

Study	Design	Data source	Sample size	Study location	Hotline name	Hotline mode	Study population	Outcomes	Findings
Descriptive Studies									
Abdullah et al., 2021 (26)	Cross-sectional	Coding of recorded calls	<i>n</i> = 177 calls	Westchester County, NY	WMCHHealth COVID Anxiety Hotline	Phone	Individuals impacted by COVID-19	Callers: demographic and clinical characteristics	81% of callers were female. 58% of callers did not report any prior psychiatric history. Anxiety and sleep disturbances were the most prevalent symptoms reported (72%). 26% of calls were of high acuity level, which was significantly associated with insomnia and anxiety (<i>p</i> ≤ .05).
Arias et al., 2015 (27)	Cross-sectional	ED and program participant records	<i>n</i> = 874 participants	8 EDs in: Boston, MA; Phoenix, AZ; Marlborough, MA; Pawtucket, RI; Columbus, OH; Little Rock, AR; Aurora, CO; Omaha, NE	Boys Town National Hotline	Phone	Adults at risk of suicide	Callers: demographic and clinical characteristics, call outcome	6% of ED follow-up calls and 16% of participants were transferred to a crisis hotline. Of those callers transferred, 97% completed a crisis counseling call, 67% were female, and 80% were white. Median call time was 14 minutes. 64% of callers who were transferred to a crisis counselor reported suicidal ideation, and 20% reported at least one suicide attempt in the weeks after the call.
Becker and Ramchand, 2014 (28)	Cross-sectional	Statewide survey of adults	<i>n</i> = 2,568 participants	California	NA	Phone, text, chat	California adults	Callers: modality preferences	62% of California adults reported that they would choose a phone-based hotline if they were to experience a suicidal thought, relative to other modality options. 46% of respondents said that they would contact a web-based chat hotline, and 43% indicated that they would contact a text hotline.
Boness, Helle, and Logan, 2021 (29)	Cross-sectional	Call logs	<i>n</i> = 5,001 calls	Midwest U.S.	One hotline (unspecified)	Phone, text	General population	Callers: clinical characteristics, hotline utilization, referrals	Calls ranged from 354 to 473 per month and were most frequent in spring and summer months. Median call duration was 15 minutes. 52% of adult callers reported a history of victimization of violence. 17% of calls resulted in a referral.
Brühlhart et al., 2021 (30)	Cross-sectional	Call logs	<i>n</i> = 3,936,900 calls	National	Lifeline, SAMHSA's Disaster Distress Helpline	Phone	NA	Callers: hotline utilization	Increases in COVID-19 cases were associated with significant decreases in the number of calls to the Lifeline (<i>p</i> = 0.03). Policy interventions (state-level nonpharmaceutical interventions and income support) were not found to have statistically significant effects on Lifeline call volume.

Budinger, Cwik, and Riddle, 2015 (31)	Cross-sectional	Survey of youth program participants	<i>n</i> = 168 participants	Baltimore, MD	Lifeline, Maryland Youth Crisis Hotline (MYCH)	Phone, text, chat	Youth at risk of suicide	Callers: awareness, modality preferences, demographic characteristics	30% of participants were aware of the Lifeline and the MYCH; 21% knew of another hotline. 3% reported having used the Lifeline, 4% had used the MYCH, and 4% used some other hotline. Participants reported phone as the most preferred medium (41%). 25%, 19%, and 15% ranked text, chat, and social media as most preferred, respectively. 33% indicated they would “likely” or “very likely” worry what others thought if they knew that participants had called a hotline.
Busby et al., 2020 (32)	Retrospective cohort	Survey of youth program participants	<i>n</i> = 234 participants	13 EDs across the U.S. (unspecified)	One hotline (unspecified)	Phone	Youth at risk of suicide	Callers: demographic and clinical characteristics, engagement	94% of callers were successfully transferred to a counselor for follow-up interview. 84% of all callers shared information about coping strategies. Call length was, on average, 13 minutes (SD = 10 minutes). There were no significant differences in engagement based on demographic or clinical characteristics.
Goldbach et al., 2019 (33)	Cross-sectional	Survey of youth callers	<i>n</i> = 657 callers	National	One LGBTQ+ youth hotline (unspecified)	Phone, text	LGBTQ+ youth at risk of suicide	Callers: demographic characteristics, reasons for contact	26% of callers reported that they would not have contacted a hotline other than the one that they did contact. The fact that the hotline was LGBTQ+ affirming was the most common reason (42%) for contacting the hotline, particularly for transgender and gender-nonbinary youth. 51% of gender minorities reported this reason for calling compared with 36% of cisgender youth (OR: 1.87, <i>p</i> < 0.05).
Gould et al., 2016 (34)	Cross-sectional	Call logs	<i>n</i> = 491 contacts; <i>n</i> = 266 responders	8 call centers across the U.S. (unspecified)	Lifeline	Phone	Callers at risk of suicide; volunteer and professional responders	Callers: clinical characteristics, hotline utilization	Callers with the largest risk profile—high-risk callers (50%)—reported high levels of hopelessness, psychological pain, and suicidal intent. Emergency services were sent on 19% of calls, and active rescues on 28% of calls. Responders reported a reduction of imminent risk in 39% of calls. Volunteers were less likely than professional responders to have completed ASIST training (<i>p</i> = 0.04) and to actively engage callers over the phone (OR: 0.41, <i>p</i> = 0.003) and were more likely to send an active rescue (OR: 2.31, <i>p</i> = 0.001).

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Hedman-Robertson, 2018 (35)	Cross-sectional	Survey of students	<i>n</i> = 560 participants	Midwest U.S.	Lifeline	Phone	College students	Callers: awareness, perceived helpfulness, likelihood of use	50% of students reported seeing the hotline advertisement, but only 29% were able to identify who would answer the hotline. Seeing the ad was associated with greater perceived helpfulness of the hotline ($p < 0.05$). Perceived helpfulness weakly predicted increased likelihood of hotline use ($p < 0.01$). 1% of respondents reported lifetime hotline use.
Kerner et al., 2021 (36)	Cross-sectional	Call logs	<i>n</i> = 67,478 contacts	Los Angeles, CA	One youth hotline (unspecified)	Phone, text	Youth	Callers: hotline utilization, demographic characteristics	Hotline utilization increased from 8,008 contacts in 2010 to 12,409 contacts in 2016 ($p = 0.03$). The most frequent callers were women aged 15 or 16. 30% of contacts were made through text. Primary reasons for contact were anxiety and stress (20%), sadness and depression (17%), and suicidal ideation (14%). Referrals to outside mental health resources were made in 56% of contacts and increased from 2010 to 2016 ($p = 0.01$).
King et al., 2014 (37)	Cross-sectional	Call logs	<i>n</i> = 412 calls	National	VCL	Phone	Older male veterans	Callers: demographic and clinical characteristics, reasons for contact, variations by age	Top themes discussed by callers were mental health issues, suicidal ideation, and substance use issues. Age was associated with loneliness (OR: 1.05, $p < 0.01$) and mental health concerns (OR: 0.98; $p < 0.05$), with older and middle-aged veterans more likely to feel lonely but less likely to express mental health concerns.
Meng, D'Arcy, and Adams, 2015 (38)	Cross-sectional	Survey of adults	<i>n</i> = 5,645 participants	National (nationally representative sample)	NA	Phone	Adults	Callers: hotline utilization, demographic and clinical characteristics	3% of survey participants self-reported lifetime use of a hotline. Females, older adults, married individuals, and those with substance use, anxiety, depression, and/or chronic conditions were more likely to report using a hotline ($p < 0.05$). Participants with anxious and avoidant attachment styles were more likely to self-report hotline use ($p < 0.05$).

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Miner et al., 2016 (39)	Cross-sectional	Convenience sample of 68 phones	$n = 77$ voice assistants	NA	Lifeline	Phone	NA	Other: recognition of need, referral to hotline	Siri, Google Now, and S Voice recognized the statement "I want to commit suicide" as concerning. Siri and Google Now referred the user to the Lifeline. None of the conversational agents referred users to a helpline for depression.
Mishara et al., 2016 (40)	Cross-sectional	Call logs, live coding of calls	$n = 14$ call centers; $n = 1,431$ contacts	14 call centers across the U.S. (unspecified)	Multiple hotlines (unspecified)	Phone	Volunteer and professional responders	Responders: professional status, services provided, call outcome	Centers with only volunteers conducted suicide risk assessments more often (64%) than centers with only professional staff (47%). Professional-only centers were less likely to identify callers as being suicidal (26% of calls), compared with centers with only volunteers (34%). Volunteer centers had significantly higher (better) scores on the Crisis Call Outcome Rating Scale, compared with all professional and mixed volunteer and professional centers ($p < 0.01$).
Predmore et al., 2017 (41)	Qualitative	Interviews with responders	$n = 54$ responders	National	VCL	Text, chat	Veterans	Callers: modality preferences	Veterans often used chat and text because of privacy concerns and to make initial contact with psychiatric services. Sometimes, veterans used chat because of a lack of access to a phone. It was unclear whether callers and chatters exhibited different concerns or rates of suicidality.
Ramchand et al., 2016 (42)	Qualitative	Interviews with responders	$n = 54$ responders	National	VCL	Phone	Women veterans	Callers: clinical characteristics, reasons for contact, differences in gender	43% of responders expressed that "most" women callers expressed concerns about sexual violence or assault. The most common women caller concerns reported were mental health issues, family or relationship issues, and financial issues. Responders reported that hopelessness, PTSD, and loneliness were the most commonly mentioned reasons for why women callers wanted to die.

Ramchand et al., 2017 (43)	Cross-sectional	Live coding of calls	<i>n</i> = 241 contacts	California	Lifeline, other hotlines (unspecified)	Phone, text, chat	Adults at risk of suicide	Callers: demographic and clinical characteristics, satisfaction, call outcomes	57% of callers were women. 51% of callers self-reported a mental health or substance use disorder problem. Longer calls led to higher satisfaction ($p < 0.001$) and a higher likelihood of reduced caller distress by the end of the call ($p = 0.03$). Callers to centers that are part of the Lifeline were more likely to experience decreased distress than callers to non-Lifeline centers ($p = 0.02$). Only one center had callers who experienced increased distress.
Rasmussen et al., 2017 (44)	Cross-sectional	Call logs	<i>n</i> = 3,660 calls	National	VCL	Phone	Older veterans	Callers: demographic characteristics, satisfaction, variations by age	Older veterans, those aged 60 or older, made up 25% of callers. Of older veteran callers, approximately 80% found the call beneficial. Several significant differences between older and younger callers were reported. Older veterans were more likely than younger callers to report physical health concerns ($p < 0.001$) and loneliness ($p = 0.001$) and less likely to report mental health problems ($p < 0.001$) and substance use ($p < 0.001$).
Rhoades et al., 2018 (45)	Cross-sectional	Survey of youth callers	<i>n</i> = 657 callers	National	One LGBTQ+ youth hotline (unspecified)	Phone, text, chat	LGBTQ+ youth at risk of suicide	Callers: demographic and clinical characteristics	32% of youth callers had experience with homelessness, and higher rates of homelessness were associated with those who had disclosed LGBTQ+ identity to parents (1.56 increased odds, 95% CI: 1.01–2.42) or had experienced parental rejection (1.75 increased odds, 95% CI: 1.15–2.67). Youth with homelessness experience reported more symptoms of psychiatric disorders (80% increased odds of depression) and higher rates of suicidality (3.30 times odds of reporting suicide attempt, 95% CI: 2.13–5.11).

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Roth and Szlyk, 2021 (46)	Cross-sectional	Survey of adults	<i>n</i> = 18,909 participants	National (nationally representative sample)	NA	NA	General population	Callers: hotline utilization, demographic and clinical characteristics	Lifetime and past 12-month prevalence of hotline use (based on self-report) were 3% and 1%, respectively. A greater likelihood of lifetime use correlated with being female and white, having a mental health condition, experiencing suicidality, and interacting with other sectors of the mental health service system (<i>p</i> < 0.001 for all).
Szlyk, Roth, and García-Perdomo, 2020 (47)	Cross-sectional	Text logs	<i>n</i> = 122,909 texters; <i>n</i> = 153,514 contacts	National	CTL	Text	Individuals at risk of suicide	Callers: clinical characteristics, hotline utilization, reasons for contact	Three distinct classes of texters were identified from the risk prediction model: those with “low distress,” those with the lowest prevalence of concerns (77% of texters); those with “anxious distress,” those with the highest prevalence of anxiety and stress (14%); and those with “relational distress,” with the highest likelihood of expressing relational concerns (9%). The “relational distress” class had the highest prevalence of depression and self-harm.
Thompson, Sugg, and Runkle, 2018 (48)	Cross-sectional	Text logs	<i>n</i> = 849,483 contacts	National	CTL	Text	Youth	Callers: hotline utilization, demographic and clinical characteristics	Higher rates of text-based hotline use were observed in counties with higher mean household incomes, higher divorce rates, and lower residential stability (<i>p</i> < 0.001 for all). Rurality was the strongest predictor of reduced text-based hotline use (<i>p</i> < 0.001).
Tsai et al., 2020 (49)	Cross-sectional	Survey of veterans	<i>n</i> = 1,002 participants	National (nationally representative sample)	VCL	Phone	Veterans	Callers: awareness	The majority of veterans (65%) reported awareness of the VCL. Awareness of the VCL was associated with having the VA as a primary health care provider (<i>p</i> < 0.001) and a greater number of medical conditions (<i>p</i> < 0.05). Multivariable regressions failed to show that lifetime substance abuse or suicidal intent were predictive of awareness of the VCL.

Waitzkin et al., 2018 (50)	Mixed methods (cross-sectional; transcript review)	Interviews and survey of callers	<i>n</i> = 233 callers	National	GI Rights Hotline	Phone	Active military	Callers: demographic and clinical characteristics, reasons for contact	The majority of clients were male (82%), white (62%), and between 18 and 26 years old (58%) and exhibited high rates of mental health conditions, particularly depression (72%) and PTSD (62%). 20% of callers were AWOL. Among those who were AWOL, 82% met criteria for PTSD. Reasons for contacting a civilian hotline rather than military services included mistrust of leadership, fear of retaliation, inadequate services within the military, and cost.
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Intervention Studies—Hotline Is the Intervention

Britton et al., 2013 (51)	Cross-sectional	Call logs	<i>n</i> = 646 callers	National	VCL	Phone	Veterans at risk of suicide	Callers: caller and call characteristics, characteristics associated with proximal outcomes	Approximately 84% of calls ended with a favorable outcome: 25% with a resolution, and 59% with a referral. Calls from high-risk callers had greater odds of ending with a referral, versus being unresolved (RR: 2.50, <i>p</i> < 0.001), as did calls between 6:00 a.m. and 6:00 p.m. (RR: 2.19, <i>p</i> < 0.01).
Gould et al., 2012 (52)	Mixed methods (retrospective cohort; interviews)	Interviews with callers	<i>n</i> = 654 callers	16 call centers in 14 states (unspecified)	Lifeline	Phone	Individuals at risk of suicide	Callers: demographic and clinical characteristics associated with referrals, service utilization after referral	Women were more likely than men to receive a mental health referral (OR: 1.72, <i>p</i> < 0.05). 49% of suicidal callers followed through with a referral, compared with 39% of non-suicidal callers (OR: 1.22, <i>p</i> > 0.05). The most-common barriers to utilizing resources were related to callers' denial of the severity of the mental health problem or the belief that it could be resolved without treatment.
Gould et al., 2018 (53)	Mixed methods (cross-sectional; interviews)	Interviews with callers, survey of responders	<i>n</i> = 550 callers; <i>n</i> = 41 responders	6 call centers across 4 U.S. census regions (unspecified)	Lifeline	Phone	Individuals at risk of suicide	Callers: behavioral outcomes	76% of callers reported that the hotline intervention stopped them from self-harm, and 91% said that it kept them safe. Callers' perceived impact of the hotline on their suicidality was associated with responder procedures, particularly discussing distractors (<i>p</i> = 0.005), social support networks (<i>p</i> = 0.002), and reasons for dying (<i>p</i> = 0.008); and caller characteristics, particularly initial suicide risk (<i>p</i> = 0.02).

Gould et al., 2021 (54)	Pre-post	Pre-chat and post-chat surveys of chatters	<i>n</i> = 39,911 pre-chat surveys; <i>n</i> = 13,130 post-chat surveys	National	Lifeline	Chat	Individuals at risk of suicide	Callers: behavioral outcomes, perceived helpfulness	Two-thirds (65%) of chatters were female. 84% of chatters exhibited current or recent suicidal ideation. Chatters were less upset after the chat (<i>p</i> < 0.001). 27% reported feeling less depressed, and 45% reported feeling less suicidal. Among chatters whose main concern was depression, 67% found the chat helpful.
Johnson, Muehler, and Stacy, 2021 (55)	Cross-sectional	Interviews with callers	<i>n</i> = 155 callers	National	VCL	Phone	Veterans at risk of suicide	Callers: behavioral outcomes, perceived helpfulness, satisfaction	87% of callers expressed satisfaction with the VCL, and 82% reported that the hotline was helpful. Furthermore, 73% of callers reported that the VCL kept them safe. For callers with suicidal thoughts, 83% said that the hotline helped stop them from self-harm. Qualitative themes focused on the most and least helpful aspects of the hotline and suggestions for improvement.
Stack, 2015 (56)	Pre-post	Call logs, mortality data	<i>n</i> = 27 callers; <i>n</i> = 219 suicides	St. Petersburg, FL	One hotline (unspecified)	Phone	Individuals at risk of suicide	Other: number of suicides	Crisis phones installed on the bridge were associated with preventing, on average, 2.6 suicides per year; however, there was a net increase in the number of suicides after the phones were installed (4.5 additional suicides, <i>p</i> < 0.001). Potential reasons explored were suggestion and contagion effects, particularly due to the emergence of a suicide blog related to the bridge.
Intervention Studies—Other Interventions									
Aguirre and Pillai, 2013 (57)	Cross-sectional	Call logs, mortality data	<i>n</i> = 77,981 contacts	Louisiana	One hotline (unspecified)	Phone	Individuals at risk of suicide	Callers: hotline utilization	Average number of hotline calls during “risk days” and “nonrisk days” was 23 and 21, respectively (<i>p</i> = 0.05). Community traumatic events and hotline call volume did not have a significant effect on the likelihood of suicide.

Bossarte et al., 2014 (58)	Pre-post	Call logs	<i>n</i> = 10 cities	6 cities: Las Vegas, NV; Dallas, TX; Miami, FL; Phoenix, AZ; San Francisco, CA; Los Angeles, CA. 4 control cities: Denver, CO; New Orleans, LA; San Antonio, TX; San Diego, CA	Lifeline, VCL	Phone	Veterans and active military	Callers: hotline utilization, calls resulting in rescues	Significantly increased call volume to the Lifeline and VCL was reported during a suicide prevention campaign in implementation cities compared with control cities (<i>p</i> < 0.01). A decrease in the percentage of calls placed by U.S. military veterans in implementation cities also suggested an uptick in use by broader population.
Cross et al., 2017 (59)	Cross-sectional	Live coding of calls, coding of recorded trainings	<i>n</i> = 764 contacts; <i>n</i> = 34 trainers	17 call centers (unspecified)	Lifeline	Phone	Callers at risk of suicide; trainers	Responders: services provided associated with trainer behavior	Trainers' competence on ASIST program delivery was associated with counselors' usage of risk assessment and safety planning with callers who expressed suicidal thoughts (<i>p</i> < 0.05). A relationship was not observed between counselor use of recommended behaviors and trainer adherence to ASIST program content.
Elder, Karras, and Bossarte, 2016 (60)	Cross-sectional	Survey of households	<i>n</i> = 8,756 households	12 cities: Spokane, WA; San Francisco, CA; Dallas, TX; Miami, FL; Las Vegas, NV; Los Angeles, CA; Phoenix, AZ; Salem, OR; San Antonio, TX; San Diego, CA; New Orleans, LA; Denver, CO	NA	Phone	Older veterans	Callers: intention to use hotline	Small but statistically significant associations (<i>p</i> < 0.05) were observed between exposure to each campaign message and intention to use a hotline. For example, exposure to suicide prevention campaign messaging was associated with the intention of using a suicide prevention hotline (prevalence ratio: 1.21, <i>p</i> < 0.01). The authors also reported a dose-response gradient between level of exposure to messaging and reported intention to use a hotline.

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Glover et al., 2019 (61)	Prospective cohort	Call logs, survey of participants	<i>n</i> = 100 participants	Chicago, IL	CTL, Illinois Warm Line, Koko	Text, phone, chat	Homeless youth	Callers: hotline utilization, benefit	Participants preferred brief, automated phone-based interventions compared with hotline use. Of hotlines incorporated into the intervention, the CTL was used the most (> 50% use across time points). It was viewed as helpful by 33% of participants after three months and 16% after six months. Phone- and app-based hotlines were the least used and were rated as the least beneficial.
Gould et al., 2013 (62)	Randomized trial	Live coding of calls	<i>n</i> = 1,410 callers; <i>n</i> = 1,570 contacts	17 call centers (unspecified)	Lifeline	Phone	Individuals at risk of suicide	Callers: behavioral outcomes	Callers were significantly less depressed (<i>p</i> < 0.05) and suicidal (<i>p</i> < 0.001) by the end of calls handled by trained responders, relative to those handled by untrained providers. Improvements in caller outcomes were linked to training-related interventions, including exploring reasons for living (<i>p</i> < 0.05) and support contacts (<i>p</i> < 0.01). Longer calls were associated with a reduction in suicidality (<i>p</i> < 0.001). Each additional minute increased the odds of reduced suicidality by 4%.
Karras et al., 2014 (63)	Cross-sectional	Survey of households	<i>n</i> = 2,526 households	12 cities: Spokane, WA; San Francisco, CA; Dallas, TX; Miami, FL; Las Vegas, NV; Los Angeles, CA; Phoenix, AZ; Salem, OR; San Antonio, TX; San Diego, CA; New Orleans, LA; Denver, CO	NA	Phone	Veterans	Callers: intention to use hotline	33% of respondents self-reported seeing suicide prevention messaging in the past 30 days. 13% reported knowing someone who had used a suicide prevention hotline. 48% reported that, if in need, they would be highly likely to use a hotline. Respondents who had seen the prevention messaging within the past 30 days were more likely to use a hotline (OR: 1.57; 95% CI: 1.24–1.99). Those who knew someone who had used a hotline were more likely to self-report having used a hotline (OR: 1.79; CI: 1.23–2.60). Male participants were less likely to self-report having used a hotline (OR: 0.52; 95% CI: 0.42–0.66)

Karras et al., 2016 (64)	Repeated cross-sectional	Call logs	Not reported	National	Lifeline, VCL	Phone	Veterans and active military	Callers: hotline utilization	Campaign messaging was associated with higher call volume for both the Lifeline and the VCL ($p < 0.001$). More calls were received during the week than on Sunday ($p < .001$). Daily call volume for both hotlines peaked in the spring ($p < 0.001$). Messaging did not increase the use of unadvertised crisis services among those with no prior intention to call ($p < 0.001$).
Karras et al., 2017 (65)	Quasi-experimental	Call logs	$n = 10$ cities	10 cities: Sacramento, CA; Fargo, ND; Fayetteville, NC; St. Louis, MO; Virginia Beach, VA; Boise, ID; Sioux Falls, SD; Johnson City, TN; Seattle, WA; Tampa, FL	VCL	Phone	Veterans	Callers: hotline utilization	VCL daily call volume was higher during and after the campaign ($p < 0.05$). However, this may have reflected an overall upward trend over time; interactions between time and campaign exposure indicated disparate patterns: Call volume went up ($p = 0.001$; mixed messages) or down ($p = 0.01$; high-dose) or was nonsignificant ($p > 0.05$; low-dose).
Ling et al., 2019 (66)	Qualitative	Interviews of responders	$n = 9$ responders	Caldwell, NJ	Caldwell University HelpLine	Phone	Graduate counseling students	Responders: personal impact of volunteering, training perceptions	Most student volunteer responders reported that hotline work increased their awareness of skills they needed to develop, advanced their careers, and prepared them for future work in psychiatric care. Responders reported that conducting mock calls and reviewing safety planning were the most useful parts of training.
Niederkrötenhaller et al., 2021 (67)	Quasi-experimental	Call logs, mortality data	NR	National	Lifeline	Phone	General population	Callers: hotline utilization, number of suicides	Following the release of rap artist Logic's song "1-800-273-8255," the Lifeline experienced a 6.9% increase in caller volume, compared with baseline call volume ($p < 0.001$). There was also a 5.5% reduction in suicides over the same period, compared with baseline expected suicide rates ($p = 0.02$).

Ramchand et al., 2019 (68)	Quasi-experimental	Call logs	NA	National	Lifeline, VCL	Phone	Individuals at risk of suicide	Callers: hotline utilization	One day after a celebrity suicide, Lifeline calls increased by 300%, compared with the week before, and the proportion of answered calls dropped from 73% to 57%. The increase was primarily due to calls made by nonveterans. Lifeline call volume returned to the average level two weeks after the suicide.
Thompson et al., 2019 (69)	Quasi-experimental	Call logs	<i>n</i> = 70,330 contacts	National	CTL	Text	Youth	Callers: hotline utilization	In the two days following the premiere of the TV series <i>13 Reasons Why</i> , there was a significant increase in contact volume to the CTL (34%, <i>p</i> < 0.05). However, for the remainder of the study period, there was a significant decrease (13%) in contacts to the CTL (<i>p</i> < 0.05).
Torgerson et al., 2021 (70)	Quasi-experimental	Media impressions	NR	National	Lifeline	Phone	Individuals at risk of suicide	Other: media engagement	Google searches for “suicide hotline” increased by 49% above expected volume (<i>p</i> < 0.05) the day after the release of rap artist Logic’s song “1-800-273-8255” (the number for the Lifeline). This Google search, as well as “teen suicide,” remained elevated for 28 days (<i>p</i> < 0.01).
Implementation Studies									
Catanach et al., 2019 (71)	Cross-sectional	ED and program participant records	<i>n</i> = 2,644 participants	Colorado	Rocky Mountain Crisis Partners	Phone	Individuals at risk of suicide	Callers: participation Other: implementation lessons	Of 5,620 ED visits for suicide referred to follow-up check-in phone calls, 2,737 (49%) resulted in accepted referrals for participation (2,644 unique individuals). There were 15,414 attempted contacts (mean: 5.6 calls per person) and 2,385 successful contacts (91% success rate). Higher ED referral rates corresponded to having a program champion, repeated training, data system improvements, and frequent communication.

Draper et al., 2015 (72)	Qualitative	Primary qualitative data collection	NA	National	Lifeline	Phone	Individuals at risk of suicide	Other: policy development, implementation lessons	The authors reviewed a national policy for helping callers using the Lifeline who are at imminent risk of suicide. This policy aimed to provide a clear definition of <i>imminent risk</i> and a uniform interventional response that included three principles: active engagement, active rescue, and collaboration between crisis and emergency services. The authors provide a review of the evidence that underpinned this policy.
Feinstein et al., 2020 (73)	Qualitative	Primary qualitative data collection	NA	Austin, TX	Healthcare Worker Mental Health COVID-19 Hotline	Phone	Health care workers	Other: implementation lessons	The authors outline 13 steps related to program planning, staffing, leadership, resources, and funding that led to successful implementation of the hotline. Illustrative examples are using leadership capable of mobilizing resources, developing training and marketing materials, and including a data-collection process that evaluates effectiveness and outcomes.
Knox et al., 2012 (74)	Cross-sectional	Call logs	NA	National	VCL	Phone	Veterans at risk of suicide	Callers: hotline utilization, demographic characteristics, referrals	The VA became part of the Lifeline network in 2007, adopting its risk assessment standards and launching a series of public campaigns. Between 2007 and 2010, the Lifeline received 171,000 calls. 70% of consumers were male veterans between 40 and 69 years old. 16,000 referrals to VA suicide prevention coordinators took place over this period.
Labouliere et al., 2020 (75)	Prospective cohort	Survey of responders	$n = 271$ responders	5 call centers across 4 U.S. census regions (unspecified)	Lifeline	Phone	Callers at risk of suicide; self-trained responders	Responders: effectiveness, feasibility, self-efficacy, hotline utilization Other: implementation lessons	After receiving training, responders reported SPI to be feasible and reported a high level of self-efficacy for use. Higher self-efficacy was associated with greater utilization ($p = 0.04$). Perceived feasibility ($p = 0.02$) and helpfulness ($p < 0.001$) post-training predicted reports of effectiveness during SPI use. 53% of responders at reporting centers stated that there were no barriers to using SPI.

Ramchand, Jaycox, and Ebener, 2016 (76)	Cross-sectional	Primary data collection	<i>n</i> = 2,568 callers; <i>n</i> = 12 centers; <i>n</i> = 241 contacts	California	Lifeline, other hotlines (unspecified)	Phone, text, chat	NA	Responder: professional status	Hotlines relied on volunteers (three of 12 crisis call centers) or a mix of volunteers and paid staff (nine of 12). Sources of funding included local government and private donors. Operational arrangements ranged from stand-alone service providers to programs housed in community mental health centers. Crisis hotlines integrated with partners in multiple ways. Operational challenges included variability in quality of services, shifting telecommunication trends, and financial sustainability.
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Other Studies

Hunt et al., 2018 (77)	Perspective	NA	NA	NA	NA	Phone	Men at risk of suicide	Callers: reasons for contact, efficacy of phone-based crisis services	Potential reasons for attractiveness of hotlines for men are confidentiality, accessibility regardless of location, a lack of screening assessment, ability to make and terminate the call at any time, and problem-solving support approaches. Authors state that the evidence on the effectiveness of phone-based crisis services is disputable, particularly for men.
Mathieu et al., 2021 (78)	Systematic review	Literature review	<i>n</i> = 52 articles	Multiple locations across the U.S.	Multiple hotlines	Phone, text, chat	Youth	Callers: concerns of youth, outcomes associated with service-related factors Other: studies that meet eligibility criteria	Between 1973 and 2020, 52 articles were published on youth helplines, including 34 quantitative and 13 qualitative studies. The most common problems reported by youth were psychosocial difficulties and suicidality. Service-related factors that influenced engagement and outcomes were the modality of the helpline and responder-caller interactions.

^a Contacts, calls, texts, or chats; NA, not applicable

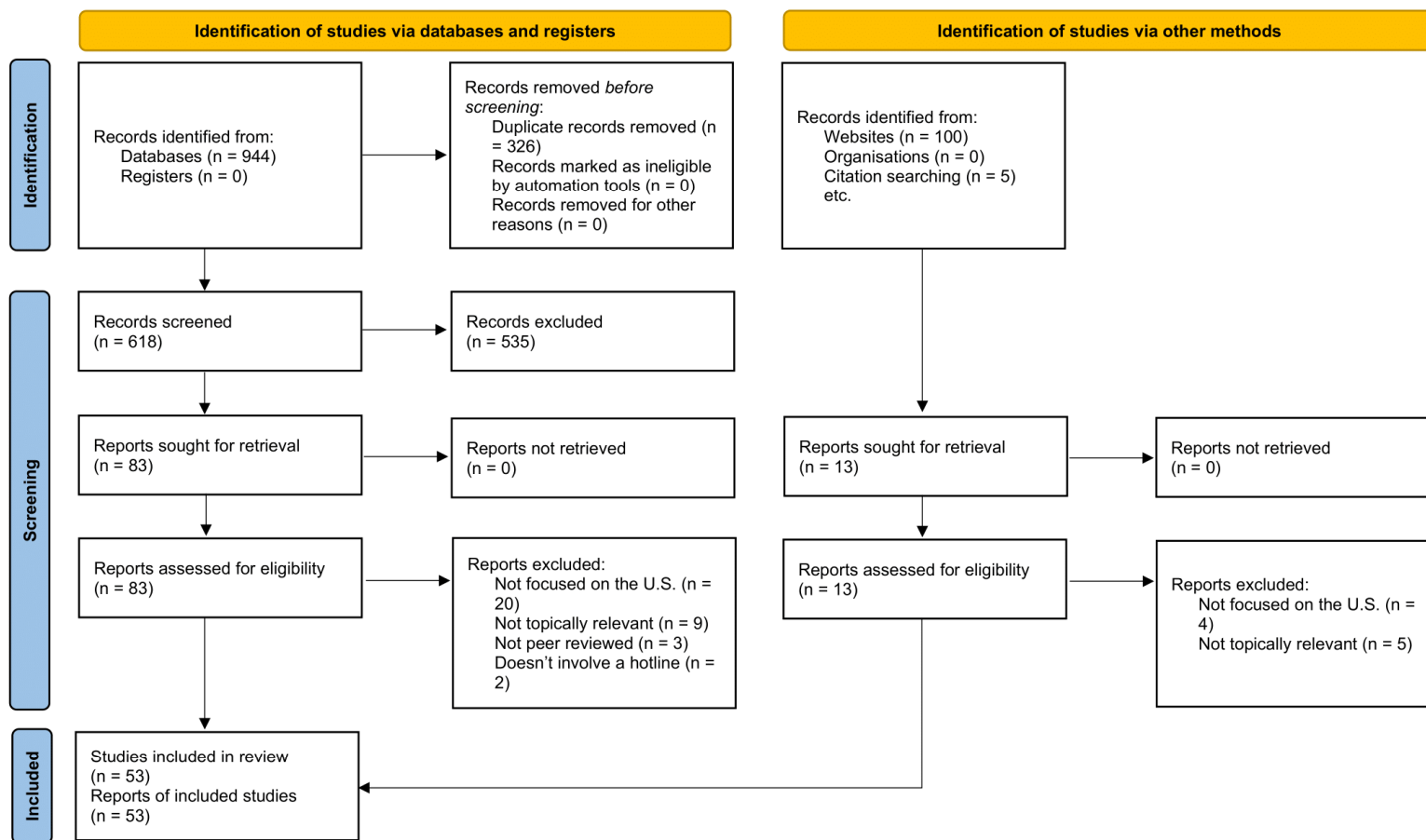
^b AR, Arkansas; AZ, Arizona; CA, California; CO, Colorado; ED, emergency department; FL, Florida; ID, Idaho; LA, Louisiana; MA, Massachusetts; MD, Maryland; MO, Missouri; NA, not applicable; NC, North Carolina; ND, North Dakota; NJ, New Jersey; NV, Nevada; NY, New York; OH, Ohio; OR, Oregon; RI, Rhode Island; SD, South Dakota; TN, Tennessee; TX, Texas; VA, Virginia; WA, Washington

^c CTL, Crisis Text Line; MYCH, Maryland Youth Crisis Hotline; LGBTQ+, Lesbian, Gay, Bisexual, Transgender, Queer; Lifeline, 988 Suicide & Crisis Lifeline previously the National Suicide Prevention Lifeline; NA, not applicable; SAMHSA, Substance Abuse and Mental Health Services Administration; VA, Department of Veterans Affairs; VCL, Veterans Crisis Line; WMCHHealth, Westchester Medical Center

^d LGBTQ+, Lesbian, Gay, Bisexual, Transgender, Queer; NA, not applicable; Youth, defined as aged 24 and younger

^e AWOL, absent without official leave; CI, confidence interval; ED, emergency department; OR, odds ratio; PTSD, post-traumatic stress disorder; SD, standard deviation; SPI, Safety Planning Intervention

Literature Flow Diagram



Search Strategy

Database	Limiters Applied	Search Terms
PubMed	<ul style="list-style-type: none"> ● Publication year: 2012–2021 ● Search domain: title/abstract 	<ol style="list-style-type: none"> 1. ((mental health) OR (behavioral health) OR (suicide) OR (substance use)) AND ((hotline) OR (helpline) OR (lifeline)) AND ((crisis) OR (emergency) OR (988))
APA PsycInfo	<ul style="list-style-type: none"> ● Publication year: 2012–2021 ● Publication type: peer-reviewed journal ● Language: English 	<ol style="list-style-type: none"> 1. AB (“mental health” AND “hotline” AND “crisis”) OR AB (“behavioral health” AND “hotline” AND “crisis”) OR AB (“suicide” AND “hotline” AND “crisis”) OR AB (“substance use” AND “hotline” AND “crisis”) 2. AB (“mental health” AND “helpline” AND “crisis”) OR AB (“behavioral health” AND “helpline” AND “crisis”) OR AB (“suicide” AND “helpline” AND “crisis”) OR AB (“substance use” AND “helpline” AND “crisis”) 3. AB (“mental health” AND “lifeline” AND “crisis”) OR AB (“behavioral health” AND “lifeline” AND “crisis”) OR AB (“suicide” AND “lifeline” AND “crisis”) OR AB (“substance use” AND “lifeline” AND “crisis”) 4. AB (“mental health” AND “hotline” AND “emergency”) OR AB (“behavioral health” AND “hotline” AND “emergency”) OR AB (“suicide” AND “hotline” AND “emergency”) OR AB (“substance use” AND “hotline” AND “emergency”) 5. AB (“mental health” AND “helpline” AND “emergency”) OR AB (“behavioral health” AND “helpline” AND “emergency”) OR AB (“suicide” AND “helpline” AND “emergency”) OR AB (“substance use” AND “helpline” AND “emergency”) 6. AB (“mental health” AND “lifeline” AND “emergency”) OR AB (“behavioral health” AND “lifeline” AND “emergency”) OR AB (“suicide” AND “lifeline” AND “emergency”) OR AB (“substance use” AND “lifeline” AND “emergency”)

7. AB ("mental health" AND "hotline" AND "988") OR AB ("behavioral health" AND "hotline" AND "988") OR AB ("suicide" AND "hotline" AND "988") OR AB ("substance use" AND "hotline" AND "988")

8. AB ("mental health" AND "helpline" AND "988") OR AB ("behavioral health" AND "helpline" AND "988") OR AB ("suicide" AND "helpline" AND "988") OR AB ("substance use" AND "helpline" AND "988")

9. AB ("mental health" AND "lifeline" AND "988") OR AB ("behavioral health" AND "lifeline" AND "988") OR AB ("suicide" AND "lifeline" AND "988") OR AB ("substance use" AND "lifeline" AND "988")

10. TI ("mental health" AND "hotline" AND "crisis") OR TI ("behavioral health" AND "hotline" AND "crisis") OR TI ("suicide" AND "hotline" AND "crisis") OR TI ("substance use" AND "hotline" AND "crisis")

11. TI ("mental health" AND "helpline" AND "crisis") OR TI ("behavioral health" AND "helpline" AND "crisis") OR TI ("suicide" AND "helpline" AND "crisis") OR TI ("substance use" AND "helpline" AND "crisis")

12. TI ("mental health" AND "lifeline" AND "crisis") OR TI ("behavioral health" AND "lifeline" AND "crisis") OR TI ("suicide" AND "lifeline" AND "crisis") OR TI ("substance use" AND "lifeline" AND "crisis")

13. TI ("mental health" AND "hotline" AND "emergency") OR TI ("behavioral health" AND "hotline" AND "emergency") OR TI ("suicide" AND "hotline" AND "emergency") OR TI ("substance use" AND "hotline" AND "emergency")

14. TI ("mental health" AND "helpline" AND "emergency") OR TI ("behavioral health" AND "helpline" AND "emergency") OR TI ("suicide" AND "helpline" AND "emergency") OR TI ("substance use" AND "helpline" AND "emergency")

		<p>15. TI (“mental health” AND “lifeline” AND “emergency”) OR TI (“behavioral health” AND “lifeline” AND “emergency”) OR TI (“suicide” AND “lifeline” AND “emergency”) OR TI (“substance use” AND “lifeline” AND “emergency”)</p> <p>16. TI (“mental health” AND “hotline” AND “988”) OR TI (“behavioral health” AND “hotline” AND “988”) OR TI (“suicide” AND “hotline” AND “988”) OR TI (“substance use” AND “hotline” AND “988”)</p> <p>17. TI (“mental health” AND “helpline” AND “988”) OR TI (“behavioral health” AND “helpline” AND “988”) OR TI (“suicide” AND “helpline” AND “988”) OR TI (“substance use” AND “helpline” AND “988”)</p> <p>18. TI (“mental health” AND “lifeline” AND “988”) OR TI (“behavioral health” AND “lifeline” AND “988”) OR TI (“suicide” AND “lifeline” AND “988”) OR TI (“substance use” AND “lifeline” AND “988”)</p>
<p>Embase</p>	<ul style="list-style-type: none"> • Publication year: 2012–2021 • Publication type: article • Language: English 	<p>1. ('mental health':ab AND 'hotline':ab AND 'crisis':ab) OR ('behavioral health':ab AND 'hotline':ab AND 'crisis':ab) OR ('suicide':ab AND 'hotline':ab AND 'crisis':ab) OR ('substance use':ab AND 'hotline':ab AND 'crisis':ab)</p> <p>2. ('mental health':ab AND 'helpline':ab AND 'crisis':ab) OR ('behavioral health':ab AND 'helpline':ab AND 'crisis':ab) OR ('suicide':ab AND 'helpline':ab AND 'crisis':ab) OR ('substance use':ab AND 'helpline':ab AND 'crisis':ab)</p> <p>3. ('mental health':ab AND 'lifeline':ab AND 'crisis':ab) OR ('behavioral health':ab AND 'lifeline':ab AND 'crisis':ab) OR ('suicide':ab AND 'lifeline':ab AND 'crisis':ab) OR ('substance use':ab AND 'lifeline':ab AND 'crisis':ab)</p> <p>4. ('mental health':ab AND 'hotline':ab AND 'emergency':ab) OR ('behavioral health':ab AND 'hotline':ab AND 'emergency':ab) OR ('suicide':ab AND 'hotline':ab AND 'emergency':ab) OR ('substance use':ab AND 'hotline':ab AND 'emergency':ab)</p> <p>5. ('mental health':ab AND 'helpline':ab AND 'emergency':ab) OR ('behavioral health':ab AND 'helpline':ab AND 'emergency':ab) OR ('suicide':ab AND 'helpline':ab AND 'emergency':ab) OR ('substance use':ab AND 'helpline':ab AND 'emergency':ab)</p>

6. ('mental health':ab AND 'lifeline':ab AND 'emergency':ab) OR ('behavioral health':ab AND 'lifeline':ab AND 'emergency':ab) OR ('suicide':ab AND 'lifeline':ab AND 'emergency':ab) OR ('substance use':ab AND 'lifeline':ab AND 'emergency':ab)
7. ('mental health':ab AND 'hotline':ab AND '988':ab) OR ('behavioral health':ab AND 'hotline':ab AND '988':ab) OR ('suicide':ab AND 'hotline':ab AND '988':ab) OR ('substance use':ab AND 'hotline':ab AND '988':ab)
8. ('mental health':ab AND 'helpline':ab AND '988':ab) OR ('behavioral health':ab AND 'helpline':ab AND '988':ab) OR ('suicide':ab AND 'helpline':ab AND '988':ab) OR ('substance use':ab AND 'helpline':ab AND '988':ab)
9. ('mental health':ab AND 'lifeline':ab AND '988':ab) OR ('behavioral health':ab AND 'lifeline':ab AND '988':ab) OR ('suicide':ab AND 'lifeline':ab AND '988':ab) OR ('substance use':ab AND 'lifeline':ab AND '988':ab)
10. ('mental health':ti AND 'hotline':ti AND 'crisis':ti) OR ('behavioral health':ti AND 'hotline':ti AND 'crisis':ti) OR ('suicide':ti AND 'hotline':ti AND 'crisis':ti) OR ('substance use':ti AND 'hotline':ti AND 'crisis':ti)
11. ('mental health':ti AND 'helpline':ti AND 'crisis':ti) OR ('behavioral health':ti AND 'helpline':ti AND 'crisis':ti) OR ('suicide':ti AND 'helpline':ti AND 'crisis':ti) OR ('substance use':ti AND 'helpline':ti AND 'crisis':ti)
12. ('mental health':ti AND 'lifeline':ti AND 'crisis':ti) OR ('behavioral health':ti AND 'lifeline':ti AND 'crisis':ti) OR ('suicide':ti AND 'lifeline':ti AND 'crisis':ti) OR ('substance use':ti AND 'lifeline':ti AND 'crisis':ti)
13. ('mental health':ti AND 'hotline':ti AND 'emergency':ti) OR ('behavioral health':ti AND 'hotline':ti AND 'emergency':ti) OR ('suicide':ti AND 'hotline':ti AND 'emergency':ti) OR ('substance use':ti AND 'hotline':ti AND 'emergency':ti)
14. ('mental health':ti AND 'helpline':ti AND 'emergency':ti) OR ('behavioral health':ti AND 'helpline':ti AND 'emergency':ti) OR ('suicide':ti AND 'helpline':ti AND 'emergency':ti) OR ('substance use':ti AND 'helpline':ti AND 'emergency':ti)
15. ('mental health':ti AND 'lifeline':ti AND 'emergency':ti) OR ('behavioral health':ti AND 'lifeline':ti AND 'emergency':ti) OR ('suicide':ti AND 'lifeline':ti AND 'emergency':ti) OR ('substance use':ti AND 'lifeline':ti AND 'emergency':ti)

		<p>16. ('mental health':ti AND 'hotline':ti AND '988':ti) OR ('behavioral health':ti AND 'hotline':ti AND '988':ti) OR ('suicide':ti AND 'hotline':ti AND '988':ti) OR ('substance use':ti AND 'hotline':ti AND '988':ti)</p> <p>17. ('mental health':ti AND 'helpline':ti AND '988':ti) OR ('behavioral health':ti AND 'helpline':ti AND '988':ti) OR ('suicide':ti AND 'helpline':ti AND '988':ti) OR ('substance use':ti AND 'helpline':ti AND '988':ti)</p> <p>18. ('mental health':ti AND 'lifeline':ti AND '988':ti) OR ('behavioral health':ti AND 'lifeline':ti AND '988':ti) OR ('suicide':ti AND 'lifeline':ti AND '988':ti) OR ('substance use':ti AND 'lifeline':ti AND '988':ti)</p>
<p>Scopus</p>	<ul style="list-style-type: none"> • Publication year: 2012–2021 	<ol style="list-style-type: none"> 1. (((((((("988" "Crisis") OR ("crisis hotline" "mental health")) OR (crisis hotline "behavioral health")) OR (crisis hotline "suicide")) OR ("emergency response" "suicide")) OR ("emergency response" "suicide")) OR ("emergency response" "mental health")) OR ("mental health" "hotline")) OR ("suicide" "hotline")) OR ("behavioral health" "hotline")) 2. ("Mental Health" & "Hotline" & "Crisis") 3. ("Mental Health" & "Hotline" & "988") 4. ("Mental Health" & "Hotline" & "Emergency") 5. ("Mental Health" & "Lifeline" & "Crisis") 6. ("Mental Health" & "Lifeline" & "988") 7. ("Mental Health" & "Lifeline" & "Emergency") 8. ("Behavioral Health" & "Hotline" & "Crisis") 9. ("Behavioral Health" & "Hotline" & "988") 10. ("Behavioral Health" & "Hotline" & "Emergency") 11. ("Substance Use" & "Helpline" & "Crisis") 12. ("Substance Use" & "Helpline" & "988") 13. ("Substance Use" & "Helpline" & "Emergency") 14. ("Suicide" & "Hotline" & "Crisis") 15. ("Suicide" & "Hotline" & "988") 16. ("Suicide" & "Hotline" & "Emergency") 17. ("Suicide" & "Helpline" & "Crisis") 18. ("Suicide" & "Helpline" & "988") 19. ("Suicide" & "Helpline" & "Emergency")

Google Scholar	• Date range: 2012–2021	1. ((mental health) OR (behavioral health) OR (suicide) OR (substance use)) AND ((hotline) OR (helpline) OR (lifeline)) AND ((crisis) OR (emergency) OR (988))
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