JAMA Psychiatry | Original Investigation

# Brief Cognitive Behavioral Therapy for Suicidal Military Personnel and Veterans
## The Military Suicide Prevention Intervention Research (MSPIRE) Randomized Clinical Trial

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**IMPORTANCE** US military personnel and veterans have higher rates of suicide than the general population. Previous trials support the efficacy of brief cognitive behavioral therapy (BCBT) for reducing suicide attempts among military personnel compared with treatment as usual, and replication of these findings is needed.

**OBJECTIVE** To test the efficacy of BCBT for reducing suicide attempts and suicidal ideation among high-risk military personnel and veterans.

**DESIGN, SETTING, AND PARTICIPANTS** This was a 2-arm, parallel randomized clinical trial comparing BCBT with present-centered therapy (PCT), conducted from 2020 to 2025. The setting was 3 US-based outpatient psychiatric clinics and included US military personnel and veterans reporting suicidal ideation during the past week and/or suicidal behavior during the past month who were either self-referred or referred by their mental health clinicians.

**INTERVENTIONS** Participants were randomly assigned to either BCBT, a psychotherapy that teaches emotion regulation skills, or PCT, a problem-solving psychotherapy, using a computerized algorithm with stratification for sex and number of prior suicide attempts.

**MAIN OUTCOMES AND MEASURES** The primary outcome was suicide attempt, assessed with the Self-Injurious Thoughts and Behaviors Interview–Revised.

**RESULTS** Of 154 individuals assessed for eligibility, 108 (mean [SD] age, 32.8 [12.8] years; 79 male [73.1%]) were enrolled. Fewer patients receiving BCBT (n = 2, estimated proportion = 5.6%) than PCT (n = 8, estimated proportion = 27.9%) attempted suicide during follow-up. Mean time to first suicide attempt was 638.6 (90% CI, 557.8-719.3) days in the PCT group vs 755.9 (90% CI, 715.1-796.8) days in the BCBT group (log-rank $\chi^2_1 = 3.6$; $P = .03$). BCBT significantly reduced the risk of any suicide attempt (hazard ratio [HR], 0.25; 90% CI, 0.07-0.90; $P = .04$) as well as the rate of follow-up suicide attempts (0.06 vs 0.18 attempts per participant-year, risk ratio, 0.24; 90% CI, 0.08-0.70; $P = .02$). Suicidal ideation significantly decreased in both groups ($F_{8,264} = 7.2$, $P < .001$) with no differences between groups ($F_{8,266} = 0.2$; $P = .49$).

**CONCLUSIONS AND RELEVANCE** This randomized clinical trial found that BCBT reduced suicide attempts among US military personnel and veterans reporting recent suicidal ideation and/or suicidal behaviors compared with an active comparator. These results replicate earlier findings.

**TRIAL REGISTRATION** ClinicalTrials.gov Identifier: NCT03769259

Visual Abstract

Supplemental content

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*JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2025.2850
Published online October 8, 2025.

Since 2001, suicide rates increased in the US by more than 30%.[1] Among military personnel, suicide rates increased by nearly 50% during that same period.[2] Half of military suicide decedents access mental health care in the months preceding their deaths.[3] Mental health settings, therefore, present a critical opportunity to deliver suicide-focused interventions. Meta-analyses support the efficacy of outpatient cognitive behavioral therapies for reducing suicide attempts, with larger effects for therapies that target suicide risk directly, relative to treating psychological disorders in general.[4,5] In the military, a previous randomized clinical trial (RCT) found that brief cognitive behavioral therapy (BCBT) for suicide prevention, a 10- to 12-session individual therapy protocol, significantly reduced the proportion of patients who attempted suicide vs treatment as usual (TAU) among active-duty US military personnel reporting recent suicidal ideation and/or suicide attempts.[6] More recently, BCBT significantly reduced percentages of patients who attempted suicide in nonmilitary youth[7] and adult psychiatric inpatients.[8] Additionally, BCBT reduces recurrence of repeat suicide attempts among adult psychiatric outpatients when delivered remotely via telehealth.[9]

Previous studies of BCBT and other suicide-focused treatments in military and veteran settings used TAU as the comparator, limiting the ability to draw conclusions about the treatment components that are essential for reducing suicide attempt risk. Owing to persistently elevated suicide rates among military personnel and veterans, additional research is needed to replicate the efficacy of BCBT in this population and compare BCBT with an active treatment comparator.

The primary aim of this study was to test the efficacy of BCBT on suicide attempts among military personnel and veterans reporting recent suicidal ideation and/or behaviors. Unlike most previous studies of BCBT and other suicide-focused treatments, this study used an active comparator, present-centered therapy (PCT), instead of TAU, to differentiate treatment-specific effects from nonspecific therapeutic factors. We hypothesized that participants randomized to BCBT would have reduced suicide attempt risk and suicidal ideation as compared with participants randomized to PCT.

### Key Points

**Question** Can brief cognitive behavioral therapy (BCBT) for suicide prevention reduce suicide attempts and suicidal ideation among high-risk suicidal US military personnel and veterans?

**Findings** In this randomized clinical trial of 108 US military personnel and veterans reporting recent suicidal ideation and/or suicidal behaviors, participants who received BCBT were less likely to attempt suicide during follow-up as compared with participants who received present-centered therapy (PCT), an active comparator. Participants receiving BCBT and PCT demonstrated significant reductions in suicidal ideation with no differences between the treatment groups.

**Meaning** This study found that BCBT is effective for preventing suicide attempts among high-risk military personnel and veterans.

## Methods

### Study Design and Settings

This study used a 2-arm, single-blind RCT design to enroll participants at a large US Marine Corps installation from January to March 2020 (Supplement 1). Enrollment halted from March to December 2020 due to the COVID-19 global pandemic and resumed from December 2020 to April 2022. In January 2023, the study sponsor approved the addition of 2 study sites at a Department of Veterans Affairs outpatient clinic and an academic medical center. Participant enrollment continued at these sites from September 2023 to February 2025. Study procedures were approved by institutional review boards at each site, and are presented following the Consolidated Standards of Reporting Trials (CONSORT) reporting guidelines.

### Participants

US military personnel and veterans were eligible for inclusion if they were (1) between 18 and 64 years old, (2) reported suicidal ideation with intent to die within the past week and/or a suicide attempt within the past month, (3) were able to complete informed consent procedures, and (4) were able to attend study visits in person or virtually through an online videoconferencing system. Exclusion criteria included (1) having a psychiatric or medical condition that precluded their ability to provide informed consent or participate in outpatient therapy or (2) being scheduled to deploy or otherwise have a change in their military status that would preclude completion of the treatment protocol. Demographic characteristics, including race and ethnicity, were self-reported by participants and collected because suicide rates vary across demographic groups. Participant races and ethnicities included American Indian, Asian, Black, Hispanic or Latino, not Hispanic or Latino, Pacific Islander, White, or other (no further subdivisions are available).

### Procedures

Participants self-referred or were referred to the study by a member of their mental health care team to complete informed consent procedures. After providing consent, individuals completed interviews and self-report measures to confirm eligibility. Eligible individuals were randomly assigned to 1 of 2 treatment groups using a computerized randomization procedure in blocks of 6 and 8 with 2 strata: biological sex (male or female) and number of prior suicide attempts (none, 1, or >2). Randomization was conducted by research assistants who were not involved in treatment delivery. Participants were informed of their treatment assignment during the first therapy session. Independent assessors masked to treatment assignment assessed participants every 3 months after baseline for up to 24 months. Additional details about the study design, procedures, and protocol can be found in Khazem et al.[10]

### Therapists

Study therapists were representative of real-world health care professionals in military and VA settings and included psychology postdoctoral fellows and predoctoral interns, licensed and unlicensed social workers, and licensed and unli-

censed professional counselors who completed standardized training workshops for each of the study therapies. Trainings were 2 full days in duration per therapy and included demonstration videos and role-play skills practice with feedback. Therapy sessions were audio recorded, 25% of which were rated for fidelity by a trained supervisor who provided written feedback about protocol administration. Study therapists attended weekly group supervision and consultation meetings.

## Treatment Groups

Participants were allowed to continue their usual mental health care outside the study protocol. In addition to usual care, participants were randomly assigned to 1 of 2 treatment groups: BCBT or PCT. Both treatment groups included suicidal ideation screening, suicide risk assessment, and safety planning-type interventions, all recommended by The Joint Commission,[11] Zero Suicide Institute,[12] and the National Action Alliance for Suicide Prevention[13] for the care of suicidal patients. Similarities and differences in treatment group components and procedures are summarized in **Table 1**.

### BCBT

BCBT is a 12-session psychotherapy that teaches patients how to use self-regulation strategies to manage emotional distress and change extreme negative thoughts and beliefs that sustain long-term vulnerability to suicide. In the first session, clinicians conduct a patient-centered suicide risk assessment focused on gathering the patient's narrative account of their most recent suicidal episode or suicide attempt, collaboratively develop a case conceptualization, and guide patients through crisis response planning procedures. Subsequent BCBT sessions focus on training behavioral emotion regulation skills (eg, relaxation, mindfulness) to reduce emotional reactivity and promote behavioral inhibition and cognitive reappraisal skills to undermine maladaptive thoughts and beliefs that increase vulnerability to suicidal states. The treatment concludes with a focus on relapse prevention.

### PCT

PCT is a 12-session outpatient psychotherapy that provides psychoeducation about the typical symptoms and features of suicidal crises, normalization of symptoms, provision of emotional support and feedback about life problems and stressful situations, and positive interpersonal interactions. PCT was selected as the active comparator because it is an empirically supported treatment for psychiatric conditions that are correlated with increased suicide (ie, depression and posttraumatic stress disorder)[14,15] and reduces suicidal ideation[15-17] but contains elements and procedures that differ from BCBT (Table 1), thereby allowing us to isolate treatment effects while controlling for nonspecific therapeutic factors.

## Outcomes

The primary outcome was time to first suicide attempt, defined as a deliberate, self-directed, and potentially injurious behavior enacted with the expectation or intent to die,[18] assessed with the Self-Injurious Thoughts and Behaviors Interview-Revised.[19] The secondary outcome was change in severity of suicidal ideation, assessed with the Scale for Suicide Ideation (SSI).[20]

**Table 1. Components and Elements of Present-Centered Therapy (PCT) and Brief Cognitive Behavioral Therapy (BCBT)**

| Component | PCT | BCBT |
|---|---|---|
| **Suicide risk screening, assessment, and monitoring** | | |
| Suicidal ideation screening with standardized tool | Yes | Yes |
| Session-to-session monitoring with standardized tool | Yes | Yes |
| Narrative assessment of index suicidal episode | No | Yes |
| **Safety planning** | | |
| Stanley-Brown safety plan | Yes | No |
| Crisis response planning | No | Yes |
| **Lethal means safety** | | |
| Included as part of safety plan | Yes | No |
| Lethal means counseling | No | Yes |
| **Psychoeducation** | | |
| Suicide as symptom of psychiatric diagnosis | Yes | No |
| Suicide as deficits in emotion regulation and cognitive flexibility | No | Yes |
| **Therapy activities** | | |
| Daily log to monitor stressors | Yes | No |
| Active problem-solving | Yes | No |
| Behavioral emotion regulation and cognitive reappraisal skills training | No | Yes |
| Relapse prevention task | No | Yes |
| Caring contacts[a] | Yes | Yes |

[a] Available only at the military installation site.

## Statistical Analysis

Sample size calculation was based on the log-rank test to compare time to first suicide attempt (primary end point). Based on previously published clinical trials,[6,21,22] we estimated that 20% to 40% of patients in the comparison condition would attempt suicide during follow-up, and 20% of participants would drop out. Using a 1-sided log-rank test at $\alpha = .05$, enrollment of 210 participants provided greater than 80% power to detect a 50% relative risk reduction in suicide attempts in BCBT. In January 2023, the study sponsor approved the addition of 2 new study sites and a reduction in sample size to 104 participants. The reduced number was based on our original power analysis, which indicated that n = 104 provided 80% power to detect a 60% relative reduction in suicide attempts using a 1-tailed log-rank test. All analyses were conducted using SAS, version 9.4 (SAS Institute) with $\alpha = .05$ a priori significance levels and 1-sided hypothesis tests. Additional information is available from Khazem et al[10] and the ClinicalTrials.gov site.[23]

Analyses included all enrolled participants with no exceptions (ie, intent to treat). The proportion of participants in each treatment group with a suicide attempt during follow-up was estimated using the Kaplan-Meier method. The primary end point, time to first suicide attempt, was compared between treatment groups using the log-rank test and Cox regression. Both methods account for participant attrition, consistent with intent-to-treat principles. Adjusted analyses included randomization strata variables as covariates: prior attempt sta-

tus (ie, 0, 1, and ≥2) and sex. To account for addition of new study sites during the study period, we also included study site as a nonprespecified covariate. We supplemented our prespecified primary analyses with 2 unspecified analyses to account for multiple attempts within individuals: the Anderson-Gill counting process method,[24] an extension of Cox regression for modeling recurrent outcomes that assumes the risk of repeat suicide attempts within a participant is related to an underlying vulnerability that persists over time regardless of previous suicide attempts, and Poisson regression. In the Poisson regression model, we added the log of follow-up time, calculated as the number of years from enrollment to final data collection, as a participant-level offset variable to account for differential follow-up time. To assess the clinical meaningfulness of findings, we calculated relative and absolute risk reductions and number needed to treat values. Change in severity of suicidal ideation, the secondary end point, was tested using mixed-effects modeling with postbaseline change in SSI as the outcome, treatment group, time, and the group × time interaction as fixed-effect predictors, and random effects for the intercept and slope. Covariance matrices were selected by comparing Bayes Information Criterion values, with smaller values indicating better fit.

## Results

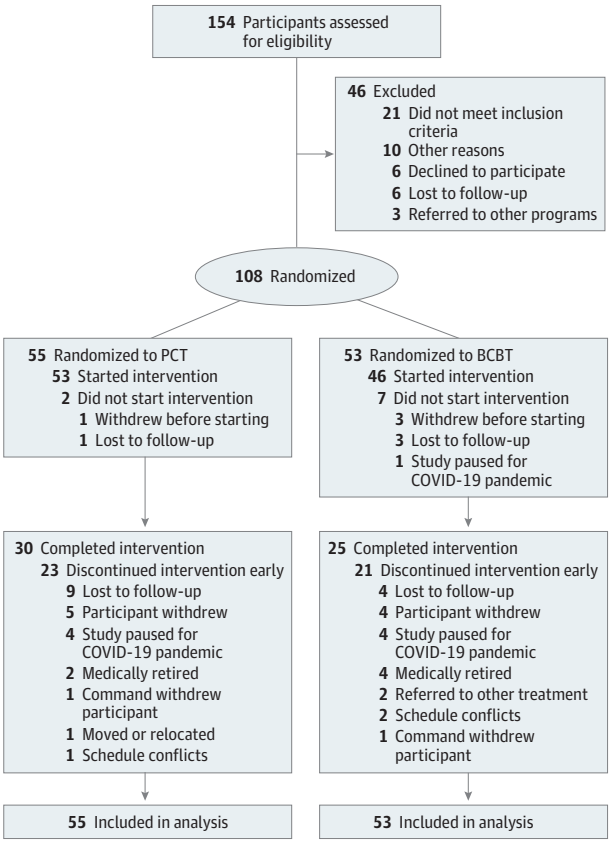
### Participant Characteristics

Of 154 individuals assessed for eligibility, 108 (mean [SD] age, 32.8 [12.8] years; age range, 19-64 years; 29 female [26.9%]; 79 male [73.1%]) were enrolled (**Figure 1**). Study sample characteristics by site are available in the eTable in Supplement 2. Participants self-identified the following races and ethnicities: 4 American Indian (3.7%), 3 Asian (2.7%), 16 Black (14.8%), 21 Hispanic or Latino (19.4%), 87 not Hispanic or Latino (80.6%), 2 Pacific Islander (1.9%), 74 White (68.5%), and 9 other race (8.3%) (**Table 2**).[25] At baseline, 87 participants (80.6%) reported suicidal ideation within the past week, and 21 (19.4%) reported a suicide attempt within the past month. Participants who started therapy attended a mean (SD) of 7.9 (4.4) PCT vs 7.9 (4.1) BCBT sessions ($t_{97}$ = 0.2; $P$ = .50). The number of participants attending 8 or more therapy sessions (referred to as *treatment completers*) did not differ between groups: 30 (56.6%) in PCT vs 25 (54.3%) in BCBT ($\chi^2_1$ = 0.5; $P$ = .41). When excluding the 9 participants who could not start or complete therapy due to the COVID-19 shutdown, the mean (SD) number of attended sessions were 8.3 (4.3) in the PCT group vs 8.2 (4.0) in the BCBT group ($t_{89}$ = 0.3; $P$ = .49), and the number of treatment completers was 30 (61.2%) in the PCT group vs 25 (59.5%) in the BCBT group ($\chi^2_1$ = 0.3; $P$ = .43). No baseline demographic or clinical variables predicted treatment completion. Of 108 enrolled participants, 87 (80.6%) completed at least 1 follow-up assessment.

### Primary End Point: Time to First Suicide Attempt

Of 108 enrolled participants, 10 (estimated proportion = 17.0%) made at least 1 suicide attempt during follow-up: 2 in BCBT (estimated proportion = 5.6%) and 8 in PCT (estimated proportion = 27.9%). There were no known participant deaths. The log-rank tests results indicated the mean time without a suicide attempt was significantly longer in BCBT relative to PCT (638.6 days; 90% CI, 557.8-719.3 days in PCT vs 755.9 days; 90% CI, 715.1-796.8 days in BCBT; unstratified log-rank $\chi^2_1$ = 3.6; $P$ = .03; stratified log-rank $\chi^2_1$ = 3.6; $P$ = .03). The Cox regression results indicated risk of suicide attempts was significantly reduced in BCBT relative to PCT (unadjusted hazard ratio [HR], 0.25; 90% CI, 0.07-0.90; $P$ = .04; adjusted HR, 0.22; 90% CI, 0.06-0.86; $P$ = .03). Survival curves are plotted in **Figure 2**. Relative risk reduction was 75% to 78%, absolute risk reduction was 22.3%, and number needed to treat (NNT) to prevent 1 additional patient from attempting suicide was 5.

Figure 1. Flow of Participants Through the Study




BCBT indicates brief cognitive behavioral therapy; PCT, present-centered therapy.

### Follow-Up Analyses: Suicide Attempt Rate

A total of 18 suicide attempts were made by 10 participants; 6 participants made 1 attempt, 3 participants made 2 attempts, and 1 participant made 6 attempts. In BCBT, 2 participants made 3 suicide attempts (1 participant made 1 attempt and 1 participant made 2 attempts), and in PCT, 8 participants made 15 suicide attempts (5 participants made 1 attempt, 2 participants made 2 attempts, and 1 participant made 6 attempts). In BCBT, all 3 suicide attempts occurred within 6 months. In PCT, 7 of 15 suicide attempts (40.0%) occurred within 6

Table 2. Sample Characteristics

| Characteristic | PCT (n = 55) | BCBT (n = 53) |
|---|---|---|
| Age, mean (SD), y | 33.4 (12.3) | 32.2 (13.3) |
| Sex, No. (%) | | |
| Female | 13 (23.6) | 16 (30.2) |
| Male | 42 (76.4) | 37 (69.8) |
| Race, No. (%) | | |
| American Indian | 3 (5.5) | 1 (1.9) |
| Asian | 1 (1.8) | 2 (3.8) |
| Black | 7 (12.7) | 9 (17.0) |
| Pacific Islander | 2 (3.6) | 0 (0.0) |
| White | 39 (70.9) | 35 (66.0) |
| Other[a] | 3 (5.5) | 6 (11.3) |
| Hispanic or Latino, No. (%) | | |
| No | 46 (83.6) | 41 (77.4) |
| Yes | 9 (16.4) | 12 (22.6) |
| Site, No. (%) | | |
| Department of Defense | 26 (47.3) | 24 (45.3) |
| Department of Veterans Affairs | 6 (10.9) | 8 (15.1) |
| Academic medical center | 23 (41.8) | 21 (39.6) |
| Military/veteran status, No. (%) | | |
| Military | 27 (49.1) | 28 (52.8) |
| Veteran | 28 (50.9) | 25 (47.2) |
| Military branch, No. (%) | | |
| Marines | 30 (54.5) | 30 (56.6) |
| Army | 14 (25.5) | 12 (22.6) |
| Air Force | 2 (3.6) | 7 (13.2) |
| Navy | 5 (9.1) | 3 (5.7) |
| Coast Guard | 2 (3.6) | 0 (0.0) |
| Missing | 2 (3.6) | 1 (1.9) |
| Prior attempts, No. (%) | | |
| 0 | 18 (33.3) | 20 (38.5) |
| 1 | 20 (37.0) | 14 (26.9) |
| ≥2 | 16 (29.6) | 18 (34.6) |
| Psychiatric diagnosis, No. (%)[b,c] | | |
| Major depressive disorder | 21 (41.2) | 26 (48.1) |
| Bipolar disorder | 16 (31.4) | 12 (22.1) |
| Panic disorder | 16 (31.4) | 27 (50.0) |
| Generalized anxiety disorder | 14 (27.5) | 23 (42.6) |
| Posttraumatic stress disorder | 10 (19.6) | 11 (20.4) |
| Attention-deficit/hyperactivity disorder | 26 (51.0) | 34 (63.0) |
| Intermittent explosive disorder | 10 (19.6) | 9 (16.7) |
| Substance use disorder | 14 (27.5) | 17 (31.5) |
| Treatment format, No. (%) | | |
| In-person | 26 (47.3) | 24 (45.3) |
| Remote/telehealth | 29 (52.7) | 29 (54.7) |

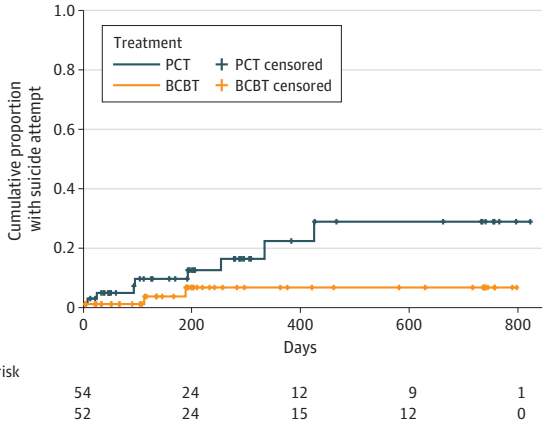
Abbreviations: BCBT, brief cognitive behavioral therapy; PCT, present-centered therapy.

[a] No further subdivisions are available.

[b] Data were missing from 3 cases, so percentages are based on n = 105 participants.

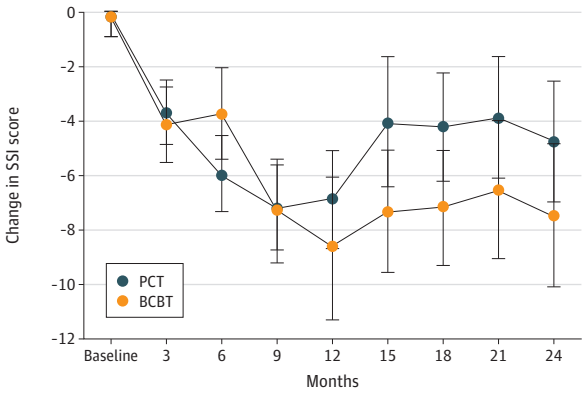
[c] Based on the Composite International Diagnostic Interview Screening Scales.[25]

Figure 2. Cumulative Proportion of Participants in Each Treatment Group With a Follow-Up Suicide Attempt, With Number of Participants at Risk




BCBT indicates brief cognitive behavioral therapy; PCT, present-centered therapy.

Figure 3. Change in Scale for Suicidal Ideation (SSI) Mean Scores Over Time Across Treatment Groups




BCBT indicates brief cognitive behavioral therapy; PCT, present-centered therapy.

months, another 3 (20.0%) occurred within 12 months, and the remaining 6 occurred within 18 months. Results of the Andersen-Gill Cox regression model (unadjusted HR, 0.34; 90% CI, 0.14-0.86; $P$ = .03; adjusted HR, 0.34; 90% CI, 0.13-0.93; $P$ = .04) and Poisson regression (unadjusted rate ratio [RR], 0.24; 90% CI, 0.08-0.70; $P$ = .02; adjusted RR, 0.24; 90% CI, 0.09-0.70; $P$ = .02) indicated the suicide attempt rate was lower in BCBT relative to PCT (unadjusted rates = 0.06 vs 0.18 attempts per participant-year; adjusted rates = 0.01 vs 0.05 attempts per participant-year). Relative rate reduction of suicide attempts was 76%, absolute rate reduction was 4% to 13%, and NNT to prevent 1 additional patient from attempting suicide was 3.

## Secondary End Point: Change in Severity of Suicidal Ideation

Mean SSI scores are plotted by treatment and time in **Figure 3**. Suicidal ideation significantly decreased in severity over time

in both groups (unadjusted $F_{8,266} = 7.2$; $P < .001$; adjusted $F_{8,262} = 6.6$; $P < .001$) but did not differ between treatment groups (unadjusted $F_{8,266} = 0.2$; $P = .49$; adjusted $F_{8,262} = 0.2$; $P = .49$).

## Discussion

In this RCT, BCBT both significantly reduced and delayed suicide attempts among US military personnel and veterans with elevated suicide risk. This study replicated an earlier RCT[6] finding significant reductions in suicide attempts among US military personnel receiving BCBT. Unlike that previous study, which compared BCBT with TAU, in this study, we compared BCBT with an active comparator (PCT), which allowed us to better demonstrate treatment effects. In contrast with PCT, which focuses on monitoring daily stressors and supporting active problem solving, BCBT emphasizes emotion regulation and cognitive reappraisal skills training to disrupt cognitive-affective behavioral networks that maintain suicidal states. BCBT also includes crisis response planning, a safety planning-type intervention that has been shown to significantly reduce suicidal ideation and attempts among military personnel and veterans.[26,27] Taken together, these findings suggest these BCBT-specific procedures may uniquely account for the treatment's effect on reducing suicide attempts.

Our results are noteworthy when considering our comparator (PCT) included recommended clinical practices like suicidal ideation screening and safety planning.[11-13] Other clinical trials with nonmilitary samples show the superiority of BCBT to treatments with these same recommended practices. In an RCT[8] of psychiatric inpatients admitted for elevated suicide risk, a 4-session version of BCBT adapted for psychiatric inpatient settings significantly reduced postdischarge suicide attempts relative to psychiatric inpatient TAU. In a separate RCT,[9] BCBT delivered via telehealth significantly reduced suicide attempts relative to PCT. In combination with those earlier studies, the present results suggest BCBT-specific procedures incrementally reduce suicide attempts beyond the effects of other, commonly used risk management strategies.

In contrast with the between-group differences in suicide attempts, reductions in ideation severity did not differ over time between groups, a pattern that converges with a recent RCT[9] comparing BCBT with PCT but diverges from studies comparing BCBT with TAU,[6,8] which found larger and faster reductions in suicidal ideation in BCBT. This discrepancy could be related to differences between TAU and PCT, a manualized psychotherapy that focuses on increasing adaptive responses to current life stressors and using problem-solving strategies to address these difficulties.[14] PCT and other problem-solving therapies have been shown to be effective for reducing suicidal ideation and emotional distress.[5,15] This study thus compared 2 distinct treatments with established efficacy for reducing suicidal ideation. The absence of group differences on suicidal ideation is, therefore, unsurprising. Clinically, these findings implicate the importance of distinguishing suicidal thoughts from suicidal behaviors as distinct outcomes and suggest that behavioral and cognitive emotion regulation skills, more so than problem-solving skills, uniquely target the pathogenic mechanisms that are directly related to the emergence of suicidal behavior. In that regard, the emergence of suicidal behaviors is associated with emotion dysregulation and maladaptive cognitive processes.[28,29]

Despite concerted efforts to retain participants in this study, approximately 40% did not complete therapy, defined as attending at least 8 of 12 (≥75%) scheduled sessions. This dropout rate is higher than the average estimated rate of early dropout in cognitive behavioral therapies (26%), although dropout rates are noticeably higher (35%-40%) in teletherapy[30] and among patients reporting more severe suicidal ideation and depression[31,32] but is comparable with dropout rates among Iraq- and Afghanistan-era military veterans (40.3%).[33] This finding highlights the need for targeting treatment adherence among military personnel and veterans. Shortening the duration of BCBT could address this issue. Previous research[33] suggests that dropout rates are significantly lower (17% vs 40%) in intensive (ie, multiple session per week) vs standard (ie, 1 session per week) outpatient programs. Treatment duration could also be shortened by reducing the number of therapy sessions. Findings from other clinical trials suggest this approach is feasible. Crisis response planning, a central component of BCBT, has been shown to significantly reduce suicide attempts when used as a stand-alone intervention.[27] A 4-session version of BCBT adapted for psychiatric inpatient units has also been shown to significantly reduce postdischarge suicide attempts when delivered daily while patients are in the hospital.[8] Future studies aimed at shortening BCBT are warranted.

### Limitations

This study has some limitations. Enrollment began in early 2020, just before the start of the COVID-19 pandemic. In addition to a temporary pause in recruitment, study progress after the shutdown remained slow because of staff attrition and change in the lead investigator's institutional affiliation. To compensate for these delays, the study sponsor approved 2 additional study sites, broadening eligibility to include veterans (instead of active duty military personnel only), a reduction of sample size, and a provision of study interventions via telehealth. Although the overall effect of COVID-19 on study outcomes cannot be fully known, adjusting for these changes in our analyses had little effect on the results. The inclusion of both US military personnel and veterans in this study complements previous RCTs that restricted enrollment to military personnel only.[6] Nonetheless, conclusions based on the present study may still be limited to military personnel and veterans. Third, as noted previously, only approximately half of participants completed therapy. Because the mean number of sessions attended and completion rates were similar across treatments, dropout likely had negligible impact on our results. Additional research examining dose-response relationships in BCBT and other suicide prevention treatments is indicated. Finally, because there were no known deaths in this study, we are unable to draw any conclusions about BCBT ef-

fects on suicide mortality. Future studies enrolling much larger samples are needed to consider death as an outcome.

## Conclusions

This RCT found that BCBT reduced the risk of suicide attempts among military personnel and veterans with recent suicidal ideation and/or suicidal behaviors and was more effective than an active psychotherapy that has been shown to reduce suicidal ideation. Results replicate an earlier RCT supporting the efficacy of BCBT for the prevention of suicide attempts among military personnel[6] and converge with RCTs reporting reductions in suicide attempts among nonmilitary patients receiving BCBT.[7-9] As such, BCBT should be a recommended treatment for preventing suicide attempts and disseminated throughout the military health system.


### ARTICLE INFORMATION

**Accepted for Publication:** July 23, 2025.

**Published Online:** October 8, 2025. doi:10.1001/jamapsychiatry.2025.2850

**Author Contributions:** Drs Bryan and Khazem had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
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*Obtained funding:* Bryan, Brown, Garland, Rudd.
*Administrative, technical, or material support:* Bryan, Khazem, Brown, Pruiksma, Acierno, Larick, Baucom, Garland, Rudd.
*Supervision:* Bryan, Baker, Brown, Taylor, Larick.

**Conflict of Interest Disclosures:** Dr Bryan reported receiving grants from the Department of Defense, the National Institute of Mental Health, the New Jersey Gun Violence Research Center, the American Foundation for Suicide Prevention; royalties from Guilford Press, Oxford University Press, Springer Publishing, Taylor & Franics, and PESI; and having ownership of Anduril LLC. Dr Khazem reported receiving personal fees from Anduril LLC and Oui Therapeutics outside the submitted work. Dr Baker reported receiving personal fees from Anduril LLC and grants from the Department of Defense and Greater Plains Collaborative outside the submitted work. Dr Brown reported receiving grants from the National Institute of Mental Health and the Department of Defense during the conduct of the study. Dr Pruiksma reported receiving personal fees from Nightrighter at cbtiweb.org outside the submitted work. Dr Garland reported receiving personal fees from BehaVR outside the submitted work. Dr Rudd reported receiving grants from the Department of Defense; royalties from Guilford Press and the American Psychological Association; and stock ownership from Oui Therapeutics outside the submitted work. No other disclosures were reported.

**Funding/Support:** Research reported in this publication was supported in part by grant W81XWH1820022 from the Department of Defense (Dr Bryan) and the Military Suicide Research Consortium, an effort supported by grant W81XWH1620004 from the Office of the Assistant Secretary of Defense (Dr Brown).

**Role of the Funder/Sponsor:** The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

**Disclaimer:** The content is solely the responsibility of the authors and does not necessarily represent the official views of the US Department of Defense.

**Data Sharing Statement:** See Supplement 3.


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