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National Suicide Prevention Lifeline (Now 988 Suicide and Crisis Lifeline): Evaluation of Crisis Call Outcomes for Suicidal Callers

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ABSTRACT

Introduction: With the 988 Suicide and Crisis Lifeline's expanding role in the crisis care continuum in the U.S., assessments of its effectiveness are more important than ever. The current study estimated the extent to which suicidal Lifeline callers perceived their crisis calls as helping them and stopping them from killing themselves, whether their suicidal thoughts recurred after the call, and the caller characteristics and counselor practices associated with these outcomes.

Methods: Telephone interviews were conducted with 437 adult suicidal callers to 12 Lifeline crisis centers between April 15, 2020 and August 15, 2021. The interview collected callers' demographic and clinical characteristics and their perceptions of counselor practices and call outcomes. A series of logistic regression analyses assessed the association of caller characteristics and counselor practices with call outcomes.

Results: The vast majority of suicidal Lifeline callers thought their crisis call helped them (nearly 98%) and stopped them from killing themselves (88.1%). Callers' perceptions of counselor behaviors in the domains of fostering engagement/connection, collaborative problem-solving, and safety assessment/management were strongly associated with callers' perceived effectiveness of the crisis call.

Conclusions: Our study offers empirical evidence for the effectiveness of the Lifeline's (now 988 Lifeline's) telephone crisis services from the caller's perspective.

Suicide continues to be an alarming public health problem in the United States. Suicide mortality rates released for 2022 by the Centers for Disease Control and Prevention (Garnett and Curtin 2024) indicate that overall age-adjusted suicide rates increased 30% from 2002 (10.9 suicide deaths per 100,000 standard population) to 2022 (14.2); suicide deaths reached 48,476 deaths in 2022, the highest number on record (CDC 2025). The establishment of the 988 Suicide and Crisis Lifeline (988 Lifeline) is a leading response to this national crisis. Since the initial establishment of a national network of local, certified call

centers by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2001, which in 2005 became known as the National Suicide Prevention Lifeline (Lifeline), crisis lines have been playing an ever-greater role in the mental health and suicide crisis response system in the U.S. The network of over 200 crisis centers provides 24/7/365 support directly to individuals in distress and to those calling, chatting, or texting out of concern for the well-being of someone else. With the advent in 2022 of 988 as the network's new dialing code, demand for these services has increased (SAMHSA 2023a) as has federal and state funding for them (Consolidated Appropriations Act 2023 2022). With its heightened profile and reach, assessments of the Lifeline's effectiveness are more important than ever.

Evaluations of the Lifeline's effectiveness have been conducted since the crisis network's inception (Gould et al. 2007, 2012, 2013, 2016, 2018; Kalafat et al. 2007; Mishara et al. 2007a). One measure of the Lifeline's effectiveness is the client's perceptions of care, which are deemed critical to the delivery of effective healthcare and have been identified as one of SAMHSA's National Outcome Measures for the evaluation of mental health and substance abuse services (SAMHSA 2023b). An early study of calls to eight centers in the Hopeline Network (the precursor to the Lifeline) employed callers' own ratings of their mental state and suicidality at the beginning and end of the call and demonstrated significant reductions in callers' reports of intent to die, hopelessness, and psychological pain over the course of the call. In the weeks following the call, hopelessness and psychological pain continued to decrease, but intent to die did not continue to diminish, and 43.2% of callers reported recurrent suicidal ideation (Kalafat et al. 2007; Gould et al. 2007). An evaluation of suicidal callers who received follow-up calls from Lifeline counselors as part of a SAMHSA-funded initiative to improve continuity of care found that 80% of interviewed callers believed the follow-up intervention stopped them from killing themselves, and 90.6% reported that it kept them safe (Gould et al. 2018). An evaluation of the Lifeline Crisis Chat (LCC) network employed linked pre- and post-chat surveys and found that chatters were significantly and substantially less distressed at the end of the chat intervention than they were at the beginning; two-thirds of suicidal chatters reported that the chat had been helpful, and nearly half reported being less suicidal by the end of the chat (Gould et al. 2021).

In partnership with the Lifeline, the Veteran's Crisis Line (VCL) provides crisis care and an entry point to the behavioral health care system for thousands of veterans (Veteran's Crisis Line 2023). A study of the VCL's effectiveness employed interviews of 155 VCL users who were referred to a Veterans Affairs Medical Center Suicide Prevention Team (Johnson et al. 2021). Eighty-seven percent of interviewees expressed satisfaction with the intervention, nearly 82% reported that the VCL was helpful, 72.9% said that the VCL helped keep them safe, and nearly 83% of suicidal callers reported that the crisis contact helped stop them from killing themselves.

Two evaluations of non-Lifeline crisis services have also employed clients' perspectives about the intervention. Coveney et al. (2012) study of callers contacting the Samaritans hotline in the UK found that respondents to a self-report survey reported feeling less alone, afraid, and anxious, and more hopeful, supported, and wanting to live after their contact with the Samaritans. Analyses of surveys completed by texters to the Crisis Text Line in the U.S. found that nearly 90% of texters reported that the crisis conversation was helpful, and nearly half of suicidal texters reported being less suicidal at the end of the conversation (Gould et al. 2022).

Crisis clients' demographic and clinical characteristics have been found to be associated with their self-reported outcomes. With regard to demographic characteristics, females' perceptions of the effectiveness of telephone and chat crisis interventions have been more positive than males' perceptions (Gould et al. 2018, 2021), but no association of gender with crisis text outcomes has been found (Gould et al. 2022). Lifeline chatters under age 18 reported significantly better outcomes than older chatters (Gould et al. 2021), and younger CTL texters were more likely to find the conversation helpful than older texters (Gould et al. 2022). In contrast, among adult Lifeline callers who received follow-up calls, older clients were more likely than younger clients to report that the follow-up intervention kept them safe. Hispanic/Latinx clients consistently have provided more favorable feedback than non-Hispanic/Latinx clients on crisis telephone (Gould et al. 2018) and text (Gould et al. 2022) interventions. Texters who identified as Black were more likely than White texters to report being more overwhelmed or suicidal at the end of the CTL conversation; however, the magnitude of the difference was small. Importantly, no racial differences emerged concerning the conversation's overall helpfulness or texters' hopefulness or depression at the conversation's conclusion (Gould et al. 2022).

With regard to clients' clinical characteristics, a caller's intent to die at the end of the crisis intervention was found to be the most significant independent predictor of the caller's suicidality (ideation, plans or attempts) 23–3 weeks following the call (Gould et al. 2007). Texters who scored above the clinical cutoff on depression, anxiety, or social isolation scales were less likely than their less symptomatic counterparts to report positive outcomes (i.e., finding the conversation useful or feeling more hopeful afterward) and more likely to report being more depressed, overwhelmed, or suicidal at the conversation's conclusion (Gould et al. 2022). By contrast, Lifeline callers with high suicide risk scores and those with lifetime suicide attempts who received clinical follow-up calls from crisis counselors were more likely to report that the follow-up intervention stopped them from killing themselves and that it kept them safe (Gould et al. 2018).

There is limited research examining the association of crisis counselor intervention styles with clients' perceptions of the intervention (Gould et al. 2021, 2022); however, studies using silent monitoring of calls (Mishara et al. 2007a) or counselor reports (Gould et al. 2016) have identified specific counselor behaviors and approaches that are associated with improvement in crisis clients' outcomes. Crisis counselor intervention styles that involve a supportive approach, good contact, and collaborative problem-solving consistently have been associated with better outcomes of crisis interventions via telephone (Mishara et al. 2007a), chat (Gould et al. 2021) and text (Gould et al. 2022). Callers to the VCL reported that what was most helpful to them about the call was receiving an intervention or solution

that addressed their presenting problem and feeling generally cared about, supported, validated, listened to, and understood (Johnson et al. 2021). An evaluation of Lifeline callers deemed at imminent risk of suicide by crisis counselors found that higher levels of caller engagement with the counselor enhanced counselors' chances of mitigating imminent suicide risk through collaborative interventions without involving emergency services (Gould et al. 2016).

To date, there is limited information on suicidal callers' perceptions of the effectiveness of their Lifeline calls. One study published over 15 years ago (Gould et al. 2007) examined changes in caller's self-reported hopelessness, psychological pain, and intent to die during the call and two to 3 weeks after the call. The extent to which callers perceived their calls as having helped them or stopped them from killing themselves, and the caller characteristics and counselor practices that were associated with these outcomes, were not assessed. The current study aims to update estimates of the Lifeline's effectiveness using the important outcome of callers' perceptions of care.

1 | Methods

1.1 | Sample

1.1.1 | Crisis Centers

Twelve centers representative of the Lifeline network were selected to participate in this study based on their responses to the Lifeline's internal 2018 Crisis Center Survey. Center selection was stratified by call volume as a proxy for center size and by U.S. census region (Northeast, Midwest, South, and West), such that one center was selected for each tertile of call volume in each census region. In addition, an effort was made to balance centers that did and did not use volunteers to answer crisis lines. Of the 12 centers selected, four used only paid staff, one used exclusively volunteers, and 7 centers had both paid and volunteer counselors. Two of the 12 centers provided national backup coverage to the Lifeline network in addition to answering local Lifeline calls. Calls to the Lifeline's Spanish subnetwork were not included in this study.

1.1.2 | Callers

Suicidal callers were eligible to participate. The caller's current suicidality was identified by the Lifeline counselors based on their clinical risk assessment. Additionally, callers had to be at least 18 years old, English-speaking, and located within the U.S. or the U.S. territory of Puerto Rico. A total of 1169 callers were approached by Lifeline counselors for permission to be contacted by the study team. Of these, 900 (77.0%) agreed to be contacted, and 642 were selected to be interviewed based on a priori recruitment goals; this selection was random within the center. Twenty-two callers were determined to be ineligible for the interview after being reached by an interviewer, most commonly because the caller denied having been suicidal at the time of the crisis call ($N = 14$). Of the remaining 620 callers, 437 (71.3%) completed interviews, 141 could not be reached by an interviewer, and 42 declined to be interviewed when reached.

1.2 | Procedure

Callers were recruited for study participation at the end of crisis calls between April 15, 2020, and August 15, 2021. At each center, several shifts on different days and times were designated as shifts when suicidal callers would be approached to participate. Between 4 and 14 crisis counselors at each center participated in approaching callers, totaling 114 counselors across all centers. Roughly three-quarters of these counselors (77.2%) were paid staff; the rest were volunteers.

Counselors were directed not to approach callers for contact permission until the end of the call, after the crisis intervention was completed. Callers were not approached if emergency services were required. At the time of contact by the study team, a standardized telephone consent script was used, incorporating the required elements of a written consent form. Interviews were conducted on average 13 days after the initial call to the center (SD = 15.15, range = 2–97 days). To ensure independent assessments, the study interviewers were not crisis center staff but had telephone crisis counseling experience. The caller interview included a protocol to ensure caller safety: any caller 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 interview, was reconnected back to the center the caller had initially phoned. These procedures have been used in earlier studies conducted by the study team (e.g., Gould et al. 2012). Callers participating in the interview received a $50 money order.

Research Electronic Data Capture (REDCap), a secure web application, was used for data management (Harris et al. 2009). The study's protocol was approved by the Institutional Review Board of the New York State Psychiatric Institute and Columbia University Department of Psychiatry.

1.3 | Measures

The telephone interview assessed callers' demographics, history of suicidal ideation and behavior, suicide risk at the time of call, current treatment with a mental health professional, callers' perceptions of counselor behaviors, post-call plans and referrals, and crisis call outcomes, including recurrence of suicidal ideation and callers' perceptions of the crisis call's effectiveness.

1.3.1 | Demographics

Age, gender, ethnicity, and race were assessed using the following questions: (1) *Age*: "Would you mind telling me how old you are?" Age was categorized into the following groups: 18–24, 25–34, 35–49, and 50+; (2) *Gender*: "How would you describe your gender?" Interviewers coded responses as male, female, transgender, questioning, or other; (3) *Ethnicity*: "Would you describe your ethnicity as Hispanic/Latinx? (yes or no); and

(4) *Race*: How would you describe your race?" Based on callers' responses, interviewers coded all that applied from the following options: American Indian/Alaska Native, Asian, Native Hawaiian/Pacific Islander, Black/African American, White, Other, or Don't know/declined to answer.

1.3.2 | History of Suicidal Ideation and Behavior and Suicide Risk at Time of Call

A modified version of the suicide risk assessment used in the study team's previous Lifeline evaluations was used to retrospectively assess callers' suicide risk at the time of the Lifeline call (Gould et al. 2012). The assessment included questions measuring the following: (1) lifetime suicide attempts prior to the Lifeline call (yes or no); (2) likelihood to act on suicidal thoughts at the time of the call, measured on a Likert scale from 1 (not at all likely) to 5 (extremely likely); and (3) wish to die at the time of the call, measured on a Likert scale from 1 (definitely wanted to die) to 5 (definitely wanted to live).

1.3.3 | Current Treatment With a Mental Health Professional at the Time of Call

Callers were asked if they were in treatment with a mental health professional (e.g., psychiatrist, psychologist, social worker, school counselor, other therapist) for any behavioral or emotional issues at the time they called the Lifeline.

1.3.4 | Callers' Perceptions of Counselor Behaviors

Callers were asked to rate the extent to which the counselor handling their Lifeline call engaged in a series of behaviors consistent with the Lifeline's guidance regarding best practices for crisis interventions (988 Suicide and Crisis Lifeline 2023a). To assess *fostering engagement/connection*, callers were asked to what extent the counselor: (1) created a supportive and welcoming environment where the caller could feel comfortable sharing concerns; (2) helped the caller explore their feelings and what they were going through; (3) empathized with the caller and helped them feel less alone; (4) took the time to listen and help the caller feel heard; and (5) seemed distracted or uninterested in the caller's story (this item was reverse coded). To assess *collaborative problem-solving*, callers were asked to what extent the counselor: (1) helped the caller problem-solve about their situation; (2) treated the caller as a partner in exploring ways to cope; and (3) empowered the caller. To assess *safety assessment/management*, callers were asked to what extent the counselor: (1) helped the caller explore and share any thoughts or feelings they may have been having about suicide; (2) seemed to accurately understand how much the caller was or was not at risk of suicide at the time of the call; (3) helped the caller identify things to do to help keep them safe; and (4) helped the caller connect with their reasons for living. Each behavior was rated by the caller on a four-point scale (not at all, a little, moderately, a lot). Scales were created by adding together callers' ratings on the constituent items so that a higher score reflected more of a scale's construct: fostering engagement/connection (5 items, range = 0–15; cronbach's alpha = 0.849), collaborative problem-solving (3 items, range = 0–9; cronbach's alpha = 0.793), and safety assessment/management (4 items, range = 0–12; cronbach's alpha = 0.795). The correlation between the fostering engagement/connection scale and each of the other two counselor scales is 0.56. The correlation between the collaborative problem-solving scale and the safety assessment/management scale is 0.71, which may reflect the inclusion of suicide-specific collaborative problem-solving strategies within the domain of safety assessment/management. Because two of our outcomes of interest are suicide-specific, it was determined that suicide-specific counselor behaviors would be treated as a separate scale, rather than merged with other problem-solving behaviors, despite the strong correlation between them.

1.3.5 | Post-Call Plans and Referrals

The caller and counselor's discussion of plans to keep the caller safe after the call and in future suicidal crises, and the provision of mental health service referrals, were assessed with the following questions: (1) whether the caller and counselor came up with a plan for what the caller could do after the call to keep safe (yes, no, or do not remember); (2) came up with a plan for what the caller would do if the caller became suicidal again in the future (yes, no, or do not remember); and (3) whether the caller received a referral for mental health services during their call (yes, no, or do not remember).

1.3.6 | Call Outcomes

Crisis call outcomes were measured by the following questions: (1) since the call, have you had any thoughts of killing yourself? (yes or no); (2) to what extent did the call stop you from killing yourself? (a lot, a little, not at all, it made things worse, or not relevant–caller not at risk of acting on thoughts of suicide); and (3) overall, how much did the call help you? (it helped a lot, it helped a little, it didn't really help or hurt, it made things a little worse, or it made things a lot worse).

1.4 | Statistical Analyses

Statistical analyses were performed using SPSS version 28.0 and SAS version 9.4. Simple frequencies were calculated for demographic variables, suicide risk items, counselor practices (caller perceptions of counselor behaviors scales, action plans for current and future crises, mental health referrals), and the three outcome variables.

Separate mixed-effect logistic regression analyses of the three outcomes were conducted using the independent variables described below, including the center as a random effect to account for correlations among callers to the same center. These models were developed using the PROC GLIMMIX procedure in SAS.

Demographic variables were first tested in separate mixed effect logistic regression models to identify any significant associations with each outcome. Demographic variables found to be

significantly associated were subsequently added as covariates in analyses of the respective outcomes.

Independent variables included callers' history of suicide attempt, likelihood of acting on thoughts of suicide at the time of the call, intensity of the wish to die at the time of the call, mental health treatment at the time of call, and counselor practices (scales for callers' perceptions of counselor behaviors in the domains of engagement/connection, collaborative problem-solving, and safety assessment/management; whether an action plan for the current crisis or for a future crisis was developed; and whether a mental health referral was given). Due to a scarcity of unfavorable responses in each of the counselor behavior scales, scores were collapsed into fewer levels by merging responses with a frequency of less than 10. Engagement/Connection scale scores 0 through 12 (out of 15) were combined, yielding a 4-point scale. Collaborative Problem-Solving scale scores 0 through 2 (out of 9) were combined, yielding an 8-point scale. Safety Assessment/Management scale scores 0 through 5 (out of 12) were combined, yielding an 8-point scale.

Unlike caller demographics, the caller characteristics included as independent variables (history of suicide attempt, likelihood of acting on thoughts of suicide at the time of the call, intensity of the wish to die at the time of the call, and mental health treatment at the time of call) were not considered as potential covariates in the logistic regression analyses. Because these characteristics are themselves among the targets of the counselors' interventions, it was determined that adjusting for them could lead to a condition of overcontrol.

In light of the data being collected during the COVID-19 pandemic, supplementary sensitivity analyses were conducted to explore whether the three outcomes differed by callers reporting that stress related to COVID-19 was or was not the primary reason for their call. If the differences were statistically significant, then the main analyses were repeated, adjusting for this COVID-19 variable. These analyses utilized the same PROC GLIMMIX model structure as the main analysis.

For all analyses conducted, associations were evaluated using two-sided statistical tests, with a p-value of <0.05 considered significant.

2 | Results

2.1 | Description of Lifeline Callers

Over half of interviewed callers were female and nearly three-quarters were between the ages of 18 and 34 (see Table 1). They were 64% White, 14% Black, and 5% Asian, with roughly 9% identifying as more than one race. The sample was approximately 15% Hispanic/Latinx.

Just over half of callers reported having made a suicide attempt in their lifetime prior to their Lifeline call. Over half reported being at least somewhat likely to act on their suicidal thoughts at the time of their call. Approximately 40% reported they wanted to die more than live or definitely wanted to die. Under half of callers reported being in treatment with a mental health professional at the time of their Lifeline call.

2.2 | Counselor Practices

2.2.1 | Callers' Perceptions of Counselor Behaviors

Table 2 presents the raw mean scores for the three counselor behavior scales. The average score for counselors' fostering engagement/connection was nearly 14 out of a possible 15, indicating that callers nearly universally found their counselors to engage in these behaviors a lot. Average scores for counselor problem-solving and safety assessment/management behaviors were also quite high.

2.2.2 | Post-Call Plans and Referrals

Nearly three in four callers reported that the Lifeline counselor worked with them to come up with a plan for what they could do to keep themselves safe after the current crisis call ("Action Plan for Current Crisis"), and about two-thirds reported coming up with a plan for what they could do if they became suicidal again in the future ("Action Plan for Future Crisis") (see Table 2). About half of callers reported receiving a mental health services referral. This included referrals to new mental health providers as well as referrals back to the caller's current or prior mental health provider.

2.3 | Call Outcomes

Table 3 presents the crisis call outcomes reported by the callers. More than half of the callers reported that they had not had suicidal thoughts since their Lifeline call, while a sizeable minority (40.8%) reported that they had. The vast majority of callers reported that the call stopped them from killing themselves either a little or a lot (88.1%), and nearly all callers reported that calling the Lifeline helped them a little or a lot (97.7%). The extremely low frequencies of ineffective/negative outcomes precluded their inclusion in subsequent logistic regression analyses.

2.4 | Relationship Between Caller Characteristics, Counselor Practices, and Call Outcomes

The associations of demographics and independent variables with the three crisis call outcomes are presented in Table 4. (see Table S1a–c for full tabulation of percentages for each independent variable/outcome pair).

Crisis call outcomes did not vary significantly by the caller's age, gender, or ethnicity. Callers' perceptions of call helpfulness varied significantly by the caller's race, with callers identifying as Asian reporting that the call helped them less than other callers. The percentage of callers who reported that the call helped them a lot was 72.5%, 72.9%, 69.7%, and 70.3% for callers who identified themselves as White, Black, Multiracial, or Other,

TABLE 1 | Description of interviewed lifeline callers ($n = 437$).

Demographics	*N*	(%)
Age		
18–24	184	(42.2%)
25–34	131	(30.0%)
35–49	66	(15.1%)
50+	55	(12.6%)
Gender		
Male	161	(36.8%)
Female	257	(58.8%)
Transgender	5	(1.1%)
Questioning	1	(0.2%)
Other	13	(3.0%)
Race		
American Indian/Alaskan Native	12	(2.8%)
Asian	21	(4.9%)
Black	59	(13.8%)
Native Hawaiian/Pacific Islander	2	(0.5%)
White	276	(64.8%)
Multiracial		
American Indian/Alaskan Native and Black	1	(0.2%)
American Indian/Alaskan Native and White	5	(1.2%)
Asian and Other	1	(0.2%)
Asian and White	5	(1.2%)
Black and White	10	(2.3%)
Native Hawaiian/Pacific Islander and White	2	(0.5%)
White and Other	1	(0.2%)
"Mixed"	8	(1.8%)
Other	23	(5.4%)
Hispanic/Latinx Ethnicity		
Hispanic/Latinx	66	(15.1%)
Not Hispanic/Latinx	370	(84.9%)
History of Suicidal Behavior and Suicide Risk at Time of Call		
Prior suicide attempt?		
Yes	226	(52.2%)
No	207	(47.8%)
How likely was caller to act on thoughts at time of call?		
1—Not at all likely	111	(25.6%)
2	96	(22.2%)
3—Somewhat likely	138	(31.9%)

(Continues)

TABLE 1 | (Continued)

Demographics	*N*	(%)
4	55	(12.7%)
5—Extremely likely	31	(7.2%)
6—Attempt in progress at time of call	2	(0.5%)
How much did caller want to die at time of call?		
Definitely wanted to die	73	(16.9%)
Wanted to die more than live	108	(24.9%)
About equal	109	(25.2%)
A part of them wanted to live more than die	93	(21.5%)
Definitely wanted to live	50	(11.5%)
Current treatment with a mental health professional at the time of the call		
Yes	195	(44.6%)
No	242	(55.6%)

respectively. In contrast, only 42.9% of callers who identified as Asian reported that the call helped them a lot (see Table S1c). Therefore, race (Asian/not Asian) was included as a covariate in subsequent analyses of this outcome variable.

Callers who reported being more likely to act on their thoughts of suicide and having a stronger wish to die at the time of the crisis call had significantly greater odds of reporting recurrent thoughts of suicide after their crisis call. For example, 51.6% of callers who reported that they were extremely likely to act on their suicidal thoughts at the time of the crisis call, in contrast to 27.9% of callers who were not at all likely to act, had recurrent suicidal thoughts (see Table S1a). The acuity of callers' suicide risk at the time of the call did not impact their perceptions of the call's stopping them from killing themselves or the call's helpfulness. Callers who were in current mental health treatment at the time of the crisis call had significantly higher odds than callers who were not in treatment of reporting thoughts of suicide after the crisis call. Of those in current mental health treatment, 50.3% reported that they had suicidal thoughts after the call, in contrast to 32.6% of callers not in current mental health treatment (see Table S1a). Callers' treatment status did not impact their perceptions of the call's stopping them from killing themselves or the call's helpfulness.

All three caller-rated counselor behavior scales were significantly related to all three crisis call outcomes. The effect sizes of these associations were substantially larger than those of the other independent variables.

Having action plans for after the current call and for the event of a future suicidal crisis was not significantly related to whether the caller had thoughts of suicide after the call. A future crisis plan, but not a current action plan, was significantly related to callers' reporting that the call stopped them from killing themselves a lot. Of callers with a future crisis plan, 73.4% reported that the call stopped them from killing themselves a lot, in contrast to 57.1% of callers with no future plan (see Table S1b). Both types of plans were significantly related to callers' perceptions of the helpfulness of the call. Of callers with a current action plan, 74.1% reported that the call helped them a lot, in contrast to 55.1% of callers with no current plan. Similarly, of callers with a future crisis plan, 76.6% reported that the call helped them a lot, in contrast to 59.0% of callers with no future plan (see Table S1b). Receiving a referral for mental health treatment was not significantly related to any outcome.

2.5 | Sensitivity Analyses

There were no significant differences in two main outcomes (recurrence of suicidal thoughts and perceived helpfulness of the call) between callers who did or did not report that stress related to COVID-19 was the primary reason for their call (OR 0.73 (95% CI: 0.46–1.17) $p = 0.189$; OR 1.65 (95% CI: 0.96–2.83) $p = 0.069$, respectively). However, callers who reported that COVID-related stress was the primary reason for their call had significantly higher odds of reporting that the call stopped them from killing themselves (OR 2.43 (95% CI: 1.22–4.86) $p = 0.012$). Therefore, analyses for this outcome were repeated, adjusting for the COVID-related stress variable (see Table S2). The pattern of results remained the same. This suggests the association between predictors and outcomes was not impacted by COVID-related stress on our outcomes, justifying our not including COVID-related stress in our main analytic models.

3 | Discussion

Several key findings emerged from interviews with 437 suicidal Lifeline callers. Individuals at high risk for suicide—based on high rates of prior suicide attempts and high levels of intent to act and wishes to die at the time of the call—reach out to telephone crisis services, which is consistent with findings from our 2007 study (Gould et al. 2007). The current study provides the first estimates of the extent to which suicidal Lifeline callers think their crisis call intervention stopped them from killing themselves (88.1%). This estimate is similar to that reported by Lifeline callers about the impact of follow-up calls (80%;

TABLE 2 | Counselor practices ($n = 437$).

Callers' perceptions of counselor behaviors	Mean (S.D.)[a]
Fostering engagement/Connection Scale (5 items, range = 0–15)	13.85 (2.07)
Collaborative Problem-Solving Scale (3 items, range = 0–9)	7.08 (2.17)
Safety Assessment/Management Scale (4 items, range = 0–12)	9.57 (2.64)
Post-call plans and referrals	***N* (%)**
"Did you and the counselor come up with a plan for what you could do after the call to keep yourself safe?" (Action Plan for Current Crisis)	
Yes	316 (72.8%)
No	69 (15.9%)
Do not remember	49 (11.3%)
"Did you and the counselor come up with a plan for what you could do if you become suicidal again in the future?" (Action Plan for Future Crisis)	
Yes	290 (67.0%)
No	105 (24.2%)
Do not remember	38 (8.8%)
"Did you receive a referral for mental health services during your call to the Lifeline?"	
Yes	213 (49.1%)
No	186 (42.9%)
Do not remember	35 (8.1%)

[a]Raw mean scores for the three counselor behavior scales.

TABLE 3 | Call outcomes ($N = 437$).

Call outcomes	*N*	%
"Since the call, have you had any thoughts of killing yourself?"		
Yes	177	40.8
No	257	59.2
"To what extent did the call stop you from killing yourself?"		
A lot	302	69.6
A little	81	18.5
Not at all	7	1.6
It made things worse	0	0
N/A (*participant was not at risk of acting on thoughts*)	44	10.1
"Overall, how much did the call help you?"		
It helped me a lot	311	71.7
It helped me a little	113	26.0
It didn't really help or hurt	7	1.6
It made things a little worse	3	0.7
It made things a lot worse	0	0

Gould et al. 2018) and by VCL callers about their crisis call (83%, Johnson et al. 2021). Suicidal Lifeline callers in the current study nearly universally reported that their crisis call helped (nearly 98%). This is an even higher rate of helpfulness than those reported for the CTL (90%, Gould et al. 2022), VCL (82%, Johnson et al. 2021), and Lifeline Crisis Chat (LCC) (66.8%, Gould et al. 2021). Differences may reflect different populations of clients being surveyed (e.g., suicidal and non-suicidal clients for CTL versus only suicidal clients for LCC, VCL, and in the current study) or the different means of data collection (automated surveys for CTL and LCC versus interviews for VCL and in the current study).

Suicidal callers rated their counselors as engaging in Lifeline best practices (fostering engagement/connection, collaborative problem-solving, and safety assessment/management) to a great extent, and callers' perceptions of these counselor behaviors were significantly and clinically meaningfully associated with positive call outcomes. While it might be expected that callers would rate counselor behaviors favorably on calls they found helpful and effective, it is notable that favorable ratings of the assessed domains of counselor behavior were also associated with lower rates of recurrence of suicidal thoughts. The current findings are consistent with earlier studies of chatters' and texters' perceptions of the impact of counselor engagement (Gould et al. 2021, 2022) and silent monitoring studies reporting that counselors' supportive approach, good contact, and

TABLE 4 | Relationship of caller characteristics and counselor practices to call outcomes ($N = 437$).

	Call outcomes					
	"Since the call, have you had any thoughts of killing yourself?" (Yes vs. No)		"To what extent did the call stop you from killing yourself?" (A little vs. A lot)[a]		"Overall, how much did the call help you?" (A little vs. A lot)[b]	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Caller demographics						
Age (years)		Overall $p = 0.252$		Overall $p = 0.503$		Overall $p = 0.336$
18–24 (reference)	—		—		—	
25–34						
35–49						
50+						
Gender		Overall $p = 0.622$		Overall $p = 0.061$		Overall $p = 0.332$
Female (reference)	—		—		—	
Male						
Other						
Race		Overall $p = 0.107$		Overall $p = 0.135$		Overall $p = 0.047$
White (reference)	—		—		—	
Black					1.29 (0.64, 2.61)	
Asian					0.26 (0.11, 0.66)	
Multi-racial					0.92 (0.41, 2.10)	
Other[c]					1.19 (0.51, 2.80)	
Ethnicity						
Not Hispanic/Latinx (reference)	—		—		—	
Hispanic/Latinx	1.29 (0.72, 2.34)	0.394	1.95 (0.88, 4.31)	0.101	1.40 (0.73, 2.66)	0.309
History of suicidal behavior and suicide risk at time of call						
Prior Suicide Attempt						
No (reference)	—		—		—	
Yes	1.27 (0.86, 1.88)	0.234	1.56 (0.95, 2.56)	0.079	1.31 (0.84, 2.04)[d]	0.235

(Continues)

TABLE 4 | (Continued)

	Call outcomes					
	"Since the call, have you had any thoughts of killing yourself?" (Yes vs. No)		"To what extent did the call stop you from killing yourself?" (A little vs. A lot)[a]		"Overall, how much did the call help you?" (A little vs. A lot)[b]	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Likelihood of acting on thoughts of suicide at time of crisis call	1.36 (1.15, 1.60)	$p < 0.001$	1.11 (0.90, 1.37)	0.316	1.14 (0.94, 1.37)[d]	0.174.
Wish to die at time of crisis call	1.34 (1.14, 1.57)	$p < 0.001$	1.03 (0.90, 1.27)	0.752	0.87 (0.73, 1.04)[d]	0.132.
Currently in treatment with a mental health professional						
No (reference)						
Yes	2.07 (1.40–3.07)	$p < 0.001$	0.78 (0.47–1.27)	0.315	0.90 (0.58–1.41)[d]	0.656
Counselor Practices						
Callers' perceptions of counselor behaviors						
Fostering Engagement/Connection Scale	0.76 (0.64, 0.91)	$p = 0.003$	1.64 (1.32, 2.03)	$p < 0.001$	2.09 (1.68, 2.53)[d]	$p < 0.001$
Collaborative Problem-Solving Scale	0.87 (0.79, 0.95)	$p = 0.003$	1.48 (1.30, 1.68)	$p < 0.001$	1.73 (1.52, 1.98)[d]	$p < 0.001$
Safety Assessment/Management Scale	0.87 (0.80, 0.95)	$p = 0.004$	1.45 (1.29, 1.63)	$p < 0.001$	1.55 (1.38, 1.73)[d]	$p < 0.001$
Post-call plans and referrals						
Action Plan for Current Crisis						
No (reference)	—		—			
Yes	0.89 (0.52, 1.52)	0.672	1.73 (0.89, 3.33)	0.104	1.99 (1.11, 3.56)[d]	0.021
Action Plan for Future Crisis						
No (reference)	—		—		—	
Yes	0.86 (0.54, 1.36)	0.520	1.79 (1.02, 3.14)	0.043	2.28 (1.37, 3.79)[d]	0.002
Mental health referral						
No (reference)	—		—		—	
Yes	0.90 (0.60, 1.35)	0.602	1.08 (0.65, 1.79)	0.758	1.07 (0.67, 1.70)[d]	0.771

[a]The small frequencies of the response options "Not at all" and "It made things worse" precluded their inclusion in the analyses.
[b]The small frequencies of the response options "It didn't really help or hurt," "It made things a little worse," and "It made things a lot worse" precluded their inclusion in the analyses.
[c]Due to the small numbers of participants who identified as American Indian/Alaskan Native or Native Hawaiian/Pacific Islander, these groups were combined with the "other" group in the analyses.
[d]Asian (Y/N) Included as a covariate.

collaborative problem-solving were associated with better call outcomes (Mishara et al. 2007a).

Two-thirds of callers reported that they and the counselor had come up with a plan for what they could do if the caller became suicidal again in the future, and this was significantly associated with the caller's perception that the call was helpful and that it stopped them from killing themselves. This underscores the importance of safety planning, which provides suicidal callers with tools to manage future challenges (Stanley and Brown 2012). Safety planning has been found to be both feasible and helpful to Lifeline counselors (Labouliere et al. 2020), and among suicidal patients discharged from the ED, safety planning has been shown to be associated with a reduction in suicidal behavior and increased treatment engagement (Stanley et al. 2018). In contrast, coming up with an action plan for the current crisis was not associated with the caller's perception that the call stopped them from killing themselves; however, it was associated with the caller's perception of the call's usefulness. Identification of resources and solutions to address a current crisis is consistent with a collaborative problem-solving model (Mishara et al. 2007b), which has been associated with better immediate caller outcomes (e.g., Mishara et al. 2007a).

No demographic characteristics of the callers, other than race, were associated with the callers' perceptions of the call's effectiveness. This is in contrast to earlier studies that found that females and clients who identify as Hispanic/Latinx generally have more positive perceptions of the effectiveness of the intervention (Gould et al. 2018, 2021, 2022). Our finding that callers identifying as Asian had significantly poorer perceptions of the call's helpfulness may reflect the unique burden Asian Americans faced during the COVID pandemic (when our interviews occurred) due to its association with China and the resulting increase in discrimination toward Asian Americans (Tessler et al. 2020). In an earlier article (Port et al. 2023), we found that Asian-American callers, compared to White callers, were more likely to mention an increase in COVID-related general anxiety and non-specific fear, which may be less likely to be mitigated by a crisis intervention.

Despite the positive outcomes reported by suicidal callers, approximately 41% of callers had recurrent suicidal thoughts between their crisis call and the time of our interview, on average 13 days later. This is similar to the 43.2% of suicidal callers in our 2007 study who reported any suicidality following their crisis call (Gould et al. 2007). As in that earlier study, the recurrence of suicidal thoughts was significantly associated with higher suicide risk at the time of the crisis call. Callers who were in current mental health treatment at the time of the crisis call were also more likely to have recurrent suicidal thoughts. This may reflect these callers having more chronic and intransigent problems than callers who were not in treatment. The current findings reinforce the importance of the initiative started by SAMHSA in 2008 to have crisis center staff offer and provide follow-up calls to all Lifeline callers who report current or recent suicidal ideation.

The current study has several limitations. Firstly, there may be a selection bias in callers who agreed to participate in the telephone interview compared to those who did not. A bias may also have been present in the Lifeline counselors' selection of callers to be approached for recontact by the research team. Secondly, we recognize that other measures of effectiveness, such as service utilization after a crisis call (Britton et al. 2023; Gould et al. 2012) are critically important to assess. This was beyond the scope of the present study. Thirdly, we were unable to examine factors that were associated with ineffective or negative outcomes (i.e., callers responding that the calls did not help them or made things worse or that the calls did not stop them from killing themselves) because the frequency of these outcomes was extremely low. Lastly, the interviews were conducted during the COVID-19 pandemic and might not be generalizable to other times. However, our sensitivity analyses indicated that callers' identifying COVID-related stress as the primary reason for their call had little impact on our results. Moreover, our findings are consistent with those from time periods before the COVID-19 pandemic.

The study also has numerous strengths. To our knowledge, this is the first study to present suicidal Lifeline callers' perceptions of their crisis calls' effectiveness, using now-standardized effectiveness metrics (i.e., helpfulness and "stopped me from killing myself" items). Callers were recruited from a representative sample of Lifeline crisis centers. Although the interviews were collected before July 2022, when Lifeline's 10-digit number was transitioned to 988, the 988 network of crisis centers is largely the same as in the earlier Lifeline network, and best practices for crisis counselors have not changed (988 Suicide and Crisis Lifeline 2023b). As such, the current findings provide estimates of effectiveness relevant to the 988 Lifeline.

In conclusion, our study provides empirical evidence for the effectiveness of Lifeline's (now 988 Lifeline's) telephone crisis services from the perspective of callers themselves, as evidenced by the vast majority of interviewed callers reporting that their call was helpful and stopped them from killing themselves. Callers nearly universally perceived their crisis counselors as connecting with them, helping them to problem-solve, and working with them toward safety, all of which enhanced the callers' positive perceptions of the intervention. High-risk callers continue to utilize the Lifeline. Callers at more acute risk at the time of the crisis call and those in ongoing mental health treatment were more likely to experience continued suicidality after the call. Callers who reported developing action plans to address current and potential future crises were more likely to perceive the call as helping them a lot, and callers who reported developing an action plan to address a potential future crisis (i.e., a safety plan) were more likely to perceive the call as stopping them from killing themselves a lot. This suggests that even when crisis calls do not prevent the recurrence of suicidality, they can be effective in providing callers with tools for keeping themselves safe after the call.

Author Contributions

Madelyn S. Gould: conceptualization (lead), data curation (equal), formal analysis (equal), funding acquisition (lead), investigation (lead), methodology (lead), project administration (equal), resources (equal), supervision (equal), validation (lead), writing – original draft (lead), writing – review and editing (lead). **Alison M. Lake:** conceptualization (equal), data curation (equal), formal analysis (equal),

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data are not available from the authors. Lifeline data are subject to third-party restrictions set by Vibrant Emotional Health.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.