



Brief Interventions for Self-injurious Thoughts and Behaviors in Young People: A Systematic Review

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Abstract

Rates of self-injurious thoughts and behaviors (SITBs) increase sharply across adolescence and remain high in young adulthood. Across 50 years of research, existing interventions for SITBs remain ineffective and inaccessible for many young people in particular need of mental healthcare. Briefer intervention options may increase access to care. However, many traditional interventions for SITBs take 6 months or more to complete—making it difficult for providers to target SITBs under real-world time constraints. The present review (1) identifies and (2) summarizes evaluations of brief psychosocial interventions for SITBs in young people, ages 10–24 years. We conducted searches for randomized and quasi-experimental trials conducted in the past 50 years that evaluated effects of “brief interventions” (i.e., not exceeding 240 min, or four 60-min sessions in total length) on SITBs in young people. Twenty-six articles were identified for inclusion, yielding a total of 23 brief interventions. Across all trials, results are mixed; only six interventions reported any positive intervention effect on at least one SITB outcome, and only one intervention was identified as “probably efficacious” per standard criteria for evidence-based status. While brief interventions for SITBs exist, future research must determine if, how, and when these interventions should be disseminated.

Keywords Brief mental health intervention · Young people · Youth · Suicide · Self-injury · Systematic review

Lifetime prevalence for many self-injurious thoughts and behaviors (SITBs) increases sharply across adolescence and remains elevated in young adulthood (Nock et al., 2008, 2013), with 19.8 to 24.0% of adolescents having experienced suicidal ideation (SI; Nock et al., 2008), 17.2% of adolescents and 13.4% of young adults having engaged in non-suicidal self-injury (NSSI; Swannell et al., 2014), and 3.1 to 8.8% of adolescents having made a suicide attempt (Nock et al., 2008). By the time they enter college, 35.8% of students seeking out mental health treatment report “seriously considering” attempting suicide at some point in their lives (Center for Collegiate Mental Health, 2018). SITBs, particularly non-suicidal self-injury, predict future suicidal behaviors (Asarnow et al., 2011; Cox et al., 2012; Ribeiro et al., 2016a; Whitlock et al., 2013), indicating a serious

need for their early detection, prevention, and treatment. Given an elevated SITB prevalence rate and high proportion of deaths by suicide (CDC, 2017; Nock et al., 2008), young people ages 10–24 years represent a vulnerable population in particular need of timely intervention.

Clinical psychology research identifies psychosocial interventions for SITBs in young people, including: Integrated Cognitive Behavioral Therapy, Attachment-Based Family Therapy, Dialectical Behavior Therapy, and Interpersonal Psychotherapy, and others (Diamond et al., 2010; Esposito-Smythers et al., 2011; Mehlum et al., 2014; Tang et al., 2009). However, effects of interventions for SITBs are small and inconsistent (Brausch & Girresch, 2012; Glenn et al., 2015; Gonzales & Bergstrom, 2013; Nock, 2010). In fact, meta-analytic evidence suggests significant *reductions* in average treatment effect size over the past five decades (weighted mean risk ratios = 0.68–0.91 in 1980s to 2010s), and effect sizes appear consistently small across age, intervention type, and SITB outcome (Fox et al., 2020). More recently, another meta-analysis corroborated this pattern of results in youth; authors found largely non-significant mental health treatment effects for SITBs in

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children and adolescents (Harris et al., 2022). Together, these statistics reflect the low potency of existing interventions despite > 50 years of research on SITB prevention and treatment.

In addition to this lack of potency, existing treatments for SITBs have limited accessibility. More than 67% of adolescents who report past-year suicidal ideation, and more than 50% who endorse a past-year suicide plan or attempt, also report having *zero* contact with a mental health specialist in the previous 12 months (Husky et al., 2012). Even among those who initially seek help, uptake is low, and attrition is high (Granboulan et al., 2001; Lizardi & Stanley, 2010; Piacentini et al., 1995; Trautman et al., 1993). After a recent suicide attempt, one sample of adolescents attended a median of 4 outpatient sessions following an emergency room referral (Piacentini et al., 1995). In a second sample of adolescents who recently attempted suicide, over 25% attended *zero* scheduled outpatient sessions after leaving the emergency room, ~ 11% attended only one session, and less than one-third of adolescents attended all of their scheduled sessions (Granboulan et al., 2001). Low uptake and high attrition indicate the current structure of SITB interventions does not consistently reach young people who are in great need of care.

Further, in many real-world contexts, the window of opportunity for SITB intervention is often very limited. One analysis of > 115,000 hospital encounters for suicide attempts and ideation among US youth found that more than half of the encounters involved a stay of 0–1 days; nearly 85% of encounters ended in discharge within 6 days (Plemmons et al., 2018). Patients are also at particularly high risk for suicide attempts and suicide deaths in the months after a hospital discharge (Brent et al., 1993; Chung et al., 2017; Goldston et al., 1999; Prinstein et al., 2008). A review of 48 studies found that over a quarter of suicide-related events (i.e., attempts, deaths) occurred within the first month post discharge from hospital—and 40% occurred within three months (Forte et al., 2019). In these cases, full-length intervention may not be completed prior to discharge or SITB recurrence; brief interventions designed to quickly and effectively intervene during windows of elevated risk have potential for high impact.

Creating brief, well-targeted interventions for SITBs may increase the likelihood of young people receiving a full, intended intervention dosage—potentially boosting intervention efficacy. Several brief intervention trials to date have observed low attrition rates; in a small RCT, a 4-session parent training program had > 90% session attendance (Pineda & Dadds, 2013), and single-session, emergency room-based interventions have reported 100% intervention completion across multiple trials (Glenn et al., 2015). If individuals typically receive a handful of their planned sessions, interventions designed to be brief would encourage

intentional decision-making around the therapeutic content most patients actually receive. Additionally, patients could feasibly complete these briefer interventions during short, clinically important periods where risk is elevated.

Evidence suggests it is worth taking a closer look at briefer mental healthcare options for SITBs in young people. For one, there is a clear demand, as calls for briefer SITB interventions are widespread in the suicide literature (Glenn et al., 2015, 2019; Lizardi & Stanley, 2010; McCabe et al., 2018; Stanley & Brown, 2012; Stewart et al., 2019). Further, brief interventions have shown promise for treating psychiatric problems in youth. “Single-session interventions,” very brief treatments designed to last one session, have comparable meta-analytic effect sizes to traditional-length psychotherapies for other forms of youth psychopathology (meta-analytic g 's = 0.32 versus 0.46 overall; Schleider & Weisz, 2017; Weisz et al., 2017). Additionally, two meta-analyses including a combined > 340 SITB treatments suggest that treatment length is weakly and inconsistently related to treatment effect size—particularly in youth (Fox et al., 2020; Harris et al., 2022). Given that many young people are unable to access any treatment, and treatment dropout rates are quite high, null to weak impacts of treatment length on efficacy suggest a distinct need to explore brief treatment options.

Still, with many existing interventions designed to last upwards of 6 months (Brent et al., 2009; Esposito-Smythers et al., 2011; Rossouw & Fonagy, 2012; Taylor et al., 2011) and others requiring multiple therapists or treatment-related components every week (Bettis et al., 2020; Glenn et al., 2019), knowing how to treat SITBs in settings with real-world time constraints presents a real challenge. Average SITB intervention length in randomized trials far exceeds the time that many can dedicate to treatment (intervention M s = 12.76 and 23.83 weeks for youth and all age groups, respectively; Harris et al., 2022; Fox et al., 2020). SITBs are complicated, multidetermined phenomena (Fox et al., 2019; Franklin et al., 2017; Ribeiro et al., 2016b), and people often struggle with multiple comorbidities (Kavalidou et al., 2019; Liu et al., 2020); it is easy to understand why treatment developers often design complex, lengthy, and resource-intensive treatments. However, without simultaneous efforts to evaluate brief SITB interventions and organize their evidence base, much of the resulting literature does little to help providers or policy-makers with limited time and resources.

While preliminary attempts to identify brief, effective interventions for SITBs exist, they remain incomplete. Several reviews focus only on treatment effects for certain outcomes (e.g., suicidal ideation, suicidal behavior)—failing to include intervention effects on other important SITBs, like non-suicidal self-injury (Doupnik et al., 2020; du Roscoät & Beck, 2013; Inagaki et al., 2019; McCabe et al., 2018).

Earlier reviews also focus solely on interventions designed to target SITBs, thereby excluding treatments designed to target other, related outcomes (e.g., depression) that may have secondary treatment effects on SITBs (McCabe et al., 2018). Additionally, several of these reviews only include trials that recruited participants from emergency department or other healthcare settings (Inagaki et al., 2019; McCabe et al., 2018; Milner et al., 2015), potentially missing brief interventions delivered in community and school-based settings. Many reviews further limit their search by intervention modality (e.g., excluding self-guided interventions, interventions not delivered in-person, or psychotherapy; Doupnik et al., 2020; du Roscoät & Beck, 2013; McCabe et al., 2018). Finally, none of the above reviews focus entirely on brief SITB interventions for young people, despite the elevated risk for SITBs within this age group (Nock et al., 2008). Therefore, identifying brief interventions for SITBs in young people—across outcomes, treatment targets, settings, and modalities—remains important, yet underexplored.

The present study aims to identify and evaluate brief psychosocial interventions for SITBs in young people. After conducting a literature search, we describe each brief intervention and evaluate efficacy, as indexed by performance in intervention versus control groups. This review will help determine/identify: (1) what brief interventions for SITBs exist, (2) if these brief options can reduce SITBs, (3) the quality of evidence for brief interventions to date, and (4) gaps in the existing knowledge surrounding brief interventions for SITBs in young people.

Method

Literature Search

Given the present study represents a systematic review paper of previously published work, ethics approval was not required. All search and analytic methods were preregistered via PROSPERO (record ID: CRD42020171948).¹ We conducted searches across electronic databases (PsychINFO, MEDLINE, ERIC, Open Dissertations), and manually searched other relevant manuscripts (Doupnik et al., 2020; du Roscoät & Beck, 2013; Fox et al., 2020; Glenn et al., 2015, 2019; Inagaki, et al., 2019; McCabe et al., 2018; Melhem & Brent, 2020; Milner et al., 2015; Schleider et al., 2020) for randomized controlled trials and quasi-experimental studies conducted in the past 50 years that evaluate effects of brief interventions on self-injurious thoughts and behaviors

in young people (January 1, 1970–January 31, 2020). Search terms included: *child*, *teen**, *adolescen**, *youth**, *pediatric*, *college student*, *college students*, *young adult*, or *young adults*; and *suicid**, *self-injury*, *self-harm*, *self-mutilation*, *self-cutting*, *cutting*, *self-burning*, *self-poisoning*, *NSSI*, or *SITB*; and *intervention*, *prevention*, *treatment*, *program*, *randomized*, *RCT*, *workshop*, *field trial*, or *training*.

Inclusion and Exclusion Criteria

Inclusion criteria were as follows: (1) Articles available in English; (2) Mean age between 10.0 and 24.0 years, per the World Health Organization's definition of "young people"; (3) Participants received one or more non-pharmacological intervention condition(s) or a comparison condition (e.g., treatment as usual) with a randomized-controlled or quasi-experimental trial design. To be included, a study's comparison condition must represent a group of individuals that is distinct from the intervention group; (4) The trial included at least one treatment outcome evaluating young people's self-injurious thoughts or behaviors. To be included, the outcome must be measured post treatment in the treatment and comparison conditions; (5) The trial was conducted within the past 50 years (1970–2020); (6) At least one active intervention in the trial is "brief," as defined in a prior review of brief, youth-directed interventions (see definition below). All articles meeting the above criteria were included, regardless of recruitment method, intervention setting, intervention delivery modality, and whether or not each intervention specifically targeted SITBs.

Consistent with a recent review of brief interventions for youth psychopathology (Schleider et al., 2020), we defined "brief interventions" as interventions not exceeding 240 min, or four 60-min sessions in total length. Youth complete an average of ~3.9 treatment sessions in real-world clinical settings (Harpaz-Rotem et al., 2004), ~25% of adolescents seeking outpatient psychotherapy end treatment after 1–2 sessions (Abel et al., 2020), and attendance is low even among adolescents with post-emergency room referrals following a suicide attempt (average and median sessions attended = 5.9 and 4, respectively; Granboulan et al., 2001; Lizardi & Stanley, 2010; Piacentini et al., 1995). Therefore, identifying evidence-based, brief treatments for SITBs may help direct young people, parents, and providers toward tools with the greatest potential for impact, given the reality of limited treatment time.

Notably, many interventions for SITBs in youth include some form of follow-up contact after an initial clinical encounter (e.g., via phone, email, or postcards). Thus, this review used a systematized approach to 'counting' such follow-ups either part of, or adjunctive to, a given brief intervention. Specifically, follow-up contacts were not counted toward intervention length unless these follow-up contacts (1) were a structured, standardized part of the intervention

¹ To include non-randomized trials, to facilitate comparisons with prior work (Fox et al., 2020), and to account for substantial anticipated heterogeneity in SITB measurement between trials, we preregistered the present study as a systematic review over a meta-analysis.

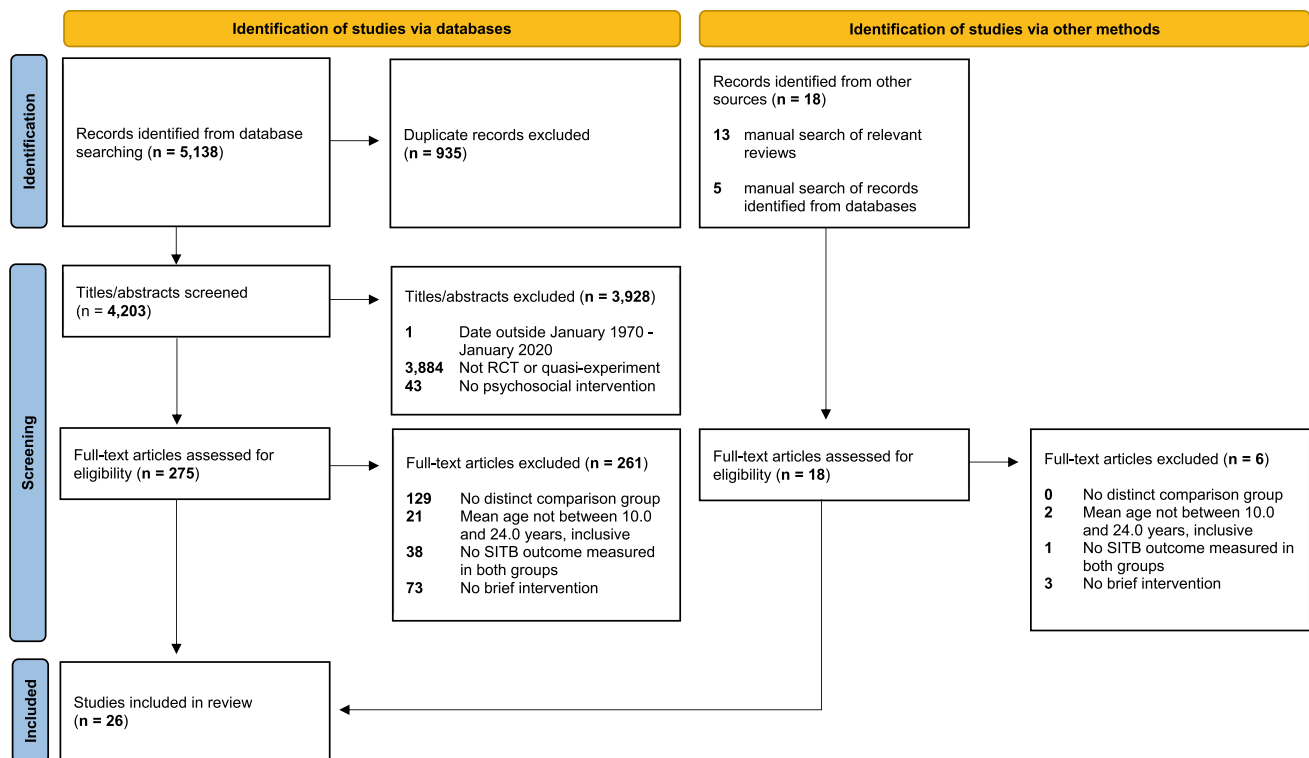


Fig. 1 PRISMA 2020 flow diagram of systematic review results

(i.e., study investigators intended for all participants to be contacted in a uniform manner), and (2) included content designed to be therapeutic (i.e., above and beyond clinical or resource referrals).

To begin the review process, article screening was conducted by the first author and a trained research coordinator (second author). These two individuals independently determined whether articles met inclusion criteria 1, 3, and 5 (written in English; one or more non-pharmacological treatment(s) tested via RCT or quasi-experimental design; released within the specified date range), based on each abstract. After initial abstract screening, these two raters independently determined whether remaining articles met inclusion criteria 2, 4, and 6 (mean age between 10.0 and 24.0 years; at least one post-treatment SITB outcome for both conditions; “brief interventions” fewer than four 60-min sessions or ≤ 240 min of total length) based on the full texts. Any disagreements were resolved via discussion at both rounds of initial review. Studies meeting all above inclusion criteria after these two stages of screening were included in the present review (see Fig. 1).

Data Extraction, Coding, and Processing

Once final studies were identified, each article was coded at the full-text level for specific study and sample

characteristics: study year, publication status (peer-reviewed versus unpublished), participant demographics (mean age, sex, gender identity, LGBTQ+ identity, racial and/or ethnic identity), and sample type (recruitment within clinical versus community settings).

Additional coded study-level information included treatment length (total minutes, number of sessions, and number of weeks), study follow-up length (weeks), intervention delivery format (self-administered or administered by mental health provider, other health provider, or school staff), delivery setting (outpatient mental healthcare setting, hospital, school, research lab, community center, or remotely by technology), and training required for those administering the intervention (hours; for non-self-administered studies only). For studies where “treatment as usual” was compared to one or more brief interventions plus treatment as usual, coders did not consider treatment as usual components when estimating brief intervention duration. Wherever possible, estimated intervention duration in minutes was based on author-reported estimates for intended intervention length, followed by the reported mean duration, the median duration, and the maximum duration of intervention. If a manuscript did not report intervention duration (minutes), coders contacted the corresponding author of the paper to determine an author-based estimate. Where author-based estimates were unavailable, coders

estimated duration in minutes based on standardized values (i.e., phone calls = 15 min; postcards, notes, emails = 5 min; texts, posters = 1 min of intervention).

Coders recorded all intended intervention targets—per each manuscript’s description of intervention—to evaluate whether each intervention was specifically designed to target SITBs, or whether it was designed to treat a different mental health outcome. For example, intervention targets could have included: SITBs, depression, substance use, personality dysfunction, and/or other mental health problems. Additionally, coders recorded whether each trial was registered on a clinical trials registry (e.g., clinicaltrials.gov; yes or no), and, if so, which primary outcome was specified in the registration. Using this information, coders indicated whether the primary outcome reported on the registration (if any) matched the primary outcome reported in each trial. To capture attrition, coders extracted the number of participants assigned to the treatment(s) versus control condition, number of participants who started the treatment(s) (percent of participants in the treatment condition who attended at least one session/initiated self-administered treatment), and participant retention in treatment versus control condition (percent by condition at final follow-up). As some interventions may target SITBs in young people via training others (e.g., parents or health provider trainings), coders extracted data for the person receiving intervention content (young person, parent, health professional, or school staff).

Specific codes also provide information about comparison conditions. Coders labeled whether each comparison condition was labeled “waitlist control/no treatment,” “treatment as usual/usual care” (TAU/UC), “psychoeducation,” or “active comparator.” Considering the wide variation of comparison conditions utilized in youth mental health treatment research (Weisz et al., 2013), coders recorded how “TAU/UC,” “psychoeducation,” or “active comparator” was defined for each study condition (per authors’ written descriptions). Coders noted instances where the description of a comparison condition was unclear or incomplete.

Lastly, coders extracted specific information about the SITB outcome(s) in each study: the total number of SITB-related outcomes measured, whether each study observed *any* positive, statistically significant effects across all SITB outcomes (yes or no), and, if so, which specific outcome(s) improved relative to the control group. Additionally, coders calculated what percentage of each study’s outcomes were significantly improved for SITB-specific (e.g., non-suicidal self-injury) and non-specific outcomes (e.g., depression). For studies evaluating outcomes across multiple manuscripts (i.e., multiple papers using the same sample), coders counted outcomes from all earlier papers in addition to outcomes assessed in the included study.

Coders also extracted the following for each SITB outcome measured: the specific SITB outcome measure(s) used (e.g.,

Suicidal Ideation Questionnaire), the form of SITB outcome measurement (self-report, interview, or mixed), and the type of SITB outcome. To facilitate comparisons with earlier meta-analyses evaluating mental health treatment effects on SITBs (Fox et al., 2020), SITB types included: non-suicidal self-injury, suicide ideation (including suicidal intent and plans), suicide attempts, suicide deaths, suicide attempts *and* deaths (if combined in outcome), self-harm (all self-harm, regardless of intent), lumped suicidal thoughts and behaviors (if combined in outcome), lumped self-injurious thoughts and behaviors (if combined in outcome), hospitalization resulting from a SITB episode, or suicide questionnaire. Importantly, outcomes reporting a mix of SITBs *and* depression symptoms were not included in the present review (e.g., composite Childhood Depression Inventory scores, including the item, “I want to kill myself”). However, suicidality-specific measures that do include outcomes not directly related to SITBs were coded separately in the final “suicide questionnaire” category (e.g., Suicide Cognition Scale scores, including the item, “It is impossible to describe how badly I feel”). Coders created short descriptions of each intervention, as well as qualitatively summarized the results of each trial.

Coders evaluated the state of the evidence supporting each intervention using established rating criteria widely used within clinical psychology and psychiatry research (“well-established,” “probably efficacious,” “possibly efficacious,” “experimental,” or “questionable”; Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Glenn et al., 2015; Schleider et al., 2020; Southam-Gerow & Prinstein, 2014). Intervention efficacy was assessed separately for each SITB outcome, such that each intervention could receive multiple efficacy ratings (one for each outcome assessed).

Lastly, in accordance with the Cochrane Consumers & Communication Review Group recommendations (Ryan et al., 2013), coders examined methodological variables from each study to evaluate risk of bias (e.g., masking of participants and personnel, incomplete outcome data, selective outcome reporting, etc.). For studies where participants were not assigned to a condition (i.e., quasi-experiments evaluating an intervention group vs. a retroactively identified comparison sample) this was noted explicitly, and risk of bias was not coded for selection bias, performance bias, or detection bias. Rater agreement was evaluated across all study, group, and outcome-level variables using Cohen’s kappa (average $K=0.84$).

Results

Study Selection and Inclusion

The search identified 5138 records via database searching ($n=4203$ after duplicate removal) and 18 additional records

via manual search. Title/abstract screening excluded 3928 records, and 293 articles were screened at the full-text level (275 from database search, 18 from manual search). Of these 293 articles, 267 were excluded using the pre-specified inclusion criteria—yielding 26 total articles for inclusion in the present review (all published; see Fig. 1 for full details and reasons for exclusion). The first and second authors coded all 26 included articles in-full (MD and SC).

Characteristics of Included Studies

Participants

These 26 articles included 24 completely independent studies, one analysis combining additional collected data with an initial sample (Aseltine & DeMartino, 2004; Aseltine et al., 2007), and one long-term follow-up study reporting additional outcomes 14 years later (King et al., 2009, 2019)—culminating in 17,366 total young people (study N s = 36–8389),² with estimates of central tendency for age (e.g., mean, median, midpoint, or estimated age based on grade-level) ranging from 14 to 19.50 years old (unweighted mean of study-level estimates = 15.85 years; see Table 1). 10.61–58.30% of the samples were reported as male; none of the included articles contained evidence that gender identity was assessed as distinct from sex, or that identity options beyond the binary (“male,” “female”) were provided. Only one study reported the number or proportion of LGBTQ+ participants (Asarnow et al., 2017). A majority of articles (15 of 26) reported research conducted in majority-white samples (range of study-level estimates = 33.15–86.11% white). While data for participants’ racial and ethnic identities were often unreported, the proportion of white participants was reported far more frequently (reported in 18 of 26 articles) than the proportion of participating Black, Hispanic, Asian, Pacific Islander, or Native young people (reported in 15, 15, 9, 3, and 7 of 26 articles, respectively). Overall, young people included in these studies were recruited from community (i.e., non-selected; $n = 8$), clinically selected ($n = 4$), outpatient ($n = 1$), and inpatient/hospital/residential samples ($n = 14$); notably, the total n does not equal 26, as multiple studies recruited participants from more than one of the above sample types, and one study was a long-term follow-up study within the same, original sample (King et al., 2019). One study specifically recruited participants from a group of treatment-seeking individuals who were ineligible to receive specialty mental health services (Robinson et al., 2012).

² Estimated total N is approximate, given that the exact sample size for between-group comparisons (i.e., size of intervention and comparison school samples) in Torcasso and Hilt (2017) is unknown.

Study Design & Risk of Bias

A majority of included articles (20 of 26 articles) reported results from randomized trials (see Table 2 for study designs and risk of bias); however, multiple non-randomized trials ($n = 2$) used an alternating allocation sequence, and several articles ($n = 4$) used a quasi-experimental design to make retrospective comparisons with a *distinct*, matched and non-randomized comparison group (e.g., comparing intervention group participants to individuals who previously visited the hospital prior to intervention rollout; comparing intervention group to a matched control school). Comparison groups fell into four broad categories, sorted based on authors’ description: wait list/no treatment ($n = 6$), treatment as usual ($n = 14$), psychoeducation ($n = 3$), and active comparison ($n = 3$).

Risk of bias codes (Ryan et al., 2013) suggested varying levels of possible bias across studies. Three of 26 articles met criteria for “high” risk of selection bias (i.e., non-random assignment or study staff aware of allocation sequence). A majority ($n = 14$) met criteria for “high” risk of performance bias—indicating either participants or study personnel were unmasked to study condition. Seven articles did not provide clear information about randomization method, allocation concealment, or masking of participants and study staff. By comparison, risk of detection bias was low across all 26 articles; four articles met criteria for “high” risk (i.e., unmasked outcome assessors), and three articles did not clearly report whether outcome assessors were masked. Four articles reported using quasi-experimental designs without allocating participants to specific groups; these articles were not coded for selection, performance, or detection bias. Probability of attrition bias was indexed as a function of difference in attrition between groups relative to overall attrition (What Works Clearinghouse, 2020), with higher study attrition and differential attrition reflecting higher probability of bias. Eight articles met criteria for “high” risk of attrition bias, and 10 articles either lacked sufficient information to determine risk of attrition bias or the risk of attrition bias was unclear.

Fewer than half ($n = 12$) of the 26 articles were pre-registered on clinicaltrials.gov or another clinical trials registry included on the World Health Organization’s International Clinical Trials Registry Platform (ICTRP; World Health Organization, 2022; see Table 3 for details about study pre-registrations and follow-ups). Of these 12 pre-registered studies, only seven studies contained 1:1 match between pre-registered primary outcome(s) and primary outcome(s) reported in the published manuscript. Two of these 12 studies had previously published the pre-registered primary outcome in an earlier paper, and three studies met criteria for a partial match between pre-registered and reported primary outcomes (i.e., multiple outcomes were pre-registered as

Table 1 Study participants

Study citation	Sample recruitment	Sample <i>N</i>	Age	Male sex	Gender assessed distinct from sex?	LGBTQ+
Asarnow, J. R., Baraff, L. J., Berk, M., Grob, C. S., Devich-Navarro, M., Sudath, R., Piacentini, J. C., Rotheram-Borus, M. J., Cohen, D., & Tang, L. (2011). An Emergency Department Intervention for Linking Pediatric Suicidal Patients to Follow-Up Mental Health Treatment. <i>Psychiatric Services</i> , 62(11), 1303–1309. https://doi.org/10.1176/ps.62.11.pss6211_1303	Inpatient/hospital/residential	181	14.70	30.94%	No	Unknown
Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015	Clinically selected; outpatient therapy; inpatient/hospital/residential	42	14.62	11.90%	No	21.50%
Aseltine, R. H., and DeMartino, R. (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. <i>American Journal of Public Health</i> , 94(3), 446–451. https://doi.org/10.2105/ajph.94.3.446	Community	2100	15.50	Unknown	No	Unknown
Aseltine, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: a replication and extension. <i>BMC Public Health</i> , 7(161). https://doi.org/10.1186/1471-2458-7-161	Community	4133	15.50	Unknown	No	Unknown
Cotgrove, A., Zirinsky, L., Black, D., & Weston, D. (1995). Secondary prevention of attempted suicide in adolescence. <i>Journal of Adolescence</i> , 18(5), 569–577. https://doi.org/10.1006/jado.1995.1039	Inpatient/hospital/residential	105	14.90	15.24%	No	Unknown
Cyz, E. K., King, C. A., & Biermann, B. J. (2019). Motivational Interviewing-Enhanced Safety Planning for Adolescents at High Suicide Risk: A Pilot Randomized Controlled Trial. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(2), 250–262. https://doi.org/10.1080/15374416.2018.1496442	Inpatient/hospital/residential	36	15.42	21.20%	No	Unknown
Donaldson, D., Spirito, A., Arrigan, M., & Aspel, J. W. (1997). Structured disposition planning for adolescent suicide attempters in a general hospital: Preliminary findings on short-term outcome. <i>Archives of Suicide Research</i> , 3(4), 271–282. https://doi.org/10.1080/1381119708258279	Inpatient/hospital/residential	101	15.00	14.85%	No	Unknown
Eskin, M., Ertekin, K., & Demir, H. (2008). Efficacy of a Problem-Solving Therapy for Depression and Suicide Potential in Adolescents and Young Adults. <i>Cognitive Therapy and Research</i> , 32(2), 227–245. https://doi.org/10.1007/s10608-007-9172-8	Clinically selected	53	19.12	30.43%	No	Unknown

Table 1 (continued)

Study citation	Sample recruitment	Sample <i>N</i>	Age	Male sex	Gender assessed distinct from sex?	LGBTQ+
Fitzpatrick, K. K., Witte, T. K., & Schmidt, N. B. (2005). Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. <i>Behavior Therapy</i> , 36(4), 323–333. https://doi.org/10.1016/s0005-7894(05)80114-5	Clinically selected	110	19.02	45.45%	No	Unknown
Grupp-Phelan, J., Stevens, J., Boyd, S., Cohen, D., Ammerman, R., Liddy-Hicks, S., Heck, K., Marcus, S., Stone, L., Campo, J., & Bridge, J. (2019). Effect of a motivational interviewing-based intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents. <i>JAMA Network Open</i> , 2(12), e1917941. https://doi.org/10.1001/jamanetworkopen.2019.17941	Inpatient/hospital/residential	168	15.00	20.75%	No	Unknown
Hill, R. M., & Pettit, J. W. (2019). Pilot Randomized Controlled Trial of LEAP: A Selective Preventive Intervention to Reduce Adolescents' Perceived Burdensomeness. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(sup1), S45–S56. https://doi.org/10.1080/15374416.2016.1188705	Community	80	16.93	31.20%	No	Unknown
Kennard, B. D., Goldstein, T., Foxwell, A. A., McMakin, D. L., Wolfe, K., Biernesser, C., Moorehead, A., Douaihy, A., Zullo, L., Wentroble, E., Owen, V., Zelazny, J., Iyengar, S., Porta, G., & Brent, D. (2018). As Safe as Possible (ASAP): A Brief App-Supported Inpatient Intervention to Prevent Postdischarge Suicidal Behavior in Hospitalized, Suicidal Adolescents. <i>American Journal of Psychiatry</i> , 175(9), 864–872. https://doi.org/10.1176/appi.ajp.2018.17101151	Inpatient/hospital/residential	66	15.10	10.61%	No	Unknown
King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team–Version II for suicidal adolescents: A randomized controlled intervention trial. <i>Journal of Consulting and Clinical Psychology</i> , 77(5), 880–893. https://doi.org/10.1037/a0016552	Inpatient/hospital/residential	448	15.59	28.79%	No	Unknown
King, C. A., Gipson, P. Y., Horwitz, A. G., & Opperman, K. J. (2015). Teen Options for Change: An Intervention for Young Emergency Patients Who Screen Positive for Suicide Risk. <i>Psychiatric Services</i> , 66(1), 97–100. https://doi.org/10.1176/appi.ps.201300347	Inpatient/hospital/residential	49	17.10	20.00%	No	Unknown

Table 1 (continued)

Study citation	Sample recruitment	Sample <i>N</i>	Age	Male sex	Gender assessed distinct from sex?	LGBTQ+
King, C. A., Arango, A., Kramer, A., Busby, D., Czyz, E., Foster, C. E., & Gillespie, B. W. (2019). Association of the Youth-Nominated Support Team Intervention for Suicidal Adolescents With 11- to 14-Year Mortality Outcomes. <i>JAMA Psychiatry</i> , 76(5), 492. https://doi.org/10.1001/jamapsychiatry.2018.4358	Inpatient/hospital/residential	448	15.59	28.79%	No	Unknown
Ougrin, D., Boege, I., Stahl, D., Banarsee, R., & Taylor, E. (2013). Randomised controlled trial of therapeutic assessment versus usual assessment in adolescents with self-harm: 2-year follow-up. <i>Archives of Disease in Childhood</i> , 98(10), 772–776. https://doi.org/10.1136/archdischild-2012-303200	Clinically selected; inpatient/hospital/residential	70	15.55	20.00%	No	Unknown
Perera, E. A., & Kathriarachchi, S. T. (2011). Problem-solving counseling as a therapeutic tool on youth suicidal behavior in the suburban population in Sri Lanka. <i>Indian Journal of Psychiatry</i> , 53(1), 30–35. https://doi.org/10.4103/0019-5545.75558	Inpatient/hospital/residential	124	19.50	Unknown	No	Unknown
Rengasamy, M., & Sparks, G. (2019). Reduction of Postdischarge Suicidal Behavior Among Adolescents Through a Telephone-Based Intervention. <i>Psychiatric Services</i> , 70(7), 545–552. https://doi.org/10.1176/appi.ps.201800421	Inpatient/hospital/residential	146	15.00	30.28%	No	Unknown
Robinson, J., Yuen, H. P., Gook, S., Hughes, A., Cosgrave, E., Killackey, E., Baker, K., Jorm, A., McGorry, P., & Yung, A. (2012). Can receipt of a regular postcard reduce suicide-related behaviour in young help seekers? A randomized controlled trial. <i>Early Intervention in Psychiatry</i> , 6(2), 145–152. https://doi.org/10.1111/j.1751-7893.2011.00334.x	People who were not eligible for treatment specialty mental health services	165	18.60	35.37%	No	Unknown
Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. <i>Prevention Science</i> , 17(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3	Community	1272	14.00	58.30%	No	Unknown
Torcasso, G., & Hilt, L. M. (2017). Suicide Prevention Among High School Students: Evaluation of a Nonrandomized Trial of a Multi-stage Suicide Screening Program. <i>Child & Youth Care Forum</i> , 46, 35–49. https://doi.org/10.1007/s10566-016-9366-x	Community	Unknown	14.00	Unknown	No	Unknown

Table 1 (continued)

Study citation	Sample recruitment	Sample <i>N</i>	Age	Male sex	Gender assessed distinct from sex?	LGBTQ+
Vieland, V., Whittle, B., Garland, A., Hicks, R., & Shaffer, D. (1991). The impact of curriculum-based suicide prevention programs for teenagers: An 18-month follow-up. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 30(5), 811–815. https://doi.org/10.1016/s0890-8567(10)80021-8	Community	381	15.80	48.29%	No	Unknown
Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, I., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemin, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., ... Carli, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. <i>The Lancet</i> , 385(9977), 1536–1544. https://doi.org/10.1016/s0140-6736(14)61213-7	Community	8389	14.80	41.24%	No	Unknown
Wharff, E. A., Ginnis, K. M., & Ross, A. M. (2012). Family-based Crisis Intervention with Suicidal Adolescents in the Emergency Room: A Pilot Study. <i>Social Work</i> , 57(2), 133–143. https://doi.org/10.1093/sw/sws017	Inpatient/hospital/residential	250	15.60	25.20%	No	Unknown
Wharff, E. A., Ginnis, K. B., Ross, A. M., White, E. M., White, M. T., & Forbes, P. W. (2019). Family-Based Crisis Intervention With Suicidal Adolescents: A Randomized Clinical Trial. <i>Pediatric Emergency Care</i> , 35(3), 170–175. https://doi.org/10.1097/pec.0000000000001076	Inpatient/hospital/residential	142	15.50	28.06%	No	Unknown
Whittaker, R., Stasiak, K., McDowell, H., Doherty, I., Shepherd, M., Chua, S., Dorey, E., Parag, V., Ameratunga, S., Rodgers, A., & Merry, S. (2017). MEMO: an mHealth intervention to prevent the onset of depression in adolescents: a double-blind, randomised, placebo-controlled trial. <i>Journal of Child Psychology and Psychiatry</i> , 58(9), 1014–1022. https://doi.org/10.1111/jcpp.12753	Community	855	14.30	31.70%	No	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Asarnow, J. R., Baraff, L. J., Berk, M., Grob, C. S., Devich-Navarro, M., Suddath, R., Piacentini, J. C., Rotheram-Borus, M. J., Cohen, D., & Tang, L. (2011). An Emergency Department Intervention for Linking Pediatric Suicidal Patients to Follow-Up Mental Health Treatment. <i>Psychiatric Services</i> , 62(11), 1303–1309. https://doi.org/10.1176/ps.62.11.pss6211_1303	33.15%	12.71%	45.30%	Unknown	Unknown	Unknown	Unknown	8.84%	0.00%
Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015	83.33%	4.76%	21.43%	11.90%	Unknown	Unknown	Unknown	7.14%	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Aseltine, R. H., & DeMartino, R. (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. <i>American Journal of Public Health</i> , 94(3), 446–451. https://doi.org/10.2105/ajph.94.3.446	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Aseltine, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: a replication and extension. <i>BMC Public Health</i> , 7(161). https://doi.org/10.1186/1471-2458-7-161	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Cotgrove, A., Zirinsky, L., Black, D., & Weston, D. (1995). Secondary prevention of attempted suicide in adolescence. <i>Journal of Adolescence</i> , 18(5), 569–577. https://doi.org/10.1006/jado.1995.1039	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Czyz, E. K., King, C. A., & Biermann, B. J. (2019). Motivational Interviewing-Enhanced Safety Planning for Adolescents at High Suicide Risk: A Pilot Randomized Controlled Trial. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(2), 250–262. https://doi.org/10.1080/15374416.2018.1496442	86.11%	8.33%	2.78%	8.33%	2.78%	2.78%	Unknown	Unknown	Unknown
Donaldson, D., Spirito, A., Arrigan, M., & Aspel, J. W. (1997). Structured disposition planning for adolescent suicide attempters in a general hospital: Preliminary findings on short-term outcome. <i>Archives of Suicide Research</i> , 3(4), 271–282. https://doi.org/10.1080/1381119708258279	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Eskin, M., Ertekin, K., & Demir, H. (2008). Efficacy of a Problem-Solving Therapy for Depression and Suicide Potential in Adolescents and Young Adults. <i>Cognitive Therapy and Research</i> , 32(2), 227–245. https://doi.org/10.1007/s10608-007-9172-8	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Fitzpatrick, K. K., Witte, T. K., & Schmidt, N. B. (2005). Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. <i>Behavior Therapy</i> , 36(4), 323–333. https://doi.org/10.1016/s0005-7894(05)80114-5	75.00%	4.00%	2.00%	Unknown	Unknown	1.00%	Unknown	3.00%	1.00%

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Grupp-Phelan, J., Stevens, J., Boyd, S., Cohen, D., Ammerman, R., Liddy-Hicks, S., Heck, K., Marcus, S., Stone, L., Campo, J., & Bridge, J. (2019). Effect of a motivational interviewing-based intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents. <i>JAMA Network Open</i> , 2(12), e1917941. https://doi.org/10.1001/jamanetworkopen.2019.17941	50.31%	38.36%	5.66%	Unknown	Unknown	Unknown	8.18%	2.52%	0.63%
Hill, R. M., & Pettit, J. W. (2019). Pilot Randomized Controlled Trial of LEAP: A Selective Preventive Intervention to Reduce Adolescents' Perceived Burdensomeness. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(sup1), S45–S56. https://doi.org/10.1080/15374416.2016.1188705	68.40%	16.50%	65.80%	7.60%	Unknown	1.30%	Unknown	8.80%	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Kennard, B. D., Goldstein, T., Foxwell, A. A., McMakin, D. L., Wolfe, K., Biernesser, C., Moorehead, A., Douaihy, A., Zullo, L., Wentroble, E., Owen, V., Zelazny, J., Iyengar, S., Porta, G., & Brent, D. (2018). As Safe as Possible (ASAP): A Brief App-Supported Inpatient Intervention to Prevent Postdischarge Suicidal Behavior in Hospitalized, Suicidal Adolescents. <i>American Journal of Psychiatry</i> , 175(9), 864–872. https://doi.org/10.1176/appi.ajp.2018.17101151	77.27%	Unknown	1.52%	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team–Version II for suicidal adolescents: A randomized controlled intervention trial. <i>Journal of Consulting and Clinical Psychology</i> , 77(5), 880–893. https://doi.org/10.1037/a0016552	83.71%	6.47%	1.79%	Unknown	Unknown	Unknown	Unknown	8.04%	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
King, C. A., Gipson, P. Y., Horwitz, A. G., & Opperman, K. J. (2015). Teen Options for Change: An Intervention for Young Emergency Patients Who Screen Positive for Suicide Risk. <i>Psychiatric Services</i> , 66(1), 97–100. https://doi.org/10.1176/appi.ps.201300347	38.78%	57.14%	2.04%	Unknown	2.04%	4.08%	Unknown	2.04%	Unknown
King, C. A., Arango, A., Kramer, A., Busby, D., Czyz, E., Foster, C. E., & Gillespie, B. W. (2019). Association of the Youth-Nominated Support Team Intervention for Suicidal Adolescents With 11- to 14-Year Mortality Outcomes. <i>JAMA Psychiatry</i> , 76(5), 492. https://doi.org/10.1001/jamapsychiatry.2018.4358	83.71%	6.47%	1.79%	Unknown	Unknown	Unknown	Unknown	8.04%	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Ougrin, D., Boege, I., Stahl, D., Banarsee, R., & Taylor, E. (2013). Randomised controlled trial of therapeutic assessment versus usual assessment in adolescents with self-harm: 2-year follow-up. <i>Archives of Disease in Childhood</i> , 98(10), 772–776. https://doi.org/10.1136/archdischild-2012-303200	52.86%	20.00%	Unknown	11.43%	Unknown	Unknown	12.86%	2.86%	0.00%
Perera, E. A., & Kathriarachchi, S. T. (2011). Problem-solving counseling as a therapeutic tool on youth suicidal behavior in the suburban population in Sri Lanka. <i>Indian Journal of Psychiatry</i> , 53(1), 30–35. https://doi.org/10.4103/0019-5545.75558	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Rengasamy, M., & Sparks, G. (2019). Reduction of Postdischarge Suicidal Behavior Among Adolescents Through a Telephone-Based Intervention. <i>Psychiatric Services</i> , 70(7), 545–552. https://doi.org/10.1176/appi.ps.201800421	73.24%	21.83%	Unknown	2.82%	Unknown	1.41%	Unknown	Unknown	0.70%

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Robinson, J., Yuen, H. P., Gook, S., Hughes, A., Cosgrave, E., Killackey, E., Baker, K., Jorm, A., McGorry, P., & Yung, A. (2012). Can receipt of a regular postcard reduce suicide-related behaviour in young help seekers? A randomized controlled trial. <i>Early Intervention in Psychiatry</i> , 6(2), 145–152. https://doi.org/10.1111/j.1751-7893.2011.00334.x	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. <i>Prevention Science</i> , 17(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3	60.20%	6.10%	22.60%	Unknown	Unknown	Unknown	9.10%	2.00%	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Torcasso, G., & Hilt, L. M. (2017). Suicide Prevention Among High School Students: Evaluation of a Nonrandomized Trial of a Multi-stage Suicide Screening Program. <i>Child & Youth Care Forum</i> , 46, 35–49. https://doi.org/10.1007/s10566-016-9366-x	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Vieland, V., Whittle, B., Garland, A., Hicks, R., & Shaffer, D. (1991). The impact of curriculum-based suicide prevention programs for teenagers: An 18-month follow-up. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 30(5), 811–815. https://doi.org/10.1016/s0890-8567(10)80021-8	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, I., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemin, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., ... Carli, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. <i>The Lancet</i> , 385(9977), 1536–1544. https://doi.org/10.1016/S0140-6736(14)61213-7	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Wharff, E. A., Ginnis, K. M., & Ross, A. M. (2012). Family-based Crisis Intervention with Suicidal Adolescents in the Emergency Room: A Pilot Study. <i>Social Work</i> , 57(2), 133–143. https://doi.org/10.1093/sw/sws017	64.80%	16.80%	10.40%	2.40%	Unknown	Unknown	2.00%	3.60%	0.00%

Table 1 (continued)

Study citation	White	Black or African American	Latino or hispanic	Asian	Pacific Islander	Native or indigenous	Multiracial	Another race or ethnicity not assessed	Race or ethnicity unknown
Wharff, E. A., Ginnis, K. B., Ross, A. M., White, E. M., White, M. T., & Forbes, P. W. (2019). Family-Based Crisis Intervention With Suicidal Adolescents: A Randomized Clinical Trial. <i>Pediatric Emergency Care</i> , 35(3), 170–175. https://doi.org/10.1097/pec.00000000000010176	66.19%	6.47%	9.35%	2.88%	Unknown	Unknown	17.99%	Unknown	Unknown
Whittaker, R., Stasiak, K., McDowell, H., Doherty, I., Shepherd, M., Chua, S., Dorey, E., Parag, V., Ameratunga, S., Rodgers, A., & Merry, S. (2017). MEMO: an mHealth intervention to prevent the onset of depression in adolescents: a double-blind, randomised, placebo-controlled trial. <i>Journal of Child Psychology and Psychiatry</i> , 58(9), 1014–1022. https://doi.org/10.1111/jcpp.12753	58.60%	Unknown	Unknown	24.33%	5.96%	9.71%	Unknown	1.40%	0.00%

primary, and only some of the published primary outcomes match the pre-registered outcomes). Because a majority of studies were not pre-registered ($n = 14$), risk of reporting bias (i.e., selective outcome reporting) was difficult to

discern; one was pre-registered without specific outcomes listed, and four articles pre-registered outcomes that were not reported in the published manuscript.

Table 2 Study design and risk of bias

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Asarnow, J. R., Baraff, L., Berk, M., Grob, C. S., Devich-Navarro, M., Suddath, R., Piacentini, J. C., Rotheram-Borus, M. J., Cohen, D., & Tang, L. (2011). An Emergency Department Intervention for Linking Pediatric Suicidal Patients to Follow-Up Mental Health Treatment. <i>Psychiatric Services</i> , 62(11), 1303–1309. https://doi.org/10.1176/ps.62.11.pss6211_1303	Randomized trial	TAU + Psychoeducation	Low	High	Low	Low	Unsure
Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015	Randomized trial	Active comparator	Low	Unsure	Low	High	High
Asetine, R. H., & DeMartino, R. (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. <i>American Journal of Public Health</i> , 94(3), 446–451. https://doi.org/10.2105/ajph.94.3.446	Randomized trial	Waiting list/no treatment	Low	High	High	Unsure	Low

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Aseltine, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: a replication and extension. <i>BMC Public Health</i> , 7(161). https://doi.org/10.1186/1471-2458-7-161	Randomized trial	Waiting list/no treatment	Low	High	High	Unsure	Low
Cotgrove, A., Zirinsky, L., Black, D., & Weston, D. (1995). Secondary prevention of attempted suicide in adolescence. <i>Journal of Adolescence</i> , 18(5), 569–577. https://doi.org/10.1006/jado.1995.1039	Randomized trial	TAU	Unsure	Unsure	Unsure	Unsure	Unsure
Cyz, E. K., King, C. A., & Biermann, B. J. (2019). Motivational Interviewing-Enhanced Safety Planning for Adolescents at High Suicide Risk: A Pilot Randomized Controlled Trial. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(2), 250–262. https://doi.org/10.1080/15374416.2018.1496442	Randomized trial	TAU	Unsure	Unsure	Low	High	Unsure

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Donaldson, D., Spirito, A., Arrigan, M., & Aspel, J. W. (1997). Structured disposition planning for adolescent suicide attempters in a general hospital: Preliminary findings on short-term outcome. <i>Archives of Suicide Research</i> , 3(4), 271–282. https://doi.org/10.1080/1381119708258279	Non-randomized trial (quasi-experimental comparison with previous hospital patients)	TAU	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Unsure	Unsure
Eskin, M., Ertekin, K., & Demir, H. (2008). Efficacy of a Problem-Solving Therapy for Depression and Suicide Potential in Adolescents and Young Adults. <i>Cognitive Therapy and Research</i> , 32(2), 227–245. https://doi.org/10.1007/s10608-007-9172-8	Randomized trial	Waiting list/no treatment	Unsure	High	High	High	Unsure
Fitzpatrick, K. K., Witte, T. K., & Schmidt, N. B. (2005). Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. <i>Behavior Therapy</i> , 36(4), 323–333. https://doi.org/10.1016/s0005-7894(05)80114-5	Randomized Trial	Psychoeducation	Unsure	Unsure	Unsure	Unsure	Unsure

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Grupp-Phelan, J., Stevens, J., Boyd, S., Cohen, D., Ammerman, R., Liddy-Hicks, S., Heck, K., Marcus, S., Stone, L., Campo, J., & Bridge, J. (2019). Effect of a motivational interviewing-based intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents. <i>JAMA Network Open</i> , 2(12), e1917941. https://doi.org/10.1001/jamanetworkopen.2019.17941	Randomized trial	TAU	Low	High	Low	Low	Low
Hill, R. M., & Pettit, J. W. (2019). Pilot Randomized Controlled Trial of LEAP: A Selective Preventive Intervention to Reduce Adolescents' Perceived Burdensomeness. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(sup1), S45–S56. https://doi.org/10.1080/15374416.2016.1188705	Randomized trial	Psychoeducation	Low	High	Low	Low	Unsure

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Kenard, B. D., Goldstein, T., Foxwell, A. A., McMakin, D. L., Wolfe, K., Biernesser, C., Moorehead, A., Douathy, A., Zullo, L., Wentroble, E., Owen, V., Zelazny, J., Iyengar, S., Porta, G., & Brent, D. (2018). As Safe as Possible (ASAP): A Brief App-Supported Inpatient Intervention to Prevent Postdischarge Suicidal Behavior in Hospitalized, Suicidal Adolescents. <i>American Journal of Psychiatry</i> , 175(9), 864–872. https://doi.org/10.1176/appi.ajp.2018.17101151	Randomized trial	TAU	Low	High	Low	Low	High
King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team–Version II for suicidal adolescents: A randomized controlled intervention trial. <i>Journal of Consulting and Clinical Psychology</i> , 77(5), 880–893. https://doi.org/10.1037/a0016552	Randomized trial	TAU	Low	High	Low	Low	Low

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
King, C. A., Gipson, P. Y., Horwitz, A. G., & Opperman, K. J. (2015). Teen Options for Change: An Intervention for Young Emergency Patients Who Screen Positive for Suicide Risk. <i>Psychiatric Services</i> , 66(1), 97–100. https://doi.org/10.1176/appi.ps.201300347	Randomized trial	TAU	Unsure	Unsure	Low	Unsure	Unsure
King, C. A., Arango, A., Kramer, A., Busby, D., Czyn, E., Foster, C. E., & Gillespie, B. W. (2019). Association of the Youth-Nominated Support Team Intervention for Suicidal Adolescents With 11- to 14-Year Mortality Outcomes. <i>JAMA Psychiatry</i> , 76(5), 492. https://doi.org/10.1001/jamapsychiatry.2018.4358	Randomized trial	TAU	Low	High	Low	Low	Low
Ougrin, D., Boege, I., Stahl, D., Banarsee, R., & Taylor, E. (2013). Randomised controlled trial of therapeutic assessment versus usual assessment in adolescents with self-harm: 2-year follow-up. <i>Archives of Disease in Childhood</i> , 98(10), 772–776. https://doi.org/10.1136/archdischild-2012-303200	Randomized trial	TAU	Low	High	Low	Unsure	High

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Perera, E. A., & Kathirarachchi, S. T. (2011). Problem-solving counseling as a therapeutic tool on youth suicidal behavior in the suburban population in Sri Lanka. <i>Indian Journal of Psychiatry</i> , 53(1), 30–35. https://doi.org/10.4103/0019-5545.75558	Non-randomized trial (alternating allocation sequence)	TAU	High	Unsure	Unsure	High	Unsure
Rengasamy, M., & Sparks, G. (2019). Reduction of Postdischarge Suicidal Behavior Among Adolescents Through a Telephone-Based Intervention. <i>Psychiatric Services</i> , 70(7), 545–552. https://doi.org/10.1176/appi.ps.201800421	Non-randomized trial (alternating allocation sequence)	Active Comparator	High	Unsure	Low	Low	Unsure
Robinson, J., Yuen, H. P., Gook, S., Hughes, A., Cosgrave, E., Killackey, E., Baker, K., Jorm, A., McGorry, P., & Yung, A. (2012). Can receipt of a regular postcard reduce suicide-related behaviour in young help seekers? A randomized controlled trial. <i>Early Intervention in Psychiatry</i> , 6(2), 145–152. https://doi.org/10.1111/j.1751-7893.2011.00334.x	Randomized trial	TAU	Low	High	Low	High	Low

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. <i>Prevention Science</i> , 17(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3	Randomized trial	Waiting list/no treatment	Unsure	High	High	High	Unsure
Torcasso, G., & Hilt, L. M. (2017). Suicide Prevention Among High School Students: Evaluation of a Non-randomized Trial of a Multi-stage Suicide Screening Program. <i>Child & Youth Care Forum</i> , 46, 35–49. https://doi.org/10.1007/s10566-016-9366-x	Non-randomized trial (quasi-experimental comparison with matched control school)	Waiting list/no treatment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Unsure	Unsure
Vieland, V., Whittle, B., Garland, A., Hicks, R., & Shaffer, D. (1991). The impact of curriculum-based suicide prevention programs for teenagers: An 18-month follow-up. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 30(5), 811–815. https://doi.org/10.1016/s0890-8567(10)80021-8	Non-randomized trial (quasi-experimental comparison with matched control schools)	Waiting list/no treatment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	High	Unsure

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, I., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemín, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., ... Carl, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. <i>The Lancet</i> , 385(9977), 1536–1544. https://doi.org/10.1016/s0140-6736(14)61213-7	Randomized trial	Psychoeducation	High	High	Low	Unsure	High
Wharff, E. A., Ginnis, K. M., & Ross, A. M. (2012). Family-based Crisis Intervention with Suicidal Adolescents in the Emergency Room: A Pilot Study. <i>Social Work</i> , 57(2), 133–143. https://doi.org/10.1093/sw/sws017	Non-randomized trial (quasi-experimental comparison with previous ER patients)	TAU	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	Quasi-experiment; no condition assignment	High	Unsure
Wharff, E. A., Ginnis, K. B., Ross, A. M., White, E. M., White, M. T., & Forbes, P. W. (2019). Family-Based Crisis Intervention With Suicidal Adolescents: A Randomized Clinical Trial. <i>Pediatric Emergency Care</i> , 35(3), 170–175. https://doi.org/10.1097/pec.0000000000001076	Randomized trial	TAU	Unsure	High	Low	Unsure	Unsure

Table 2 (continued)

Study citation	Study design	Comparison group	Selection bias	Performance bias	Detection bias	Attrition bias	Reporting bias
Whittaker, R., Stasiak, K., McDowell, H., Doherty, I., Shepherd, M., Chua, S., Dorey, E., Parag, V., Ameratunga, S., Rodgers, A., & Merry, S. (2017). MEMO: an mHealth intervention to prevent the onset of depression in adolescents: a double-blind, randomised, placebo-controlled trial. <i>Journal of Child Psychology and Psychiatry</i> , 58(9), 1014–1022. https://doi.org/10.1111/jcpp.12753	Randomized trial	Active comparator	Low	Low	Low	Low	Low

Interventions

Twenty-three distinct and “brief” interventions were evaluated across all 26 articles. Overall, these interventions were designed to target a variety of outcomes—with some primary treatment targets classified as SITBs (e.g., suicide attempts, suicidal ideation, non-suicidal self-injury), and others not classified as SITBs (e.g., attitudes about suicide, problem solving skills, motivation for follow-up treatment). Many of these 23 interventions were disseminated using more than one of the following settings/contexts (see Table 4 for full details about intervention characteristics): outpatient mental health clinics ($n=2$), inpatient clinics ($n=4$), emergency rooms/departments ($n=5$), school/after-school ($n=5$), research laboratories ($n=1$), home-based in-person ($n=1$), self-guided digital ($n=3$), and teletherapy ($n=7$). Additionally, three interventions were delivered within a broader hospital setting ($n=1$), via mailed postcards ($n=1$), and a psychiatry department and health center ($n=1$). Most of the 23 interventions were at least partially youth-directed ($n=20$); however, several studies directed intervention content toward school staff ($n=2$), youth-nominated adults ($n=1$), family ($n=3$), or parents/caregivers ($n=4$)—either in addition to, or in lieu of, working directly with youth (e.g., “gatekeeper” trainings). Finally, most interventions (16 of 23) were delivered by one, or multiple, of the following types of trained health provider(s): psychiatrists ($n=1$), doctoral-level psychologists ($n=5$), Masters-level clinicians (including social workers; $n=5$), trainee clinicians (e.g., graduate students; $n=2$), nurses ($n=2$), or broader provider titles (e.g., “hospital staff,” “clinicians,” “therapists,” “doctors”; $n=7$). One intervention involved a gatekeeper training of school staff using “certified intervention trainers,” and two interventions were administered by school staff. Only four of 23 interventions required no provider (i.e., completely self-administered interventions). Of studies that used trained providers, a vast majority did not specify the number of required training hours (reported in five of 22 articles; $range < 1–40$ h).

While all interventions included in this review were brief, the duration of intervention varied dramatically across multiple indices: minutes ($range 15–240$ min), number of “sessions”/modules/discrete contacts ($range 1–126$; in some cases, interventions included daily text messages over a number of weeks), as well as number of days ($range 1–336$ days) and weeks ($range < 1–48$) elapsed from start to finish of all standardized intervention components. Details about intervention access within an intent-to-treat sample (i.e., among those who had been allocated to a study condition) were often unknown—including percent of participants who started and completed each intervention, as well as the average number of minutes of intervention completed.

Table 3 Study pre-registration and follow-ups

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Asarnow, J. R., Baraff, L. J., Berk, M., Grob, C. S., Devich-Navarro, M., Suddath, R., Piccentini, J. C., Rotheram-Borus, M. J., Cohen, D., & Tang, L. (2011). An Emergency Department Intervention for Linking Pediatric Suicidal Patients to Follow-Up Mental Health Treatment. <i>Psychiatric Services</i> , 62(11), 1303–1309. https://doi.org/10.1176/ps.62.11.pss6211_1303	2011	Pre-registered	Suicide attempts; linkage to outpatient treatment; clinical and functioning outcomes	Partial match	1	N/A
Asarnow, J. R., Hughes, J. L., Babeava, K. N., & Sugar, C. A. (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015	2017	Pre-registered	Suicide attempts; hospitalization; satisfaction with mental health services	Partial match	1	N/A
Aseltine, R. H., & DeMartino, R. (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. <i>American Journal of Public Health</i> , 94(3), 446–451. https://doi.org/10.2105/ajph.94.3.446	2004	Pre-registered	Suicide attempts	Yes	1	N/A
Aseltine, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: a replication and extension. <i>BMC Public Health</i> , 7(161). https://doi.org/10.1186/1471-2458-7-161	2007	Pre-registered	Suicide attempts	Yes	2	Yes; this study builds on results from Aseltine & DeMartino (2004), adding data collected in year 2/wave 2

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Cotgrove, A., Zirinsky, L., Black, D., & Weston, D. (1995). Secondary prevention of attempted suicide in adolescence <i>Journal of Adolescence</i> , 18(5), 569–577. https://doi.org/10.1006/jado.1995.1039	1995	Not pre-registered	N/A	No pre-registration	1	N/A
Czyz, E. K., King, C. A., & Biermann, B. J. (2019). Motivational Interviewing-Enhanced Safety Planning for Adolescents at High Suicide Risk: A Pilot Randomized Controlled Trial. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(2), 250–262. https://doi.org/10.1080/15374416.2018.1496442	2019	Not pre-registered	N/A	No pre-registration	1	N/A
Donaldson, D., Spirito, A., Arrigan, M., & Aspel, J. W. (1997). Structured disposition planning for adolescent suicide attempters in a general hospital: Preliminary findings on short-term outcome. <i>Archives of Suicide Research</i> , 3(4), 271–282. https://doi.org/10.1080/1381119708258279	1997	Not pre-registered	N/A	No pre-registration	1	N/A
Eskin, M., Ertekin, K., & Demir, H. (2008). Efficacy of a Problem-Solving Therapy for Depression and Suicide Potential in Adolescents and Young Adults. <i>Cognitive Therapy and Research</i> , 32(2), 227–245. https://doi.org/10.1007/s10608-007-9172-8	2008	Not pre-registered	N/A	No pre-registration	1	N/A

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Fitzpatrick, K. K., Witte, T. K., & Schmidt, N. B. (2005). Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. <i>Behavior Therapy</i> , 36(4), 323–333. https://doi.org/10.1016/s0005-7894(05)80114-5	2005	Not pre-registered	N/A	No pre-registration	1	N/A
Grupp-Phelan, J., Stevens, J., Boyd, S., Cohen, D., Ammerman, R., Liddy-Hicks, S., Heck, K., Marcus, S., Stone, L., Campo, J., & Bridge, J. (2019). Effect of a motivational interviewing-based intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents. <i>JAMA Network Open</i> , 2(12), e1917941. https://doi.org/10.1001/jamanetworkopen.2019.17941	2019	Pre-registered	Suicide ideation; depression; rate of initiating mental health treatment; treatment session attendance	Yes	1	N/A
Hill, R. M., & Pettit, J. W. (2019). Pilot Randomized Controlled Trial of LEAP: A Selective Preventive Intervention to Reduce Adolescents' Perceived Burdensomeness. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(sup1), S45–S56. https://doi.org/10.1080/15374416.2016.1188705	2019	Not pre-registered	N/A	No pre-registration	1	N/A

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Kennard, B. D., Goldstein, T., Foxwell, A. A., McMakin, D. L., Wolfe, K., Biemesser, C., Moorehead, A., Douaihy, A., Zullo, L., Wentroble, E., Owen, V., Zelazny, J., Iyengar, S., Porta, G., & Brent, D. (2018). As Safe as Possible (ASAP): A Brief App-Supported Inpatient Intervention to Prevent Postdischarge Suicidal Behavior in Hospitalized, Suicidal Adolescents. <i>American Journal of Psychiatry</i> , 175(9), 864–872. https://doi.org/10.1176/appi.ajp.2018.17101151	2018	Pre-registered	Suicide ideation; suicide attempts	Yes	1	N/A
King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team-Version II for suicidal adolescents: A randomized controlled intervention trial. <i>Journal of Consulting and Clinical Psychology</i> , 77(5), 880–893. https://doi.org/10.1037/a0016552	2009	Pre-registered	Suicide ideation	Yes	1	N/A
King, C. A., Gipson, P. Y., Horwitz, A. G., & Opperman, K. J. (2015). Teen Options for Change: An Intervention for Young Emergency Patients Who Screen Positive for Suicide Risk. <i>Psychiatric Services</i> , 66(1), 97–100. https://doi.org/10.1176/appi.ps.201300347	2015	Not pre-registered	N/A	No pre-registration	1	N/A

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
King, C. A., Arango, A., Kramer, A., Busby, D., Cyz, E., Foster, C. E., & Gillespie, B. W. (2019). Association of the Youth-Nominated Support Team Intervention for Suicidal Adolescents With 11- to 14-Year Mortality Outcomes. <i>JAMA Psychiatry</i> , 76(5), 492. https://doi.org/10.1001/jamapsychiatry.2018.4358	2019	Pre-registered	Suicide ideation	Pre-registered outcome(s) reported in earlier paper	2	Yes; this paper is a 14-year follow-up study for King et al. (2009)
Ougrin, D., Boege, I., Stahl, D., Banarsee, R., & Taylor, E. (2013). Randomised controlled trial of therapeutic assessment versus usual assessment in adolescents with self-harm: 2-year follow-up. <i>Archives of Disease in Childhood</i> , 98(10), 772–776. https://doi.org/10.1136/archdischild-2012-303200	2013	Pre-registered	Engagement with follow-up	Pre-registered outcome(s) reported in earlier paper	2	No; this is a 2-year follow-up study of an original non-SITB outcomes study not eligible for inclusion in this review
Perera, E. A., & Kathriarachchi, S. T. (2011). Problem-solving counseling as a therapeutic tool on youth suicidal behavior in the suburban population in Sri Lanka. <i>Indian Journal of Psychiatry</i> , 53(1), 30–35. https://doi.org/10.4103/0019-5545.75558	2011	Not pre-registered	N/A	No pre-registration	1	N/A
Rengasamy, M., & Sparks, G. (2019). Reduction of Post-discharge Suicidal Behavior Among Adolescents Through a Telephone-Based Intervention. <i>Psychiatric Services</i> , 70(7), 545–552. https://doi.org/10.1176/appi.ps.201800421	2019	Not pre-registered	N/A	No pre-registration	1	N/A

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Robinson, J., Yuen, H. P., Gook, S., Hughes, A., Cosgrave, E., Killackey, E., Baker, K., Jorm, A., McGorry, P., & Yung, A. (2012). Can receipt of a regular postcard reduce suicide-related behaviour in young help seekers? A randomized controlled trial. <i>Early Intervention in Psychiatry</i> , 6(2), 145–152. https://doi.org/10.1111/j.1751-7893.2011.00334.x	2012	Pre-registered	Suicide attempts; lumped self-injurious thoughts and behaviors	Yes	1	N/A
Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. <i>Prevention Science</i> , 17(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3	2016	Not pre-registered	N/A	No pre-registration	1	N/A
Torcasso, G., & Hilt, L. M. (2017). Suicide Prevention Among High School Students: Evaluation of a Nonrandomized Trial of a Multi-stage Suicide Screening Program. <i>Child & Youth Care Forum</i> , 46, 35–49. https://doi.org/10.1007/s10566-016-9366-x	2017	Not pre-registered	N/A	No pre-registration	1	N/A
Vieland, V., Whittle, B., Garland, A., Hicks, R., & Shaffer, D. (1991). The impact of curriculum-based suicide prevention programs for teenagers: An 18-month follow-up. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 30(5), 811–815. https://doi.org/10.1016/s0890-8567(10)80021-8	1991	Not pre-registered	N/A	No pre-registration	2	No; this is an 18-month follow-up study of an original non-SITB outcomes study not eligible for inclusion in this review

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?
Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, J., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemín, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., ... Carli, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. <i>The Lancet</i> , 385(9977), 1536–1544. https://doi.org/10.1016/s0140-6736(14)61213-7	2015	Pre-registered	Suicide ideation; suicide attempts; suicide deaths; number of referrals; well-being	Partial match	1	N/A
Wharff, E. A., Ginnis, K. M., & Ross, A. M. (2012). Family-based Crisis Intervention with Suicidal Adolescents in the Emergency Room: A Pilot Study. <i>Social Work</i> , 57(2), 133–143. https://doi.org/10.1093/sw/sws017	2012	Not pre-registered	N/A	No pre-registration	1	N/A
Wharff, E. A., Ginnis, K. B., Ross, A. M., White, E. M., White, M. T., & Forbes, P. W. (2019). Family-Based Crisis Intervention With Suicidal Adolescents: A Randomized Clinical Trial. <i>Pediatric Emergency Care</i> , 35(3), 170–175. https://doi.org/10.1097/pec.0000000000001076	2017	Not pre-registered	N/A	No pre-registration	1	N/A

Table 3 (continued)

Study citation	Year	Pre-registration status	Pre-registered primary outcome(s)	Does pre-registered primary outcome match reported primary outcome(s)?	Number of papers considered when coding study characteristics and outcomes	Is a second paper from this same study included in this review?		
Whittaker, R., Stasiak, K., McDowell, H., Doherty, I., Shepherd, M., Chua, S., Dorey, E., Parag, V., Ameratunga, S., Rodgers, A., & Merry, S. (2017). MEMO: an mHealth intervention to prevent the onset of depression in adolescents: a double-blind, randomised, placebo-controlled trial. <i>Journal of Child Psychology and Psychiatry</i> , 58(9), 1014–1022. https://doi.org/10.1111/jcpp.12753	2017	Pre-registered	Depression	Yes	2	No; this is a 12-month follow-up study of an original feasibility/acceptability study not eligible for inclusion in this review		
Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB outcomes improved Last Follow-Up	All Follow-Up Time Points, Weeks
Asarnow, J. R., Baraff, L. J., Berk, M., Grob, C. S., Devich-Navarro, M., Suddath, R., Piacentini, J. C., Rotheram-Borus, M. J., Cohen, D., & Tang, L. (2011). An Emergency Department Intervention for Linking Pediatric Suicidal Patients to Follow-Up Mental Health Treatment. <i>Psychiatric Services</i> , 62(11), 1303–1309. https://doi.org/10.1176/ps.62.11.pss6211_1303	2 months	N/A	3	No second follow-up	No	0.00%	N/A	8 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015	3 months	12 months	4	4	Significantly worse outcome in brief intervention group	0.00%	0.00%	12, 24, 48 weeks
Aseeltine, R. H., & DeMartino, R. (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. <i>American Journal of Public Health</i> , 94(3), 446–451. https://doi.org/10.2105/ajph.94.3.446	3 months	N/A	2	No second follow-up	Yes	50.00%	N/A	12 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB outcomes improved Last Follow-Up	All Follow-Up Time Points, Weeks
Aseline, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: a replication and extension. <i>BMC Public Health</i> , 7(161). https://doi.org/10.1186/1471-2458-7-161	3 months	N/A	2	No second follow-up	Yes	50.00%	N/A	12 weeks
Cotgrove, A., Zirinsky, L., Black, D., & Weston, D. (1995). Secondary prevention of attempted suicide in adolescence. <i>Journal of Adolescence</i> , 18(5), 569–577. https://doi.org/10.1006/jado.1995.1039	1 year	N/A	1	No second follow-up	No	0.00%	N/A	48 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Cyz, E. K., King, C. A., & Biermann, B. J. (2019). Motivational Interviewing-Enhanced Safety Planning for Adolescents at High Suicide Risk: A Pilot Randomized Controlled Trial. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(2), 250–262. https://doi.org/10.1080/15374416.2018.1496442	1 month	3 months	3	3	Significantly worse outcome in brief intervention group	0.00%	Unknown	2, 4, 12 weeks
Donaldson, D., Spirito, A., Arrigan, M., & Aspel, J. W. (1997). Structured disposition planning for adolescent suicide attempters in a general hospital: Preliminary findings on short-term outcome. <i>Archives of Suicide Research</i> , 3(4), 271–282. https://doi.org/10.1080/1381119708258279	3 months	N/A	1	No second follow-up	No reported significance test	Unknown	N/A	12 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB outcomes improved Last Follow-Up	All Follow-Up Time Points, Weeks
Eskin, M., Ertekin, K., & Demir, H. (2008). Efficacy of a Problem-Solving Therapy for Depression and Suicide Potential in Adolescents and Young Adults. <i>Cognitive Therapy and Research</i> , 32(2), 227–245. https://doi.org/10.1007/s10608-007-9172-8	6 weeks	12 months	1	0	Yes	100.00%	N/A	6, 48 weeks
Fitzpatrick, K. K., Witte, T. K., & Schmidt, N. B. (2005). Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. <i>Behavior Therapy</i> , 36(4), 323–333. https://doi.org/10.1016/s0005-7894(05)80114-5	0 days	1 month	2	2	Yes	Unknown	50.00%	0 days; 1, 2, 4 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Grupp-Phelan, J., Stevens, J., Boyd, S., Cohen, D., Ammerman, R., Liddy-Hicks, S., Heck, K., Marcus, S., Stone, L., Campo, J., & Bridge, J. (2019). Effect of a motivational intervention on initiation of mental health treatment and mental health after an emergency department visit among suicidal adolescents. <i>JAMA Network Open</i> , 2(12), e1917941. https://doi.org/10.1001/jamanetworkopen.2019.17941	2 months	6 months	1	2	No	0.00%	0.00%	8, 24 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Hill, R. M., & Pettit, J. W. (2019). Pilot Randomized Controlled Trial of LEAP: A Selective Preventive Intervention to Reduce Adolescents' Perceived Burdensomeness. <i>Journal of Clinical Child & Adolescent Psychology</i> , 48(sup1), S45–S56. https://doi.org/10.1080/15374416.2016.1188705	2 weeks ("posttreatment")	8 weeks ("6 weeks after posttreatment")	1	1	No	0.00%	0.00%	2, 8 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Kennard, B. D., Goldstein, T., Foxwell, A. A., McMakin, D. L., Wolfe, K., Biermeiser, C., Moorehead, A., Douaihy, A., Zullo, L., Wentroble, E., Owen, V., Zelazny, J., Iyengar, S., Porta, G., & Brent, D. (2018). As Safe as Possible (ASAP): A Brief App-Supported Inpatient Intervention to Prevent Postdischarge Suicidal Behavior in Hospitalized, Suicidal Adolescents. <i>American Journal of Psychiatry</i> , 175(9), 864–872. https://doi.org/10.1176/appi.ajp.2018.17101151	4 weeks	24 weeks	8	8	No	Unknown	0.00%	4, 12, 24 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB comes improved Last Follow-Up	All Follow-Up Time Points, Weeks
King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team—Version II for suicidal adolescents: A randomized controlled intervention trial. <i>Journal of Consulting and Clinical Psychology</i> , 77(5), 880–893. https://doi.org/10.1037/a0016552	6 weeks	12 months	1	2	Yes	100.00%	0.00%	6, 12, 24, 48 weeks
King, C. A., Gipson, P. Y., Horwitz, A. G., & Opperman, K. J. (2015). Teen Options for Change: An Intervention for Young Emergency Patients Who Screen Positive for Suicide Risk. <i>Psychiatric Services</i> , 66(1), 97–100. https://doi.org/10.1176/appi.ps.20130347	2 months	N/A	1	No second follow-up	No	0.00%	N/A	8 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
King, C. A., Arango, A., Kramer, A., Busby, D., Czyn, E., Foster, C. E., & Gillespie, B. W. (2019). Association of the Youth-Nominated Support Team Intervention for Suicidal Adolescents With 11- to 14-Year Mortality Outcomes. <i>JAMA Psychiatry</i> , 76(5), 492. https://doi.org/10.1001/jamapsychiatry.2018.4358	6 weeks	14 years	1	1	Yes	100.00%	0.00%	6, 12, 24, 48, 672 weeks
Ougrin, D., Boege, I., Stahl, D., Banarsee, R., & Taylor, E. (2013). Randomised controlled trial of therapeutic assessment versus usual assessment in adolescents with self-harm: 2-year follow-up. <i>Archives of Disease in Childhood</i> , 98(10), 772–776. https://doi.org/10.1136/archdischild-2012-303200	3 months	2 years	0	2	No	N/A	0.00%	12, 48, 96 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Perera, E. A., & Kathirarachchi, S. T. (2011). Problem-solving counseling as a therapeutic tool on youth suicidal behavior in the suburban population in Sri Lanka. <i>Indian Journal of Psychiatry</i> , 53(1), 30–35. https://doi.org/10.4103/0019-5545.75558	6 months	N/A	1	No second follow-up	No reported significance test	Unknown	N/A	24 weeks
Rengasamy, M., & Sparks, G. (2019). Reduction of Postdischarge Suicidal Behavior Among Adolescents Through a Telephone-Based Intervention. <i>Psychiatric Services</i> , 70(7), 545–552. https://doi.org/10.1176/appi.ps.201800421	90 days	N/A	1	No second follow-up	Significantly worse outcome in brief intervention group	0.00%	N/A	13 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Robinson, J., Yuen, H. P., Gook, S., Hughes, A., Cosgrave, E., Kilkenny, E., Baker, K., Jorm, A., McGorry, P., & Yung, A. (2012). Can receipt of a regular postcard reduce suicide-related behaviour in young help seekers? A randomized controlled trial. <i>Early Intervention in Psychiatry</i> , 6(2), 145–152. https://doi.org/10.1111/j.1751-7893.2011.00334.x	12 months	18 months	8	8	No	0.00%	0.00%	48, 72 weeks
Schilling, E. A., Asetine, R. H., & James, A. (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. <i>Prevention Science</i> , 17(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3	3 months	N/A	4	No second follow-up	Yes	50.00%	N/A	12 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Torcasso, G., & Hilt, L. M. (2017). Suicide Prevention Among High School Students: Evaluation of a Nonrandomized Trial of a Multi-stage Suicide Screening Program. <i>Child & Youth Care Forum</i> , 46, 35–49. https://doi.org/10.1007/s10566-016-9366-x	2 years	N/A	4	No second follow-up	Yes	50.00%	N/A	96 weeks
Vieland, V., Whittle, B., Garland, A., Hicks, R., & Shaffer, D. (1991). The impact of curriculum-based suicide prevention programs for teenagers: An 18-month follow-up. <i>Journal of the American Academy of Child & Adolescent Psychiatry</i> , 30(5), 811–815. https://doi.org/10.1016/s0890-8567(10)80021-8	1 month	18 months	0	2	No	N/A	0.00%	4, 72 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB outcomes improved Last Follow-Up	All Follow-Up Time Points, Weeks
Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, J., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemain, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., ... Carli, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. <i>The Lancet</i> , 385(9977), 1536–1544. https://doi.org/10.1016/s0140-6736(14)61213-7	3 months	12 months	2	2	No	0.00%	0.00%	12, 48 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB comes improved Last Follow-Up	All Follow-Up Time Points, Weeks
Wharff, E. A., Ginnis, K. M., & Ross, A. M. (2012). Family-based Crisis Intervention with Suicidal Adolescents in the Emergency Room: A Pilot Study. <i>Social Work, 57</i> (2), 133–143. https://doi.org/10.1093/sw/sws017	1 day	3 months	1	0	Yes	100.00%	N/A	1 day; 1, 2, 4, 12 weeks
Wharff, E. A., Ginnis, K. B., Ross, A. M., White, E. M., White, M. T., & Forbes, P. W. (2019). Family-Based Crisis Intervention With Suicidal Adolescents: A Randomized Clinical Trial. <i>Pediatric Emergency Care, 35</i> (3), 170–175. https://doi.org/10.1097/pec.0000000000001076	0 days	1 month	1	0	Yes	100.00%	N/A	0, 3 days; 1, 4 weeks

Table 3 (continued)

Study citation	First follow-up	Last follow-up	Number SITB outcomes first follow-up	Number SITB outcomes last follow-up	Did study report any significant positive effect on SITBs?	Percent SITB outcomes improved first follow-up	Percent SITB Outcomes Improved Last Follow-Up	All Follow-Up Time Points, Weeks
Whittaker, R., Stasiak, K., McDowell, H., Doherty, I., Shepherd, M., Chua, S., Dorey, E., Parag, V., Ameratunga, S., Rodgers, A., & Merry, S. (2017). MEMO: an mHealth intervention to prevent the onset of depression in adolescents: a double-blind, randomised, placebo-controlled trial. <i>Journal of Child Psychology and Psychiatry</i> , 58(9), 1014–1022. https://doi.org/10.1111/jcpp.12753	9 weeks	12 months	0	3	No	N/A	0.00%	9, 48 weeks

Table 4 Interventions

Interventions and relevant studies included	Intervention description	Measure for Intervention duration, minutes	Intervention duration, sessions/contacts/modules	Intervention duration, weeks	Intervention setting	Intervention provider	Intervention audience
Family intervention for suicide prevention (FISP)							
Asarnow et al. (2011)	1 brief, in-emergency department crisis therapy session with youth and family (90 min) + 4 structured phone calls (60 min)	Author estimate	5	4 weeks	Emergency room	Clinicians with graduate training	Youth; family
Enhanced-treatment as usual							
Asarnow et al. (2017)	1 in-clinic parent education session (50 min) + 3 structured phone calls (45 min) providing support for accessing community treatment	Coder estimate	4	7 weeks	Outpatient; teletherapy	Therapists	Parents/caregivers
Signs of suicide (SOS)							
Aseltine and DeMartino (2004)*	Curriculum designed to teach youth to recognize, and act on, signs of suicide—including video and discussion (120 min)	Maximum	Unknown	< 1 week	School/afterschool	School staff	Youth; school staff
Aseltine et al. (2007)*							
Schilling et al. (2016)*							
Hospital re-admission token							
Cotgrove et al. (1995)	Brief conversation and provision of hospital re-admission token, for use if youth feel suicidal post discharge (15 min)	Coder estimate	1	< 1 week	Inpatient	Hospital staff	Youth
Motivational interview-enhanced safety planning (MI-SafeCope)							
Czyz et al. (2019)	1 safety planning meeting with youth, incorporating motivational interviewing (60 min) + 1 family meeting to boost support (30 min) + post-discharge calls to youth and parents (30 min)	Author estimate	4	2 weeks	Inpatient; teletherapy	Doctoral-level psychologist	Youth; parents/caregivers

Table 4 (continued)

Interventions and relevant studies	Intervention description	Measure for Intervention duration, minutes	Intervention duration, sessions/contacts/modules	Intervention duration, weeks	Intervention setting	Intervention provider	Intervention audience
Structured disposition planning							
Donaldson et al. (1997)	1 in-hospital family session to increase psychotherapy engagement (60 min) + 3 post-discharge calls to youth and caregivers to coordinate outpatient care (90 min)	Maximum	4	6 weeks	Emergency room; teletherapy	Doctoral-level psychologist	Youth
Short-term problem-solving therapy (PST)							
Eskin et al. (2008)*	6 sessions of youth-directed problem-solving therapy (225 min)	Mean	6	6 weeks	Psychiatry department; Health center	Trainee clinicians	Youth
Problem solving and coping video							
Fitzpatrick et al. (2005)*	Psychoeducational video about problem-solving and coping (35 min)	Author estimate	1	<1 week	Research lab	Self-administered	Youth
Suicidal teens accessing treatment after an ED visit (STAT-ED)							
Grupp-Phelan et al. (2019)	1 in-emergency department motivational interview with youth and parents to encourage treatment-seeking, plus referral (40 min) + 4 structured case management phone calls (60 min)	Coder estimate	5	Unknown	Emergency room; teletherapy	MA-level clinician	Youth; parents/caregivers
LEAP intervention							
Hill and Pettit (2019)	2 modules of web-based, cognitive-behavioral suicide prevention program (60 min)	Maximum	2	2	Self-guided digital	Self-administered	Youth

Table 4 (continued)

Interventions and relevant studies included	Intervention description	Measure for Intervention duration, minutes	Intervention duration, sessions/contacts/modules	Intervention duration, weeks	Intervention setting	Intervention provider	Intervention audience
As safe as possible (ASAP)							
Kennard et al. (2018)	Youth-directed inpatient intervention (180 min) + daily prompts for digital smartphone app with personal distress coping strategies and safety plan (20 min) + 2 post-discharge phone calls to review safety plan and coordinate outpatient care (35 min)	Coder estimate	24	Unknown	Inpatient; self-guided digital	MA-level clinicians; trainee clinicians; self-administered	Youth
Youth-nominated support team-version II (YST-II)							
King et al. (2009)*	1 psychoeducation session with youth-nominated adults (60 min) + 12 weekly support phone calls (180 min)	Author estimate	13	12	Inpatient; teletherapy	Doctoral-level psychologists; Ma-level clinicians; nurses	Youth-nominated adults
King et al. (2019)**							
Teen options for change (TOC)							
King et al. (2015)	1 youth-directed motivational interview (45 min) + 1 handwritten note from therapist (5 min) + 1 structured follow-up call from therapist for support and facilitation of action plan (15 min)	Coder estimate	3	<1	Emergency room; teletherapy	Therapists	Youth

Table 4 (continued)

Interventions and relevant studies included	Intervention description	Measure for Intervention duration, minutes	Intervention duration, sessions/contacts/modules	Intervention duration, weeks	Intervention setting	Intervention provider	Intervention audience
Therapeutic assessment (TA)							
Ougrin et al. (2013)	1 post-assessment session with youth and family to identify a target problem, boost motivation for change, and explore possible solutions (30-min)	author estimate	1	<1	Outpatient; emergency room	Doctoral-level psychologists; Ma-level clinicians; nurses; doctors	Youth; family
Problem-solving counseling							
Perera and Kathriarachchi (2011)	4 individual sessions of problem-solving counseling (240 min)	Author estimate	4	4	Home-based; hospital	Therapists	Youth
Single Call Intervention (SCI)							
Rengasamy and Sparks (2019)	1 call to youth and parents to provide risk assessment, review parent issues/concerns, review safety plan and reasons for living (40 min)	Maximum	2	<1	Teletherapy	Psychiatry staff	Youth; parents/caregivers
Postcard intervention							
Robinson et al. (2012)	12 monthly postcards with referrals and psychoeducation about self-help coping strategies (60 min)	Coder estimate	12	48	Postcards	Self-administered	Youth
TeenScreen							
Torcasso and Hilt (2017)*	1 youth-directed self-report screener and debriefing or clinical interview (75 min)	Maximum	2	Unknown	School/after school	Clinicians; screeners	Youth
Curriculum-based suicide prevention program							

Table 4 (continued)

Interventions and relevant studies included	Intervention description	Measure for Intervention duration, minutes	Intervention duration, sessions/contacts/modules	Intervention duration, weeks	Intervention setting	Intervention provider	Intervention audience
Vireland et al. (1991)	1 in-class presentation to educate about “warning signs” of suicide and resources (90 min)	Author estimate	1	< 1	School/after school	School staff	Youth
Question Persuade, and Refer (QPR)							
Wasserman et al. (2015)	1 interactive lecture (120 min) + 1 role-play session (60 min) with school staff “gatekeepers”	Author estimate	2	4	School/after school	Certified trainers	School staff
Screening by Professionals Programme (ProfScreen)							
Wasserman et al. (2015)	1 youth-directed screening questionnaire + in-person clinical interview (120 min)	Author estimate	2	4	School/after school	Psychiatrists; doctoral-level psychologists	Youth
Family-Based Crisis Intervention (FBICI)							
Wharff et al. (2012)*	1 in-emergency department family session based on cognitive-behavioral and family systems treatment models (90 min)	Author estimate	1	< 1	Emergency room	MA-level clinicians	Youth; family
Wharff et al. (2019)*							
MEMO—CBT							
Whittaker et al. (2017)	2 brief, daily text messages with cognitive-behavioral therapy-derived messages for 9 weeks (126 min)	Coder estimate	126	9	Self-guided digital	Self-administered	Youth

ED emergency department

*Reported positive intervention effect on at least one SITB outcome

**Reported positive intervention effect in original study (first follow-up study) only

Table 5 Outcomes and summary of study results

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Asarnow et al. (2011) FISP vs. usual care + psychoeducation	Harkavy Asnis Suicide Scale (HASS); Suicidal Ideation Harkavy Asnis Suicide Scale (HASS); Suicidal Behavior National Institute of Mental Health Diagnostic Interview Schedule for Children Version IV (DISC-IV); Suicide Attempts	Suicide ideation Lumped suicidal thoughts and behaviors Suicide attempts	Youth self-report questionnaire Youth self-report questionnaire Youth interview; caregiver interview	No No No	No second follow-up No second follow-up No second follow-up	No No No	Youths in the FISP group did not significantly differ from youths assigned to Usual Care + Psychoeducation on measures of suicidal ideation, suicidal behavior, or suicide attempts, at 2 months post-discharge

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Asarnow et al. (2017)							
Brief E-TAU vs. safety intervention	Columbia Suicide Severity Rating Scale (C-SSRS)/ Suicide History Interview (SHI): Suicide Attempts Past 3 Months Columbia Suicide Severity Rating Scale (C-SSRS)/ Suicide History Interview (SHI): Non-suicidal Self-Injury Past 3 Months Service Assessment for Children and Adolescents (SACA): ED Visits For Suicidality Past 3 Months Service Assessment for Children and Adolescents (SACA): Hospitalizations For Suicidality Past 3 Months	Suicide attempts Non-suicidal self-injury ED visits Hospitalization	Youth interview Youth interview Caregiver interview Caregiver interview	Outcome worse in brief intervention group relative to comparison No Outcome worse in brief intervention group relative to comparison Outcome worse in brief intervention group relative to comparison	Outcome worse in brief intervention group relative to comparison No No No	Yes No Yes None reported	For this trial, we evaluated a structured, brief E-TAU condition as the brief intervention. Youth in the brief intervention (E-TAU) condition experienced a higher probability (i.e., shorter outcome-free “survival” time) for suicide attempts, ED visits, and hospitalizations at 3 months, compared to those in the 12-week SAFETY intervention condition. Across 12 months (i.e., “overall” survival curves), most analyses found no significant differences between E-TAU and SAFETY groups, with one sensitivity analysis finding only suicide attempts still differed significantly between E-TAU and SAFETY groups. Probability of non-suicidal self-injury did not differ between groups at 3 months, or across the full 12-month follow-up period

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Aseltine and DeMartino (2004)*							
SOS vs. Waitlist/Usual Classes	Youth Risk Behavior Survey (YRBS) Questions: Seriously Considered Suicide Past 3 Months	Suicide ideation	Youth self-report questionnaire	No	No second follow-up	None reported	At 3-month follow-up, high school students in the SOS treatment group were significantly less likely to report a suicide attempt within the past 3 months, relative to high school students who had not received the program (i.e., were enrolled in usual classes)
	Youth Risk Behavior Survey (YRBS) Questions: Suicide Attempts Past 3 Months	Suicide attempts	Youth self-report questionnaire	Yes	No second follow-up	None reported	
Aseltine et al. (2007)*							
SOS vs. waitlist/usual classes	Youth Risk Behavior Survey (YRBS) Questions: Seriously Considered Suicide Past 3 Months	Suicide ideation	Youth self-report questionnaire	No	No second follow-up	None reported	At 3-month follow-up, high school students in the SOS treatment group were significantly less likely to report a suicide attempt within the past 3 months, relative to high school students who did not receive the program (i.e., were enrolled in standard classes)
	Youth Risk Behavior Survey (YRBS) Questions: Suicide Attempts Past 3 Months	Suicide attempts	Youth self-report questionnaire	Yes	No second follow-up	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Schilling et al. (2016)* SOS vs. waitlist/usual classes	Youth Risk Behavior Survey (YRBS) Questions: Suicide Attempts Lifetime Youth Risk Behavior Survey (YRBS) Questions: Suicide Attempts Past 3 Months Youth Risk Behavior Survey (YRBS) Questions: Seriously Considered Suicide Past 3 Months Youth Risk Behavior Survey (YRBS) Questions: Suicide Plan Past 3 Months	Suicide attempts Suicide attempts Suicide ideation Suicide ideation	Youth self-report questionnaire Youth self-report questionnaire Youth self-report questionnaire Youth self-report questionnaire	Yes Yes No No	No second follow-up No second follow-up No second follow-up No second follow-up	None reported No No No	At 3-month follow-up, youth in the SOS Group reported lower prevalence of lifetime suicide attempts, relative to the comparison group. After controlling for pre-test/baseline attempts, SOS youth reported fewer suicide attempts at 3-month follow-up, relative to peers who did not receive the program (i.e., were enrolled in usual classes). No between-group differences were detected for suicide planning or ideation at 3-month follow-up Group reported lower prevalence of lifetime suicide attempts, relative to the comparison group. After controlling for pre-test/baseline attempts, SOS youth reported fewer suicide attempts at 3-month follow-up, relative to peers who did not receive the program (i.e., were enrolled in usual classes). No between-group differences were detected for suicide planning or ideation at 3-month follow-up
Cotgrove et al. (1995) Standard care + re-entry token vs. standard care only	Electronic Medical Records: Suicide Attempts Past Year	Suicide attempts	Medical/hospital records	No	No second follow-up	None reported	At 1-year follow-up, the number of adolescents with repeat suicide attempts did not significantly differ between the Standard Care + Re-Entry Token group and the Standard Care Only group

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Czyz et al. (2019) MI-SafeCope vs. TAU	EMA-Adapted Columbia Suicide Severity Rating Scale (C-SSRS); Daily Suicide Ideation (Y/N)	Suicide ideation	Youth self-report questionnaire	Outcome worse in brief intervention group relative to comparison	Not measured	None reported	Across 28 days of EMA data (extracted in this review as a “1-month” follow-up), teens in the MI-SafeCope condition reported a higher likelihood of daily suicidal ideation—relative to TAU teens. However, daily frequency and duration of suicidal ideation did not significantly differ between MI-SafeCope and TAU groups across 28 Days of EMA data. Authors report raw data for non-lethal suicide attempts (4 intervention teens with attempts, 4 comparison teens with attempts), suicide deaths (1 death among intervention teens, 0 deaths among comparison teens), and ED visits due to suicide-related concerns (7 intervention teens with ED visit, 5 comparison teens with ED visit) over the course of the 3-month follow-up
	EMA-Adapted Columbia Suicide Severity Rating Scale (C-SSRS); Daily Frequency of Suicide Ideation	Suicide ideation	Youth self-report questionnaire	No	Not measured	None reported	
	EMA-Adapted Columbia Suicide Severity Rating Scale (C-SSRS); Daily Duration of Suicide Ideation	Suicide ideation	Youth self-report questionnaire	No	Not measured	None reported	
	Columbia Suicide Severity Rating Scale (C-SSRS); Suicide Attempts	Suicide attempts	Youth interview	Not measured	Unknown	None reported	
	Suicide Deaths	Suicide deaths	Unknown	Not measured	Unknown	None reported	
	Emergency Department Visit Due to Suicide-Related Concerns	ED visits	Youth interview	Not measured	Unknown	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Donaldson et al. (1997) Standard care + structured disposition planning vs. standard care only	Repeat Suicide Attempt Past 3 Months	Suicide attempts	Youth self-report questionnaire	Unknown	No second follow-up	None reported	None of the Standard Care + Structured Disposition Planning adolescents reported a repeat suicide attempt over 3-month follow-up period. 9% of Standard Care Only adolescents reported a repeat suicide attempt
Eskin et al. (2008)* PST vs. waiting list	Suicide Probability Scale (SPS)	Suicide questionnaire	Youth self-report questionnaire	Yes	Not measured	None reported	Relative to the waiting list comparison group, suicide potential decreased from baseline to post-treatment (6 weeks later) for young people in the PST group. Authors reported significant main effects for time, group, and significant group x time interaction effect
Fitzpatrick et al. (2005)* PST video vs. control video	Beck Suicide Scale (BSS); Composite Scores	Lumped self-injurious thoughts and behaviors	Youth self-report questionnaire	Unknown	Yes	None reported	Immediately post-treatment (i.e., at 0-day follow-up), the PST Video group reported an average BSS score of 10.40 (SD = 5.29), while the Control Video group reported an average BSS score of 10.68 (SD = 7.59)

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
	Beck Suicide Scale (BSS): Proportion Worsened, Maintained, Improved	Lumped self-injurious thoughts and behaviors	Youth self-report questionnaire	No	No	None reported	Latent growth curve analyses across all follow-up periods (posttest, 1 week, 2 weeks, 1 month) found significantly different growth trajectories between groups—with the treatment group observing a faster reduction in BSS composite scores relative to the control. Authors conclude this is likely due to early decreases in BSS score in the treatment group, relative to the control. The proportion of participants who worsened, maintained, and improved on the BSS did not significantly differ between groups either immediately post-treatment or 1 month later

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Grupp-Phelan et al. (2019)							
STAT-ED vs. enhanced-TAU	Suicidal Ideation Questionnaire–Junior (SIQ-Jr) Columbia Suicide Severity Rating Scale (C-SSRS): Suicide Attempts Past 6 Months	Suicide ideation Suicide attempts	Youth self-report questionnaire Youth interview	No Not measured	No No	None reported None reported	Self-reported suicidal ideation did not significantly differ between adolescents in the STAT-ED and E-TAU groups at 2-month or 6-month follow-ups. Suicide attempts within the past 6 months also did not significantly differ between groups at 6-month follow-up
Hill and Pettit (2019)							
LEAP vs. psychoeducation	Beck Scale for Suicide Ideation (BSS)	Lumped self-injurious thoughts and behaviors	Youth self-report questionnaire	No	No	No	Lumped self-injurious thoughts and behaviors did not significantly differ between LEAP and Psychoeducation groups at posttreatment or 6-week follow-up

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Kennard et al. (2018) TAU + ASAP intervention vs. TAU only	Columbia Suicide Severity Rating Scale (C-SSRS): Number of Suicide Attempts Over 24 Week Follow-Up	Suicide attempts	Youth interview	Unknown	No	No	Across the 24-week follow-up period, adolescents in the ASAP + TAU group did not significantly differ from TAU adolescents on a number of SITB-related outcomes (suicide attempts, time to suicide attempt, suicidal ideation, non-suicidal self-injury, suicide-related behavior, and several combined outcomes). Most sensitivity analyses conducted by the authors for these outcomes observed null effects. However, for one outcome (time to suicide attempt across 24 weeks), controlling for age resulted in a significant between-groups difference that favored the ASAP + TAU condition (i.e., longer time to suicide attempt in intervention vs. control group)
	Columbia Suicide Severity Rating Scale (C-SSRS): Time to Suicide Attempt Over 24 Week Follow-Up	Suicide attempts	Youth interview	Unknown	No	Yes	
	Suicidal Ideation Questionnaire-Junior (SIQ-Jr): Number of Youth Experiencing Significant Suicidal Ideation Over 24 Week Follow-Up	Suicide ideation	Youth self-report questionnaire	Unknown	No	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
	Columbia Suicide Severity Rating Scale (C-SSRS): Number of Youth Experiencing Significant Suicidal Ideation or Attempted Suicide Over 24 Week Follow-Up	Lumped suicidal thoughts and behaviors	Youth interview	Unknown	No	None reported	
	Columbia Suicide Severity Rating Scale (C-SSRS): Number of Youth Engaged in Suicide-Related Behavior Over 24 Week Follow-Up	Suicide-related behavior	Youth interview	Unknown	No	None reported	
	Columbia Suicide Severity Rating Scale (C-SSRS): Number of Youth Engaged in Non-suicidal Self-Injury Over 24 Week Follow-Up	Non-suicidal self-injury	Youth interview	Unknown	No	None reported	
	Columbia Suicide Severity Rating Scale (C-SSRS): Number of Youth Engaged in Suicide-Related Behavior or Attempted Suicide Over 24 Week Follow-Up	Suicide attempts; any suicide-related behavior	Youth interview	Unknown	No	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
King et al. (2009)* TAU + YST-II vs. TAU Only	Suicidal Ideation Questionnaire–Junior (SIQ-Jr) NIMH DISC-IV Mood Disorders Module, Single Item: Suicide Attempts	Suicide ideation Suicide attempts	Youth self-report questionnaire Youth interview	Yes Not measured	No No	None reported None reported	Relative to TAU adolescents, TAU + YST-II adolescents reported larger decreases in suicidal ideation at 6 weeks. Neither suicidal ideation, nor suicide attempts, differed between groups at 12-month follow-up
King et al. (2019)** TAU + YST-II vs. TAU Only	Suicidal Ideation Questionnaire–Junior (SIQ-Jr) National Death Index (NDI); Suicide Deaths	Suicide ideation Suicide deaths	Youth self-report questionnaire Medical/hospital records	Yes Not measured	Not measured No	None reported None reported	TAU + YST-II was associated with lower suicidal ideation at six weeks, relative to the control (see King et al., 2009 for first follow-up results). There were no differences in suicide deaths between conditions at 14 years (King et al., 2019)
King et al. (2015) TOC vs. Enhanced- TAU	Suicidal Ideation Questionnaire–Junior (SIQ-Jr)	Suicide ideation	Youth self-report questionnaire	No	No second follow-up	None reported	At 2-month follow-up, TOC and E-TAU adolescents did not significantly differ in self-reported suicidal ideation

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Ougrin et al. (2013)	Therapeutic assessment vs. usual assessment	Adolescents With One or More Presentations to Accident & Emergency Department With Self-Harm	Episodes of self-harm leading to emergency presentation	Medical/hospital records	Not measured	No	At 2-year follow-up, the Therapeutic Assessment and Assessment as Usual groups did NOT significantly differ in either (a) the number of adolescents with 1 or more presentations to Accident & Emergency (A&E) Department due to self-harm, or (b) the number of episodes of self-harm that did not lead to an A&E presentation
Perera and Kathriarachchi (2011)	Problem solving counseling vs. routine care	Suicide attempts	Suicide attempts	Unknown	Unknown	No second follow-up	Authors did not conduct formal between-groups significance tests to compare suicide attempts at 6-month follow-up between Problem Solving Counseling and Routine Care groups. At 6-month follow-up, there were 2 suicide attempts in the control group vs. no suicide attempts in the treatment group

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Rengasamy and Sparks (2019)	Columbia Classification Algorithm of Suicide Assessment (C-CASA): Any Suicidal Behavior Past 90 Days	Any suicide behavior (interrupted, aborted, actual, and completed attempts)	Youth self-report questionnaire; caregiver questionnaire; medical/hospital records	Outcome worse in brief intervention group relative to comparison	No second follow-up	No	Although both interventions are “brief,” the multiple-call intervention outperformed the single-call intervention; adolescents in the MCI condition reported fewer incidents of any suicidal behavior at 90-day follow-up, relative to SCI adolescents
Robinson et al. (2012)	Suicidal Behaviors Questionnaire (SBQ-14): Past Self-Harm With Intent To Die	Suicide attempts	Youth self-report questionnaire	No	No	None reported	Young people did not significantly differ between Post-card + TAU and TAU Only groups for any SITB outcomes (past self-harm with intent to die, deliberate self-harm since last assessment, past-month deliberate self-harm, some chance of considering

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
	Suicidal Behaviors Questionnaire (SBQ-14): Past Deliberate Self-Harm (Since Last Assessment)	Self-harm	Youth self-report questionnaire	No	No	No	suicide in lifetime, some chance of attempting suicide in lifetime, past serious suicidal ideation, past frequent suicidal ideation and Beck Scale for Suicidal Ideation) at either 12- or 18-month follow-ups
	Suicidal Behaviors Questionnaire (SBQ-14): Past Month Deliberate Self-Harm	Self-harm	Youth self-report questionnaire	No	No	No	
	Suicidal Behaviors Questionnaire (SBQ-14): Some Chance of Considering Suicide In Lifetime	Chance of considering suicide in lifetime	Youth self-report questionnaire	No	No	None reported	
	Suicidal Behaviors Questionnaire (SBQ-14): Some Chance of Attempting Suicide In Lifetime	Chance of attempting suicide in lifetime	Youth self-report questionnaire	No	No	None reported	
	Suicidal Behaviors Questionnaire (SBQ-14): Past Serious Suicidal Ideation	Suicide ideation	Youth self-report questionnaire	No	No	None reported	
	Suicidal Behaviors Questionnaire (SBQ-14): Past Frequent Suicidal Ideation	Suicide ideation	Youth self-report questionnaire	No	No	None reported	
	Beck Scale for Suicide Ideation (BSS)	Lumped self-injurious thoughts and behaviors	Youth self-report questionnaire	No	No	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Torcasso and Hilt (2017)*							
TeenScreen vs. non-TeenScreen schools	Youth Risk Behavior Survey (YRBS) Questions: Seriously Considered Suicide Past 12 Months	Suicide ideation	Youth self-report questionnaire	Yes	No second follow-up	None reported	Over the course of two years, the number of students who seriously considered suicide in the past 12 months and the number of students who attempted suicide twice or more in the past 12 months both significantly decreased, for students in the TeenScreen school only (no significant decrease among students in the comparison school that received no screening). No
	Youth Risk Behavior Survey (YRBS) Questions: Suicide Plan Past 12 Months	Suicide ideation	Youth self-report questionnaire	No	No second follow-up	None reported	Over the course of two years, the number of students who seriously considered suicide in the past 12 months and the number of students who attempted suicide twice or more in the past 12 months both significantly decreased, for students in the TeenScreen school only (no significant decrease among students in the comparison school that received no screening). No
	Youth Risk Behavior Survey (YRBS) Questions: Attempted Suicide Once Past 12 Months	Suicide attempts	Youth self-report questionnaire	No	No second follow-up	None reported	Over the course of two years, the number of students who seriously considered suicide in the past 12 months and the number of students who attempted suicide twice or more in the past 12 months both significantly decreased, for students in the TeenScreen school only (no significant decrease among students in the comparison school that received no screening). No
	Youth Risk Behavior Survey (YRBS) Questions: Attempted Suicide Twice or More Past 12 Months	Suicide attempts	Youth self-report questionnaire	Yes	No second follow-up	None reported	Over the course of two years, the number of students who seriously considered suicide in the past 12 months and the number of students who attempted suicide twice or more in the past 12 months both significantly decreased, for students in the TeenScreen school only (no significant decrease among students in the comparison school that received no screening). No

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Vieland et al. (1991)							
Prevention program vs. non-prevention program schools	Single-Item Question: Suicidal Ideation Past 18 Months	Suicide ideation	Youth self-report questionnaire	Not measured	No	None reported	Youth from Prevention Program schools did not significantly differ from youth in Non-Prevention Program schools on measures of suicidal ideation or suicide attempts at 18-month follow-up
	Single-Item Question: Suicide Attempts Lifetime (Proportion of Students Changing from 'No' to 'Yes')	Suicide attempts	Youth self-report questionnaire	Not measured	No	None reported	
Wasserman et al. (2015)							
QPR vs. psychoeducation	Paykel Hierarchical Suicidal Ladder: Lifetime Suicide Attempts	Suicide attempts	Youth self-report questionnaire	No	No	None reported	Students in the QPR and ProfScreen groups did not significantly differ from Comparison Group students on either SITB outcome (incident suicide attempts, incident severe suicidal ideation in past 2 weeks), at 3- and 12-month follow-ups
	Paykel Hierarchical Suicidal Ladder: Severe Suicidal Ideation Past 2 Weeks	Suicide ideation	Youth self-report questionnaire	No	No	None reported	
ProfScreen vs. psychoeducation	Paykel Hierarchical Suicidal Ladder: Lifetime Suicide Attempts	Suicide attempts	Youth self-report questionnaire	No	No	None reported	
	Paykel Hierarchical Suicidal Ladder: Severe Suicidal Ideation Past 2 Weeks	Suicide ideation	Youth self-report questionnaire	No	No	None reported	

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Wharff et al. (2012)* FBCI vs. TAU	Percent Admitted to Inpatient Psychiatry Due to Suicidality	Hospitalization	Medical/hospital records	Yes	Not measured	None reported	Adolescents and families who presented to the ER for suicidality during the FBCI intervention period were less likely to be admitted to inpatient psychiatry at 1-day follow-up, relative to suicidal adolescents and families who reported to the ER during the TAU period
Wharff et al. (2019)* FBCI vs. TAU	Hospitalizations Due to Suicidality (Determined by ED Physician)	Hospitalization	Medical/hospital records	Yes	Not measured	None reported	Adolescents and families who presented to the ER for suicidality and were randomized to the FBCI condition were less likely to be admitted to inpatient psychiatry immediately post-treatment, relative to suicidal adolescents and families randomized to TAU

Table 5 (continued)

Study	Outcome measure	Outcome type	Outcome form	Was this SITB outcome improved in the brief intervention group at first follow-up?	Was this SITB outcome improved in the brief intervention group at last follow-up?	Did a sensitivity analysis find a different result?	Summary of study findings
Whittaker et al. (2017)							
MEMO CBT vs. MEMO control	Youth Risk Behavior Survey (YRBS) Questions: Seriously Considered Suicide Past 3 Months	Suicide ideation	Youth self-report questionnaire	Not measured	No	None reported	High school students in the MEMO CBT condition did not significantly differ from MEMO Control group students on any of the three SITB outcomes (suicidal ideation, plan, or attempts in past 3 months) at 12-month follow-up
	Youth Risk Behavior Survey (YRBS) Questions: Suicide Plan Past 3 Months	Suicide ideation	Youth self-report questionnaire	Not measured	No	None reported	
	Youth Risk Behavior Survey (YRBS) Questions: Suicide Attempts Past 3 Months	Suicide attempts	Youth self-report questionnaire	Not measured	No	None reported	

ED emergency department

*Reported positive intervention effect on at least one SITB outcome

**Reported positive intervention effect in original study (first follow-up study) only

Despite heterogeneity in treatment duration and details about delivery, many of the 23 evaluated interventions included similar content; a majority incorporated elements of problem-solving therapy, motivational interviewing to boost motivation for change and/or treatment uptake, techniques based on cognitive-behavioral therapy, safety planning, or facilitation/referral of outpatient care. Other interventions focused primarily on risk assessment and psychoeducation about suicide (see Table 4 for full overview).

Outcomes

Most articles reported multiple SITB outcomes (*mean*: 2.58; *range* 1–8) and non-SITB outcomes (*mean*: 6.77, *range* 0–26). Specifically, studies evaluated intervention effects on the following categories of SITB outcomes (see Table 5): non-suicidal self-injury ($n = 2$), suicidal ideation ($n = 15$), suicide attempts ($n = 17$), suicide deaths ($n = 2$), self-harm (i.e., regardless of intent to die; $n = 1$), lumped suicidal thoughts and behaviors ($n = 2$), lumped self-injurious thoughts and behaviors ($n = 3$), hospitalization resulting from a SITB episode ($n = 3$), and suicide questionnaire with items not relating to SITBs (e.g., Suicide Cognition Scale, with item “it is impossible to describe how badly I feel”; $n = 1$). Six studies evaluated other SITB outcomes, including emergency department visits for SITB episodes, self-reported chance of considering or attempting suicide in lifetime, self-harm episodes not leading to an emergency department visit, etc. These outcomes were measured across a wide range of follow-up periods (*range*: 0 days–14 years).

Did Brief Interventions Significantly Improve SITBs?

Trial results across all 26 articles were mixed; nine of 26 (34.62%) reported any significant positive effect of intervention on at least one SITB outcome. A 10th article and long-term follow-up study of one of the above nine positive trials (King et al., 2009) found no significant difference between groups on any SITB-specific outcome 14 years later (King et al., 2019). For two of 26 articles (7.69%), raw data were presented for all measured SITB outcomes in both the intervention and comparison groups in lieu of between-groups significance tests. Eleven of 26 (43.31%) reported null effects across all SITB outcomes, and three of 26 (7.69%) reported at least one *negative* SITB effect in the brief intervention group relative to a comparison group (noted in Tables 3, 5). Notably, in two of these three instances of negative SITB outcomes, brief intervention groups were compared to a second, longer-duration intervention group; one study found that a brief single-call intervention (~40 min) was outperformed by a multiple-call intervention (~240 min) that also met this review’s criteria for brief intervention (Rengasamy & Sparks, 2019), and the other study found that

a brief enhanced treatment as usual intervention (in-clinic session + three follow-up calls, ~95 min) was outperformed by a 12-week cognitive behavioral therapy family intervention (12 weekly sessions, ~1080 min; Asarnow et al., 2017). Full descriptions and results for each intervention are summarized in Tables 4 and 5.

Of the nine studies that reported a positive intervention effect on at least one SITB outcome, most ($n = 7$; 77.78%) were randomized trials. Five of the nine positive trials compared the brief intervention group to a waiting list/no treatment control, three to a treatment as usual group, one to a psychoeducation control. Among these nine trials with at least one positive SITB effect, the percentage of SITB outcomes improved (out of the total number of SITB outcomes measured) ranged from 50 to 100% at the first follow-up time point, and 0–50% at the last follow-up time point. Average follow-up length for the nine positive trials was 16.00 and 23.20 weeks for first and last follow-ups, respectively. Only two of the nine positive trials measured at least one SITB outcome at first *and* last follow-up time points (Fitzpatrick et al., 2005; King et al., 2009). Of these two trials with at least one SITB outcome measured at first and last follow-ups, neither reported sustained effects on the same SITB outcome across both time points; one trial found significant reductions in suicidal ideation at 6-week follow-up that were not sustained at 12-month follow-up (King et al., 2009), and one trial reported significant reductions in lumped self-injurious thoughts and behaviors using latent growth curve analyses across all follow-up time points (i.e., no reporting of between-group effects specific to first and last follow-up time points; Fitzpatrick et al., 2005).

A variety of intervention durations (*range* 35–240 min) were associated with at least one significant SITB effect. The majority of the nine positive trials ($n = 5$) delivered interventions via mental health professionals—with a remaining one delivered by mental health school staff (i.e., counselors), two delivered by other school staff, and one self-administered. For intended treatment audience, three studies intervened directly with youth, two involved youth and family or parents/caregivers, three involved youth and school staff, and one was directed at youth-nominated adults. Finally, four of the nine positive trials used community samples, two used screened (i.e., clinically selected) samples, and three used inpatient/hospital/residential samples. One recruited participants from screened, outpatient, and inpatient/hospital/residential settings.

Taken together, the nine studies that reported a positive treatment effect on at least one SITB outcome varied in their design, percentage of SITB outcomes improved, type of comparison group, intervention duration, intended intervention audience, and type of sample recruitment. Most studies with at least one positive SITB effect delivered interventions via mental health professionals—with several delivered by

school staff. No positive trial compared a brief intervention to an active comparator, and only one study involved completely self-administered intervention.

Which Brief Interventions Significantly Improved SITBs?

Six of the 23 included interventions were associated with significant SITB improvement in at least one study. Notably, all six of these interventions were specifically designed to target reductions in at least one SITB. In other words, none of the interventions designed to primarily target other, non-SITB outcomes (e.g., depression) showed evidence of positive treatment effects for SITBs. One of these 6 interventions met evidence-based status criteria for “probably efficacious” (Chambless & Hollon, 1998; Chambless & Ollendick, 2001; Glenn et al., 2015; Schleider et al., 2020; Southam-Gerow & Prinstein, 2014), four for “possibly efficacious,” and one for “experimental.” Two of these six interventions were associated with at least some publicly available intervention materials (e.g., training manuals, treatment manuals, or other open-access materials); in cases where no intervention materials were made public (four of six), descriptions of each intervention’s content are based on text published within each article (see Tables 4 and 5 for an overview of intervention details and results).

Two of these six interventions had multiple included studies find positive results on at least one SITB outcome: (1) Signs of Suicide (SOS; Aseltine et al., 2007; Aseltine & DeMartino, 2004; Schilling et al., 2016), a 120-min psychoeducational curriculum delivered by trained school staff, and (2) Family-Based Crisis Intervention (FBCI; Wharff et al., 2012, 2019), a 90-min family crisis intervention delivered within the emergency department (FBCI). Specifically, SOS was designed by a non-profit organization (Screening for Mental Health, Incorporated) to teach high school students how to recognize and respond to signs of suicide in themselves and from their peers (e.g., symptoms of depression, alcohol use). Using a short video and discussion guide, students are encouraged to take the potential signs of suicide seriously, to acknowledge them using empathy, and to tell a trusted adult whenever they are identified. The SOS program is available for purchase online (MindWise Innovations, 2022) with some materials publicly available for parents online (MindWise Innovations, 2018). Across two randomized trials (Aseltine & DeMartino, 2004; Schilling et al., 2016) and one re-analysis including a second wave of data collection (Aseltine et al., 2007), SOS students were less likely to report suicide attempts three months later, relative to students who received no treatment—thus meeting evidence-based status criteria for “level 2: probably efficacious.” Additionally, the FBCI intervention was developed by study authors to build rapport between adolescents and

their families—simultaneously building cognitive behavioral (e.g., relaxation, problem-solving, cognitive reframing) and safety planning skills via non-judgmental collaboration. FBCI was associated with fewer adolescent inpatient psychiatry admissions immediately following the intervention in one randomized trial (Wharff et al., 2019) and one quasi-experimental trial (Wharff et al., 2012)—both relative to treatment as usual. Therefore, FBCI meets evidence-based status criteria for “level 3: possibly efficacious” for inpatient psychiatric admissions.

The remaining four of these six interventions were associated with SITB improvements in a single trial. Two of these interventions focused primarily on teaching problem-solving skills: a 35-min problem-solving and coping video (Fitzpatrick et al., 2005), and six sessions of short-term problem-solving therapy delivered by trainee clinicians (PST, 225 min; Eskin et al., 2008). For both problem-solving interventions, young people were encouraged to identify key problems and their associated thoughts, emotions, and behaviors before applying learned coping skills (e.g., goal setting, distinguishing problem-solving from worry or rumination) to a personal problem of choice. Both interventions were tested in randomized trials. The 35-min problem-solving and coping video was associated with faster reductions in a combined measure of suicidal thoughts and behaviors across one-month follow-up, relative to a psychoeducation control (level 3: “possibly efficacious”), and the six-session PST was associated with reduced suicide potential six weeks later in high school and university students, relative to a waiting list comparison (level 3: “possibly efficacious”).

Another two interventions—one 60-min psychoeducation intervention for youth-nominated adults (Youth-Nominated Support Team–Version II, YST-II; King et al., 2009, 2019), and one 75-min therapeutic suicide screening intervention (Teen Screen; Torcasso & Hilt, 2017)—also reported at least one positive intervention effect for SITBs in a single trial. Specifically, the YST-II intervention included one individual or group psychoeducation session directed toward youth-selected adults; during these sessions, YST intervention specialists (e.g., trained psychologists, clinicians, nurses) covered material on relevant psychiatric disorders, individualized treatment plan for each youth, common risk factors for suicide, and specific ways to access emergency services, if needed. Youth-nominated adults were also contacted by YST staff for weekly support phone calls (each ~ 15 min) to provide individual support and facilitate treatment progress for the next 12 weeks. The full YST-II intervention manual is publicly available online (King et al., 2001). In one randomized trial, YST-II was associated with decreases in suicidal ideation at six-week follow-up, relative to treatment as usual (King

et al., 2009; level 3: “possibly efficacious”). However, this study detected no differences in suicidal ideation or suicide attempts at 12 months (King et al., 2009), and a 14-year follow-up study found no significant difference in suicide-related deaths between groups (King et al., 2019).

The 75-min TeenScreen intervention was developed by Columbia University as a multi-stage and therapeutic suicide screening program for high school students. To complete TeenScreen, all students finish a 10-min screening tool plus either a debriefing conversation or a clinical interview. Should a TeenScreen clinician determine a student is in need of referral for mental health services, guardians are contacted with referral information and instructions within 24 h, and the TeenScreen clinician may assist with scheduling the first appointment. Additional case management services are offered through the third session with a mental health professional if necessary. In one non-randomized, quasi-experimental comparison (level 4: “experimental”), fewer adolescents in TeenScreen schools endorsed *two or more* suicide attempts in the previous 12 months; notably, the study found no difference between intervention and comparison groups for the number of students endorsing a single suicide attempt at the same two-year follow-up (Torcasso & Hilt, 2017).

Which Brief Interventions Did Not Significantly Improve SITBs?

Few consistent patterns emerged between “successful” interventions and null interventions; like the six interventions with at least one observed SITB improvement, the 17 interventions with null SITB effects also varied in duration (1–240 min), audience, providers, and delivery contexts. Of these 17 null interventions, ten were completely youth-directed, six were at least partially family-directed, and one was directed at school staff. Twelve of 17 null interventions were delivered via mental health professionals (e.g., MA-level clinicians, therapists, psychiatrists, etc.), two by other adults (e.g., school staff), and three were completely self-administered. The majority of the 17 null interventions ($n = 11$) were delivered within healthcare settings (e.g., ER, inpatient, outpatient, etc.). Descriptively, these interventions ranged from digital CBT programs (Hill & Pettit, 2019; Whittaker et al., 2017), to psychoeducational class presentations and postcards (Robinson et al., 2012; Vieland et al., 1991; Wasserman et al., 2015), to safety planning and motivational interviewing (Czyz et al., 2019; Grupp-Phelan et al., 2019; Kennard et al., 2018; King et al., 2015; Rengasamy & Sparks, 2019), to multi-session problem-solving counseling (Perera & Kathriarachchi, 2011), to provision of hospital readmission tokens (Cotgrove et al., 1995), to in-person family session(s) plus structured follow-up phone

calls (Asarnow et al., 2011, 2017; Donaldson et al., 1997; Ougrin et al., 2013). In sum, substantial heterogeneity existed across all intervention characteristics.

Discussion

Across more than 50 years of intervention research (Fox et al., 2020), clinical psychology has failed to meet the needs of young people who engage in SITBs at scale. Many young people with a recent history of SITBs never access treatment (Hom et al., 2015; Husky et al., 2012) or access only a fraction of the intended dose (Granboulan et al., 2001). Above and beyond commonly cited barriers to accessing mental health treatment (e.g., cost, time, stigma; Brown et al., 2016; Mojtabai et al., 2011), accessing treatment for SITBs may be especially challenging for young people; many fear negative consequences of disclosure (e.g., negative reactions from others, non-consensual involvement of caregivers, forced hospitalization; Fox et al., 2022; Rosenrot & Lewis, 2020). Further, many SITBs (including suicidal ideation) can rapidly intensify from one hour to the next (Kleiman et al., 2017; Wang et al., 2021)—making it difficult to access care in moments when it is needed most. Thus, there is an urgent need to identify evidence-based SITB interventions that can be deployed when time is limited. The present review, spanning 50 years of randomized and quasi-experimental intervention research, identified and summarized effects of “brief” interventions (i.e., 240 min or less) on SITBs in young people.

Across 26 identified articles, nearly two dozen brief interventions were identified and included in this review. These 23 interventions shared aspects of therapeutic content, including: problem-solving, motivational interviewing, safety planning, psychoeducation, and facilitated referral/case management. As such, many of the interventions contained at least one of two treatment components identified as possibly efficacious in a recent review of youth SITB interventions—(1) inclusion of family and (2) skills development (Bettis et al., 2020). Although the included interventions shared common therapeutic principles, they were designed for implementation across a wide range of contexts (e.g., inpatient, schools, teletherapy), durations (e.g., 35–240 min), providers (e.g., self-administered, doctoral-level psychologists, school staff), and audiences (e.g., family versus youth-directed). The existing literature therefore supports the idea that brief SITB interventions are amenable to implementation in many treatment-seeking and non-treatment-seeking contexts. In some cases, these interventions may be designed to make the most of limited clinical contact time—in others, to increase potential of reaching those who may not otherwise receive mental healthcare.

Despite collective evidence suggesting brief interventions can be disseminated using a variety of methods/contexts, formal evaluations of these interventions suggest mixed efficacy for addressing SITBs. Less than half of all included studies, and less than one-third of all brief interventions, found a positive intervention effect for at least one SITB outcome. More often than not, trial results were null across all measured SITB outcomes. Several articles found brief interventions performed *worse* than a comparison condition (in two cases, a full-length active comparator) at SITB reduction. For many existing brief interventions, the state of the evidence surrounding their ability to reduce SITBs is weak or null. Few patterns emerged between characteristics of “successful” brief interventions (i.e., those that observed at least one SITB improvement), versus those with null SITB effects.

From the 10 trials that did report a positive intervention effect on at least one SITB outcome, six brief interventions emerged as potentially helpful for improving SITBs. Each of these potentially helpful brief interventions was designed to target one or more SITB(s). Signs of Suicide (SOS) and Family-Based Crisis Intervention (FBCI) were associated with the highest degree of evidence, as multiple studies found positive effects for at least one SITB outcome (evidence-based status determined “probably efficacious” and “possibly efficacious,” respectively). These two interventions differ by content, delivery settings, providers, and audiences. The SOS intervention is a school-based, staff-delivered psychoeducational curriculum designed to teach youth to recognize (and quickly “act on”) signs of suicide (Aseltine & DeMartino, 2004; Aseltine et al., 2007; Schilling et al., 2016); by contrast, FBCI is a clinician-delivered crisis intervention based on cognitive-behavioral and family systems treatment models, delivered to youths and families in the emergency department (Wharff et al., 2012, 2019). Notably, for both interventions with significant SITB findings across multiple trials (SOS and FBCI), members of the same research team conducted the original trial and follow-up research.

The remaining four of the six brief interventions with any significant reduction in SITBs were supported in a single included trial. These four interventions included: two problem-solving interventions (both “possibly efficacious”; Eskin et al., 2008; Fitzpatrick et al., 2005), a therapeutic screener and briefing interview (“experimental”; Torcasso & Hilt, 2017), and a psychoeducational, social network intervention informed by theories of social support and health behavior (“possibly efficacious”; King et al., 2009). Notably, two of these interventions were also associated with null effects for closely related SITB outcomes (King et al., 2009, 2019; Torcasso & Hilt, 2017). Further, an earlier randomized trial testing a previous version of one of these interventions (YST Version I; > 240 min, not included in this review) failed to

significantly reduce suicidal ideation or attempts 6 months later, relative to the control (King et al., 2006). Thus, while some evidence suggests these interventions may help reduce SITBs, replication is needed to determine the consistency and longevity of these effects.

Future Directions for Brief SITB Intervention Research

The current review demonstrates that many brief interventions for SITBs already exist and have been implemented into many education, health, and mental health contexts. However, several limitations and gaps within the existing literature are worth addressing in future research. Firstly, better transparency and consistency in reporting standards across all intervention trials (both randomized and quasi-experimental) would make it easier to evaluate the strength of results. More than half of the included articles did not pre-register their research objectives, design, or outcomes on a public trial registry—making it difficult to identify possible reporting bias or to distinguish between a priori and post hoc tests. Transparency about primary versus secondary outcomes is especially important, given the large number of SITB (*mean*: 2.58) and non-SITB outcomes (*mean*: 6.77) that were evaluated within each trial, as well as the many ways to measure a given SITB (e.g., any engagement, frequency of engagement, time until engagement). A majority of studies also met criteria for “high” risk of performance bias, indicating either study staff or participants were aware of condition assignment. Rigorous and transparent research helps avoid continued dissemination of unhelpful or actively iatrogenic interventions (Simon et al., 2022). Small, yet important adjustments to study design and initiation (e.g., pre-registering trial outcomes, ensuring proper masking) would maximize our ability to learn from null trial results and prevent possible harm.

Secondly, existing brief intervention research targets SITB outcomes related to suicide (e.g., suicidal ideation, suicide attempts) far more often than others (non-suicidal self-injury). The present review includes only two brief intervention trials that measured NSSI at follow-up—neither of which yielded intervention-related improvements (Asarnow et al., 2017; Kennard et al., 2018). Given that > 17% of adolescents report some experience with NSSI (Swannell et al., 2014), future intervention research may wish to prioritize brief, accessible intervention options for young people engaging in self-injurious behavior without an intent to die.

Future efforts should also prioritize further improving treatment accessibility. While all included interventions were “brief,” 15 of the 26 included articles focused on youth who were already receiving mental health services (i.e., outpatient or inpatient settings). Continuing to expand delivery of brief interventions beyond traditional

healthcare settings (e.g., emergency rooms; inpatient clinics and outpatient clinics) may improve access for the many youth who never access formal or specialized mental health treatment (Hom et al., 2015; Husky et al., 2012). Further, one-third of the included interventions were associated with at least some publicly available material (e.g., open-access treatment materials or manuals). Providing free and easily-accessible treatment content may promote fidelity to the original intervention and create greater opportunities for broad dissemination.

Collecting additional information may also help us better understand if, how, and when brief SITB interventions should be implemented. Several of the included studies did not specify a singular therapy type on which the intervention was based (e.g., Cognitive Behavioral Therapy, Dialectical Behavior Therapy, Problem-Solving, etc.), and many interventions contained components from multiple therapies—making it difficult to sort interventions into distinct theoretical categories. A small minority of the included studies included information about the number of individuals who started and completed each intervention among an intent-to-treat sample (i.e., of those who were randomized/enrolled). Further, a vast majority of trials did not report the number of hours necessary to train the providers delivering each intervention. These data are essential to evaluating scalability and sustainability of intervention strategies across various settings.

Additionally, many articles lacked detailed demographic information across multiple participant identities (race/ethnicity, gender identity, sexual orientation). Studies were far more likely to measure and report information about the number of participating white youth than Asian, Pacific Islander, and Native or Indigenous youth. Only one of 26 articles included information about lesbian, gay, or bisexual youth, and none of the included articles appeared to measure gender identity beyond sex. This lack of demographic information is alarming, given LGBTQ+ youth are more likely to experience SITBs relative to cisgender heterosexual peers (Rogers & Taliaferro, 2020), and Asian, Pacific Islander, and Native American youth with past-year suicidal ideation are less likely to access mental health services for their ideation, relative to non-Hispanic white youth with a similar SITB history (Nestor et al., 2016). Omitting questions or data related to youth identities prevents evaluation of whether interventions differ in effectiveness, acceptability, or accessibility across diverse sets of identities and their intersections (Pachankis, 2018). Thus, consistently collecting demographic information is one important part of evaluating whether any mental health intervention is increasing equitable access to quality mental healthcare.

Finally, continued evaluation of novel and existing brief SITB interventions is necessary. Large-scale randomized trials of the six interventions identified as “experimental,”

“possibly efficacious,” or “probably efficacious”—conducted by independent research teams—will provide greater insight into efficacy. Large studies are also required for well-powered, close examination of which individuals may benefit most from each intervention. Future evaluations may also prioritize direct comparisons of brief intervention content (e.g., head-to-head trials evaluating brief problem-solving vs. brief family systems approaches); these results would help guide which “active ingredients” to prioritize when designing and implementing future brief interventions. Continued development of novel brief interventions is also necessary to meet demands within changing contexts (e.g., isolation and shut downs related to COVID-19). Given that brief SITB interventions will (by necessity) continue to exist, these interventions require consistent, collective investment.

Conclusions

Full-length treatments are crucial for addressing SITBs, and they cannot adequately address the needs of all young people in need of support, at all times when support is needed. Brief interventions for SITBs provide one possible avenue toward improving access to evidence-based mental healthcare; however, mixed results and limited supporting evidence make it difficult to discern if, how, and where brief SITB interventions should be implemented. Future research must address real-world gaps in access to adequate SITB treatment.

Author Contribution MLD, KRF, and JLS conceptualized the project and contributed to study design. MLD and SC performed data search and extraction, and MLD performed data analysis for inter-rater reliability. MLD wrote the initial draft of the manuscript. All authors contributed to review and editing of the final manuscript.

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Data Availability The author confirms that all data generated or analysed during this study are included in this published article.

Declarations

Ethical approval The present article represents a systematic review paper of previously published work. Ethics approval was not required for this review.

Conflict of interest MLD receives book royalties from New Harbinger. MLD has been paid for her role as a contracted researcher at Koko, a nonprofit online mental health platform. JLS serves on the Scientific Advisory Board for Walden Wise and the Clinical Advisory Board for Koko; is Co-Founder and Co-Director of Single Session Support Solutions, Inc.; and receives book royalties from New Harbinger, Oxford University Press, and Little Brown Book Group.

Consent The present article represents a systematic review paper of previously published work. No novel participant data were collected. Consent was not required for this review.

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