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Computerized Cognitive Behavioral Therapy for Adults with Depressive or Anxiety Disorders

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PREFACE

Quality Enhancement Research Initiative's (QUERI's) Evidence-based Synthesis Program (ESP) was established to provide timely and accurate syntheses of targeted healthcare topics of particular importance to Veterans Affairs (VA) managers and policymakers, as they work to improve the health and healthcare of Veterans. The ESP disseminates these reports throughout VA.

QUERI provides funding for four ESP Centers and each Center has an active VA affiliation. The ESP Centers generate evidence syntheses on important clinical practice topics, and these reports help:

- develop clinical policies informed by evidence,
- guide the implementation of effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures, and
- set the direction for future research to address gaps in clinical knowledge.

In 2009, the ESP Coordinating Center was created to expand the capacity of QUERI Central Office and the four ESP sites by developing and maintaining program processes. In addition, the Center established a Steering Committee comprised of QUERI field-based investigators, VA Patient Care Services, Office of Quality and Performance, and Veterans Integrated Service Networks (VISN) Clinical Management Officers. The Steering Committee provides program oversight, guides strategic planning, coordinates dissemination activities, and develops collaborations with VA leadership to identify new ESP topics of importance to Veterans and the VA healthcare system.

Comments on this evidence report are welcome and can be sent to Nicole Floyd, ESP Coordinating Center Program Manager, at nicole.floyd@va.gov.

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EXECUTIVE SUMMARY

BACKGROUND

Given the high rates of mental illness among Veterans returning from Iraq and Afghanistan, it is not surprising that the demand for mental health services in Veterans Health Administration (VHA) has increased 132 percent since 2006. The most commonly diagnosed and treated disorders among Veterans receiving care at VHA include (1) PTSD, (2) depressive disorders, (3) episodic mood disorders, (4) anxiety disorders, and (5) substance use disorders. Unfortunately, shortages in trained mental health providers and logistical barriers limit Veterans' access to evidence-based therapies.

To address the growing need and barriers to accessing mental health services, the VA/Department of Defense (DoD) developed the Integrated Mental Health Strategy (IMHS), which includes the development of a series of Web-based self-help programs. Because web-based programs can be accessed anonymously, anytime, anywhere, and by multiple Veterans simultaneously, these services have the potential to surmount stigma and geographical and financial barriers to accessing mental health treatment.

Cognitive behavioral therapy (CBT), using group or individual face-to-face therapy, is effective in treating mild to severe mental health symptoms. Computer-based self-help programs grounded in CBT (computerized CBT [cCBT]) have generally been shown to produce significant reductions in depressive and anxiety symptoms, but treatment effects vary across studies. The availability of support via email, instant messaging, or phone contact with a therapist may mitigate attrition and improve treatment outcomes. Still, it is unclear how support-related factors influence treatment response to cCBT programs. To support the development of cCBT self-help programs, the VA commissioned the Evidence-based Synthesis Program to conduct a systematic review of the literature.

The key research questions for this systematic review were developed after a topic refinement process that included a preliminary review of published, peer-reviewed literature; consultation with internal partners and investigators; and consultation with content experts and key VA stakeholders. During the topic refinement process, the scope of this review was narrowed to focus on depressive and anxiety disorders, with plans to complete a subsequent review on alcohol and substance abuse disorders. The Key Questions (KQs) for this systematic review are:

KQ 1: For adults with depressive disorder, posttraumatic stress disorder, panic disorder, or generalized anxiety disorder, what are the effects of computerized CBT (cCBT) interventions compared with inactive controls?

KQ 2: For cCBT interventions, what level, type, and modality of user support is provided (e.g., daily telephone calls, weekly email correspondence); who provides this support (e.g., therapist, graduate student, peer); what is the clinical context (primary intervention, adjunct); and how is this support related to patient outcomes?

KQ 3: For adults with depressive disorder, posttraumatic stress disorder, panic disorder, or generalized anxiety disorder, what are the effects of cCBT interventions compared with face-to-face therapy?

METHODS

This review was commissioned by the VA's Evidence-based Synthesis Program. We followed a standard protocol for this review; certain methods map to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. The topic was nominated after a process that included a preliminary review of published peer-reviewed literature and consultation with investigators, VA and non-VA experts, and key stakeholders (Mental Health Web Services, Mental Health Services, and Mental Health QUERI).

SEARCH STRATEGY AND STUDY SELECTION

In consultation with a master librarian, we searched MEDLINE® (via PubMed®), Cochrane Central Register of Controlled Trials, Embase®, CINAHL®, and PsycINFO® from January 1, 1990, to August 30, 2013, for peer-reviewed publications of trials that compared cCBT with usual care or face-to-face therapy in adults with depressive symptoms or disorders, and selected anxiety disorders. We limited the search to RCTs published in the English language.

Using prespecified inclusion and exclusion criteria, two reviewers assessed titles and abstracts for relevance to the KQs. Full-text articles identified by either reviewer as potentially relevant were retrieved and examined by two reviewers against the eligibility criteria. In addition, trials with three or more arms were examined for appropriateness of all arms for inclusion. Data elements to be abstracted from articles after full text review included descriptors to assess applicability, quality elements, intervention/exposure details, and outcomes. Key characteristics abstracted included patient descriptors, setting, features and dose of the cCBT intervention, and features of the comparator. Key features relevant to applicability include the match between the sample and target populations and the training and experience of the clinician. Data from published reports were then abstracted into the final abstraction form by a trained reviewer, and confirmed by a second reviewer.

DATA SYNTHESIS

When meta-analysis was feasible, we computed summary estimates of effect, stratified by condition (e.g., major depressive disorder, panic disorder), for both end-of-treatment and longest followup point ≥6 months. Because the primary outcome—symptom severity—was measured across the trials using different instruments, the measurements of symptom severity were combined using standardized mean differences (SMDs) in a random-effects model.

In addition, symptom severity for a single trial was often reported using more than one instrument (e.g., Beck Depression Inventory and Hamilton Depression Rating Scale). When multiple instruments were used, we calculated the mean effect from all instruments measuring symptoms directly related to the eligible illness, so that each study provided only one effect size for each treatment comparison.

We used subgroup analyses to explore potential sources of heterogeneity, including the category of support given with the intervention and the type of control group. We classified interventions into the following four mutually exclusive categories: (1) "no support" except technical (cCBT-NS);

(2) "supported" but via delayed communication modes such as email (cCBT-S); (3) "live support" featuring immediate bidirectional communication such as over the phone (cCBT-LS); and (4) "adjunct to therapy," where the cCBT program was used to augment face-to-face therapy (cCBT-AT). We classified control groups into three categories: waitlist, treatment as usual, and attention/information control. Because subgroup analyses involve indirect comparisons (across studies) and are susceptible to confounding, we considered these analyses to be hypothesis-generating. Publication bias was assessed using findings from a ClinicalTrials.gov search or funnel plots.

Where quantitative synthesis was not feasible (as for patient satisfaction and adherence outcomes), we analyzed the data qualitatively. The qualitative syntheses focused on documenting and identifying patterns in efficacy and safety of the intervention across conditions and outcome categories.

RISK OF BIAS (QUALITY) AND STRENGTH OF EVIDENCE ASSESSMENT

We used the key quality criteria described in the Agency for Healthcare Research and Quality's (AHRQ's) "Methods Guide for Effectiveness and Comparative Effectiveness Reviews," adapted to this specific topic and customized to RCTs. For RCTs, these criteria are adequacy of randomization and allocation concealment, the comparability of groups at baseline, blinding, the completeness of followup and differential loss to followup, whether incomplete data were addressed appropriately, the validity of outcome measures, and conflict of interest. We assigned a summary risk of bias score (low, moderate, or high) to individual studies.

In addition to rating the quality of individual studies, we evaluated the overall strength of evidence for each KQ using the approach recommended by AHRQ. In brief, this approach requires assessment of four domains: risk of bias, consistency, directness, and precision. An additional domain considered was publication bias. These domains were considered qualitatively, and a summary rating of high, moderate, low, or insufficient strength of evidence was assigned after discussion by two reviewers.

PEER REVIEW

A draft of the report was reviewed by technical experts and clinical leadership. A transcript of their comments and our responses is available in the appendix.

RESULTS

We identified 1552 unique citations from our combined search of 5 databases. Manual searching of key bibliographies and review articles identified 13 additional citations for a total of 1565 citations. After title and abstract screening and full text review, we included 54 articles (representing 47 unique trials involving 7270 patients plus 7 companion articles) for data abstraction. Because some RCTs contained multiple treatment arms, there were 64 relevant comparisons: 53 compared cCBT with control (KQ 1), 4 compared cCBT with different levels of therapist support (KQ 2), and 7 compared cCBT with face-to-face therapy (KQ 3).

The majority of the 47 included trials were conducted outside of the United States; only one was conducted in U.S. military personnel or Veterans. Overall risk of bias was assessed as high in 5 studies, moderate in 27 studies, and low in 15 studies. All but one trial reported one or more measures of symptom severity, and 25 reported health-related quality of life (HRQOL) at the end of treatment; 22 trials also reported symptom severity at a later followup.

The 47 included trials targeted the following patient groups:

- Depressive symptoms (15 trials)
- Major depressive disorder (11 trials)
- Depression, anxiety, or mixed anxiety/depression (3 trials)
- Panic disorder (10 trials)
- Generalized anxiety disorder (4 trials)
- PTSD (2 trials)
- Anxiety symptoms (2 trials)

Participants in the trials were often in the middle-aged adult range (median 39.8 years of age; range 20.7 to 58.0 years of age); no studies focused on older adults. Most trials specifically excluded patients currently engaged in traditional CBT and patients with suicidal ideation or concurrent substance abuse. Many studies excluded patients with severe symptoms. Psychotropic medications, usually with a restriction for a stable dose, were allowed in approximately 70 percent of the studies.

KQ 1: For adults with depressive disorder, posttraumatic stress disorder, panic disorder, or generalized anxiety disorder, what are the effects of cCBT interventions compared with inactive controls?

Key Points

- Computerized CBT was delivered primarily through the internet, and most trials (79%) utilized some form of therapist support.
- Treatment adherence was reported in 62 percent of comparisons and varied substantially across studies (median proportion completing all cCBT sessions was 49.5%, range 11% to 100%). Adherence rates were lower for patients with depressive symptoms than for other conditions.
- For patients with depressive disorders or symptoms:
    - Compared with control groups, trials of patients diagnosed with major depressive disorder who received cCBT generally reported large treatment effects at end of treatment (standardized mean difference [SMD] -0.82), with relatively little variability between studies, though more distal followup effects were more modest.
    - Trials of patients identified with depressive symptoms from self-report questionnaires, with no confirmed depression diagnosis, found only modest effects at end of treatment and followup (SMD -0.40), and treatment effects varied importantly across trials. Heterogeneity in treatment effects was explained in part by the category of cCBT support but not by the type of control group.

  - In trials of major depressive disorder and depressive symptoms, cCBT resulted in small to moderate improvements in HRQOL relative to control groups (SMD 0.37 and 0.26 respectively).

- For patients with anxiety disorders and symptoms:
  - Treatment effects were large and consistent across trials of patients with generalized anxiety disorder (SMD -.94). Trials of panic disorder also had large treatment effects (SMD -1.08), but they were inconsistent across interventions. Heterogeneity in treatment effects was explained in part by the category of cCBT support.
  - Few trials evaluated the long-term treatment effects of cCBT interventions. The available evidence suggests that treatment effects are small at 6 months or longer.
  - In trials of generalized anxiety disorder and panic disorder, cCBT resulted in moderate improvements in HRQOL relative to control groups (SMD 0.57 and 0.49 respectively).
  - The evidence was insufficient to determine the effect of cCBT in patients with PTSD or in patients with anxiety symptoms who were not diagnosed with a specific disorder.
- Data are lacking on cCBT safety and adverse events and only 47 percent of trials reported effects on HRQOL.

We found at least moderate strength of evidence (SOE) that cCBT interventions improved symptoms to a greater degree than control conditions (usual care, waitlist, or attention controls) for depressive symptoms, major depressive disorder, generalized anxiety disorder, and panic disorder (Table 1). For the latter three conditions, the effects measured at end of treatment were large. For PTSD and anxiety symptoms, however, there were few trials, and our confidence in the estimate of treatment effect was low. Patterns were similar for effects on HRQOL. For the subset of trials in our systematic review that evaluated outcomes at 6 months or longer, treatment effects were smaller, but remained statistically significant.

The rate of adherence was low when compared with general estimates of treatment completion for major depressive disorder and generalized anxiety disorder. The limited adherence rates in clinical trials, where patients are often more adherent than in typical practice, are a concern for effective implementation of cCBT.

Table 1. Summary of the strength of evidence for KQ 1: cCBT compared with control at end of treatment by disorder

Outcome	Strength of Evidence Domains				Effect Estimate (95% CI)[a]	SOE
	Number of Studies (Patients)	Study Design/ Risk of Bias	Consistency Directness	Precision Publication Bias		
Adults with depressive symptoms						
Symptom severity	13 (3010)	RCT/Moderate	Inconsistent Direct	Precise None detected	SMD = -0.40 (-0.49 to -0.31)	Moderate
HRQOL	4 (1269)	RCT/Moderate	Consistent Direct	Precise None detected	SMD = 0.26 (0.11 to 0.41)	Moderate
Adults with major depressive disorder or dysthymia						
Symptom severity	11 (931)	RCT/Moderate	Consistent Direct	Precise None detected	SMD = -0.82 (-.98 to -0.67)	High
HRQOL	8 (941)	RCT/Moderate	Consistent Direct	Precise None detected	SMD = 0.37 (0.22 to 0.52)	High
Adults with generalized anxiety disorder						
Symptom severity	4 (321)	RCT/Low	Consistent Direct	Imprecise None detected	SMD = -0.94 (-1.34 to -0.54)	Moderate
HRQOL	3 (176)	RCT/Moderate	Consistent Direct	Imprecise None detected	SMD = 0.57 (0.27 to 0.87)	Low
Adults with panic disorder						
Symptom severity	7 (333)	RCT/Moderate	Consistent Direct	Imprecise None detected	SMD = -1.08 (-1.45 to -0.72)	Moderate
HRQOL	6 (250)	RCT/Moderate	Consistent Direct	Imprecise None detected	SMD = 0.49 (0.23 to 0.75)	Moderate
Adults with PTSD						
Symptom severity	2 (71)	RCT/Moderate	Consistent Direct	Imprecise None detected	No summary estimate. SMD range from -0.42 to -0.46	Low
HRQOL	1 (40)	RCT/Moderate	NA Direct	Imprecise None detected	No summary estimate. SMD = 0.60 (-0.04 to 1.23) from one study	Insufficient
Adults with anxiety symptoms						
Symptom severity	2 (132)	RCT/High	Consistent Direct	Imprecise None detected	No summary estimate. SMD range from -0.28 to -0.42	Low
HRQOL	0 (0)	NA	NA NA	NA NA	NA	Insufficient

a For symptom severity, a negative effect estimate favors cCBT; for health-related quality of life, a positive effect estimate favors cCBT.

Abbreviations: CI=confidence interval; HRQOL=health-related quality of life; NA=not applicable; PTSD=posttraumatic stress disorder; RCT=randomized controlled trial; SMD=standardized mean difference; SOE=strength of evidence

KQ 2: For cCBT interventions, what level, type, and modality of user support is provided (e.g., daily telephone calls, weekly email correspondence); who provides this support (e.g., therapist, graduate student, peer); what is the clinical context (primary intervention, adjunct); and how is this support related to patient outcomes?

Key Points

- Of the 57 cCBT intervention arms examined, 15 (26.3%) were classified as not supported, 26 (45.6%) were supported, 14 (24.6%) were supported with live features, and 2 (3.5%) were used as adjuncts to therapy.
- All but three studies allowed patients to access the program from a nonclinical location (e.g., home, library, or community facility), and an advertisement on the internet was the most common means of recruitment (53%).
- Most trials used email in some form (74%), while phone support by clinical staff (35%) and peer support via discussion board or chat room (25%) and were used less often. Instant messaging was used in a single study.
- The intervention components of studies classified as supported and supported with live features were highly variable, making firm conclusions difficult to draw.
- Exploratory subgroup analysis, using indirect comparisons, showed an association between higher levels of support and greater treatment effects. Two small studies directly compared different levels of therapist support and did not find a differential treatment effect.

Most of the cCBT interventions were accessed via the internet from nonclinical locations and were supported by a therapist. Approximately one-third included a peer support discussion board. The level of therapist support varied widely, ranging from minimal feedback on homework assignments via email to a full therapy session via instant messaging or a chat room format. In two studies, cCBT was used as an adjunct to face-to-face therapy, but for most interventions, cCBT was a standalone treatment. Exploratory subgroup analysis, using indirect comparisons, showed an association between higher levels of support and greater treatment effects. Two small studies directly compared different levels of therapist support and did not find a differential treatment effect.

KQ 3: For adults with depressive disorder, posttraumatic stress disorder, panic disorder, or generalized anxiety disorder, what are the effects of cCBT interventions compared with face-to-face therapy?

Key Points

- Only seven trials directly compared cCBT interventions with standard face-to-face therapy. Five trials used an internet-based platform, while two trials incorporated a computerized complement to face-to-face therapy.
- For patients with anxiety disorders or symptoms, only panic disorder had enough trials to provide a summary effect size. Evidence suggests that there is minimal difference between cCBT and face-to-face therapy for panic disorder (SMD -0.07; 95% CI, -0.34 to 0.21).
- For patients with depressive disorders or symptoms, more data are needed to evaluate the differential effect between cCBT and face-to-face therapy.
- No trials of this type were conducted in patients with PTSD.

Seven studies directly compared cCBT with face-to-face therapy (Table 2). Panic disorder was the only condition with more than two studies making this comparison, and these trials showed no difference in effects on symptom severity or HRQOL (moderate SOE). Two studies, a relatively large, high-quality trial and a smaller, fair-quality trial, found no difference in treatment effects for participants with depressive symptoms (low SOE). The sample size in the single pilot study on major depressive disorder was too small to determine SOE. Therefore, we conclude the current literature is generally insufficient for making a determination about whether the efficacy of cCBT is comparable to traditional, face-to-face therapy.

Table 2. Summary of the strength of evidence for KQ 3

Outcome	Strength of Evidence Domains				Effect Estimate (95% CI)[a]	SOE
	Number of Studies (Patients)	Study Design/ Risk of Bias	Consistency Directness	Precision Publication Bias		
Adults with depressive symptoms						
Symptom severity	2 (254)	RCT/Low	Consistent Direct	Imprecise None detected	No summary estimate. SMD range (0.01 to 0.06)	Low
HRQOL	0 (0)	NA	NA NA	NA NA	No studies	Insufficient
Adults with major depression or dysthymia						
Symptom severity	1 (26)	RCT/Moderate	NA Direct	Imprecise None detected	No summary estimate. SMD = -0.20 (-0.98 to 0.57) from one study	Insufficient
HRQOL	0 (0)	NA	NA NA	NA NA	No studies	Insufficient
Adults with panic disorder						
Symptom severity	4 (319)	RCT/Low	Consistent Direct	Imprecise None detected	SMD = -0.07 (-0.34 to 0.21)	Moderate
HRQOL	3 (239)	RCT/Low	Consistent Direct	Imprecise None detected	SMD = -0.07 (-0.34 to 0.21)	Moderate

a For symptom severity, a negative effect estimate favors cCBT; for health-related quality of life, a positive effect estimate favors cCBT.

Abbreviations: HRQOL=health related quality of life; NA=not applicable; RCT=randomized controlled trial; SMD=standardized mean difference; SOE=strength of evidence

CLINICAL AND POLICY IMPLICATIONS

The VHA will need to determine whether to offer commercially available cCBT programs to patients or develop its own programs. New programs could be tailored to a Veteran sample and could incorporate recent developments in treatment as well as be adapted for increasingly prevalent technologies such as smartphones. VHA should not underestimate the challenge of introducing different approaches to care delivery. Offering choice and meeting patient preferences is a patient-centered approach that has the potential to improve adherence and clinical outcomes. Alternatively, facilities might consider using cCBT in a stepped-care model that offers cCBT as a first-line psychotherapy for patients with mild to moderate illness. In this

model, patients who do not report benefit from cCBT could then be referred for face-to-face therapy. Effective implementation could be informed by research on these competing options.

Another implementation issue to address is the question of when, and for whom, should cCBT be offered. Our review suggests greater effects for patients meeting criteria for full disorders and mild to moderate symptom severity. Requiring a diagnosis and clinician referral to the program could ensure more careful diagnostic evaluations and closer followup. However, this approach could partially negate some of the advantages of the cCBT format, such as anonymity and overcoming time constraints and travel barriers.

Another consideration is how much therapist support to provide with cCBT treatments. Psychotherapy models identify the therapeutic alliance between patient and therapists as an important mechanism of achieving improved psychiatric symptoms. Based on indirect comparisons, we found a relatively consistent gradient showing greater treatment effects with greater support. However, very few studies evaluated more intensive human support for some conditions, and we were unable to isolate the specific features or degree of support associated with treatment benefit. Based on current evidence, we conclude that health systems implementing cCBT should include therapist support via email or brief telephone sessions, or both.

Finally, facilities implementing cCBT also need to consider the staffing needs for these interventions. The studies we reviewed did not provide reliable estimates of the panel size that a single therapist could support, but based on the median of approximately 13 to 15 minutes devoted to each patient weekly, a therapist supporting cCBT could provide care to a substantially larger cohort than those utilizing face-to-face therapy.

RECOMMENDATIONS FOR FUTURE RESEARCH

We used the framework recommended by Robinson et al. to identify gaps in evidence and classify why these gaps exist (Table 3). This approach considers PICOTS (population, intervention, comparator, outcomes, timing, and setting) to identify gaps and classifies them as due to (1) insufficient or imprecise information, (2) biased information, (3) inconsistency or unknown consistency, and (4) not the right information. Using this structure, we have identified gaps in evidence and propose study designs to address these gaps.VA and other healthcare systems should consider their clinical and policy needs when deciding whether to invest in research to address gaps in evidence.

Table 3. Evidence gaps and future research needs

Evidence Gap	Reason	Type of Studies to Consider
Patients		
Effects in patients with PTSD or anxiety symptoms	Insufficient information	Randomized controlled trials
Effects on access to care	Insufficient information	Observational studies to evaluate if cCBT users differ from users of traditional mental health services and changes in proportion of veterans with mental illness receiving evidence-based therapies
Identifying factors (such as severity, educational level) that predict successful treatment with cCBT	Insufficient information	Large trials, observational studies, or patient level meta-analysis
Interventions		
Optimal level of therapist support	Insufficient information Exploratory analysis suggest possible differential effect	RCTs or quasi-experimental studies of limited versus more robust therapist support
Optimal mode of support delivery, i.e., phone vs. email vs. chat-room, etc.	Insufficient information	Head-to-head comparisons of mode, duration and intensity of therapist support.
Amount of therapist support. i.e., frequency and duration of contact independent of mode	Insufficient information	Head-to-head comparisons of mode, duration and intensity of therapist support.
Optimal case-load for a therapist supporting cCBT interventions	Insufficient information	Time-in-motion or related study designs
Optimal mode of implementation, e.g., patient choice vs. stepped-care	Insufficient information	RCTs or quasi-experimental studies of patient choice versus cCBT first, then face-to-face therapy for nonresponders
Optimal platform (e.g., Web or mobile device) and interface design	Insufficient information: few studies of mobile devices; no detailed analysis of Web design features	RCTs, quasi-experimental, and single case experimental designs to test novel technology. Studies should contain multiple platform comparisons including web-only, web + mobile, web on mobile, and mobile-only. Also include various mobile features such as text messaging, video messaging, and mobile applications.
Comparator		
Effectiveness compared to in person treatment	Insufficient information	Trials with end or treatment and 6 to 12 month outcome assessments
Outcomes		
Effects on adherence rates	Insufficient information	Trials with 6- to 12-month outcome assessments
Durability of treatment effects beyond the end of treatment	Insufficient information	Trials with 6- to 12-month outcome assessments
Uncertain effects on adverse events and patient safety	Insufficient information	Multisite observational studies; patient registries

Abbreviation: cCBT=computerized cognitive behavioral therapy; PTSD=posttraumatic stress disorder; RCT=randomized controlled trial

CONCLUSION

We found moderate to strong evidence that cCBT is effective in improving short-term symptoms for mid-life patients with mild to moderate major depressive disorder, generalized anxiety disorder, and panic disorder. Treatment effects were smaller for patients with depressive symptoms. We found evidence suggesting that the level of therapist support was related to the magnitude of benefit, but additional head-to-head trials are needed to address this issue definitively. VA/DoD should consider this body of evidence when updating their clinical guidelines for depression and anxiety disorders.

ABBREVIATIONS TABLE

AHRQ	Agency for Healthcare Research and Quality
cCBT	computerized (or Web-based) cognitive behavioral therapy
cCBT-AT	cCBT-adjunct to therapy
cCBT-LS	cCBT-live support
cCBT-NS	cCBT-no support
cCBT-S	cCBT-supported
CI	confidence interval
DoD	Department of Defense
HRQOL	health-related quality of life
IMHS	Integrated Mental Health Strategy
KQ	Key Question
NA	not applicable
PRISMA	Preferred Reporting Items for Systematic Reviews
PTSD	posttraumatic stress disorder
QUERI	Quality Enhancement Research Initiative
RCT	randomized controlled trial
RD	risk difference
SMD	standardized mean difference
SOE	strength of evidence
VA	Department of Veterans Affairs
VHA	Veterans Health Administration