CITATION
Meditation-Based Mantram Intervention for Veterans With Posttraumatic Stress Disorder: A Randomized Trial

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Few complementary therapies for posttraumatic stress disorder (PTSD) have been empirically tested. This study explored the efficacy of a portable, private meditation-based mantram (sacred word) intervention for veterans with chronic posttraumatic stress disorder. A prospective, single-blind randomized clinical trial was conducted with 146 outpatient veterans diagnosed with military-related PTSD. Subjects were randomly assigned to either (a) medication and case management alone (i.e., treatment-as-usual [TAU]), or (b) TAU augmented by a 6-week group mantram repetition program (MRP + TAU). A total of 136 veterans (66 in MRP + TAU; 70 in TAU) completed posttreatment assessments. An intent-to-treat analysis indicated significantly greater symptom reductions in self-reported and clinician-rated PTSD symptoms in the MRP + TAU compared with TAU alone. At posttreatment, 24% of MRP + TAU subjects, compared with 12% TAU subjects, had clinically meaningful improvements in PTSD symptom severity. MRP + TAU subjects also reported significant improvements in depression, mental health status, and existential spiritual well-being compared with TAU subjects. There was a 7% dropout rate in both treatment conditions. A meditation-based mantram repetition intervention shows potential when used as an adjunct to TAU for mitigating chronic PTSD symptoms in veterans. Veterans may seek this type of treatment because it is nonpharmacological and does not focus on trauma. It also has potential as a facilitator of exposure-based therapy or to enhance spiritual well-being. More research is needed using a longitudinal effectiveness design with an active comparison control group.

Keywords: meditation, mindfulness, posttraumatic stress disorder, quality of life, spiritual well-being

More than 2 million men and women have been deployed to Iraq and Afghanistan, and prevalence estimates indicate nearly 15% meet diagnostic criteria of posttraumatic stress disorder (PTSD; Schnurr et al., 2010). The prevalence of PTSD among these returning soldiers is consistently rising, according to data from 2002 to 2008 indicating that the rate of PTSD has increased from 0.2% to 21.8% (Shiner, 2011). Current prevalence of PTSD among all treatment-seeking veterans at the Veterans Health Administration (VHA), regardless of trauma type, is estimated at 25% (Schell & Marshall, 2008).

Standard treatments for PTSD include medication, prolonged exposure therapy, cognitive processing therapy, eye-movement desensitization and reprocessing, relaxation training, and combinations of these (Bradley, Greene, Russ, Dutra, & Westen, 2005; Foa, Hembree, & Rothbaum, 2007; Foa, Keane, & Friedman, 2000). Not all veterans elect or respond to these treatments, however. There is evidence that West for study implementation; Sheryl Becker, RN, MS, and Laureen Pada, RN, MS/MBA, for quality control. There are no competing conflicts of interest, financial or otherwise, by any of the authors above. Portions of this study were presented as a poster at the 2009 Health Services Research & Development National Meeting held February 11-13, 2009, in Baltimore, MD. This study was registered with clinicaltrials.gov, identifier NCT00120627: http://www.clinicaltrials.gov/ct2/show/NCT00120627?term=Mantram+repetition&rank=1.

The views in this article are those of the authors and do not necessarily represent the views of the Department of Veterans Affairs or the United States government.

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trauma-focused therapies have a dropout rate as high as 21% (Hembree & Foa, 2003) and a nonresponse rate as high as 50% (Schottenbauer, Glass, Armkoff, Tendick, & Gray, 2008). Only half of those who need treatment are actually seeking it (Tanielian, 2008). One reason is the stigma of mental illness (Hoge, Auchterlonie, & Miliken, 2006; Hoge et al., 2004). Therefore, developing less-stigmatizing therapies for PTSD treatment is needed.

Mediation-based interventions are considered complementary therapies, not conventional medicine (National Institutes of Health, National Center for Complementary and Alternative Medicine, 2010, 2011). Therefore, they offer an alternative to traditional medicine and may be more acceptable to veterans, but few have been empirically tested for PTSD. Meditation has been defined as both a practice (i.e., method or technique) and as a state of being (Ospina et al., 2007). Operational definitions of meditation fall into three common categories: (a) object-focused or concentrative meditation, (b) open-monitoring or moment-to-moment meditation (Lutz, Slagter, Dunne, & Davidson, 2008), and (c) transcendental meditation (TM; Travis & Shear, 2010). Concentrative meditation is focusing attention upon a single object, such as the breath, word or mantra, or image. When attention wanders, it is returned to the object with awareness but without judgment. Open-monitoring meditation is focusing attention on thoughts, feelings, or sensations as they arise, and also labeling them without judgment. Both methods result in increased mindfulness. TM, however, encourages an effortless focus on a mantra while sitting during set periods of time, but the goal is “automatic self-transcending,” described as rising above one’s own conscious activity.

Mindfulness has been conceptualized as a twofold process of focusing attention on what is happening in the moment and developing nonjudgmental acceptance of the experience (Baer, 2003). Mindfulness has been linked to decreased symptoms of anxiety and depression (Kabat-Zinn et al., 1992; Segal, Williams, & Teasdale, 2002; Vujanovic, Niles, Pietrefesa, Schmertz, & Potter, 2011); therefore, it would be logical that it might help veterans better engage in PTSD treatments by increasing their awareness, tolerance, and acceptance of distressful symptoms (Vujanovic et al., 2011).

The mantram repetition program (MRP) is a portable meditation-based intervention that teaches three tools for training attention and regulating emotion (Wadlinger & Isacowitz, 2011). The first tool, a form of concentrative meditation, is silently repeating a word or a phrase called a mantra. “Mantra,” rather than “mantra,” is used to differentiate the MRP from other forms of meditation (Easwaran, 2008). A mantra is a sacred, powerful word or phrase (e.g., Ave Maria, Shalom, So Hum, my God and my all, O Wakan Tanka, Ribono Shel Olam) to be repeated silently throughout the day as a means of training attention and raising awareness. It differs from secular forms of meditation because it emphasizes spirituality and one’s inner spiritual resources.

Spirituality is defined as a search for the sacred, and for meaning and purpose in life (Pargament & Sweeney, 2011). Spirituality, a unique aspect of the MRP, is not to be confused with religion, which can be defined as a set of rules, beliefs, and practices that are commonly linked to a community or a place (Koenig, McCullough, & Larson, 2001). Research evidence shows that spiritual meditation has greater health-related benefits than secular meditation (Bernardi et al., 2001; Wachholtz & Pargament, 2006, 2008). For those veterans who find trauma-focused therapies counterproductive, the process of redirecting attention may be used as a form of constructive distraction for managing PTSD symptoms (Vujanovic et al., 2011).

The second tool taught in MRP is slowing down, which refers to thinking or acting deliberately, intentionally, and carefully. Slowing down allows time for self-reflection, raising awareness, and setting priorities. It complements mantram repetition and may be an antidote to an individual’s subjective feeling of time pressure.

The third tool is one-pointed attention, the opposite of multitasking. It involves the awareness of having a choice to purposefully concentrate on one thing or do one thing at a time. One-pointed attention is first practiced internally by focusing on a mantra and then later applied to focusing externally on one thing (i.e., listening to others, doing a chore, completing paper work, eating a meal). Similar to mindfulness, one-pointed attention, slowing down and repeating a mantram allow time to pause and one to be aware or mindful of the present without judgment.

These tools are believed to work synergistically over time to interrupt negative thoughts, and to manage unwanted thoughts and emotional states such as anger, rage, irritability and hyperarousal. Mantram practice is encouraged as often as possible, especially during nonstressful times, so it becomes automatic. Mantram repetition is different from a sitting meditation (TM) because it is portable (does not require a special place to perform), covert (private), and convenient (can be done anytime and anywhere). Mantram repetition is to be used to manage stressful experiences at the time they occur, but it has been reported as useful in anticipation of stressful events, such as entering a crowd or driving on the freeway. It directs attention away from negative thoughts in advance, thereby reducing emotional distress.

Research on mantram repetition has shown that it results in decreased stress in community-dwelling adults (Wolf & Abel, 2003), health care employees (Bormann, Becker, et al., 2006; Yong, Kim, Park, Seo, & Swinton, 2011), veterans with chronic illnesses (Bormann, Oman, et al., 2006; Bormann et al., 2005) and adults with HIV (Bormann, Gifford et al., 2006). In a feasibility study, veterans with military-related trauma who completed the MRP demonstrated significant improvements in PTSD symptoms, psychological distress, quality of life, and spiritual well-being compared with wait-list controls (Bormann, Thorp, Wetherell, & Golshan, 2008).

The current study was a prospective, single-blind, randomized trial with an additive intervention design consisting of two groups: MRP plus treatment as usual (TAU) versus TAU alone and two time points (pre- and posttreatment). A third time point (6-weeks posttreatment) was assessed in the MRP group to assess change over time. The primary hypothesis (H1) was that veterans in the experimental (MRP + TAU) group, compared with TAU controls, would have significantly greater reductions in self-reported and clinician-assessed PTSD. Exploratory analysis was used to examine PTSD symptom clusters. Secondary hypotheses were that the MRP + TAU group would have significantly greater reductions in anxiety and depression (H2), and significantly greater improvements in mental-health-related quality of life and spiritual well-being (H3).
Method

The study was conducted at a Veterans Affairs (VA) outpatient PTSD clinic in southern California. Human subject approvals were obtained from the VA Health Care System and associated university. Subjects were recruited using flyers and brochures, and the study coordinator attended PTSD clinic group orientations to invite volunteers (see Figure 1). Subjects were compensated up to $80 for time and travel.

Participants

Participants were outpatient veterans who reported having experienced trauma during military duty and who had sought care at one of the VA clinics. Inclusion criteria included being 18 years or older, having PTSD diagnosis confirmed by the medical record and the Clinician Administered PTSD Scale (CAPS; Weathers, Keane, & Davidson, 2001), and having achieved sobriety for at least two months per self-report that was confirmed by PTSD clinicians.

Exclusion criteria included unmanaged psychotic or bipolar disorder (during past year), dementia, or severe suicidal ideation assessed by the Mini-International Neuropsychiatric Interview (MINI; Sheehan et al., 1998). Study assessors reviewed computerized records and collected self-reports on medication use to determine that all subjects had been on stable types and doses of psychotropic medications for at least two months before joining the study. Written informed consent was obtained by the study coordinator. Subjects were randomly assigned to conditions using a concealed table of computer-generated random numbers. Subjects were asked not to participate in other PTSD treatments during the 6-week intervention phase of the study, and the number of provider visits and changes in medication were monitored and validated by chart review.

TAU Control Group

TAU consisted of case management, as needed, to evaluate mental health status and to monitor treatments. For example, case managers asked about current problems (e.g., insomnia, nightmares, hyperarousal, and social withdrawal) and adherence to medication regimens. Case managers also planned future therapy for PTSD, if necessary.

MRP + TAU Group

The MRP intervention was delivered to augment TAU in six 90-min weekly group sessions (called “classes” to minimize the potential stigma of “group therapy”) by two expert master’s-level psychiatric/mental health nurses. Each class was attended by three to nine veterans. Every class included lectures, discussion, sharing, questions and answers, and homework from The Mantram Handbook (Easwaran, 2008) and a course manual. In the first class, facilitators gave an overview of PTSD, and instructions on how to choose and use a mantram to train attention. In the second class, subjects shared experiences and facilitators highlighted ways to repeat a mantram to manage PTSD symptoms. Tracking diaries, for adherence, were distributed. In the third class, the stress response and ways to use mantram to slow down and to interrupt emotional reactivity were outlined. The fourth class introduced one-pointed attention for routine tasks and one-pointed listening to improve relationships. The fifth and sixth classes reviewed how to use all tools synergistically, how to maintain practice, and how to make

Figure 1. Flow diagram of study enrollment. CAPS = Clinician-Administered PTSD Scale.
mantram repetition a habit. More detail can be found in Bormann, Oman, et al. (2006).

Measures

Baseline (pretreatment) measures included demographic information and measures of PTSD (self-reported and clinician-rated), depression, anxiety, quality of life, and spiritual well-being. Subjects in the MRP + TAU condition were also asked to report weekly adherence to the intervention and satisfaction with the treatment.

Clinician-Administered PTSD Scale (CAPS). The CAPS is the “gold standard” semistructured interview for determining PTSD diagnosis and symptom severity (Weathers et al., 2001). The CAPS was designed to assess PTSD symptoms as defined in the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000), including 17 core items representing each of three factors: Criterion B (reexperiencing), Criterion C (avoidance/numbing), and Criterion D (hyperarousal; American Psychiatric Association, 2000). The scoring used considers criteria for a symptom met if it has a frequency of 1 or more and an intensity of 2 or more (Weathers et al., 2001). There must be at least one B symptom, three C symptoms, and two D symptoms to determine full diagnostic PTSD criteria (Weathers et al., 2001). CAPS has demonstrated high levels of internal consistency, good interrater reliability, and excellent convergent validity (Weathers et al., 2001). Internal consistency reliabilities for the total CAPS score at all three time points were alphas of 0.76, 0.85, and 0.83, respectively.

CAPS interviewers were blind to the subjects’ group assignments. The interviewers included the lead assessor, who had formal training and 6 years of experience administering CAPS, and three master’s-level clinicians. Pretreatment and posttreatment CAPS interviews were videotaped so that the lead assessor could independently rate a random subsample and determine interrater reliability. Twenty-three (17%) interviews were randomly selected, and intraclass correlation coefficients between the lead assessor and the other raters ranged from 0.93 to 0.97, which indicates good agreement among interviewers.

PTSD Checklist Civilian (PCL). The PCL is a brief self-report screening instrument for the level of PTSD symptom severity using 17 items rated from 1 (not at all) to 5 (extremely; Weathers, Litz, Herman, Huska, & Keane, 1993). The time frame of the rating was for the past week. Test–retest reliability is high (r = .96) and convergent validity has been demonstrated by strong correlations between the PCL and CAPS, r = .79, n = 144, p < .001 (Keen, Kutter, Niles, & Krinsley, 2008; Weathers et al., 2001). Cronbach’s alpha coefficients for PCL at all three time points were 0.89, 0.92, and 0.93, respectively.

Brief Symptom Inventory-18 (BSI-18). The BSI-18 is a self-report questionnaire with three symptom subscales reflecting depressive symptoms, anxiety symptoms, and somatization (Derogatis, 2000). Each subscale has six items rated from 0 (not at all) to 4 (extremely). The BSI-18 was included as a brief measure to investigate whether depressive and anxiety symptoms changed during the study intervention. Somatization was measured for descriptive purposes, but scores on that subscale were not expected to change. The BSI-18 correlates highly with analogous scales on the Symptom Checklist (SCL)-90 (r = .93) and it has demonstrated internal and convergent–discriminant validity but no test–retest reliability (Derogatis, 2000). Cronbach’s alphas for the subscales of anxiety, depression, and somatization at pretreatment were 0.96, 0.97, and 0.94, respectively, and at posttreatment were 0.88, 0.90, and 0.83, respectively.

Health Survey Short Form (SF)-12 version 2. The SF-12 is a measure of health-related quality of life that was developed as a shorter version of the SF-36 (Ware, Kosinski, Turner-Bowker, & Gandek, 2002). The SF-12 has validity in samples from the United States and Europe. It demonstrates test–retest reliability and internal consistency reliability ranging from 0.83 to 0.89 (Bohannon, Maljanian, Lee, & Ahlquist, 2004). The norm-based Mental Health Component Summary score was analyzed in this study as an indicator of overall mental health functioning. The reliability estimate at pretreatment was 0.89 and at posttreatment was 0.74.

Functional Assessment of Chronic Illness Therapy-Spiritual Well-being Scale (FACIT-Sp). The FACIT-Sp was developed to assess spiritual components (e.g., harmony, meaning, purpose in life, peacefulness, faith/assurance) of quality of life in patients with cancer (Brady, Peterman, Fitchett, Mo, & Cella, 1999; Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). The FACIT-Sp contains 12 items rated on how true they are from 0 (not at all) to 4 (very much; Peterman et al., 2002). Overall scores range from 0 (low) to 48 (high), with higher scores indicating greater spiritual well-being. Validity has been demonstrated by significant Pearson correlations between measures of quality of life, mood, and religious growth (Brady et al., 1999, Peterman et al., 2002). It has demonstrated internal consistency reliability but not test–retest reliability in studies of adults with HIV (Bormann, Gifford, et al., 2006; Cotton et al., 2006). Cronbach’s alpha at pretreatment was 0.94 and at posttreatment was 0.89.

Adherence to Intervention

Subjects in the MRP + TAU were asked to record the number of days per week they practiced repeating mantras (0–7 days) and number of times per day that mantram repetition was initiated (using portable wrist counters and daily tracking forms). This self-monitoring method has been used in prior mantram studies, with satisfactory reliability as demonstrated by correlation of r = .84 with self-report in the past week (Bormann, Smith, Shively, Dellefield, & Gifford, 2007).

Program Satisfaction

Client satisfaction items were slightly modified from the Client Satisfaction Questionnaire (CSQ) for evaluating satisfaction with MRP treatment. CSQ is an 8-item self-report measure (Larsen, Attiksson, Hargreaves, & Nguyen, 1979) that was completed at the end of the MRP + TAU course but not administered to TAU subjects, as they had no group meetings. The questionnaire has demonstrated validity and reliability and the Cronbach’s alpha in this study was 0.86.

Data Analysis Plan

Subjects were enrolled in 12 cohorts; therefore, nesting effects were tested using a 2 (Group) × 12 (Cohort) analysis of variance (ANOVA) design for each dependent variable. Missing data were
replaced using imputation performed by the Expectation-Maximization (EM) algorithm in SPSS, a maximum-likelihood method based on group assignment, demographic variables, and clinical variables. Intent-to-treat (ITT) analysis using repeated measures ANOVA, with a two-tailed alpha of 0.05, was performed to test the hypotheses. Fisher’s exact test was used to compare the proportion of subjects in each group with clinically meaningful change in the CAPS. A sample size of 140 was determined by targeting 80% power using effect sizes from prior mantram studies (Cohen, 1992). To explore PTSD symptom clusters, exploratory analyses were conducted using both the three-factor and four-factor clusters of the CAPS. For the four-factor analysis, Criterion C was divided into separate factors for avoidance (two items) and numbing (five items; Friedman, Resick, Bryant, & Brewin, 2010; Palmieri, Weathers, Difede, & King, 2007). Numbers of psychotropic medication changes (types and dosages) were evaluated each week using chi-square and t tests. SPSS version 16 was used to analyze data.

Results

Group Characteristics

Figure 1 presents a flow diagram of study subjects. Four (two from each condition) dropped out prior to pretreatment assessment.

Table 1
Demographic Characteristics at Baseline (N = 146)

<table>
<thead>
<tr>
<th>Variable (range)</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (23–84 years)</td>
<td>57 (10.10)</td>
</tr>
<tr>
<td>Years of education (7–21)</td>
<td>14 (2.13)</td>
</tr>
<tr>
<td>Months of combat (0.5–84)</td>
<td>8 (7.33)</td>
</tr>
<tr>
<td>Years of PSTD symptoms (0.5–63)</td>
<td>13 (9.94)</td>
</tr>
<tr>
<td>Employmenta</td>
<td>32 (11.95)</td>
</tr>
<tr>
<td>Marital/Partner Status</td>
<td></td>
</tr>
<tr>
<td>Not married/partnered</td>
<td>142 (97)</td>
</tr>
<tr>
<td>Married/partnered</td>
<td>4 (3)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>85 (58)</td>
</tr>
<tr>
<td>African American</td>
<td>36 (25)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>14 (10)</td>
</tr>
<tr>
<td>Other</td>
<td>11 (7)</td>
</tr>
<tr>
<td>Enduring Freedom.</td>
<td></td>
</tr>
</tbody>
</table>
| Veterans were intended to be PTSD-treatment naïve prior to study enrollment; however, 123 veterans (84% of the total sample) had completed a 10-week PTSD group orientation in the clinic, as required by the clinic’s supervisor. Orientation covered the etiology and symptoms of PTSD, medications, and group support. Despite this, however, there were no significant differences at baseline in group assignment on any dependent variables between those who attended orientation and those who did not, $\chi^2(1) = 0.41, p = .56$.

To assess if TAU content was similar between conditions, a review of patient medical records was carried out among those who started treatment. All participants were found stable and on medication prior to active treatment. During the 6 weeks of active treatment, there were medication changes for 16 subjects in the TAU condition and 20 subjects in the MRP + TAU condition, $t = 0.96, p = .38$. During the same period, there were equivalent numbers of case management visits in the TAU condition ($M = 4.22, SD = 3.83$, ranging from 0 to 16) as in the MRP + TAU condition ($M = 4.59, SD = 4.16$, ranging from 0 to 18, $t = -1.01, p = .32$). Therefore, results are not likely due to effects of TAU.

There were no adverse events in either treatment condition, and there was a very low dropout rate in each condition (7%). This is noteworthy compared with the average dropout rate from trauma-focused PTSD treatments, which is reported to be 21% (Hembree & Foa, 2003), with nonresponse rates for PTSD treatments as high as 50% (Schottenbauer et al., 2008). Perhaps low dropout was due to the brevity of each condition, but nearly all subjects (97%) in the MRP + TAU condition also reported moderate or high treatment satisfaction.

Treatment Fidelity

The MRP classes were delivered by two cofacilitators, who followed written guidelines. Two of every six classes within each cohort were randomly selected and reviewed by two quality-control experts who were master’s-level nurses with MRP experience. They checked for content conformity using a checklist. Audiotapes were reviewed for 11 of the 12 cohorts, as recordings from one cohort were missing due to equipment failure. Of the 22 classes that were rated, there was 86% agreement that the course content was addressed adequately.
Table 2
Descriptive Statistics, ANOVA Results, and Effect Sizes for Clinical Outcomes

<table>
<thead>
<tr>
<th>Outcome (possible range)</th>
<th>Mantram (n = 71)</th>
<th>Control (n = 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>PCL (17 to 85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>61.39 (11.62)</td>
<td>62.70 (10.40)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>55.77 (14.30)</td>
<td>60.23 (12.17)</td>
</tr>
<tr>
<td>6 week follow-up*</td>
<td>54.93 (13.78)</td>
<td></td>
</tr>
<tr>
<td>CAPS (0 to 136)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>83.08 (16.17)</td>
<td>82.83 (19.44)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>66.16 (23.58)</td>
<td>72.59 (24.97)</td>
</tr>
<tr>
<td>6 week follow-up*</td>
<td>61.82 (23.53)</td>
<td></td>
</tr>
<tr>
<td>B Reexperiencing (0 to 40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>22.59 (6.67)</td>
<td>22.47 (7.20)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>16.57 (8.58)</td>
<td>17.05 (8.84)</td>
</tr>
<tr>
<td>C Avoidance (0 to 56)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>32.99 (7.65)</td>
<td>33.73 (9.78)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>27.25 (12.12)</td>
<td>30.59 (12.83)</td>
</tr>
<tr>
<td>D Hyperarousal (0 to 40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>27.56 (6.12)</td>
<td>27.39 (5.56)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>22.37 (7.33)</td>
<td>25.27 (7.36)</td>
</tr>
<tr>
<td>BSI-18 Depression (0 to 24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>12.52 (5.77)</td>
<td>12.32 (5.55)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>10.60 (6.13)</td>
<td>12.24 (6.02)</td>
</tr>
<tr>
<td>BSI-18 Anxiety (0 to 24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>12.15 (5.56)</td>
<td>11.98 (5.55)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>10.96 (5.63)</td>
<td>11.51 (5.46)</td>
</tr>
<tr>
<td>BSI-18 Somatization (0 to 24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>8.74 (4.99)</td>
<td>9.23 (5.40)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>7.66 (4.96)</td>
<td>8.44 (5.21)</td>
</tr>
<tr>
<td>SF-12: Norm-Based Mental Component Summary Score (0 to 100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>33.15 (9.08)</td>
<td>32.89 (7.85)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>36.30 (8.94)</td>
<td>33.17 (7.58)</td>
</tr>
<tr>
<td>FACIT-Sp (0 to 48)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretreatment</td>
<td>22.30 (8.36)</td>
<td>20.59 (8.27)</td>
</tr>
<tr>
<td>Posttreatment</td>
<td>26.72 (9.04)</td>
<td>20.04 (8.84)</td>
</tr>
</tbody>
</table>

Note. BSI-18 = Brief Symptom Inventory–18 (short form); CAPS = Clinician-Administered PTSD Scale; FACIT-Sp = Functional Assessment of Chronic Illness Therapy–Spiritual Well-being; PCL = Posttraumatic Stress Disorder Checklist; SF-12 = Health Survey Short Form-12. $\eta^2_p$ = partial eta-squared values are for Group x Time interactions. Effect sizes: small = .01; medium = .06; large = .15.

* The PCL and CAPS were collected at 6-week follow-up in the MRP + TAU group (n = 66) showing sustained improvements over time. Comparison with the TAU group at 6-week follow-up could not be done because the TAU group participated in the MRP during this follow-up period.

Primary Outcomes of PTSD Symptoms

Table 2 provides the pre- and posttreatment descriptive statistics, ANOVA results, and effect sizes for PTSD outcomes. There was no main effect for cohort (nesting) and no Cohort x Group interaction effect for any dependent variable. Self reported symptoms using PCL resulted in an average of −5.62 point drop in the MRP + TAU compared with a −2.47 drop in TAU (p < .05).

At pretreatment, CAPS symptom severity was in the “very severe” range (M = 82.95, SD = 17.86). While cutoffs differ among researchers (Monson et al., 2008; Weathers et al., 2001), some agree that a clinically meaningful improvement involves at least a 10-point reduction on the CAPS (Schnurr et al., 2007). Using both a total CAPS score of ≤45 and at least a 10-point reduction as criteria for a clinically meaningful change, 24% of subjects in the MRP + TAU group had clinically significant PTSD symptom improvement at post-treatment compared with 12% of those in the TAU group (Fisher’s exact test, p = .047). At 6-week follow-up, those in the MRP + TAU cohort continued to improve, with a mean score of 61.82 (SD = 23.53), or a 21.26-point drop from baseline.

Three symptom-cluster results indicated that MRP + TAU subjects had significant Group x Time interactions for reducing hyperarousal, but not reexperiencing or avoidance. Using the four-symptom cluster analyses, where Cluster C was divided into avoidance (2 items) and numbing (5 items), there was a significant Group x Time interaction effect for MRP + TAU improvement in numbing, $F(1, 144) = 4.00$, $p < .05$, but no differences between groups on avoidance.

Secondary Outcomes

The MRP + TAU subjects also demonstrated significant reductions in depression, but not anxiety, compared with the TAU subjects. The MRP + TAU subjects also showed significantly
greater improvements in mental health-related quality of life and spiritual well-being compared with the TAU subjects.

Both treatments were well tolerated, with no adverse events. Dropout rates were equivalent between conditions (5 subjects [7%] dropped from each). Of subjects in the MRP + TAU condition, 97% reported moderate or high satisfaction with the MRP. Adherence to mantram practice in the last week was reported as a mean of 7.60 (SD = 6.47, Mdn = 7.00) sessions per day, ranging from 1–40 sessions, and a mean of 6.30 (SD = 1.02, Mdn = 6.00) days per week, ranging from three to seven days per week.

Discussion

This study explored the efficacy of an MRP as an adjunct to medication and case management in a sample of veterans with symptomatology related to exposure to trauma. Those in the MRP + TAU group reported nearly a 6-point reduction in PCL, suggesting improvements were not likely due to chance (Monson et al., 2008). Using clinician assessments and conservative scoring, twice as many subjects in the MRP + TAU condition (24%) had clinically meaningful reductions in PTSD symptoms than in TAU (12%). Similarly, there was a modest but significant effect on depressive symptoms and mental-health-related quality of life. These changes are not explainable by the effects of antidepressants, because subjects were stable on antidepressants prior to study enrollment, and psychotropic medication changes, including types and doses, during the study were equivalent between groups. The effect size of the intervention was small, but it does appear to be a useful adjunct to treatment-as-usual for veterans who refuse other interventions, such as exposure-based therapy, that have greater effectiveness.

The MRP + TAU condition appeared to have its greatest impact on hyperarousal symptoms, consistent with the hypothesis that MRP provides a mechanism by which participants can self-regulate arousal. To the extent that fear about being able to tolerate arousal is a barrier to exposure-based psychotherapy, MRP may facilitate engagement in such approaches by helping veterans learn to manage hyperarousal, thereby building self-efficacy for tolerating anxiety produced by confronting unwanted memories and feared situations. This hypothesis should be evaluated in future studies of MRP.

The MRP + TAU subjects also reported greater improvements in spiritual well-being; in this domain, the effect size was large. As there have been similar findings in other samples (e.g., adults with HIV and health care employees; Bormann, Becker, et al., 2006; Bormann, Gifford, et al., 2006; Yong et al., 2011), this may be an important contribution of this approach. The use of a spiritual word about “mantram repetition.” It is possible that those veterans who were attracted to this option were unusual in their willingness to take part in research or in their openness to a novel intervention. Third, the findings cannot be generalized to veterans who have experienced sexual trauma, nor to those with active substance abuse or dependency. The majority of subjects were men, so findings cannot be generalized to women veterans. Fourth, the presence or absence of Axis II (personality disorders) diagnoses was not assessed.

In summary, the 6-week MRP was well received and tolerated, and demonstrated some improvement in PTSD symptoms, depression, and mental-health-related quality of life in veterans, when delivered as an adjunct to TAU (medication and case management). Most importantly, MRP showed improvements in levels of spiritual well-being. The MRP might best be used as a facilitator of trauma-focused PTSD treatments or as a way to enhance spiritual well-being. Considering the brevity and simplicity of the intervention, there is compelling evidence to continue exploring the MRP’s effects using larger, longitudinal effectiveness trials that utilize an attention control group for comparison.

References


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