Evidence Synthesis in the Military Health System: Results from a Series of Systematic Reviews Evaluating Treatment for PTSD

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Background

To promote evidence-based healthcare, providers and policymakers rely on scientific evidence to inform decision-making. Systematic reviews are a key component in the knowledge translation process and function to translate the available research into evidence-based healthcare decisions to improve care. This presentation highlights the results from a series of systematic reviews that were conducted to advance the evidence base on the treatment of PTSD and comorbid conditions.

Methods

We completed three complementary systematic reviews of PTSD using methods consistent with Cochrane guidelines. Each review protocol was publically registered prior to initiation. We conducted electronic literature searches using comprehensive search terms across several applicable databases, and employed dual authors to screen, extract data, and rate the risk of bias across studies. We then performed meta-analyses to answer key questions. Wherever appropriate, we employed the GRADE approach to rate the quality of the evidence.

Results

We discuss results from three systematic reviews:

(1) Present Centered Therapy for PTSD;
(2) Predictors of PTSD Treatment Retention and Response;
(3) Sleep Management Treatments for PTSD.

Conclusions

Systematic reviews are used to inform and promote evidence-based practices and policies in the Military Health System. The results from the current series of systematic reviews can help advance care for the treatment of Service members with combat-related PTSD.

Present Centered Therapy for PTSD

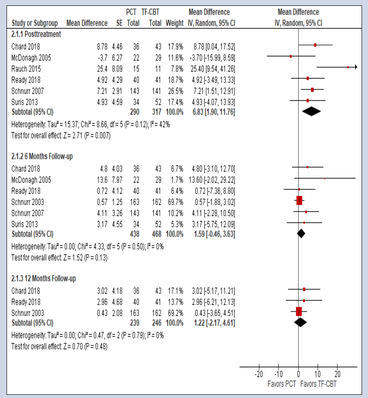
BACKGROUND: Present-centered therapy (PCT) is a non-trauma based, manualized psychotherapy for adults with PTSD. Recent trials indicate that PCT may be comparable to TF-CBT treatments in reducing PTSD symptoms and that patients receiving PCT may drop out of treatment at lower rates. The objectives of this review were to determine whether (1) PCT results in similar alleviation of symptoms relative to TF-CBT based on minimally important differences on clinician-rated PTSD assessments (10 points on the CAPS), and (2) PCT is associated with lower treatment dropout.

METHOD: The authors searched all RCTs that recruited adults with PTSD to evaluate PCT compared to TF-CBT. Both individual and group PCT modalities were included. The primary outcomes of interest included reduced PTSD severity as determined by a clinician-administered standardized measure and treatment dropout rates.

RESULTS

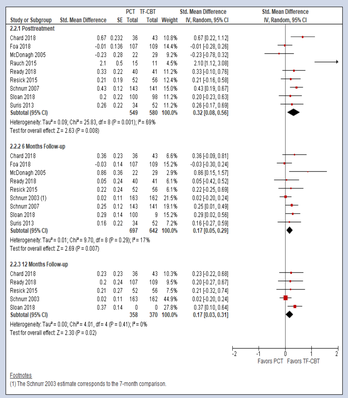
- Low quality of evidence did not support PCT as a non-inferior treatment compared to TF-CBT on post-treatment PTSD severity (MD 6.83, 95% CI 1.90 to 11.76; 6 studies, n = 607; I^2 = 42%).
- Results evaluating standardized mean differences supported this finding (SMD 0.32, 95% CI 0.08 to 0.56; participants = 1129; I^2= 69%).
- Treatment differences may attenuate over time.
- PCT has approximately 14% lower treatment drop-out rates compared to TF-CBT (RD -0.14, 95% CI -0.18 to -0.10; participants = 1542; studies = 10).

PCT vs TF-CBT: CAPS Mean Differences



Mean differences on post-treatment CAPS scores exceeded the non-inferiority threshold (6.8 point difference; 95% CI: 1.90 – 11.76).

PCT vs TF-CBT: Standardized Mean Differences



Standardized mean differences on post-treatment PTSD scores exceeded the *clinically meaningful* effect size threshold of 0.20.

DISCUSSION:

- PCT may not be as effective as TF-CBT in reducing posttreatment PTSD severity among adults with PTSD.
- PCT has lower treatment dropout rates compared to TF-CBT.
- The differential effects of PCT vs TF-CBT on PTSD severity may attenuate over longer time periods.

Predictors of PTSD Treatment Retention, Response, and Remission

BACKGROUND: Military Service members and veterans often drop out of PTSD treatment or may not fully respond to treatment. In order to match patients with the most appropriate interventions, it is important to know which intervention approaches and pre-treatment patient characteristics are predictors of treatment retention and response.

METHOD: The authors searched the electronic databases, as well as bibliographies of existing systematic reviews, to identify relevant English-language studies reporting treatment retention, response (change in severity of PTSD symptoms), and remission in active duty personnel and Veterans

RESULTS:

- 3,555 abstracts identified by electronic search were dual reviewed. Of these, 758 full texts were dual reviewed.
- 70 studies reported in 84 publications met inclusion for this review.
- Over one 100 patient characteristics and two dozen program characteristics were investigated across studies.
- Of those, 16 potential predictors of treatment retention and 24 potential predictors of treatment response were analyzed in at least two studies.

Predictors of PTSD Treatment Retention, Response, and Remission

Retention	Response	Remission
Older age was associated with better retention; *moderate quality evidence.* Service connected disability, depression, and lower treatment expectations were associated with drop-out; *low quality of evidence.* Anger, anxiety, sleep disruption, treatment history, exposure to atrocities or civilian trauma, and number of deployments were assessed as potential predictors of retention in only one study each, so no strong conclusions can be drawn. No studies of the relationship between alcohol use patterns or alcohol use disorder and retention in outpatient PTSD treatment were identified; this area warrants attention.	Length of stay in treatment was the strongest predictor of response; *high quality of evidence.* More severe PTSD at treatment entry was associated with more severe PTSD at treatment completion; *high quality evidence.* Worse baseline mental health, more combat experience, and participation in atrocities were associated with worse response to treatment; *moderate quality evidence.* Better physical health was associated with better response to treatment; *moderate quality evidence.* Individual therapy was associated with greater response than group therapy; *moderate quality of evidence.*	No predictors of remission during or after treatment were assessed in more than one study; no studies assessed remission more than one year after treatment entry. More studies in this area are needed; analyses of the Veterans Affairs national patient database are encouraged.

DISCUSSION:

- The review found several predictors of treatment retention and response, with moderate to high quality of evidence.
- Clinicians should take these predictors of treatment success into account during treatment planning.
- Several predictors lack adequate evidence and require more research. Treatment trials should more standardly report on post-treatment remission status.

Sleep Management Treatments for PTSD

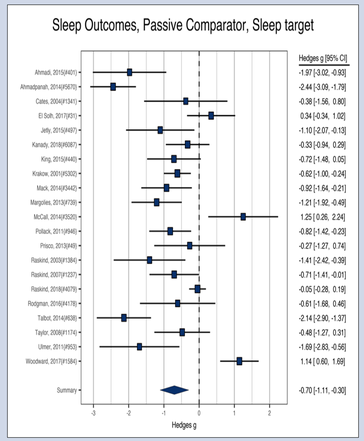
BACKGROUND: PTSD is a disorder characterized by several symptoms, including sleep disturbances. The purpose of the systematic review was to synthesize the evidence from RCTs on the effects of interventions for adults with PTSD on sleep outcomes.

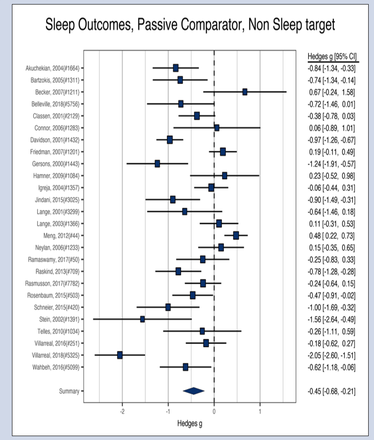
METHOD: Full text reports of RCTs evaluating interventions in patients with PTSD were screened for sleep outcomes. We reviewed sleep quality, insomnia, and nightmare measures.

RESULTS

- 83 RCTs met inclusion criteria. Identified interventions included pharmacological, psychological, and complementary and integrative medicine treatments.
- Interventions showed a medium effect on sleep (standardized mean difference [SMD] PSQI -0.71, CI -1.08, -0.35)
- Interventions explicitly aimed at improving sleep did not systematically report better treatment outcomes for patients with PTSD compared to interventions aimed at treating PTSD (p=0.33).

Effects of Interventions Explicitly Targeting Sleep Compared to General PTSD Treatments on the Pittsburgh Sleep Quality Index





In a meta-regression, interventions explicitly targeting sleep did not show better sleep outcomes than general PTSD treatments, SMD = -0.24, 95 CI -0.07 to 0.25.

DISCUSSION

- Interventions that explicitly target sleep disturbances among patients with PTSD are effective.
- PTSD interventions that do not explicitly target sleep disturbances also demonstrate effectiveness in improving sleep symptoms.
- General PTSD interventions may not differ in their effects on sleep symptoms relative to treatments targeting sleep problems.

Poster presented at the San Antonio Combat PTSD Conference in October 2019. For more information, please contact bradley.e.belsher.civ@mail.mil. The views expressed in this presentation are those of the authors and do not necessarily represent the official policy or position of the Psychological Health Center of Excellence, Department of Defense, Department of Veterans Affairs, or any other US government agency. UNCLASSIFIED