Care and Intervention Task Force (Covington et al., 2011).

Although research has focused on suicidal individuals treated in hospitals and emergency departments, crisis hotlines are known for providing immediate access to care for individuals in suicidal crisis, including many who face barriers to engaging in formal behavioral health care. The National Suicide Prevention Lifeline (Lifeline; www.suicidepreventionlifeline.org)—a national network of community crisis centers in the United States established by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2005—fielded its 3 millionth call in 2011 (SAMHSA, 2011) and currently answers approximately one million calls per year, a quarter of which are from suicidal callers (Gould, Cross, Pisani, Munfakh, & Kleinman, 2013). Earlier evaluations of Lifeline services contributed to SAMHSA's recognition of the need for follow-up in the aftermath of a suicidal hotline call. Evaluations demonstrated that Lifeline callers experience a reduction in hopelessness and suicidal intent over the course of their hotline call (Gould, Kalafat, HarrisMunfakh, & Kleinman, 2007). However, 43% of suicidal callers who completed evaluation follow-up assessments experienced some recurrence of suicidality (ideation, plan, or attempt) in the weeks following their crisis call, and only 22.5% of suicidal callers had been seen by the behavioral health care system to which they had been referred (Gould et al., 2007). In response, SAMHSA funded an initiative in 2008 to have crisis center staff offer and provide follow-up calls to all Lifeline callers who reported suicidal ideation, or "desire," during or within 48 hours before their call to the Lifeline.

The aim of the current study was to evaluate SAMHSA's initiative to have crisis centers offer and provide clinical follow-up to suicidal hotline callers. To date, there is no information on the impact of follow-up contacts on reducing the suicide risk of callers to telephone crisis services. The goals of the study are to describe the types of clinical activities that are implemented during the follow-up contacts with suicidal callers, and to determine the types of individual factors and follow-up strategies that are associated with callers' perceptions of the impact of the intervention on their suicide risk.

METHODS

Sample

Crisis Centers. Six crisis centers in the Lifeline network from across the four U.S. census regions were awarded a competitive grant from SAMHSA in 2008 to develop a clinical follow-up program for suicidal callers. Average call volume at the six centers was slightly under 7,000 calls per month (range = 390–25,000), and the average number of personnel at each center responsible for answering calls was 54.3 (range = 18–90). Three of the six centers used only paid staff, while the other three used an average of 70% volunteers to answer crisis calls (range = 40%–90%). The percentage of calls to each center that concerned suicide ranged from 5% to 40% (average = 15.2%). As part of the competitive application process, each center was required to design its own follow-up protocol. As a result, the centers' programs varied considerably according to factors such as the number and timing of follow-up calls offered and the number of crisis counselors assigned to a particular case.

The smallest of the six participating centers contributed data on too few follow-up clients to be feasibly included in our analyses. We therefore combined this center's data with that of a geographically proximal center with a comparable follow-up protocol and demographically similar clients. All of our analyses were conducted using the five "supercenters" that resulted from this merger.

Crisis Counselors. Between 3 and 16 crisis counselors at each center were responsible for conducting follow-up calls with suicidal callers to their centers. All of these crisis counselors ($N = 62$) participated in the current study. Forty-one of these counselors (66.1%, between 3 and 11 per center) completed at least one follow-up call with a client in our current interviewed sample, the focus of the present paper ($n = 550$). Nearly all of the 41 follow-up counselors (87.8%) were paid staff; only 5 (12.2%) were volunteers. All but 4 (90.2%) were college graduates and 28 (68.3%) had graduate or professional degrees. At the time they entered our study, the follow-up counselors had between 1 month and 30 years of experience as telephone crisis workers (mean = 4.5 years, $SD = 6.75$). The vast majority (80.5%) had completed Applied Suicide Intervention Skills Training (ASIST; https://www.livingworks.net/programs/asist, Gould et al., 2013) either before or during data collection. Additional training in motivational interviewing was completed by 51.2% of participating follow-up counselors. Safety Planning Intervention (SPI) training (Stanley & Brown, 2012) was rolled out across the six centers over the course of the study period as part of our evaluation design.

Callers. Lifeline callers and callers to the centers' local lines who expressed suicidal ideation within 48 hours of their crisis call were eligible for follow-up. A total of 2,319 callers received clinical follow-up from a crisis counselor. Of these, 550 were interviewed. The four most common reasons for not interviewing clients were that they were not asked by the follow-up counselors for our evaluation contact permission ($n = 878$), they were not reached by a study interviewer ($n = 248$), the interview was not assigned ($n = 222$; a random process reflecting a priori funding limitations), or they did not meet interview eligibility criteria ($n = 167$). According to the information provided by follow-up counselors on all clients ($N = 2,319$), the 550 interviewed follow-up clients did not differ significantly from the noninterviewed follow-up clients ($n = 1,769$) on the following: gender, suicide risk status at time of crisis call (plans, intent, attempts in progress, prior attempts), whether in current mental health treatment at the time of the crisis call, and whether a rescue was initiated.

Procedures

Data collection began in April 2009 and was completed in September 2011. The follow-up counselors were asked to complete a questionnaire (described later) each time they reached a client for a clinical follow-up intervention or closed a case on a client whom they were unable to reach.

Follow-up counselors were directed to approach clients for our contact permission at the very end of the first follow-up call. We attempted to reach the client between 6 and 12 weeks after the initial call to the center, to maximize the likelihood both that the follow-up intervention had been completed and that clients' memories of the intervention would still be fresh. For 106 interviewed clients (19.3%), follow-up was still ongoing at the time of our interview. At the time of contact by the evaluation team, on average 57.3 days after the initial call to the center (*SD* = 12.0; range = 42–150 days) and 36.9 days after the most recent follow-up call (*SD* = 20.3; range = 0–142 days), a standardized telephone consent script was used, incorporating the required elements of a written consent form.

To ensure independent follow-up assessments, the evaluation interviewers were not crisis center staff. The interviewers were required to have either telephone crisis counseling experience or equivalent clinical training and experience. The follow-up assessment included a protocol to ensure client safety: Any client having engaged in suicidal behavior for which treatment had not been received, or having current suicide plans or serious intent to die at the time of the follow-up interview, was reconnected back to the center the client had initially phoned.

Measures

Two main data collection sources provided the information for the current article. First, a self-report counselor questionnaire, developed for this study, collected information on attempted and completed follow-up calls with each client, including the date and length in minutes of each completed call, and the activities they engaged in during each call. Second, a telephone interview with follow-up clients collected information on demographic variables, suicide risk indicators at the time of the initial crisis call, and client feedback on the impact of the follow-up intervention.

The predictor variables were grouped into four domains: demographic indicators and baseline suicide risk indicators (taken from the client interviews), and follow-up structure and follow-up activities (taken from the counselor questionnaires).

Demographic Indicators. Interview questions assessed the client's age, gender, ethnicity, race, highest level of education, employment status, household composition, and whether the client had ever been homeless since the age of 18.

Suicide Risk Indicators at the Time of Crisis Call. A modified version of the suicide risk assessment implemented in the evaluation team's earlier hotline evaluation projects (Gould et al., 2007; Kalafat, Gould, Munfakh, & Kleinman, 2007) was used to assess suicide risk retrospectively at the time of the initial crisis call. The assessment included questions measuring the following: (1) current wish to die, from 1 (*definitely wanted to live*) to 5 (*definitely wanted to die*) with 4 or 5 recoded as yes; (2) current suicide plans (yes or no); (3) current intent to act, from 1 (*not at all likely*) to 5 (*extremely likely*) with 4 or 5 recoded as yes; (4) current suicidal behavior (yes or no); and (5) lifetime suicide attempt prior to the crisis call (yes or no). A baseline suicide risk score was calculated by combining the four current risk indicators and scoring each client on a 5-point scale according to his or her most severe response: No suicide risks reported, other than suicidal ideation (0; universally present as an eligibility criterion for referral to follow-up); wish to die (1); suicide plans (2); intent to act (3); and suicidal behavior (4).

Follow-up Structure. The structural information included the number of follow-

up calls, the length of the total intervention across all calls (in minutes), the duration of the follow-up intervention (i.e., the days between the first and last follow-up calls), and the delay to follow-up (i.e., the days between the crisis call and the first follow-up call). Brief telephone contacts with no clinical content, for example, for the purpose of scheduling a convenient time to talk, were not counted as follow-up calls.

Counselor Follow-up Activities. The activities counselors engaged in with clients during the follow-up calls are listed in Table 2. Activities that were repeated during more than one follow-up call with the same client were aggregated into a single summary item indicating whether the activity "ever" occurred during any of that client's follow-up calls.

The outcome measures taken from the client interview were two indicators of the clients' perception of care: "To what extent did the counselor's calling you stop you from killing yourself?" and "To what extent did the counselor's calling you keep you safe?" The response options for each of these indicators were *a lot*, *a little*, *not at all*, and *it made things worse*. These two indicators were significantly associated, but not completely redundant ($r = .60$).

The project's protocol was approved by the institutional review board of the New York State Psychiatric Institute and the Columbia University Department of Psychiatry.

Statistical Analyses

The analyses linked data from the client interview to data from the counselor questionnaires. In the event that a client received additional follow-up calls after completing our interview, data from the counselor questionnaires on those calls were excluded from our analyses. Follow-up activities that were reported for more than 95% of the subjects were excluded from the analyses because of insufficient variability leading to reduced statistical power. Three time-related structural variables were winsorized based on graphical inspection to reduce a possible effect of spurious outliers: (number of minutes at 120 or less, corresponding to the 93 percentile; days between the first and last follow-up calls at 50 or less, corresponding to the 98.7 percentile; and days between crisis call and first follow-up call at 30 or less, corresponding to the 98 percentile (Reifman & Keyton, 2010).

The analyses first calculated descriptive statistics for the predictor variables in each of the four domains described previously. Next, to test for the association between the predictors and the two outcome measures described earlier, we modeled each of the outcomes separately as a function of the predictor using proportional odds logistic regression models, adjusted for center. Proportional odds logistic regression models are used when an outcome variable is on an ordinal scale and assumes that the effect of the predictor is the same for each transition between adjacent levels of the outcome variable. A single odds ratio with significance level can then be reported for the predictor. Lastly, the effect of the individual predictors was adjusted for center and the subject's baseline suicide risk score. As baseline suicide risk is likely to explain a significant proportion of the callers' perceptions of care (outcomes) and also may be associated with the predictors, adjusting parsimoniously for a (single) risk score will likely enhance statistical power and reduce bias. Analyses were performed in SAS 9.3 (SAS Institute Inc., Cary, NC) and the statistical software R, version 2.12.1. In light of this being the first study to examine the predictors of efficacy of crisis center follow-up, we consider this to be a hypothesis-generating study, and as such, significance levels were not adjusted for multiple testing.

RESULTS

Description of Interviewed Follow-up Clients

Clients ranged in age from 18 to 78, with an average age of 36.8 years; almost

TABLE 1
Follow-up Clients' Characteristics: Demographics and Baseline Suicide Risk at the Time of Initial Crisis Call (N = 550)

Demographic indicators	Client characteristic	*n*	%
Gender	Female	348	63.3
	Male	202	36.7
Age	18–24	131	23.8
	25–34	137	24.9
	35–44	106	19.3
	45–54	115	20.9
	55 and over	61	11.1
Ethnicity	Non-Hispanic	482	87.6
	Hispanic	67	12.2
Race[a]	Caucasian	344	62.5
	African American	117	21.3
	Native American	33	6.0
	Asian	28	5.1
	Pacific Islander	2	0.4
	Other race	59	10.7
Education	Less than high school	56	10.2
	High school/GED	115	20.9
	Some college or technical school	219	39.8
	College graduate	125	22.7
	Graduate school	35	6.4
Employment status (unemployed)[b]	Yes	234	42.5
Household composition (lives alone)[c]	Yes	163	29.6
Homelessness (ever since the age of 18)	Yes	143	26.0
Suicide Risk Indicators at Crisis Call	Factor Present		
Wish to die (*n* = 547)	Yes	293	53.6
Suicide plans (*n* = 548)	Yes	274	50.0
Intent to act (*n* = 546)	Yes	187	34.2
Suicidal behavior (*N* = 550)	Yes	77	14.0
Lifetime attempt (prior to crisis call) (*N* = 550)	Yes	311	56.5
Suicide risk score (mean [*SD*])[d]	–	1.87	1.4

[a]Multiple categories could be endorsed, which is why percentages add to more than 100%.
[b]Employment status included the following response categories: employed full time, employed part-time, homemaker and employed, homemaker and not employed, retired, unemployed, and on disability; it was then recoded as unemployed vs. all other responses.
[c]Household composition included the following nonexclusive response categories: living with spouse/partner, children, parent(s), other family members, nonfamily members, or live alone. It was then recoded into living alone vs. all other responses.
[d]A baseline suicide risk score was calculated by combining four individual risk indicators and scoring each client on a 5-point scale based on his/her most severe response: no suicide risks reported, other than suicidal ideation (0); wish to die (1); suicide plans (2); intent to act (3); and suicidal behavior (4).

two-thirds were female (see Table 1). The percentage of Hispanic clients mirrored their distribution in the United States, while the remaining minorities were over-represented compared with their percentages in the overall U.S. population (U.S. Census Bureau, 2016). The majority of the clients had completed at least some college or technical school; over 40% were unemployed; approximately one-quarter of

the clients lived alone; and approximately one-quarter had been homeless as adults.

All clients had to have expressed suicidal ideation to be eligible for the interview. Approximately half expressed a wish to die and reported suicide plans, and a significant minority had done something to kill themselves at the time of the crisis call. More than half had made a prior suicide attempt.

Description of Follow-up and Counselor Activities

As reported by the follow-up counselors, clients in the interview sample received an average of 2.4 follow-up calls apiece prior to our interview (see Table 2). Approximately one-third of the clients received one call, half received two to three calls, and 17.6% received four or more calls (median = 2; range = 1–12). The total number of minutes of clinical follow-up per client ranged from 2 to 289 minutes (mean = 51.4, median = 40). The duration of follow-up in days from the first to the last follow-up call ranged from 1 day (i.e., all follow-up was completed on a single day) to 62 days (mean = 14.0, median = 8). The delay between the crisis call and the first follow-up call ranged from 0 to 61 days (mean = 7.4, median = 6). The 550 interviewed follow-up clients received follow-up calls from either a single counselor (75.6%), two counselors (20.0%), or three to five different counselors (4.4%).

The practices of offering emotional support and discussing coping strategies during follow-up calls were near universal. Activities emphasized in SPI (Stanley & Brown, 2012), such as discussing social contacts and settings to use as distractors and to turn to for help, and discussing warning signs of impending suicidality, and those emphasized in ASIST, such as discussing past survival skills, discussing environmental triggers to suicidality, and exploring reasons for living, were also used with large proportions of follow-up clients.

TABLE 2
Structure of Follow-up and Activities Pursued by Counselors During Follow-up (N = 550)[a]

Follow-up structure	Mean	*SD*
Number of calls	2.40	1.6
Number of minutes[b]	51.36	45.4
Number of days from 1st to last follow-up call[b]	13.01	15.4
Days between crisis call and 1st follow-up call[b]	7.39	7.5
Follow-up activity	***n***	**(%)**
Discussed coping strategies (*N* = 549)	527	95.8
Offered emotional support (*N* = 550)	526	95.6
Social contacts/settings as distractors (*N* = 546)	487	88.5
Social contacts to call for help (*N* = 546)	481	87.5
Discussed past survival skills (*N* = 546)	475	86.4
Discussed triggers to suicidality (*N* = 548)	472	85.8
Discussed warning signs (*N* = 544)	470	85.5
Explored reasons for living (*N* = 549)	424	77.1
Discussed safe/no use of alcohol/drugs (*N* = 543)	336	61.1
Discussed making environment safe (*N* = 542)	324	58.9
Explored reasons for dying (*N* = 542)	303	55.1
Explored ambivalence re life/death (*N* = 537)	272	49.5

[a]Includes only follow-up which occurred prior to our interview.
[b]Based on total distribution before winsorizing the variable.

Clients' Perceptions of Care

There were 11 clients (2.0%) who did not provide feedback on the follow-up intervention because they could not remember having received a follow-up call. Of the 539 callers who answered the questions about their perceptions of care, the majority (53.8%) reported that the follow-up call(s) stopped them from killing themselves "a lot." The remainder reported that the follow-up call(s) stopped them from killing themselves a little (25.8%) or not at all (20.4%). Comparable percentages of clients reported that the follow-up call(s) kept them safe "a lot" (59.6%), "a little" (31.0%), or "not at all" (9.5%). None of the interviewed follow-up clients reported that the follow-up call(s) "made things worse" in response to either question about their perceptions of care.

Relationship of Client Demographics to Perceptions of Care

Hispanic clients, clients with lower levels of education (high school or lower), and clients who had ever been homeless since the age of 18 had greater odds than clients without those characteristics of saying the follow-up calls stopped them from killing themselves and kept them safe (see Table 3). In addition, female clients and older clients had greater odds than male and younger clients of reporting that the follow-up intervention kept them safe.

Relationship of Baseline Risk Status to Perceptions of Care

Clients with higher baseline risk scores had greater odds than those with lower baseline risk scores of reporting that

TABLE 3
Relationship Between Client Characteristics and Clients' Perceptions of Care

	"To what extent did the counselor(s)'s calling you stop you from killing yourself?"[a]			"To what extent did the counselor(s)'s calling you keep you safe?"[a]		
	OR	95% CI[c]	*p*	OR	95% CI[c]	*p*
Demographic indicators						
Female (reference: male)	1.25	0.90–1.76	.187	1.54	1.09–2.19	.014
Age (years)	1.001	0.988–1.014	.915	1.02	1.003–1.031	.016
Hispanic ethnicity (reference: other than Hispanic)	1.99	1.14–3.46	.015	2.30	1.27–4.18	.006
Race[b]						
Caucasian	0.81	0.57–1.15	.232	0.93	0.65–1.34	.697
African American	0.95	0.63–1.43	.788	0.88	0.57–1.34	.538
Asian	1.02	0.48–2.14	.964	0.99	0.46–2.13	.974
American-Indian	2.21	0.997–4.90	.051	1.27	0.59–2.73	.540
Education (<H.S.) (Reference: ≥H.S.)	1.84	1.26–2.70	.002	1.91	1.28–2.86	.002
Unemployed	1.31	0.93–1.83	.120	1.20	0.85–1.70	.312
Lives alone	1.04	0.72–1.49	.839	1.11	0.76–1.62	.585
Homelessness (ever since the age of 18)	1.86	1.25–2.76	.002	2.02	1.33–3.07	.001
Suicide risk indicators at crisis call						
Baseline suicide risk score	1.16	1.026–1.302	.017	1.107	0.979–1.251	.104
Lifetime attempt (prior to crisis call)	1.46	1.05–2.03	.026	1.61	1.14–2.27	.007

[a]3-level categorical outcome.
[b]Contrast between particular racial group and all others not in group.
[c]All ORs adjusted for center.

the follow-up intervention stopped them from killing themselves (see Table 3). Clients with lifetime suicide attempts had greater odds than those who had never attempted suicide of reporting both that the follow-up intervention stopped them from killing themselves and that it kept them safe.

Relationship Between Follow-up Structure and Clients' Perception of Care

The number of follow-up calls received had a significant impact on clients' perceptions of care, with clients who received two to three calls having twice the odds, and clients who received four or more calls having four times the odds of reporting that the intervention stopped them from killing themselves when compared to clients who received only one follow-up call (see Table 4). The number of calls received had a similar impact on clients' perceptions that the follow-up intervention kept them safe. Clients' perceptions of the effectiveness of the intervention were also positively correlated with the number of minutes of follow-up they received and the duration of the follow-up intervention as measured from the first to the last follow-up call. A longer delay between the crisis call and the first follow-up call did not impact clients' odds of reporting that the intervention stopped them from killing themselves or kept them safe.

Relationship of Counselor Activities to Clients' Perception of Care

Clients whose follow-up counselors engaged them in discussions of safe use or

TABLE 4
Relationship between Follow-up Structure and Follow-up Activities and Clients' Perceptions of Care

	"To what extent did the counselor(s)'s calling you stop you from killing yourself?"			"To what extent did the counselor(s)'s calling you keep you safe?"		
	OR[a]	95% CI	*p*	OR[a]	95% CI	*p*
Follow-up structure						
Number of calls (reference: 1 call)						
2–3 calls	2.21	1.51–3.23	<.001	2.44	1.65–3.63	<.001
4+ calls	4.32	2.47–7.56	<.001	3.68	2.08–6.53	<.001
Number of minutes	1.008	1.002–1.013	.005	1.010	1.004–1.016	.001
Days between 1st and last follow-up calls	1.024	1.011–1.037	.003	1.023	1.009–1.036	.001
Days between crisis call and 1st follow-up call	0.996	0.968–1.024	.755	0.997	0.968–1.026	.326
Follow-up activities[a]						
Discussed making environment safe	0.93	0.57–1.50	.752	1.30	0.78–2.15	.311
Discussed safe/no use of alcohol/drugs	1.51	1.01–2.26	.046	1.65	1.07–2.50	.019
Discussed past survival skills	1.15	0.68–1.94	.599	1.54	0.90–2.62	.116
Social contacts/settings to use as distractors	2.14	1.25–3.67	.005	2.58	1.49–4.47	.001
Social contacts to call for help	2.27	1.36–3.77	.002	2.95	1.75–4.96	<.001
Discussed triggers to suicidality	1.45	0.85–2.46	.173	2.30	1.33–3.97	.003
Discussed warning signs	1.51	0.89–2.57	.128	2.69	1.55–4.66	.0004
Explored reasons for dying	1.72	1.15–2.56	.008	2.41	1.58–3.66	<.001
Explored reasons for living	1.30	0.81–2.07	.272	1.56	0.96–2.52	.072
Explored ambivalence re life/death	1.40	0.97–2.03	.076	1.69	1.15–2.48	.008

[a]Adjusted for center.

no use of alcohol and drugs, social contacts and settings to use as distractors, and social contacts to call for help, and who explored clients' reasons for dying, had greater odds of reporting that the follow-up intervention stopped them from killing themselves than clients whose counselors did not report engaging in these activities (see Table 4). These same activities, along with discussion of triggers to suicidality, discussion of warning signs, and exploration of a client's ambivalence about life and death, also increased clients' odds of reporting that the follow-up intervention kept them safe.

All analyses were repeated adjusting for baseline suicide risk, in addition to center, and the results showed no appreciable change.

DISCUSSION

Our evaluation of SAMHSA's crisis center follow-up initiative has shown the Lifeline follow-up intervention to be valuable to its recipients, of whom the vast majority indicate that the follow-up calls helped to prevent their suicide and keep them safe. Individuals at higher risk of suicide at the time of their calls to the Lifeline crisis centers perceived the follow-up intervention to be more valuable than those at lower suicide risk. Those with demographic vulnerabilities, such as lower levels of education and time spent homeless, also perceived the intervention to be more valuable than individuals without these vulnerabilities, even when adjusting for baseline suicide risk. Both the structure and the content of the follow-up intervention impacted clients' perceptions of the value of the intervention. Individuals who received more follow-up calls and a greater duration of follow-up (in minutes and in days) were more likely to report that the intervention stopped them from killing themselves and kept them safe. The greater the counselors' engagement in frequently used activities emphasized in SPI (Stanley & Brown, 2012)—discussing social contacts and settings to use as distractors and to turn to for help, and discussing warning signs of impending suicidality—and less frequently used activities emphasized in ASIST—discussing safe or no use of alcohol and drugs and exploring reasons for dying—the more highly clients' valued the intervention.

While our two outcomes are interrelated, the clients' feedback about the extent to which the follow-up calls stopped them from killing themselves and the extent to which it kept them safe provide unique perspectives on the value of the follow-up intervention. The first outcome, which was uniquely associated with the clients' baseline suicide risk, seems to address the intervention's impact on the client's short-term risk of suicidal behavior. The second outcome, which was uniquely associated with specific follow-up activities—discussions about triggers to suicidality, warning signs of impending suicidality, and explorations of a client's ambivalence about life and death—seems to address the intervention's impact on the client's longer term suicide risk. Thus, some clients who reported that the intervention did not stop them from killing themselves—perhaps because they had no current plans or intent to act at the time of the intervention—nonetheless reported that the intervention contributed positively toward keeping them safe, perhaps because of the enhanced tools it provided them for recognizing and averting future suicidal crises.

Our reliance on clients' self-report alone to determine the value of the follow-up intervention could be seen as a limitation. Objective measures of mortality and suicide attempt rates and the inclusion of a comparison group would be needed to determine to what extent clients' perceptions of the intervention's impact are accurate. Nonetheless, client perceptions of intervention effectiveness are increasingly recognized as valuable, and critical to the delivery of effective health care. Person-centered care is a key priority of the U.S. Department of Health and Human Services' 2011 National Quality Strategy (U.S. Department of Health and Human Services, 2011) and SAMHSA's, 2012 National

Behavioral Health Quality Framework (SAMHSA, 2012), and SAMHSA has identified client perception of care as one of its National Outcome Measures for the evaluation of mental health and substance abuse services (SAMHSA, 2014). While previous research has shown that client perceptions of care may lack stability over time (Sofaer & Firminger, 2005), we found that the elapsed time in days between the client's most recent follow-up call and our interview was unrelated to our outcomes, supporting the premise that the clients' perceptions are related to the actual care received and not to the timing of the assessment. A further limitation of our study was the timing of our interview prior to the end of the follow-up intervention for around one-fifth of participants. However, there were no significant differences in perceptions of care between clients whose follow-up had been completed at the time of our interview and clients whose follow-up was ongoing. Lastly, a concern could be raised about the existence of a selection bias because of the low proportion of follow-up clients who were interviewed. However, there were no significant differences between the interviewed and noninterviewed subsamples on factors that impacted the outcomes (e.g., gender and baseline suicide risk status). We do not have information on age, ethnicity, education, and history of homelessness on individuals who were not interviewed.

This is the first study to evaluate a follow-up intervention in the context of care given by crisis hotline counselors. Our findings add to the mounting evidence that follow-up is a key intervention to enhance the continued safety of individuals at risk of suicide (Beautrais et al., 2010; Carter et al., 2007; De Leo et al., 2002; Fleischmann et al., 2008; Motto & Bostrom, 2001; Vaiva et al., 2006). We are encouraged by our finding that the intervention appears most valuable to those who need it most. Our current findings also lend empirical support to the recommendations that crisis hotlines play an integral part in the risk management and continuum of care for individuals at elevated risk of suicide who are engaged with a variety of health and mental health care systems (Litts, Radke, Silverman, Ruter, & Davis, 2008; The Joint Commission, 2016).

In conclusion, crisis hotline counselors engaged in a relatively inexpensive, nondemand intervention that provided continuity of care for individuals who called the Lifeline network of crisis centers during a suicidal crisis. Our findings lay the groundwork for later initiatives to have crisis hotlines provide follow-up to at-risk individuals following inpatient psychiatric hospitalization or discharge from emergency departments, when enhanced continuity of care can be equally lifesaving.

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Manuscript Received: July 22, 2016
Revision Accepted: November 2, 2016