PTSD is a mental health disorder that may develop in individuals after exposure to extremely traumatic events, such as combat, crime, an accident, or a natural disaster.

Individuals with PTSD suffer substantial social and interpersonal problems, as well as impaired quality of life stemming from the long-term presence of the intrusive, avoidance and hyperarousal symptoms that characterize the disease.

Patients who experience distressing memories or thoughts of the traumatic event for more than a month may be diagnosed with PTSD.

How does mindfulness-based stress reduction, in addition to standard care, affect patient reported quality of life outcomes in veterans with post-traumatic stress disorder (PTSD) compared to those treated with standard care alone?

**PICO Question**

**Introduction**

- PTSD affects about 20% of US combat veterans.
- It is a major cause of mortality, and the suicide rate amongst veterans is as high as 8,000 per year.
- Nearly half of veterans with PTSD or depression have not obtained mental health assistance, and fewer than half have acquired sufficient treatment.
- Mindfulness is an integrative, mind-body based approach that helps people change the way they think and feel about their experiences.
- Mindfulness through meditation, breathing techniques, and yoga, involves consciously bringing awareness to thoughts and feelings, without making judgments, allowing the individual to better able to manage them.

**Background**

- Mindfulness-based stress reduction has an overall positive impact on health-related quality of life and stress reduction among individuals with PTSD.
- Use RCT format, its control of TAU between the groups, as sample size, and its use of multiple measures with high validity and reliability.
- Use of validated tools in diagnosing PTSD and tracking quality of life

**Results**

<table>
<thead>
<tr>
<th>Author of Article</th>
<th>Level of Evidence</th>
<th>Study Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormann et. al.</td>
<td>Level I</td>
<td>The MRP intervention (specifically, mantra practice), improved mindful attention in veterans with PTSD, yielding improved overall psychological well-being. MRP may be a beneficial adjunct to usual care in veterans with PTSD.</td>
</tr>
<tr>
<td>Gallegos et. al.</td>
<td>Level I</td>
<td>No differences between intervention types, study population, outcome measures, or control condition. Significant higher effect size (ES) for sample size &gt;30 (ES = 0.78, k = 5).</td>
</tr>
<tr>
<td>Hashemiet et. al.</td>
<td>Level II</td>
<td>Increase in QOL and for the experimental group in both post-test and delayed post-test. Significant increase in quality of life in veterans suffering from PTSD treated with MBSR.</td>
</tr>
<tr>
<td>Kearney et. al.</td>
<td>Level II</td>
<td>Intention-to-treat analyses found no reliable effects of MBSR on PTSD or depression. Mental HRQOL improved posttreatment but no reliable effect at 4 months. At 4-month follow-up, more veterans randomized to MBSR had clinically meaningful change in mental HRQOL and PTSD symptoms.</td>
</tr>
<tr>
<td>Bremner et. al.</td>
<td>Level III</td>
<td>Patients with previously increased anterior and inferior parietal lobules had improved PTSD symptoms after MBSR, measured with both CAPS and FFMQ. After 6 mos. of treatment, patients showed a differential brain response, with a decreased insula and precuneus functions in response to traumatic responses compared to the PCGT group.</td>
</tr>
<tr>
<td>King et. al.</td>
<td>Level III</td>
<td>MBCT group had significantly reduced PTSD symptoms pre- vs post MBCT as assessed by CAPS in both intent-to-treat and complete analyses. 75% of patients in MBCT (compared to 33% in TAU groups) showed clinically meaningful improvement and significantly greater reduction in CAPS than TAU group.</td>
</tr>
<tr>
<td>Mostafa et. al.</td>
<td>Level III</td>
<td>An 8-week intervention involving adjunct MBCT improved symptoms of PTSD, depression, anxiety, and stress among veterans with PTSD, compared to a control condition. MBCT seems particularly efficient as a brief psychotherapeutic intervention.</td>
</tr>
<tr>
<td>Stephenson et. al.</td>
<td>Level IV</td>
<td>Increases in mindfulness were significantly associated with reduced PTSD symptoms and most strongly related to decreases in Hyperarousal and Emotional Numbing. Increases in Acting With Awareness and Non-Reactivity were the facets of mindfulness most strongly and consistently associated with reduced PTSD symptoms.</td>
</tr>
<tr>
<td>Khephlet et. al.</td>
<td>Level V</td>
<td>Scores on the Perceived Stress Scale (p = .002) and Beck Depression Inventory (p = .005) were significantly reduced (p = .002). The global measure for sleep from the Pittsburgh Sleep Quality Index improved significantly (p = .035) Satisfaction and compliance were high.</td>
</tr>
<tr>
<td>Stankovic et. al.</td>
<td>Level VI</td>
<td>Upon completion of Integrative Restoration (Rest) classes, the participating 11 military combat veterans suffering from PTSD reported reduced rage, anxiety, and emotional reactivity, and increased feelings of relaxation, peace, self-awareness, and self-efficacy, despite challenges with mental focus, intrusive memories, and other concerns.</td>
</tr>
</tbody>
</table>

**Strengths**

- Mindfulness-based interventions had an overall positive impact on health-related quality of life and stress reduction among individuals with PTSD
- Use RCT format, its control of TAU between the groups, as sample size, and its use of multiple measures with high validity and reliability
- Use of validated tools in diagnosing PTSD and tracking quality of life

**Analysis**

**Weaknesses**

- Small sample sizes and pilot studies were used
- Lack of strict criteria for those seeking PTSD treatment beyond that they are veterans with diagnosed PTSD
- Liability to verify baseline PTSD severity
- Included a low number of female participants
- Admission rates were not included
- Lack of follow-up results and studies on residual symptoms

**Summary**

- A systematic search was performed for scientific articles using CINAHL, Cochrane Reviews, and Pubmed.
- Keywords used: "mindfulness, veterans, PTSD, and MBSR"

- The studies looked at different forms of MBSR, including mantra repetition practice, yoga, mindfulness -based cognitive therapy, breathing exercises, sitting meditation, breathing meditation, and body awareness training.
- With the exception of Bremner's PET CT scan, which would not be feasible nor ethical given our population, these interventions are low risk, cost effective due to the minimal clinic space and clinician time requirement, minimally time intensive with an average of 4 -8 weeks of participant training, and can be easily implemented in a practice setting.
- MBSR is therefore highly recommended as an adjunct treatment option in treating veterans with PTSD.

**Recommendations for Future Studies**

- Conduct more studies based on well -designed randomized controlled trials and larger sample sizes
- Explore a greater variety of integrative mind -body intervention modalities in the treatment of PTSD
- Apply stricter criteria on studies, for example, non -sexual related military PTSD, no prior drug use for treatment of PTSD, a specified age range or length of diagnosis, etc.

**Search Technique/Methods**

- Keywords used: "mindfulness, veterans, PTSD, and MBSR"

**References**

References furnished upon request. Please contact llypan@ucdavis.edu