Virtual Reality Exposure Therapy: An Effective Solution for Military Personnel with Post Traumatic Stress Disorder

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ABSTRACT

Background: Post traumatic stress disorder (PTSD) is a chronic, debilitating, psychological condition that occurs in a subset of individuals who experienced or witnessed life-threatening events [1]. Higher levels of PTSD are found among veteran populations [2]. Virtual reality exposure therapy (VRET) has been identified as an effective treatment for PTSD because it facilitates emotional engagement and intervention with the patients’ traumatic memory [3].

Purpose/Objectives: This review aims to examine the effects of VRET on military personnel diagnosed with PTSD. The purpose of this study is to determine whether VRET, as an emerging method of treatment, is effective at decreasing PTSD symptoms.

Methods: A structured literature review was conducted to analyze the effectiveness of VRET as a treatment for PTSD in military personnel. Peer-reviewed, English-only studies were obtained from the Academic Search Complete database and assessed for quality and relevance before inclusion. The following keywords were used: “virtual, "post traumatic stress disorder" and "exposure therapy.”

Results: The initial literature search results produced 43 peer-reviewed articles. 8 articles met the inclusion criteria as they directly related to the population, intervention and outcomes under study. All 8 studies found VRET to have a statistically significant effect on PTSD symptoms.

Conclusions: The literature shows limited evidence on the effectiveness of VRET for the treatment of PTSD. Further research is needed with larger samplesizes to demonstrate its efficacy towards treating PTSD.

METHODS

RESULTS

Table 1. Summary of results and limitations of articles

<table>
<thead>
<tr>
<th>Study</th>
<th>Statistical Analysis</th>
<th>Primary Findings</th>
<th>Limitations</th>
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</thead>
<tbody>
<tr>
<td>Geradi et al., 2008</td>
<td>Paired and post test analyses</td>
<td>CAPS score decreased by 6% from baseline to 3 months follow-up</td>
<td>Small sample size; no control group</td>
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<tr>
<td>Roy et al., 2014</td>
<td>Paired and post test analyses</td>
<td>Significant reduction in PCL score from baseline to 3 months follow-up</td>
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DISCUSSION

Virtual reality exposure therapy encompasses a range of behavioural and cognitive approaches that help military service personnel to confront stimuli associated with their traumatic experience [5]. This approach allows the therapist to identify and neutralize behavioural cues associated with PTSD. The studies analyzed demonstrated the efficacy of VRET in military personnel. The results of the VRET studies show promising outcomes in terms of decreasing PTSD symptoms in Iraq (I) and Afghanistan (A) military service personnel. 80% of the treatment showed both statistically and clinically meaningful reductions in PTSD, anxiety, and depression symptoms. Patient reports suggested that they experienced improvements in their activities of daily living [4]. VRET facilitates as a cognitive reconstruction of maladaptive beliefs and practices that are associated with PTSD.

CONCLUSION

The results from uncontrolled trials and case reports are difficult to generalize and make claims about the effectiveness of VRET [4]. In general under the supervision of a trained therapist, the simulated trauma is found to be an effective method to decrease PTSD and anxiety symptoms [3]. However, large scale longitudinal studies are needed to explore the effectiveness of VRET in the long term. The findings can be used to develop, explore, and test hypotheses as to how to improve current treatment. Additionally, to determine patient characteristics that may predict who will complete and benefit from VRET and who may be best served by traditional therapeutic means [4]. The need to reduce the stigma of seeking mental health treatment in military personnel is important for treatment attrition rates [4]. VRET may improve overall attraction and promote treatment seeking by certain demographic groups in need of care, such as the current generation of young military personnel [4].