Evidence Compass

Summary Report

What are effective interventions for veterans with sleep disturbances?

Summary of the Rapid Evidence Assessment

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Department of Veterans' Affairs

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Please forward any comments or queries about this report to at-ease@dva.gov.au

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Executive Summary

- Insomnia and related sleep disturbances commonly occur in veterans, with prevalence rates as high as 90% in some studies. Driving factors behind high rates of sleep disturbances in veterans include disruptions to sleep patterns as a result of a military career, in particular on deployment. The high rate of psychiatric comorbidity amongst veterans also plays a role in the prevalence of sleep disturbance.

- The aim of this rapid evidence assessment (REA) was to review effective interventions for veterans with sleep disturbances.

- Literature searches were conducted to collect studies published from 2004-2014 that investigated the efficacy of interventions for sleep problems in veterans. Studies were excluded if they did not have a majority sample of veterans, did not have sleep outcome measures, or if inclusion criteria did not specify sleep disturbances/disorders. Studies were assessed for quality of methodology, risk of bias, and quantity of evidence, and the consistency, generalisability and applicability of the findings to the population of interest. These assessments were then collated for each intervention to determine an overall ranking of level of support for each intervention.

- The ranking categories were ‘Supported’ –clear, consistent evidence of beneficial effect; ‘Promising’ – evidence suggestive of beneficial effect but further research required; ‘Unknown’ – insufficient evidence of beneficial effect; ‘Not supported’ – clear, consistent evidence of no effect or negative/harmful effect.

- Eighteen studies met the inclusion criteria for review. All studies originated from the United States except for a single study from Israel.

- The majority of the studies investigated the effectiveness of cognitive behavioural therapy for insomnia (CBTi; n= 10). Five studies investigated CBTi with an adjunctive psychotherapy, typically for PTSD-related sleep disturbances. One further study investigated sleep hygiene education (a component of CBTi) with pharmacotherapy. Two final studies investigated hypnotherapy and mind-body bridging, respectively.

- The key findings were that:

    - The evidence for CBTi as an intervention for veterans with sleep disturbances received a ‘Promising’ ranking.

  - The evidence for CBTi with an adjunctive psychotherapy for PTSD-related sleep disturbances as an intervention for veterans with sleep disturbances received a 'Supported' ranking.
  - The evidence for sleep hygiene education with adjunctive pharmacotherapy as an intervention for veterans with sleep disturbances received an 'Unknown' ranking.
  - The evidence for alternative psychological interventions (hypnotherapy and mind-body bridging) for veterans with sleep disturbances both received 'Unknown' rankings.

- This REA found that CBTi with adjunctive psychotherapy to treat PTSD-related sleep disturbances currently has the greatest level of support from the evidence, for the treatment of insomnia in veterans. CBTi alone was ranked as a promising intervention, but requires further well-conducted trials to confidently establish its efficacy for veterans.
- There is currently insufficient evidence to support the use of sleep hygiene education and pharmacotherapy, hypnotherapy, or mind-body bridging in the treatment of insomnia in veterans.
- Future research should address how to maximise clinical gains from CBTi while minimising cost and time factors to best suit the unique needs of veterans. Alternative psychological interventions need ongoing research to establish their effectiveness.

Background

Sleep disturbances (including diagnosed insomnia) involve problems with falling asleep, staying asleep, and having refreshing sleep, with profound negative impacts on an individual's quality of life[1]. Incidence of sleep disturbances and/or insomnia are extremely high in veterans, affecting up to 90% in some studies[2]. Various military factors, including training, deployment, military attitudes towards sleep and subsequent psychiatric problems related to military service can cause sleep disturbances in veterans[3-6].

The aim of the current review was to examine the scientific literature for evidence of effective interventions for veterans with sleep disturbances. It is important to note that guidelines and several systematic reviews exist for the treatment of insomnia in adults[7-12] however; there

were no specific guidelines or systematic reviews pertaining to the treatment of sleep disturbances and/or insomnia in veterans specifically. Findings from civilian adult populations may not necessarily apply to veterans, who differ from community samples in several ways, including higher rates of psychiatric disorders and military-related causes of sleep disturbances. As such, veterans with sleep disturbances may differ in response to treatment compared to a community population. A brief overview of the current interventions used for the treatment of sleep disturbances in veterans is presented below.

Types of interventions

Cognitive behavioural therapy for insomnia (CBTi) is typically used as a multimodal intervention, and can include one or any combination of several components designed to increase levels of relaxation at bedtime, increase knowledge about poor and conducive sleep time behaviours, decrease behaviours that contribute to poor sleep, develop positive associations between bedtime and sleep, and improve negative thoughts about sleep[13].

CBTi can be combined with adjunctive psychotherapies for PTSD-related sleep disturbances such as **imagery rehearsal therapy (IRT)** and variants such as **exposure, relaxation and rescripting therapy (ERRT)**. These additional psychotherapies target the nightmares associated with PTSD and the fear that can become associated with sleep time by targeting the distressing nature of nightmares.

Alternative therapies to CBTi include **hypnotherapy**, which attempts to induce an altered state of consciousness in an individual in order to change their behaviours and **mindfulness-based therapies** which focus on the connection between the mind and the body.

Pharmacotherapy, used in conjunction with psychotherapy, is a common treatment for sleep disturbances however, there are side effects associated with their use.

Evaluating the evidence

Assessment of the evidence was based on the following criteria:

- the **strength of the evidence base** which incorporated the quality and risk of bias, quantity of the evidence (number of studies), and level of the evidence (study design)
- the **consistency** across studies
- the **generalisability** of the studies to the target population

- the **applicability** to an Australian context.

Ranking the evidence

Eighteen studies met the inclusion criteria for the current review.After the evidence was evaluated, the studies were ranked as follows:

SUPPORTED	PROMISING	UNKNOWN	NOT SUPPORTED
CBTi with adjunctive psychotherapies for PTSD-related sleep disturbances	CBTi	Sleep hygiene education with adjunctive pharmacotherapy Hypnotherapy Mind-body bridging	

'**Supported**' means there was clear and consistent evidence of a beneficial effect of the intervention; '**Promising**' means the evidence was suggestive of beneficial effect, but requires confirmation with additional evidence/research; '**Unknown**' is defined as insufficient evidence at present on whether or not to support the use of this intervention, or additional evidence is required to determine efficacy of intervention; **'Not supported'** is defined as evidence suggesting that the intervention does not have an effect, or produces a harmful effect when implemented.

Implications for policy makers and service delivery

There is good evidence for the use of CBTi or CBTi combined with psychotherapies to treat PTSD-related sleep disturbances to treat veterans. However, the exact component(s) of CBTi or the specific combinations that are most effective remain unknown. Further dismantling studies are needed to determine which components of this multimodal intervention are most effective in treating veterans with sleep disturbances. There are clear, practical benefits of such an undertaking, as there are higher cost and time factors associated with certain CBTi components. For example, the cognitive therapy component of CBTi requires extensive training and should be implemented by appropriately trained mental health professionals, whereas the behavioural/educational aspects of CBTi are relatively

straightforward education components that can be delivered by most healthcare providers. Additionaly, the review found that studies that implemented a single or few components of CBTi showed significant improvements to sleep disturbances, just as studies that implemented the entire CBTi protocol did. The differences in the cost and time factors between implementing single or few components compared to the entire CBTi protocol is substantial. Therefore, it would be useful for a future study to investigate whether the *differences* in improvements of sleep disturbances between groups who undergo different components of CBTi are clinically significant. This is particularly pertinent given that veterans can be a difficult population to engage and retain in treatment, meaning that more cost-effective, shorter interventions are highly desirable treatment options. Despite uncertainty around the efficacy of individual CBTi components, the consistency in improvements to sleep across modalities for CBTi studies (e.g., group; individual; brief; use of electronic aids) indicate that the treatment itself is fairly adaptable and effective in several modes. Given the target population of veterans, who may be remotely located from service providers, limited in mobility, and have a varying range of treatment preferences, the findings indicating high adaptability of CBTi in treating veterans are promising. However, this was not systematically explored, and simply a pattern observed across studies, so these findings should be taken cautiously and re-assessed in light of future studies.

Despite the effectiveness of CBT-i for the treatment of sleep disturbance in veterans, recent research has found that veterans prefer pharmacotherapy, or alternative psychological interventions such as relaxation or mindfulness, to CBTi[14]. Potential reasons for this preference include the ‘quick-fix’ appeal of pharmacotherapy, the anxiety reducing aspect of relaxation therapies, and avoidance of the stigma associated with psychotherapy.

Researchers suggest that the negative attitudes held by veterans towards psychotherapy may be based on archaic stereotypes around what traditional psychotherapeutic treatment entails and its efficacy[15]. In contrast, non-traditional therapies that do not suffer from the psychotherapy stereotype of “talking” therapy may not suffer similar levels of stigma. In light of this research, efforts to increase the uptake of effective interventions for sleep may benefit from de-emphasizing CBT-i as psychotherapy and promoting it as brief self-help sleep strategies. This research also highlights the importance of continuing to investigate the effectiveness of alternative psychological interventions for sleep disturbance, that may be preferred by veterans. Despite veterans’ preference for pharmacotherapy in treating sleep disturbances[14], the significant side effects mean that pharmacotherapy alone is not a long-term solution.

Conclusion

Sleep disturbance is highly prevalent in veterans, with and without mental health problems and should be a priority for treatment, given the positive effects on overall mental health of improved sleep. This review found that effective treatments for veterans with PTSD-related sleep disturbance are available and there are promising treatments for all veterans with insomnia. However further research dismantling the components of CBT-i is needed to identify which are the critical components. Such research has the potential to lead to brief, targeted and accessible treatments that overcome the time and stigma related barriers to care that have been identified in previous research.

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