

# A Spiritually Based Group Intervention for Combat Veterans With Posttraumatic Stress Disorder

## Feasibility Study

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**Purpose:** To assess the feasibility, effect sizes, and satisfaction of mantram repetition—the spiritual practice of repeating a sacred word/phrase throughout the day—for managing symptoms of posttraumatic stress disorder (PTSD) in veterans. **Design:** A two group (intervention vs. control) by two time (pre- and postintervention) experimental design was used. **Methods:** Veterans were randomly assigned to intervention ( $n = 14$ ) or delayed-treatment control ( $n = 15$ ). Measures were PTSD symptoms, psychological distress, quality of life, and patient satisfaction. Effect sizes were calculated using Cohen's  $d$ . **Findings:** Thirty-three male veterans were enrolled, and 29 (88%) completed the study. Large effect sizes were found for reducing PTSD symptom severity ( $d = -.72$ ), psychological distress ( $d = -.73$ ) and increasing quality of life ( $d = .70$ ). **Conclusions:** A spiritual program was found to be feasible for veterans with PTSD. They reported moderate to high satisfaction. Effect sizes show promise for symptom improvement but more research is needed.

**Keywords:** *posttraumatic stress disorder; veterans; spirituality; quality of life; mindfulness; intervention; meditation; mind-body relaxation*

Little attention has been given to spiritually based approaches for managing posttraumatic stress disorder (PTSD) symptoms in combat veterans. With the wars in Iraq and Afghanistan, there is a growing need for more complementary and holistic therapies to assist combat veterans returning from deployment. Surveyed veterans report that they would use complementary approaches to health care if such programs were available (Bent & Hemphill, 2004; Kroesen, Baldwin, Brooks, & Bell, 2002).

We developed a spiritually based group intervention that teaches a series of focusing strategies using mantram repetition, slowing down, and one-pointed attention (Easwaran, 2001, 2005). A mantram is a Sanskrit word meaning “to cross the mind” and is sometimes referred to in the West as “holy name repetition” (Oman & Driskill, 2003) or in the East as “mantra repetition.” Repeating so-called sacred words such as

“Om Mani Padme Hum” from Buddhism or holy names such as “Rama Rama,” “Jesus Jesus,” or “Ave

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Maria,” have been associated with reduced arousal, respirations, enhanced cardiovascular rhythms (Bernardi et al., 2001), and decreased stress and depression (Wolf & Abell, 2003). Unlike other meditative practices, mantram repetition does not require any specific posture, quiet surroundings, eyes closed or any religious/spiritual beliefs. Mantram repetition is easily learned, personal, portable, invisible, and can be readily practiced without changing one’s activities or environment.

### **Purpose and Aims**

The purpose of this study was to assess the feasibility, effect sizes, and patient satisfaction of this spiritually based group intervention on mantram repetition in a sample of combat veterans with PTSD. The specific aims were to evaluate (a) recruitment and retention of veterans in the program, (b) effect sizes for PTSD symptom severity, psychological and quality of life outcomes, and (c) level of patient satisfaction of the program. These preliminary findings will be used to conduct a larger randomized controlled trial.

### **Background and Significance**

PTSD is highly prevalent in military veterans (Kulka, et al., 1990). With the War in Iraq, an estimated 12% to 13% of service personnel have met PTSD criteria following combat (Hoge, Auchterlonie, & Milliken, 2006; Hoge, et al., 2004). Standard treatments for PTSD include medication, cognitive-behavioral and exposure-based therapies, eye movement desensitization and reprocessing (EMDR), relaxation or combinations of these (Bradley, Greene, Russ, Dutra, & Westen, 2005; Foa, et al., 1999; Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Monson, et al., 2006; Taylor, et al., 2003; Watson, Tuorila, Vickers, Gearhart, & Mendez, 1997). Very little attention, however, has been devoted to the spiritual aspects of managing PTSD or studying complementary therapies to mitigate symptoms. We consider the mantram program as spiritual, not religious, because it does not require an institution, congregation, or some formalized group to be practiced.

The mantram intervention program has been studied in veterans with chronic illness (Bormann, Smith, et al., 2005), health care employees (Bormann, Becker, et al., 2006; Bormann, Oman, et al., 2006), and HIV-infected adults (Bormann, Gifford, et al., 2006). Veterans and employees have reported significant

reductions in stress, anxiety, anger and improvements in spiritual well-being and quality of life (Bormann, Becker, et al., 2006; Bormann, Oman, et al., 2006; Bormann, Smith, et al., 2005; Bormann, Smith, Shively, Dellefield, & Gifford, 2007). HIV-infected adults have reported significant reductions in anger and increased spiritual faith/assurance (Bormann, Gifford, et al., 2006).

There is evidence that spiritual well-being is associated with increased quality of life in people with HIV (Cotton, Pulchalski, Leonard, & Tsevat, 2006; Cotton, Puchalski, Sherman, et al., 2006; Ironson, Stuetzle, & Fletcher, 2006; Tuck, McCain, & Elswick, 2001) and cancer (Lin & Bauer-Wu, 2003). Spiritually based interventions have been associated with managing distress in college students (Wachholtz & Pargament, 2005), pain in migraineurs (Wachholtz & Pargament, 2006) and symptoms in people with cancer (Lin & Bauer-Wu, 2003) and HIV (Bormann, Gifford, et al., 2006; Tarakeshwar, Pearce, & Sikkema, 2005). Therefore, designing interventions such as mantram repetition to promote spiritual well-being may also be a helpful coping strategy for veterans who suffer war-related symptoms including PTSD.

### **Conceptual Framework**

The underlying conceptual framework of this study is based on mind–body therapies and the relaxation response (Benson, 1996; Jacobs, 2001a, 2001b). The relaxation response is counter to the “fight-or-flight” mechanism that is generated from stressful situations. Mantram is used to elicit the relaxation response (Benson, 1983; Jacobs, 2001a, 2001b). PTSD is characterized by three clusters of symptoms: (a) reexperiencing the trauma, (b) avoidance or numbing, and (c) hyperarousal. Mantram repetition is conceptualized as a focusing technique that, with practice, can be used to interrupt these “fight-or-flight” symptoms. By redirecting attention away from the traumatic memories and creating some “pause time” to raise awareness and reduce reactivity, mantram repetition may be a resource for managing PTSD symptoms, reducing psychological distress, and thereby increasing quality of life.

### **Design**

The study consisted of a two-group (intervention vs. a usual care delayed-treatment control) by two-time (preintervention and postintervention) experimental

design. The study was conducted at the VA San Diego Healthcare System in San Diego, CA, between December 2005 and April 2006.

## Participants

Inclusion criteria included combat veterans who were (a) 18 years or older, (b) English-literate, (c) enrolled in the VA health care system, (d) assigned a health care provider, (e) diagnosed with combat-related PTSD, (f) and self-rated with a score of 50 or greater on the PTSD Checklist (PCL). Exclusion criteria included the presence of psychotic symptoms, severe suicidality, or inability to participate in a group.

Participants were recruited by research study personnel who attended the VA's PTSD clinical orientation groups and invited veterans to enroll in the study. Flyers and brochures advertising the study were also distributed throughout the health care system, including mental health and primary care clinics. Interested participants called the study number for more information, thus reducing any coercion to participate. The project coordinator conducted a phone screen to assess whether they met eligibility criteria. If so, they were scheduled to meet with other study personnel who obtained written informed consent and conducted the Clinician Administered PTSD Scale (CAPS). All screening and study data collected were assigned a unique, confidential study ID number by the project coordinator and all personal health information was kept locked in study files.

Thirty-three male veterans were enrolled and given informed consent. Three dropped from the study after consent but prior to randomization because of "bad memories," "physical illness" or "wife's request not to participate" as reasons for terminating. Of the remaining 30 veterans, one dropped for incarceration. Random assignment using a computer-generated table of random numbers was conducted by the project coordinator on the remaining 29 veterans. They were randomly assigned to the intervention ( $n = 14$ ) and delayed-treatment control condition ( $n = 15$ ).

Participants ranged in age from 40 to 76 years with an average age of  $56 \pm 6.57$ . The sample consisted of 66% White, 14% Black, 10% Hispanic, and 10% Other. Approximately half were married or cohabiting and had income levels of more than \$30,000 per year. Both groups had approximately 13 years of education and reported familiarity with up to five complementary and alternative practices. All had served in either the Vietnam, Korean, or first Gulf War.

Although the intervention group had a slightly greater percentage of participants who described themselves as religious (71% vs. 67%) or spiritual (85% vs. 73%) compared to the control group, these differences were not statistically significant. In fact, there were no significant differences on any demographic or outcome variables at baseline except for the number of years in the military. The mantram group reported an average of 3.9 ( $SD = 1.81$ ) years compared to controls with 11.1 ( $SD = 9.90$ ) years. Despite these differences, both groups had an equivalent number of months in combat averaging  $11.2 \pm 6.99$  months.

## Mantram Intervention

The 6-week (90 min/week) mantram intervention consisted of education on PTSD symptoms and skills on how to choose and silently repeat a mantram—a word or phrase with spiritual associations chosen by the participant from a provided list—throughout the day, as often as possible, to train attention (Bormann, 2005; Easwaran, 2001, 2005; Oman & Driskill, 2003). A mantram list was provided for research purposes to insure that participants were actually repeating the traditional, ancient mantram words rather than affirmations or any other type of cognitions. The list represented all the major spiritual traditions from the East, the West, and also from Native American culture. Participants were instructed to choose a mantram that fit with any of their preexisting beliefs or philosophy or that were suggestive of something they longed to experience such as "Om Shanti" for peace, or "Rama Rama" for joy. They were also encouraged to choose mantrams that were "neutral" without negative associations. Rationale for choosing these so-called sacred words is based on the definition that mantrams have been repeated by great sages and wise men throughout the ages, and therefore, are hallowed.

By practicing in nonstressful situations as much as possible throughout the day, before sleep, or while waiting in lines, mantram repetition has been found to have a calming effect in stressful moments (Bormann, Oman, et al., 2006). Veterans were also taught the concepts of slowing down and one-pointed attention. Slowing down relates to the thinking process and setting priorities. By using mantram repetition as a "pause button" for the mind, veterans were taught how to decrease reactivity to stress and anger. One-pointed attention or mindfulness was taught by practicing mantram repetition as a focusing tool and then transferring that focus to other activities. Mantram participants also continued with usual

medical care consisting of either weekly or monthly case manager and/or primary care provider visits and medication management. For an outline of the course topics see Table 1.

The participants in the usual care delayed-treatment control group continued with their usual medical care, which included either weekly or monthly case manager and/or primary care provider visits. They also continued any medication management if applicable. They did not, however, have any group meetings during the 6-week intervention period. After completing postintervention questionnaires, they received the 6-week mantram intervention as courtesy for participating in the study. They also completed the Patient Satisfaction Questionnaire to evaluate the program (Larsen, Attkisson, Hargreaves, & Nguyen, 1979).

### Data Collection

Participants were assessed at preintervention and postintervention on all outcomes (for a list of measures see Table 2). To obtain objective assessments of PTSD symptom severity, research personnel were blinded to group assignment and conducted the Clinician-Administered PTSD Scale (CAPS; Blake, et al., 1990). For subjective assessment of PTSD symptoms, participants filled out the PTSD Checklist (Weathers, Keane, & Davidson, 2001). Other measures of psychological distress included the Brief Symptom Inventory-18 (BSI-18; Derogatis, 2000) and the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, Sydeman, Owen, & Marsh, 1999).

Quality of life measures included the Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q:SF; Endicott, Nee, Harrison, & Blumenthal, 1993), Functional Assessment of Chronic Illness Therapy—Spirituality-Expanded Version 4 (FACIT-SpEx4) (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002) and Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003). Satisfaction of the program was evaluated only at postintervention using the Client Satisfaction Questionnaire (Larsen, Attkisson, Hargreaves, & Nguyen, 1979).

### Analysis Processes and Procedures

Data were analyzed using SPSS version 15.0. Descriptive statistics were run on all variables to examine frequency distributions and identify missing data and outliers. Comparisons of demographics on

**Table 1**  
**Topics and Course Content for Mantram Repetition Intervention**

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Week 1: Orientation to PTSD, history, and symptoms
Week 2: Choosing, using, and tracking Mantram practice
Week 3: Using the Mantram to manage PTSD symptoms
Week 4: Using the Mantram for slowing down thoughts and reactions
Week 5: Using the Mantram for training attention and one-pointedness
Week 6: Putting it all together

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those who completed the study with those who did not were done using *t*-tests or Chi-square tests. Group comparisons were made using standardized mean change scores. Effect sizes were calculated using Cohen's *d*. There were no tests of significance on outcomes, and power analysis was unnecessary because this was a feasibility study.

### Ethical Protections

Prior to recruitment, the study was approved by University of California-San Diego Human Research Protections Program and the VA Healthcare System's Research and Development Committee. All participants received informed consent and a copy of the "research subject's bill of rights." Because of ethical concerns of control participants having to wait for treatment, the intervention was condensed to a brief, 6-week course, and the control group was given the intervention afterwards.

### Credibility and Legitimacy Issues and Approaches

The manualized 6-week intervention included instructor guidelines and was taught by the same two advanced practice psychiatric nurses to ensure consistent delivery. Efforts to maintain fidelity and quality of the intervention, included audiotaping randomly selected class sessions and having two outside intervention experts use a checklist to verify that the course content was taught.

### Findings

Participants who completed the study ( $n = 29$ ) were compared with those who did not ( $n = 4$ ) on

**Table 2**  
**Outcome Variables and Instruments**

Variable/Construct	Instrument	Format	Cronbach's Alpha
PTSD symptoms (Self-Report)	PCL	17 items, 5-point Likert	.89 to .92
PTSD symptoms (Clinician Assessed)	CAPS	17 items, 5-point Likert	.73 to .95
Psychological distress	BSI-18	18 items, 4-point Likert	.74 to .89
Anger	STAXI-2	57 items, 4-point Likert	.70 to .75
Quality of life enjoyment	Q-LES-Q:SF	14 items, 5-point Likert	.91 to .96
Spiritual well-being	FACIT-SpEx4	23 items, 5-point Likert	.81 to .88
Mindfulness	MAAS	15 items, 6-point Likert	.87
Satisfaction with program	CSQ	8 items, 4-point Likert	.93

Note: CAPS = Clinician-Administered PTSD Scale total score; PCL = Posttraumatic Stress Disorder Checklist; BSI-18 = Brief Symptom Inventory-18; STAXI-2 = State-Trait Anger Expression Inventory-2; Q-LES-Q:SF = Quality of Life Enjoyment and Satisfaction: Short Form; FACIT-SpEx4 = Functional Assessment of Chronic Illness Therapy-Spirituality-Expanded Version 4; MAAS = Mindfulness Attention Awareness Scale; CSQ = Client Satisfaction Questionnaire.

**Table 3**  
**Comparison of Preintervention to Postintervention Mean Change Scores and Effect Sizes by Group**

Change Scores <sup>a</sup>	Control ( <i>n</i> = 15)		Intervention ( <i>n</i> = 14)		Cohen's <i>d</i>	Effect Size	Direction
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Preintervention to Postintervention							
PCL	-1.20	7.95	-8.79	12.64	-0.72	Large	Improvement
CAPS	-2.64	5.44	-4.79	7.45	-0.33	Small	Improvement
BSI-18	0.00	9.40	-8.57	13.64	-0.73	Large	Improvement
STAXI-2	1.87	16.67	-6.50	13.80	-0.55	Medium	Improvement
Q-LES-Q:SF	0.07	0.70	0.64	0.93	0.70	Large	Improvement
FACIT-SpEx4	2.64	12.62	10.14	9.49	0.67	Medium	Improvement
MAAS	0.27	6.33	5.07	6.97	0.72	Large	Improvement

Note: Cohen's *d* effect sizes range from small (0-.39), medium (.40-.69) to large (.70 or higher).

For abbreviations, see note to Table 2.

a. Higher scores indicate more of the variable.

demographics, and no differences were found. Group comparisons of preintervention to postintervention mean change scores and effect sizes (Cohen's *d*) (Cohen, Cohen, West, & Aiken, 2003) of the intervention relative to controls are shown in Table 3. Compared to controls, the intervention group demonstrated a large effect size ( $d = -.72$ ) on self-reported PTSD severity (PCL), whereas clinician-assessed (CAPS) scores improved less dramatically ( $d = -.33$ ). Psychological distress (BSI-18) improved in the mantram group showing a large effect ( $d = -.73$ ) and anger expression (STAXI-2) showed a medium effect ( $d = -.55$ ).

Large effects sizes were found in the mantram group relative to controls for increased quality of life (Q-LES-Q:SF) ( $d = .70$ ) and mindfulness (MAAS) ( $d = .72$ ), whereas spiritual well-being (FACIT-SpEx4)

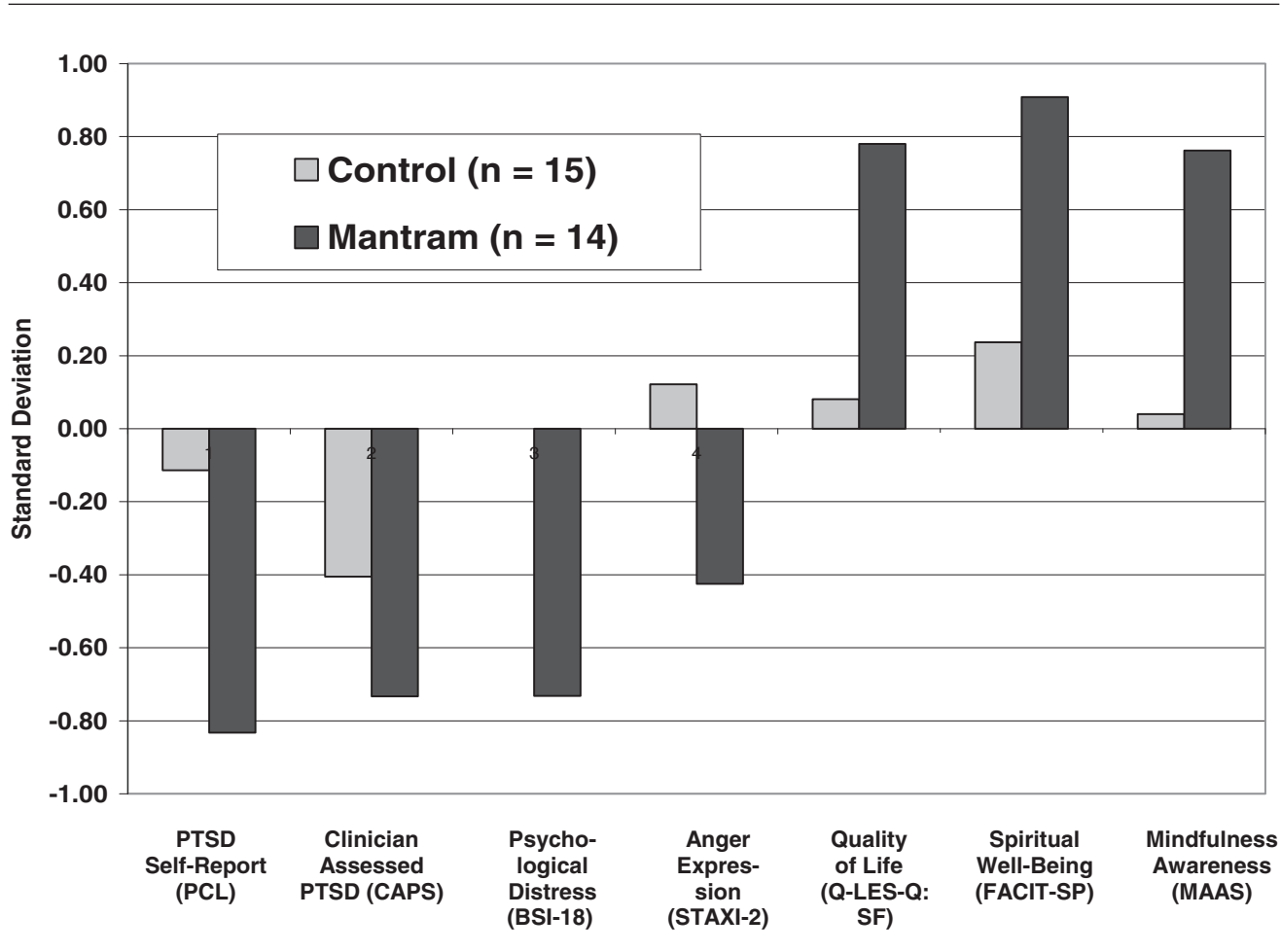
showed a medium to large effect ( $d = .67$ ). Group differences from preintervention to postintervention using standardized mean change scores are illustrated in Figure 1.

Eighty-six percent of participants, including the controls, completed the intervention and rated the program with "moderate to high" satisfaction. This suggests that the program was both feasible and satisfactory to this sample of veterans.

## Implications of Findings

Our purpose was to evaluate the feasibility, effect sizes, and satisfaction of a spiritually based group intervention for PTSD. The specific aim of evaluating recruitment and retention of veterans demonstrated

**Figure 1**  
**Standardized Mean Change Scores\* From Preintervention to Postintervention by Group**



\*Positive values indicate increases and negative values indicate decreases in the variables.

Note: PCL = Posttraumatic Stress Disorder Checklist; CAPS = Clinician-Administered PTSD Scale total score; BSI-18 = Brief Symptom Inventory-18; STAXI-2 = State-Trait Anger Expression Inventory-2; Q-LES-Q:SF = Quality of Life Enjoyment and Satisfaction: Short Form; FACIT-SpEx4 = Functional Assessment of Chronic Illness Therapy-Spirituality-Expanded Version 4; MAAS = Mindfulness Attention Awareness Scale.

that combat veterans representing the Vietnam, Korean, and first Gulf wars were interested and participated in the intervention. Recruitment of these veterans was not difficult because most were retired and could attend study groups during daytime hours. Retention was high suggesting that the intervention was acceptable. We had difficulty, however, recruiting veterans returning from Iraq and Afghanistan. Reasons for this may have been because of (a) daytime hours of our groups that conflicted with employee or school scheduling, (b) fears of stigma related to mental illness or a PTSD diagnosis, and/or (c) having less time because of family and children responsibilities. Further attention to offering the program at different times of the day is needed.

The second aim of evaluating the effect size for PTSD symptom severity and other psychological outcomes indicated medium-to-large effect sizes on most outcome variables, notably, self-reported PTSD symptoms. Effect sizes of this intervention were comparable ( $d = -.70$ ) to other well-established interventions for PTSD ( $d = .81$ ) (Bradley, et al., 2005), indicating promise for this innovative, inexpensive complementary approach to treating PTSD. However, clinician-assessed PTSD symptoms revealed only a small effect size. These results must be viewed with caution because of the small sample size.

The third aim of evaluating the level of patient satisfaction indicated that both the intervention and control groups (after having participated in the intervention)

rated the program with moderate-to-high satisfaction. This suggests that most veterans found that this spiritually based complementary program for PTSD symptoms was satisfactory.

These results are promising and warrant further research in a larger randomized trial. Results of this study cannot be generalized to those veterans who have experienced more recent war-related trauma, such as those returning from Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF). Additional research on mantram repetition with a focus on those returning from combat is needed.

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