

Journal of Holistic Nursing

<http://jhn.sagepub.com>

Efficacy of Frequent Mantram Repetition on Stress, Quality of Life, and Spiritual Well-Being in Veterans: A Pilot Study

Jill E. Bormann, Tom L. Smith, Sheryl Becker, Madeline Gershwin, Laureen Pada, Ann H. Grudzinski and Elizabeth A. Nurmi

J Holist Nurs 2005; 23; 395
DOI: 10.1177/0898010105278929

The online version of this article can be found at:
<http://jhn.sagepub.com/cgi/content/abstract/23/4/395>

Published by:



<http://www.sagepublications.com>

On behalf of:



[American Holistic Nurses Association](#)

Additional services and information for *Journal of Holistic Nursing* can be found at:

Email Alerts: <http://jhn.sagepub.com/cgi/alerts>

Subscriptions: <http://jhn.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://jhn.sagepub.com/cgi/content/refs/23/4/395>

Efficacy of Frequent Mantram Repetition on Stress, Quality of Life, and Spiritual Well-Being in Veterans

A Pilot Study

Jill E. Bormann, Ph.D., R.N., C.S.

*VA San Diego Healthcare System
San Diego State University*

Tom L. Smith, Ph.D.

University of California, San Diego

Sheryl Becker, M.N., R.N.

Madeline Gershwin, M.A., R.N.

Laureen Pada, M.S.N., M.B.A., R.N.

VA San Diego Healthcare System

Ann H. Grudzinski, B.A., R.N., C.C.R.N.

Scripps Mercy Hospital

Elizabeth A. Nurmi, B.S.N., R.N.

San Diego State University

Purpose: Silent, frequent repetition of a mantram—a word or phrase with spiritual significance, sometimes called a Holy Name—is an ancient form of prayer that may reduce stress and related symptoms. The authors tested the feasibility and efficacy of a 5-week (90-min per week) intervention on mantram repetition in a sample of ambulatory veterans. **Method:** A convenience sample (N = 62) of outpatient veterans participated in the study by completing pre- and posttest self-report questionnaires on stress, anxiety, anger, quality of life, and spiritual well-being. Wrist-worn counters were provided to track mantram practice. **Findings:** Mantram repetition signifi-

AUTHORS' NOTE: This material is based on work supported in part by the Office of Research and Development, Health Services R&D Service and Office of Academic

JOURNAL OF HOLISTIC NURSING, Vol. 23 No. 4, December 2005 395-414

DOI: 10.1177/0898010105278929

© 2005 American Holistic Nurses' Association

cantly reduced symptoms of stress and anxiety and improved quality of life and spiritual well-being. **Conclusion:** Additional research using a larger sample size and control group is needed to further substantiate the benefits of this intervention. **Implications:** Frequent, silent mantram repetition is easily taught and could be used by nurses and patients for managing stress and increasing well-being.

Keywords: *pilot study; mind-body therapy; veterans; stress; spirituality; quality of life*

People living with chronic stress are at risk for heart disease, hypertension, acute infectious respiratory illness, herpes virus (Cruess, Antoni, Kumar, & Schneiderman, 2000; Jacobs, 2001a), and other chronic diseases. Empirical investigations of subjective stress in response to difficult life events have demonstrated that recurrent intrusive images (e.g., flashbacks of trauma or disturbing memories), ideas, and feelings serve as a cardinal symptom of stress response syndromes (Horowitz, 1986; Horowitz, Wilner, & Alvarez, 1979). Intrusive stressful thoughts can lead to symptoms of anxiety and anger resulting in decreased quality of life.

Many stress management programs employ a variety of techniques. Examples include biofeedback (Peniston, 1986), progressive relaxation (Schneider et al., 1995), mindfulness meditation-based programs (Kabat-Zinn, 1982; Kabat-Zinn & Chapman-Waldrop, 1988; Kabat-Zinn, Massion, et al., 1992; Kabat-Zinn, Wheeler, et al., 1998; Proulx, 2003), cognitive-behavioral stress management programs (Cruess et al., 2000; Kabat-Zinn, 1982; Kabat-Zinn & Chapman-Waldrop, 1988), and guided imagery (Eller, 1995, 1999). None of these methods include information related to spirituality or spiritual coping, a frequently overlooked resource in the healthcare setting. People who regularly meditate and/or pray have been found to have fewer intrusive thoughts (Fabbro, Muzur, Bellen, Calacione, & Bava, 1999),

Affiliations in the Department of Veterans Affairs, with resources from VA San Diego Healthcare System; Institute of Nursing Research at San Diego State University School of Nursing; Gamma Gamma Chapter of Sigma Theta Tau International for partial funding; University of California, San Diego, Clinical Research Center NIH Grant No. M01 RR0087 for infrastructure support; Uma Bommakanty as course consultant; and Pam Allen for assistance with course enrollment. Portions of this article were presented at State of Science Congress 2002 in Washington, D.C.; Western Institute of Nursing Conference 2002 in Palm Springs, California; and the Western Institute of Nursing Conference 2004 in Portland, Oregon.

so developing ways to incorporate spirituality into stress management programs may enhance their effectiveness.

This pilot study was designed to assess the feasibility of delivering a 5-week, 90-min per week, frequent mantram repetition program to a sample of veterans and to assess its efficacy on perceived stress, state and trait anxiety, state and trait anger, symptoms of posttraumatic stress disorder (PTSD), quality of life, and spiritual well-being. Self-report assessments were used to determine the impact of the program. This study is innovative because this intervention (a) is a nonpharmacological therapy based on mantram repetition; (b) consists of one primary, portable technique that can be repeated anywhere at anytime; and (c) is sensitive to spiritual beliefs.

BACKGROUND

Studies have shown that mind-body therapies may improve prognosis in coronary heart disease and may enhance immune functioning (Astin, Shaprio, Eisenberg, & Forsy, 2003; Jacobs, 2001a). Mind-body interventions not only improve symptoms but also provide multiple benefits including reduced medical expense as a result of fewer doctor visits and medications (Friedman, Sedler, Myers, & Benson, 1997; Friedman, Sobel, Myers, Caudill, & Benson, 1995; Sobel, 2000). Additionally, these therapies have few or no side effects and may increase the sense of self-control and well-being (Astin et al., 2003; Jacobs, 2001a). A sense of control has been shown to reduce mortality and is associated with improved health and longevity (Jacobs, 2001a, 2001b).

Spirituality has been defined as "the way in which people understand and live their lives in view of their ultimate meaning and value" (Muldoon & King, 1995, p. 336). Spiritual well-being is a multidimensional construct with existential and religious dimensions associated with self-esteem and meaning or purpose in life (Ellison, 1983; Koenig, McCullough, & Larson, 2001). Spiritual practices have been related to positive mood (Domanico & Crawford, 2000), health-related quality of life and psychological and physical well-being (Bernardi et al., 2001) in HIV and cancer patients (Aguirre, 1998; Brady, Peterman, Fitchett, Mo, & Cella, 1999; Hall, 1998; Mytko & Knight, 1999). Spirituality has also been associated with increased coping skills (Fostner, 1997).

Repeating a mantram, also called a *Holy Name* (Oman & Driskill, 2003), to interrupt intrusive thoughts and reduce psychological distress is unlike other forms of meditation or relaxation techniques. Frequent mantram repetition, as taught in this program, offers practical advantages because it can be practiced any time—day or night—without special equipment or need for a quiet environment (Bormann, 2005). It also provides the option of incorporating one's personal experience of spirituality by allowing participants to choose words with spiritual meaning.

It has been reported that Veterans Affairs (VA) outpatients have a substantially worse health status than non-VA populations (Baldwin, Long, Kroesen, Brooks, & Bell, 2002; Kazis et al., 1998). Military veterans have poorer physical and psychiatric health status scores on quality-of-life measures, as well as greater numbers of co-morbid conditions compared with nonveterans (Kazis et al., 1998). Therefore, we selected a sample of veterans to test the feasibility and efficacy of a mantram intervention to reduce symptoms of stress and improve quality of life and spiritual well-being.

CONCEPTUAL FRAMEWORK

The conceptual framework supporting this study comes from research on the relaxation response (Benson, 1983, 1989, 1993, 1996; Bernardi et al., 2001; Jacobs, 2001a) and mind-body therapies used as adjuncts to conventional medical treatment (Astin et al., 2003). The relaxation response has been shown to counterbalance the stress reaction (Benson, 1996; Jacobs, 2001a, 2001b), and although there are several ways to initiate this response, mantram repetition, as taught in this study, has not been studied. Repetition of a mantram, as taught in this intervention, is not considered a traditional relaxation technique per se, although with practice, it can lead to a physiological state of relaxation. Its primary mechanism is one of directing attention away from intrusive thoughts and toward a chosen word or phrase, often with spiritual meaning, that provides comfort. Its value and benefit are assumed to be cumulative. With time and consistent practice, mantram repetition becomes an automatic habit and serves as a link to spiritual resources. It is a unique approach to anxiety management with emphasis on spiritual resources in contrast to traditional cognitive or behavioral approaches. Mantram repetition involves the same two basic steps as Benson's relaxation response: (a) mentally

repeating the word, sound, or phrase and (b) passively disregarding any other thoughts that intrude (Benson, 1983, 1993, 1996) but is practiced almost continually, rather than in 20-min segments, and can be repeated while engaged in other activity (Bormann, 2005).

METHOD

Participants

The population for this study included outpatient veterans at the VA Healthcare System in San Diego, California. The sample was taken from a volunteer group of 176 veterans who took the mantram course between April 2001 and December 2002. Of those, 101 (57%) consented to participate in the study in class sizes ranging from 5 to 22 participants. Fifty participants (49.5%) had perfect attendance, 20 (19.8%) attended four of five classes, and only six (5.9%) dropped the course after one class. Of the 101 who consented, 62 (61%) completed both pretest and posttest perceived stress scales, 25 completed pretests but not posttests, and 14 completed only posttests or neither. Comparisons between the 62 with both pretests and posttests and the 25 with only pretests indicated no significant differences in gender ($\chi^2 = 0.06, df = 1, p = .81$), ethnicity ($\chi^2 = 0.09, df = 1, p = .76$), or age ($t = -1.49, df = 95, p = .14$). The sample for analysis ($N = 62$) consisted of 90.3% men with an average age of 61.8 ($SD = 13.20$) ranging from 33 to 84 years old. Ethnicity was 64.5% White, 6.5% Asian, 4.8% Native American, 3.2% Black, 3.2% Hispanic, 8.9% Other, and 8.9% did not report ethnicity.

Additional questionnaires were added as the study progressed because of early significant reductions in pretest to posttest measures of perceived stress. Because this research was exploratory in nature, we added additional measures and have reported different sample sizes for each outcome. Tracking of mantram sessions was done on a subset of 52 (51%).

Intervention

The intervention was adapted from research on the RISE program (Research and Instruction in Self-Empowerment) originally designed to help patients with HIV manage stress (Flinders, Gershwin, & Flinders, 1994). The structure of the course was based on reading

assignments taken from *The Mantram Handbook* by Eknath Easwaran, a spiritual teacher of meditation (Easwaran, 1997, 2001). A manual of experiential weekly exercises was created for group discussion. The course curriculum consisted of: Class 1, How to Choose a Mantram; Class 2, How to Use and Track Mantram Practice; Class 3, Developing One-Pointed Attention; Class 4, Slowing Down; and Class 5, Putting It All Together. Participants were asked to choose a mantram from a recommended list of several major spiritual traditions (Easwaran, 2001; Oman and Driskill, 2003, citing that tradition-based mantrams are more effective, see Table 1). However, a few veterans preferred to create their own such as "take it easy" or "one."

The concepts of one-pointed attention and slowing down were taught as complementary aids to mantram practice (Bormann, 2005). The notion of one-pointed attention runs counter to the popular value of multitasking even though multitasking often increases stress and reduces efficiency. One-pointed attention is required internally, within the mind, when repeating the mantram, and one-pointed attention can be practiced externally by focusing on one task at a time. A homework assignment of choosing one task and giving it complete attention for a specified time was an example of practicing external one pointedness.

The concept of slowing down was also taught in conjunction with mantram repetition and one pointedness. Mentally repeating a mantram slows one's internal thinking process and increases awareness. Mantram repetition creates "pause-time" that allows for more thoughtful, intentional decision making. To slow down externally, we discussed making priorities and identifying strategies to reduce the number of obligations that create time pressure. A homework assignment was to identify activities that are speeded up and choose to consciously, intentionally slow them down.

What differs about this program from transcendental meditation (TM) or Benson's original description of how to elicit the relaxation response is that repeating a mantram throughout the day or night, even while engaged in other activities, makes it more convenient and more portable than sitting quietly with eyes closed for a period of 20 min (Bormann, 2005). Mantram repetition can be initiated immediately or rapidly, anytime or any place, whereas traditional forms of mantram meditation such as TM, or other forms of relaxation such as visual imagery or progressive muscle relaxation, require a set time, quiet place, and closing eyes for stillness.

TABLE 1
List of Common Mantrams Used in Intervention

<i>Mantram and Pronunciation</i>	<i>Meaning</i>
<i>Buddhist</i>	
Om Mani Padme Hum (Ohm Mah-nee Pod-may Hume)	An invocation to the jewel (Self) in the lotus of the heart
Namo Butsaya (Nah-mo boot-sie-yah)	I bow to the Buddha.
<i>Christian</i>	
My God and my all	St. Francis of Assisi's mantra
Maranatha (Mar-uh-nah-tha)	Lord of the heart (Aramaic)
Kyrie Eleison (Kir-ee-ay Ee-lay-ee-son)	Lord have mercy, or the Lord is risen.
Christe Eleison (Kreest-ay Ee-lay-ee-son)	Christ have mercy, Christ has risen
Jesus, Jesus or Lord Jesus Christ	Jesus, Son of God
Hail Mary or Ave Maria	Mother of Jesus
<i>Hindu/Indian</i>	
Rama (Rah-mah)	Eternal joy within. Gandhi's mantra.
Ram Ram Sri Ram (rahm rahm shree rahm)	(variation on Rama)
Om Namah Shivaya (Ohm Nah-mah Shee-vy-yah)	An invocation to beauty and fearlessness
Om Prema (Ohm Pray-Mah)	A call for universal love
Om Shanti (Ohm Shawn-tee)	In invocation to eternal peace.
So Hum (So hum)	I am that Self within.
<i>Jewish</i>	
Barukh Atiah Adonoi (Bah-ruke Ah-tah Ah-don-aye)	Blessed are Thou' O Lord
Ribono Shel Olam (Ree-boh-noh Shel Oh-lahm)	Lord of the Universe
Shalom	Peace
Sheheena (Sha Hee-nah)	Feminine aspect of God
<i>Muslim</i>	
Allah	One True God
Bismallah Ir-rahman Ir-rahim (Beese-mah-lah ir-rah-mun ir-rah-heem)	In the name of Allah, the merciful, the compassionate
<i>Native American</i>	
O Wakan Tanka	Oh, Great Spirit

Source: Bormann (2005). Permission granted by Lippincott Williams & Wilkins (<http://lwww.com>).

In a randomized controlled trial, RISE ($n = 50$) was compared to a (a) control group ($n = 50$), (b) psychotherapy group ($n = 29$), and (c) traditional stress management group ($n = 50$). Participants were measured using the Brief Symptom Inventory (Derogatis, 1993) at the start and end of treatment. Members of the RISE groups were shown to significantly decrease emotional distress such as anxiety and hostility and significantly reduce high-risk sexual behaviors in HIV patients as compared to the other groups (Earl, Flinders, Flahive, Ruppenthal, & Bartholow, 1990). Results of an experimental study on secondary school student teachers indicated that short-term RISE training was effective in reducing symptoms of stress in the domains of emotional and behavioral manifestations and gastronomic distress in posttest measurements when compared to a control group (Winzelberg & Luskin, 1999). The program was easy to teach, required a minimum time commitment, and was cost-effective.

Research Design

The study used a one-group, pretest-posttest design to test the following hypotheses:

Hypothesis 1: Persons completing the mantram course will demonstrate a significant decrease in perceived stress, state and trait anxiety, state and trait anger, and PTSD symptom scores from pre- to postintervention ($p < .05$).

Hypothesis 2: Persons completing the mantram course will demonstrate a significant increase in quality of life enjoyment and satisfaction and spiritual well-being scores from pre- to postintervention ($p < .05$).

Procedures

Institutional review board approval was obtained prior to enrolling participants. Outpatient veterans without cognitive impairment or dementia were eligible to participate. They self-selected to register for the course from fliers distributed throughout the VA medical facility. Enrollment occurred at the end of the first class by instructors who obtained written, informed consent. Courses were offered for free, and no financial incentives for participating were given. Two master's-prepared psychiatric clinical nurse specialists taught all courses. Self-report questionnaires on outcomes of interest were collected at the end of the first and last classes. Wrist-worn counters were

provided to track mantram practice and encourage making mantram repetition a habit. Because it is impractical to count each repetition of a word or phrase, counters were used to track the number of times one remembered to repeat a series or "session" of mantrams outside of class during the last 4 weeks of the course. This number was recorded by participants on a daily log sheet and collected at the end of each week by instructors. Research personnel recorded the totals.

Instruments

Outcomes were measured by the following instruments (see Table 2): Cohen's Perceived Stress Scale (S. Cohen, Kamarck, & Mermelstein, 1983; S. Cohen & Williamson, 1998), Spielberger State/Trait Anxiety and Anger Inventories (Spielberger, 1972, 1983; Spielberger, Jacobs, Russel, & Crane, 1983), PTSD-Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993), Endicott's Quality of Life Enjoyment and Satisfaction Short Form (Endicott, Nee, Harrison, & Blumenthal, 1993), and Ellison's Spiritual Well-Being Scale (Ellison, 1983; Life Advance, 2003; Paloutzian & Ellison, 1982). Wrist-worn counters (golf scorers) were used to track the frequency of mantram sessions outside of classes beginning in Week 2 through Week 5. The wrist-counters served as a reminder to practice and were used to track frequency of practice, which was recorded daily on tracking sheets.

Statistical Analysis

Data were analyzed using SPSS version 11.5. Descriptive statistics were run on all variables to examine distributions and identify missing data and outliers. Comparisons of demographics on those who completed questionnaire data with those who did not were done using chi-square and *t* tests. Comparison of perceived stress scores on those who completed both pretests and posttests with those who did not were examined using independent *t* tests. Frequencies of mantram session data were log transformed as described below. Repeated measures ANOVA were run on all outcome variables and subscales. To determine whether change throughout time could be a function of mantram repetition, ANCOVA were run on all outcome variables, controlling for frequency of mantram sessions as the covariate.

Power analyses for this study were based on the estimates of expected effect sizes from published studies, pilot data previously

TABLE 2
Outcome Variables and Instruments

<i>Variable</i>	<i>Instrument</i>	<i>Format</i>	<i>Cronbach's Alpha</i>
Stress	Perceived Stress Scale ^a	10 items, 5-point Likert	.86
Anxiety	Spielberger State-Trait Inventory ^b	20 items, 4-point Likert	State-Anxiety .97 Trait-Anxiety .89
Anger	Spielberger State-Trait Inventory ^c	20 items, 4-point Likert	State-Anger .96 Trait-Anger .93
PTSD symptoms	PTSD-Checklist ^d	17 items, 5-point Likert	.90
Quality of life	Quality of Life Enjoyment & Satisfaction General Activities subscale ^e	16 items, 5-point Likert	.91
Spiritual well-being	SWBS ^f	20 items, 6-point Likert	Total SWBS .91
	RWB	10 items	RWB = .92
	EWB	10 items	EWB = .94

NOTE: SWBS = Spiritual Well-Being Scale. RWB = religious well-being; EWB = existential spiritual well-being.

a. Cohen, Kamarck, & Mermelstein (1983); Pbert, Doerfler, & DeCosimo (1992).

b. Spielberger (1972); Spielberger, Jacobs, Russel, & Crane (1983).

c. Spielberger, Jacobs, Russel, & Crane (1983).

d. Weathers, Litz, Herman, Huska, & Keane (1993).

e. Endicott, Nee, Harrison, & Blumenthal (1993).

f. Ellison (1983); Paloutzian & Ellison (1982).

collected, and the effect size necessary for clinical relevance to determine if the intervention makes a difference on primary outcomes. In general, empirical effect sizes related to outcome variables ranged from medium to large for this type of intervention (J. Cohen, 1988).

RESULTS

Evaluation of the mantram tracking logs indicated that the daily average frequency of mantram sessions ranged from 1 to 45 with a daily average of 8.7 ($SD = 7.32$). The overall 3-week average frequency of mantram sessions (Weeks 2 to 5 of the course), not counting

practice sessions during class, indicated an average number of 181.7 sessions ($SD = 128.75$); the median was 138.0. The first and third quartiles were 96.0 and 245.2, respectively. The distribution ranged from 18 to 911 and was positively skewed, so a natural log transformation was performed on the total average frequency of mantram sessions to obtain a normal distribution to meet assumptions for ANOVA and ANCOVA tests. Internal consistency reliabilities were examined on all outcome measures using Cronbach's alpha (see Table 2).

The quality of instructors, delivery of content, and classroom environment were evaluated on a 4-point scale, with 1 = *strongly disagree* to 4 = *strongly agree* and with an overall average of 3.62 ($SD = 0.36$). Written comments indicated some participants reported "being less prone to react negatively to situations over which they had no control" and "help in managing frustration, overwhelm, anger, intrusive thoughts, and road rage." Some participants verbally reported in class that wrist counters were a reminder to repeat their mantram, whereas others did not like using them. Instead, they estimated the number of times they repeated mantram sessions and recorded that number.

Hypothesis Testing

To evaluate the first hypothesis, repeated measures ANOVA were performed on the variables yielding significant changes in the expected direction (see Table 3). This hypothesis was supported. Four effects, identified by partial η^2 (the proportion of the variance attributable to the intervention) were large ranging from .19 to .39. The second hypothesis was also supported with all effects identified by partial η^2 as large, ranging from .23 to .42.

To evaluate whether average sessions of mantram repetition accounted for any part of the outcome effects, all analyses were repeated with ANCOVAs using the natural log transformed average frequency of mantram sessions as the covariate (see Table 4). In comparing the effects attributed to the intervention (partial η^2) within the ANCOVAs to those within the ANOVAs, effects were greatly attenuated, suggesting that improvements across time may be, at least partially, attributable to the frequency of mantram session practice.

Mantram practice by time interaction effects within the ANCOVAs were also evaluated to determine whether mantram practice was related to changes across time. Table 4 reports an F value and partial

TABLE 3
 Mean Outcome Scores Using Repeated Measures
 ANOVA on Participants With Sessions of Mantram Data

Outcomes ^a	Pretest		Posttest		F	df	p value	partial η^2 ^b
	M	SD	M	SD				
Perceived stress (<i>n</i> = 52)	21.3	7.03	16.8	7.04	32.79	(1,51)	.001	.39
State anxiety (<i>n</i> = 40)	44.1	13.33	38.2	10.67	13.92	(1,39)	.001	.26
Trait anxiety (<i>n</i> = 36)	46.1	10.71	42.6	10.64	5.11	(1,35)	.030	.13
State anger (<i>n</i> = 41)	13.8	6.63	11.8	4.49	5.20	(1,40)	.030	.12
Trait anger (<i>n</i> = 41)	17.9	7.09	15.9	5.89	9.43	(1,40)	.010	.19
PTSD symptoms (<i>n</i> = 30)	39.4	12.30	34.0	12.05	7.45	(1,29)	.020	.24
Quality of life (<i>n</i> = 43)	42.6	10.36	47.5	10.42	23.91	(1,42)	.001	.36
Existential well-being (<i>n</i> = 43)	38.6	11.26	43.4	9.63	26.02	(1,42)	.001	.38
Religious well-being (<i>n</i> = 42)	41.6	11.90	44.9	13.55	12.56	(1,41)	.001	.23
Total spiritual well-being (<i>n</i> = 43)	79.2	21.94	88.0	20.74	30.45	(1,42)	.001	.42

a. Higher scores indicate greater levels of variable.

b. Partial eta-squared values for effect sizes: small = .01, medium = .06, large = .15.

TABLE 4
**Mean Outcome Scores Using Repeated Measures
 ANCOVA Controlling for Frequency of Mantram Session Practice**

Outcomes ^b	Pretest		Posttest		Time Effect			Mantram Practice by Time Effect ^a				
	M	SD	M	SD	F	df	p	Partial η^2	F	df	p	Partial η^2 ^c
Perceived stress (<i>n</i> = 52)	21.3	7.03	16.8	7.04	0.05	(1,50)	.83	.001	1.93	(1,50)	.17	.04
State anxiety (<i>n</i> = 40)	44.1	13.33	38.2	10.67	0.40	(1,38)	.53	.010	2.07	(1,38)	.16	.05
Trait anxiety (<i>n</i> = 36)	46.1	10.71	42.6	10.64	3.42	(1,34)	.08	.091	5.04	(1,34)	.04	.13
State anger (<i>n</i> = 41)	13.8	6.63	11.8	4.49	1.13	(1,39)	.29	.028	2.90	(1,39)	.10	.07
Trait anger (<i>n</i> = 41)	17.9	7.09	15.9	5.89	0.06	(1,39)	.81	.001	1.67	(1,39)	.21	.04
PTSD symptoms (<i>n</i> = 30)	39.4	12.30	34.0	12.05	0.08	(1,23)	.78	.003	0.50	(1,28)	.48	.02
Quality of life (<i>n</i> = 43)	42.6	10.36	47.5	10.42	0.77	(1,41)	.39	.018	0.04	(1,41)	.84	.001
Existential well-being (<i>n</i> = 43)	38.6	11.26	43.4	9.63	1.00	(1,41)	.33	.024	4.90	(1,41)	.04	.11
Religious well-being (<i>n</i> = 42)	41.6	11.90	44.9	13.55	0.54	(1,40)	.48	.013	0.00	(1,40)	.96	.001
Total spiritual well-being (<i>n</i> = 43)	79.2	21.94	88.0	20.74	0.30	(1,41)	.59	.007	1.47	(1,41)	.24	.03

a. Natural log transformed average frequency of mantram sessions by time interaction.

b. Higher scores indicate greater levels of variable.

c. Partial eta-squared values for effect sizes: small = .01, medium = .06, large = .15.

eta² for each outcome. Partial eta² ranged from .00 to .13 with two significant effects, for trait anxiety and existential spiritual well-being.

DISCUSSION

Veterans are a unique population with substantial physical and psychological burdens negatively affecting their quality of life (Baldwin et al., 2002; Kazis et al., 1998). The goal of the mantram program was to provide a mind-body-spiritual practice of mantram repetition (Oman & Driskill, 2003), enabling veterans to interrupt intrusive thoughts and initiate the "relaxation response" (Benson, 1983, 1989, 1993, 1996; Bernardi et al., 2001; Jacobs, 2001a). It should be noted that within this study, the relaxation response itself was not directly assessed and its presence and operation remain inferential.

Comparison of veterans' perceived stress scores with a probability sample of males ($n = 282$) ranging in age from 55 to 64 in the United States indicated that veterans in this sample had greater perceived stress. Veteran mean scores were 21.3 ($SD = 7.03$) at baseline and 16.8 ($SD = 7.04$) at posttest, compared to an average of 11.9 ($SD = 6.9$) in the general population. Veterans were more stressed even when compared to norms of the unemployed or those too ill to work (means of 16.5, $SD = 6.3$ and 19.9, $SD = 6.8$, respectively; S. Cohen & Williamson, 1988).

State and trait anxiety scores were higher in veterans compared to working adult male norms ($n = 1,387$; Spielberger, 1983). Veteran state anxiety baseline mean was 44.1 ($SD = 13.33$) compared to working adults mean of 35.7 ($SD = 10.40$). Veteran trait anxiety baseline mean was 46.1 ($SD = 10.71$) compared to working adults mean of 34.9 ($SD = 9.19$).

The state and trait anger scores in the veteran sample were essentially the same as norms of working adults ($n = 1,252$; Spielberger et al., 1983). Veteran state anger baseline mean was 13.8 ($SD = 6.63$) and trait anger mean was 17.9 ($SD = 7.09$) compared to working adults means of 14.2 ($SD = 5.73$) and 18.4 ($SD = 6.36$), respectively.

Comparison of veterans' reported quality of life with a small sample of healthy volunteers ($N = 15$, $M = 55.1$, $SD = 7.0$; Gelfin, Gorfine, & Lerer, 1998) demonstrated that veterans had lower scores before and after the intervention (pretest $M = 42.6$, $SD = 10.36$ and posttest $M = 47.5$, $SD = 10.42$). Comparison of veterans' spiritual well-being scores with a sample of medical outpatients ($N = 56$) demonstrated that

veterans had lower mean scores on all scales (Bufford, Paloutzian, & Ellison, 1991). Veterans' means were Spiritual Well-Being (SWB) 79.2 ($SD = 21.94$), Religious Well-Being (RWB) 41.6 ($SD = 11.90$), and Existential Well-Being (EWB) 38.6 ($SD = 11.26$), compared to outpatient means of SWB 99.89 ($SD = 16.01$), RWB 51.50 ($SD = 9.67$), and EWB 48.50 ($SD = 8.38$).

Findings of this study are similar to the results of the RISE program, where the HIV-infected RISE group had significant reductions in stress, anxiety, and hostility, as compared to other groups (Earl et al., 1990). Secondary school teachers in RISE also reported reductions in symptoms of stress (Winzelberg & Luskin, 1999). The primary difference between these two programs is that RISE included passage meditation, in addition to mantram repetition, and found beneficial effects. One might suggest that mantram repetition has greater applicability to a wider audience as it does not require a quiet place or time for practice.

There were significant improvements in all outcome measures in the hypothesized direction, despite small sample sizes and convenience sample. Results show that the ANCOVA tests, adjusting for frequencies with which each participant initiated mantram sessions, suggest that, in general, changes throughout time from pre- to postintervention may be mediated by mantram practice. There were two medium-to-large effects that were significant—trait anxiety and existential spiritual well-being—and two medium and five small effects that were not significant, probably because of sample size. This pilot study provides evidence that teaching a 5-week mantram intervention is feasible and acceptable in a sample of veterans. However, more research using larger, more diverse samples is warranted.

The findings are consistent with literature indicating that mind-body therapies not only provide multiple benefits, but also have few or no side effects and may increase feelings of well-being (Astin et al., 2003; Jacobs, 2001a). Findings also support the value of including spirituality in nurse-led group interventions. Spiritual practices can be viewed as another source of health promotion. Strengths of this study lie in the realm of contributions to nursing practice because nurses can teach mantram repetition to most patient populations. In addition, all instruments used had reported reliability and validity that give additional credibility to the findings. Mantram repetition used to focus attention and manage symptoms is portable and easily accessible and can be used in many situations.

There are many limitations of this study indicating the need for additional research. There is no control group, and weekly support groups alone may have contributed to the improvements in quality of life. Having a small, convenient and primarily male sample of veterans make findings difficult to generalize to other groups. The words chosen by participants were not assessed, and this lessens confidence that spiritual mantram words had a different effect than secular words. There is the potential for social desirability that may have influenced results because of the close professional contact between experimenters and participants. It is difficult to credit mantram repetition as the primary influence of improvements because of these limitations. Nevertheless, these findings provide promising, preliminary support of the feasibility and acceptability of a holistic, mind-body-spiritual intervention of frequent, silent mantram repetition.

Recommendations for future studies include using an experimental design with larger sample size. Other patient populations to be targeted include patients with HIV/AIDS, Alzheimer's caregivers, and veterans diagnosed with PTSD. Additional prospective studies using larger samples during a longer period of time would allow for examination of the long-term effects of the mantram repetition program.

REFERENCES

- Aguirre, M. G. (1998). *Health-related quality-of-life in men with HIV disease*. Los Angeles: University of California, Los Angeles.
- Astin, J. A., Shapiro, S. L., Eisenberg, D. M., & Forsys, K. L. (2003). Mind-body medicine: State of the science, implications for practice. *Journal of American Board of Family Practitioners*, 16(2), 131-147.
- Baldwin, C. M., Long, K., Kroesen, K., Brooks, A. J., & Bell, I. R. (2002). A profile of military veterans in the southwestern United States who use complementary and alternative medicine. *Archives of Internal Medicine*, 162, 1697-1704.
- Benson, H. (1983). The relaxation response: Its subjective and objective historical precedents and physiology. *Trends in Neurosciences*, 6(7), 281-284.
- Benson, H. (1989). The relaxation response and norepinephrine: A new study illuminates mechanisms. *Australian Journal of Clinical Hypnotherapy & Hypnosis*, 10(2), 91-96.
- Benson, H. (1993). The relaxation response. In D. Goleman & J. Gurin (Eds.), *Mind/body medicine: How to use your mind for better health* (pp. 233-257). Yonkers, NY: Consumer Reports.
- Benson, H. (1996). *Timeless healing*. New York: Scriber.

- Bernardi, L., Sleight, P., Bandinelli, G., Cencetti, S., Fattorini, L., Wdowczyk-Szulc, J., et al. (2001). Effect of rosary prayer and yoga mantras on autonomic cardiovascular rhythms: Comparative study. *British Medical Journal*, *323*, 1446-1449.
- Bormann, J. E. (2005). Frequent, silent mantram repetition: A jacuzzi for the mind. *Topics in Emergency Medicine*, *27*(2), 163-166.
- Brady, M. J., Peterman, A. H., Fitchett, G., Mo, M., & Cella, D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-Oncology*, *8*(5), 417-428.
- Bufford, R. K., Paloutzian, R. F., & Ellison, C. W. (1991). Norms for the Spiritual Well-Being Scale. *Journal of Psychology and Theology*, *19*, 56-70.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health & Social Behavior*, *24*(4), 385-396.
- Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan (Ed.), *The social psychology of health: The Claremont symposium on applied social psychology* (pp. 31-67). Newbury Park, CA: Sage.
- Cruess, D. G., Antoni, M. H., Kumar, M., & Schneiderman, N. (2000). Reductions in salivary cortisol are associated with mood improvement during relaxation training among HIV-seropositive men. *Journal of Behavioral Medicine*, *23*(2), 107-121.
- Derogatis, L. R. (1993). *Brief Symptom Inventory (BSI): Administration, scoring, and procedures manual* (4th ed.). Minnetonka, MN: NCS Pearson.
- Domanico, R., & Crawford, I. (2000). Psychological distress among HIV-impacted African-American and Latino males. *Journal of Prevention & Intervention in the Community*, *19*(1), 55-78.
- Earl, W., Flinders, R., Flahive, M., Ruppenthal, B., & Bartholow, B. (1990). *Efficacy of psychosocial adjustment to HIV infection: Distinguishing between group interventions in a longitudinal cohort of gay and bisexual men*. Paper presented at the International Conference on AIDS, San Francisco.
- Easwaran, E. (1997). *Meditation*. Tomales, CA: Nilgiri.
- Easwaran, E. (2001). *The mantram handbook*. (4th ed.). Tomales, CA: Nilgiri.
- Eller, L. S. (1995). Effects of two cognitive-behavioral interventions on immunity and symptoms in persons with HIV. *Annals of Behavioral Medicine*, *17*, 339-348.
- Eller, L. S. (1999). Effects of cognitive-behavioral interventions on quality of life in persons with HIV. *International Journal of Nursing Studies*, *36*, 223-233.
- Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology*, *11*(4), 330-340.
- Endicott, J., Nee, J., Harrison, W., & Blumenthal, R. (1993). Quality of life enjoyment and satisfaction questionnaire: A new measure. *Psychopharmacology Bulletin*, *29*(2), 321-326.

- Fabbro, F., Muzur, A., Bellen, R., Calacione, R., & Bava, A. (1999). Effects of praying and a working memory task in participants trained in meditation and controls on the occurrence of spontaneous thoughts. *Perceptual & Motor Skills, 88*(3, Pt. 1), 765-770.
- Flinders, R., Gershwin, M., & Flinders, T. (1994). *The RISE response: Illness, wellness, and spirituality*. New York: Crossroads.
- Fostner, J. J. (1997). *The relationship between meaning of illness and coping in HIV-positive patients*. Berkeley: California School of Professional Psychology.
- Friedman, R., Sedler, M., Myers, P., & Benson, H. (1997). Behavioral medicine, complementary medicine, and integrated care: Economic implications. *Primary Care Clinics in Office Practice, 24*(4), 949-962.
- Friedman, R., Sobel, D., Myers, P., Caudill, M., & Benson, H. (1995). Behavioral medicine, clinical health psychology, and cost offset. *Health Psychology, 14*, 509-518.
- Gelfin, Y., Gorfine, M., & Lerer, B. (1998). Effect of clinical doses of fluoxetine on psychological variables in healthy volunteers. *American Journal of Psychiatry, 155*(2), 290-292.
- Hall, B. A. (1998). Patterns of spirituality in persons with advanced HIV disease. *Research in Nursing & Health, 21*, 143-153.
- Horowitz, M. J. (1986). Stress-response syndromes: A review of posttraumatic and adjustment disorders. *Hospital & Community Psychiatry, 37*(3), 241-249.
- Horowitz, M. J., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine, 41*(3), 209-218.
- Jacobs, G. D. (2001a). Clinical applications of the relaxation response and mind-body interventions. *Journal of Alternative and Complementary Medicine, 7*(Suppl. 1), S93-S101.
- Jacobs, G. D. (2001b). The physiology of mind-body interactions: The stress response and the relaxation response. *Journal of Alternative and Complementary Medicine, 7*(Suppl. 1), S83-S92.
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry, 4*(1), 33-47.
- Kabat-Zinn, J., & Chapman-Waldrop, A. (1988). Compliance with an outpatient stress reduction program: Rates and predictors of program completion. *Journal of Behavioral Medicine, 11*(4), 333-352.
- Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*(7), 936-943.
- Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M. J., Cropley, T. G., et al. (1998). Influence of a mindfulness meditation-based stress reduction intervention on rates of skin clearing in patients with moderate to severe

- psoriasis undergoing phototherapy (UVB) and photochemotherapy (PUVA). *Psychosomatic Medicine*, 60(5), 625-632.
- Kazis, L. E., Miller, D. R., Clark, J., Skinner, K., Lee, A., Rogers, W., et al. (1998). Health-related quality of life in patients served by the Department of Veterans Affairs. *Archives of Internal Medicine*, 158, 626-632.
- Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.
- Life Advance. (2003). *The Spiritual Well-Being Scale*. Retrieved February 3, 2003, from <http://www.lifeadvance.com/swbs.htm>
- Muldoon, M., & King, N. (1995). Spirituality, health care, and bioethics. *Journal of Religion and Health*, 34(4), 329-349.
- Mytko, J., & Knight, S. J. (1999). Body, mind and spirit: Towards the integration of religiosity and spirituality in cancer quality of life research. *Psycho-oncology*, 8, 439-450.
- Oman, D., & Driskill, J. D. (2003). Holy name repetition as a spiritual exercise and therapeutic technique. *Journal of Psychology and Christianity*, 22(1), 5-19.
- Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and quality of life. In P. A. Perlman (Ed.), *Loneliness: A sourcebook for current therapy*: Wiley-Interscience.
- Pbert, L., Doerfler, L. A., & DeCosimo, D. (1992). An evaluation of the perceived stress scale in two clinical populations. *Journal of Psychopathology and Behavioral Assessment*, 14, 363-375.
- Peniston, E. G. (1986). EMG biofeedback-assisted desensitization treatment for Vietnam combat veterans with posttraumatic stress disorder. *Clinical Biofeedback and Health: An International Journal*, 9, 35-41.
- Proulx, K. (2003). Integrating mindfulness-based stress reduction. *Holistic Nursing Practice*, 17(4), 201-208.
- Schneider, R. H., Staggers, F., Alexander, C. N., Sheppard, W., Rainforth, M., Kondwani, K., et al. (1995). A randomised controlled trial of stress reduction for hypertension in older African Americans. *Hypertension*, 26(5), 820-827.
- Sobel, D. S. (2000). Mind matters, money matters: The cost-effectiveness of mind/body medicine. *Journal of the American Medical Association*, 284(13), 1705.
- Spielberger, C. D. (1972). Current trends in theory and research on anxiety. In C. D. Spielberger (Ed.), *Anxiety: Current trends in theory and research* (Vol. 1, pp. 3-19). New York: Academic Press.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory STAI (Form Y)*. Palo Alto, CA: Consulting Psychologists.
- Spielberger, C. D., Jacobs, G., Russel, S., & Crane, R. (1983). Assessment of anger: The state-trait anger scale. In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in personality assessment* (Vol. 2, pp. 159-187). Hillsdale, NJ: Lawrence Erlbaum.

- Weathers, F. W., Litz, B. T., Herman, J. A., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist (PCL): Reliability, validity and diagnostic utility*. Paper presented at the 9th Annual Conference of ISTSS, San Antonio, TX.
- Winzelberg, A. J., & Luskin, F. M. (1999). The effect of a meditation program on the level of stress in secondary school student teachers. *Stress Medicine*, 15(2), 69-77.

Jill E. Bormann, Ph.D., R.N., C..S., is a research nurse scientist at the Veterans Affairs (VA) San Diego Healthcare System and an adjunct research associate professor at the School of Nursing, San Diego State University. She is the co-chair of the Complementary, Alternative, and Integrative Medicine Workgroup at the VA. She directs research on mantram repetition in a variety of patient populations and coordinates the mantram program at the VA San Diego Healthcare System. Recent publications include an article in Topics in Emergency Medicine (2005).

Tom L. Smith, Ph.D., is principal statistician at the University of California, San Diego, and works at the VA San Diego Healthcare System. He is interested in social psychology and behavioral interventions for patients with drug or alcohol use. Recent publications include an article in Alcoholism: Clinical and Experimental Research (1999).

Sheryl Becker, M.N., R.N., is the HIV Health Education Coordinator in the Special Infectious Disease Unit at the VA San Diego Healthcare System. She teaches mantram repetition courses to veterans with chronic illness and is a group leader for mantram research.

Madeline Gershwin, M.A., R.N., is a nurse case manager on the Post-Traumatic Stress Disorder Clinical Team at the VA San Diego Healthcare System. She teaches mantram repetition and passage meditation courses to veterans diagnosed with post-traumatic stress disorder.

Laureen Pada, M.S.N., M.B.A, R.N., is the patient health education coordinator at the VA San Diego Healthcare System. She has an interest in mind-body health education and coordinates the annual VA health education fair that includes complementary and alternative therapies.

Ann H. Grudzinski, B.A., R.N., C.C.R.N., is a staff nurse at the Scripps Mercy Hospital. She completed a VA Research Nurse Practicum at the VA San Diego Healthcare System and assisted with this research study.

Elizabeth A. Nurmi, B.S.N., R.N., is a faculty member at the School of Nursing, San Diego State University. She completed a VA Research Nurse Practicum at the VA San Diego Healthcare System and assisted with this research study.