

The Effectiveness of a Trauma-focused Spiritually Integrated Intervention for Veterans Exposed to Trauma*

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Building Spiritual Strength (BSS) is an 8-session, spiritually integrated group intervention designed to address religious strain and enhance religious meaning making for military trauma survivors. It is based upon empirical research on the relationship between spirituality and adjustment to trauma. To assess the intervention's effectiveness, veterans with histories of trauma who volunteered for the study were randomly assigned to a BSS group ($n = 26$) or a wait-list control group ($n = 28$). BSS participants showed statistically significant reductions in PTSD symptoms based on self-report measures as compared with those in a wait-list control condition. Further research on spiritually integrated interventions for trauma survivors is warranted. © 2011 Wiley Periodicals, Inc. *J Clin Psychol* 67:425-438, 2011.

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Most psychotherapeutic approaches for treating posttraumatic stress disorder (PTSD) involve making new meaning of the traumatic experience (Van Der Kolk, Van Der Hart, & Burbridge, 1995). Very few address spirituality, in spite of the fact that spiritual and religious beliefs can represent key aspects of a person's meaning-making processes. Spirituality and religion are distinct but closely related constructs; spirituality deals with ultimate truth, purpose, or meaning, and religion deals with a spiritually oriented social reference group (Zinnbauer et al., 1997). Spiritually integrated interventions are designed to address concerns about ultimate meaning and purpose relevant to mental health recovery (Pargament, 2007).

Nearly equal numbers of trauma survivors describe their spirituality as helpful, hurtful, or neutral in their recovery (Strawbridge, Shema, Cohen, Rogers, & Kaplan, 1998). Recent research has identified aspects of faith that either facilitate or hinder recovery. Those who view their spirituality, faith community, and/or Higher Power as sources of support, validation, and acceptance are more able to make healthy meanings and recover than those who don't. Those who view their spirituality, faith community, and/or Higher Power as sources of judgment, punishment, or rejection have difficulty recovering from trauma (Elliott, 1994; Falsetti, Resick, & Davis, 2003; Fitchett, Rybarczyk, Demarco, & Nicholas, 1999; Fontana & Rosenheck, 2004; Harris et al., 2008b; Pargament, Koenig, Tarakeshwar, & Hahn, 2004; Strawbridge et al., 1998). This research suggests that using spiritually integrated interventions could help trauma survivors to more effectively use their spiritual practices and beliefs to deal with trauma and thus foster recovery.

These concerns are not limited only to trauma survivors who profess an explicit spirituality; many who deny spiritual perspectives are reactive to, and therefore influenced by, spirituality

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(Pargament, 2007). Furthermore, preliminary research on this phenomenon suggests that in at least some populations, leaving a painful religious affiliation does not resolve the attendant mental health concerns (Harris, Cook, & Kashubeck-West, 2008a). Although explicitly spiritually integrated interventions are generally inappropriate for individuals who do not profess a religious affiliation or other spiritual orientation, the influence of spiritual factors cannot be dismissed among those who do not identify as religious or spiritual.

There are few studies of spiritually integrated interventions for trauma survivors. Decker (2007) developed the Vet Center eclectic model as a spiritually integrated intervention for combat veterans. Anecdotal evidence from case histories supports the use of this model (Decker). In a manualized, spiritually integrated intervention for female survivors of sexual abuse, Murray-Swank and Pargament (2005) found that over the course of the intervention, the two participants developed more positive images of G-d, improved spiritual well-being, improved spiritual self-worth, and increased positive religious coping. In another study of the same intervention, four female survivors of sexual abuse demonstrated decreased psychological distress and trauma symptoms across the course of the spiritually integrated intervention and at 1-month to 2-month follow-up (Murray-Swank & Pargament, 2008). Cole (2005) studied a manualized, spiritually integrated intervention for people actively coping with cancer ($N = 16$), and found that while those in a no treatment control group reported increasing levels of depression and physical pain, those in the spiritually integrated intervention group reported stable levels of depression and pain. Interpretation of this finding is difficult because participants self-selected to intervention versus control conditions. In an uncontrolled, preintervention and postintervention study, 35 women reporting postabortion grief completed a spiritually integrated group intervention and demonstrated reduced scores on measures of shame and PTSD symptoms upon completion (Dyer Layer, Roberts, Wild, & Walters, 2004). Although promising, past findings are marred by technical deficiencies (especially in relation to outcome measures, samples sizes, group allocation, and controls), suggesting the need for a more rigorous intervention study.

Another factor to be considered when evaluating the efficacy of spiritually integrated interventions is the value of spirituality in the cultural group. Members of ethnic minority groups tend to be more religious than Caucasians (Esser-Stuart & Lyons, 2002; Leblanc, Driscoll, & Pearlin, 2004; Taylor, Chatters, & Jackson, 2007), are more likely to use religious coping (Dunn & Horgas, 2004), and are more likely to consider their spirituality an integral component of health care (Devlin, Roberts, Okaya, & Xiong, 2006). Hispanic and African American people typically seek help from their church or religious leader to address mental health concerns, rather than seeking help from mental health professionals (Marwaha & Livingston, 2002; Mays, Caldwell, & Jackson, 1996; Molock, Matlin, Barksdale, Puri, & Lyles, 2008; Purdy, Simari, & Colon, 1983). There is precedent for using prayer and spirituality in mental health interventions for African Americans (Abernethy, Houston, Mimms, & Boyd-Franklin, 2006; Barnette, 2001; Boyd-Franklin, 1991; DeBate & Davis, 2004; Jackson, Gregory, & Davis, 2004).

The goal of the present study was to assess the effectiveness of the "Building Spiritual Strength" intervention in reducing symptoms of PTSD. Given the cultural importance of spirituality in minority groups, it is likely that spiritually integrated interventions may be more effective for ethnic minority participants than those from the majority group. Hypothesis 1 was that Building Spiritual Strength, a spiritually integrated intervention for military veteran trauma survivors, would be effective in reducing symptoms of PTSD. Hypothesis 2 was that Building Spiritual Strength would be more effective for ethnic minority veterans than for those from the majority ethnic group.

Method

Building Spiritual Strength: A Description of the Intervention

Building Spiritual Strength (BSS) is an inter-faith, manualized, eight-session spiritually integrated group intervention for trauma survivors, which is available in both civilian and military versions. BSS trains participants to make the best use of their preexisting faith

resources to manage trauma's impact. BSS is not designed to convert those who are not religious to a religious way of life, or to change affiliations among religiously committed participants. Instead, BSS addresses spiritual concerns common to trauma survivors that have been associated with higher levels of PTSD in the empirical literature. The intervention is designed to assist survivors in recognizing and resolving spiritual concerns that can contribute to distress, while maintaining and enhancing areas of spiritual functioning that are contributing to positive adjustment. Participants in the protocol are given freedom to make any changes in their spirituality they see fit, including leaving or changing a religious affiliation should they choose to do so. Leaders adhere to the ethical practice of supporting the participants' choices of religious affiliation or nonaffiliation.

BSS provides opportunities to explore and reduce spiritual distress, identified in some studies as "religious strain" (Exline, Yali, & Sanderson, 2000; Harris et al., 2008a,b). Religious strains may include feeling alienated from one's Higher Power, shame, guilt, or fear related to sin or perceived sin, expectations of punishment or abandonment from a Higher Power, or difficulties in relationships with leadership or peers in a faith community. Religious strain has been related both to poorer mental health outcomes and to higher levels of PTSD symptoms in trauma survivors (Exline et al.; Harris et al., 2008a,b). BSS is explicitly designed to help reduce religious strain, which should then allow optimal use of positive spiritual resources to make new meanings of traumatic experience, thereby reducing distress and symptoms. In addition to the manual's spiritually oriented content, the process of working with a supportive group of trauma survivors who all value their spirituality of course provides powerful social support that also facilitates recovery. The content was developed based on empirical findings on spirituality, especially religious strain's relationship to trauma adjustment (Bradley, Schwartz, & Kaslow, 2005; Conners, Whiteside-Mansell, & Sherman, 2006; Harris et al., 2008a,b; Witvliet, Phipps, Feldman, & Beckham, 2004), as well as content from the Murray-Swank and Pargament's (2005, 2008) intervention for sexual abuse survivors. The primary objective is to provide ways to reduce spiritual distress. Each session is 2 hours long, and snacks or beverages are served to help create a "community support group" environment, rather than the potentially more stigmatizing formal group therapy environment.

Session one seeks to establish group rapport by sharing military and religious histories, define group norms, and identify individual spiritual development goals. During session one, participants are given the BSS workbook, as well as group rules, and are invited to document their individual spiritual goal for the intervention in their workbook.

Sessions two and three involve experiential and written prayer exercises designed to establish open communication with a Higher Power; these sessions introduce the concept of keeping a "prayer log" that participants are asked to maintain for the duration of the intervention. The prayer log intervention is largely based on the prayer journal used in the Murray-Swank and Pargament (2005, 2008) intervention. For participants with nontheistic spiritualities, a meditation log is substituted for the prayer log, and a discussion of meditation experiences is substituted for the experiential prayer exercise. The experiential exercise involves veterans "praying" (or, for nontheists, sharing meditations) out loud with the group, and allowing group members and leaders to respond with their perceptions of how a Higher Power (or Tao, Universe, or equivalent concept for non-theists) might respond to the prayer/meditation. The prayer log allows for practice of a similar exercise on an individual basis; the participant writes about one prayer/meditation concern, and after deliberate contemplation, writes his or her discernment of a Higher Power/Tao/Universe response. All subsequent sessions provide time to process the content of individuals' prayer logs, and participants are strongly encouraged to bring distressing or "stuck points" in their prayer logs to group for discussion. The prayer exercises provide leaders with information on the nature of each participant's relationship with a Higher Power and provide opportunities for intervention should there be evidence that trauma-related pathologies (for example, hypervigilance to potential threat) are causing strain in the relationship with the Higher Power.

Session four incorporates a discussion of theodicy (i.e., explaining the existence of evil), helping to resolve conflicts between beliefs in a benevolent, omnipotent Higher Power/spiritual universe and the very existence of trauma. Session content includes discussion of theodicies

from many different faith groups, allowing participants to identify areas of agreement and disagreement with each as they develop their individual theodicy.

Session five promotes individual prayer/meditation development (how participants learned to pray or meditate) and prayer/meditation practices (i.e., coping strategies involved in the practice) by presenting results of the literature on prayer and spiritual coping, thus emphasizing the effectiveness of active (vs. avoidant) spiritual coping. Participants are then asked to evaluate their own prayer/spiritual coping by reviewing the content of their prayer/meditation logs.

Sessions six and seven address forgiveness and facilitate conflict resolution: with self, others, and one's Higher Power. In these sessions forgiveness is discussed as an ongoing process of maintaining an appropriate relationship with one in need of forgiveness, rather than a "forgive and forget" approach to resolving conflict.

Session eight includes discussion of termination issues, self-evaluation of progress on individual spiritual goals, and planning for continued personal spiritual development.

Participants

Veterans who were trauma survivors were recruited via informational fliers in outpatient waiting areas at a VA Medical Center, newsletter announcements at area religious organizations with outreach programs for veterans, and informational booths at events for veterans returning from combat deployments. A total of 54 veterans attended screening interviews and consented to participate in the study, comprising 48 men and 6 women, 40 Caucasians, 10 African Americans, three Hispanics, and one Asian American. Thirty-one participants had served in Operation Iraqi Freedom and Operation Enduring Freedom, 22 were from the Vietnam or post Vietnam cohorts, and one served in World War II. The sample included 33 Protestants, 12 Catholics, and 9 with "other" religious identifications, which included Buddhism, Judaism, Eckankar, and several participants who felt that they were still searching for a religious identification or practiced a personal, individual spirituality. Thirty-three of the veterans were using other mental health services concurrently with their study participation, 19 were using both medications and counseling, another 10 were using only medications, and another four were using only counseling. The average age of participants was 45 years, and the average level of education was 15 years.

Procedure

Veterans who expressed an interest in participating in the study first attended a screening interview that included informed consent, evaluation of appropriateness for group intervention, assessment of spiritual history and trauma exposure, and completion of initial measures (see the Measures section). Veterans could be included in the study if they were (a) competent to consent for themselves, (b) a military veteran with a history of trauma exposure, (c) not at imminent risk for harm to self or others, (d) not acutely psychotic, (e) able to commit to attending groups and completing homework uninfluenced by alcohol or other mood altering substances (veterans with diagnosed substance abuse disorders were allowed to participate as long as they could make that commitment), and (f) interested in using spiritual resources to support their mental health. Of the 56 participants who attended screening interviews, one chose not to participate once the study was explained, and another failed to follow-up after completing informed consent procedures, leaving a final sample of 54. Those who completed the consent process were randomized to intervention and control conditions via a coin toss. Twenty-nine veterans were assigned to the control group, and 26 were assigned to the intervention group. Members of the control group were permitted to participate in a BSS group after completing the control condition and 22 of them did so.

Those randomized to the intervention condition were scheduled into an 8-week BSS group, either at the VA Medical Center ($n = 18$) or at a community religious organization ($n = 8$) based on the veteran's preference and schedule availability. Group leaders were doctoral-level psychologists with specialized training or experience in spirituality, and they were trained,

supervised, and observed by the first author for implementation of the intervention. Participants in both the control and the intervention groups completed measures of trauma symptoms at the initial interview and at the eighth week of their participation in either the BSS group or the control group. Participants were paid \$20 each time they completed measures for the study.

Six randomly selected group sessions were audiotaped and independently rated by two research assistants, trained by the first author, to assess fidelity to the manual. The rating scale used identified each teaching or activity element noted in the manual for that session as present or absent. For example, the rating scale for Session 3 included the following items: Was 2-way prayer homework discussed? Was there a discussion of feelings toward a Higher Power? Was there a discussion of group members having a relationship with a Higher Power? Was there a discussion involving the Empty Chair technique? Was homework assigned for next week? Inter-rater agreement between the two raters for fidelity ratings was .97. The combined ratings indicated 98.5% fidelity to the manual.

Measures

Trauma exposure was verified using the Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000), which assesses history of trauma including natural disasters, life-threatening accidents, auto accidents, violent victimization, sexual assault, and combat. It was administered only during the initial interview.

The PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) was used to measure PTSD symptomatology. The PCL includes 17 items that assess each PTSD symptom. It has been shown to have good internal consistency reliability (Cronbach's Alpha from .89–.97). Scores may range from 17–85. Validity is supported by significant positive correlations with other validated PTSD measures and structured interviews for PTSD (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996; Weathers et al.). Although reported cutoffs for probable PTSD vary, recent work has suggested a cutoff of 37 (Bliese et al., 2008). This measure was administered at baseline and after 8 weeks of participation in both the control and the intervention groups. Using the Jacobson and Truax (1991) definition of clinically significant change, by comparison to the ostensibly “normal” college student sample in Ruggiero, Del Ben, Scotti, and Rabalais (2003), a 10-point difference in the PCL scores is considered clinically significant.

At intake, participants completed a structured interview that solicited self-report data on age, gender, race, level of education, religious affiliation, marital status, use of mental health services (medications and psychotherapy), and vocational status.

Results

Participants reported exposure to an average of 13 traumatic events as measured by TLEQ, with a standard deviation of 10. Participants were asked to nominate the most distressing traumatic event; combat was most commonly nominated ($n = 20$), followed by sudden death of a loved one ($n = 9$), traumatic events not identified on the TLEQ ($n = 6$), sexual assault ($n = 4$), motor vehicle accidents ($n = 2$), other types of accidents ($n = 2$), life threatening illness ($n = 2$), witnessing family violence as a child ($n = 2$), death threats ($n = 1$), physical abuse as a child ($n = 1$), sexual abuse as a child ($n = 1$), and sexual harassment ($n = 1$). Three participants failed to nominate a most distressing trauma. When assessed at baseline, 65% of the veterans scored at or above the PCL PTSD cutoff. See Table 1 for a description of sample demographics across the control and experimental groups. Based on t tests or chi-square (as appropriate for each variable), there were no significant differences between the intervention and control groups at baseline for PCL scores, age, education, number of traumatic experiences, use of psychiatric medication, use of psychotherapy, marital status, gender, ethnic minority status, or vocational status. It should be noted that negative findings for gender may be spurious; with only six women in the sample, there is not enough statistical power to find

Table 1
 Characteristics of Control and Intervention Groups at BaselineTC

Variable	Intervention group					Wait-list group					Combined				
	Mean	SD	Range	Skew	Percentage	Mean	SD	Range	Skew	Percentage	Mean	SD	Range	Skew	Percentage
Age	43.81	15.67	66	0.21	-	47.1	11.3	42	-0.39	-	45.54	13.52	66	0.21	-
Education	14.76	2.55	12	0.65	-	15.26	3.16	13	1.83	-	15.03	2.88	16	1.36	-
Number of traumas	11.61	10.65	36	0.55	-	14.55	10.59	39	0.81	-	13.16	10.62	40	0.89	-
Baseline PCL	41.34	17.44	66	0.55	-	49.45	16.81	57	-0.38	-	45.62	17.44	66	0.05	-
% PTSD at intake	-	-	-	-	50	-	-	-	-	66	-	-	-	-	65
% Taking medication	-	-	-	-	48	-	-	-	-	55	-	-	-	-	51
% In therapy	-	-	-	-	44	-	-	-	-	48	-	-	-	-	46
% Married	-	-	-	-	48	-	-	-	-	41	-	-	-	-	45
% Male	-	-	-	-	74	-	-	-	-	97	-	-	-	-	85
% Minority	-	-	-	-	22	-	-	-	-	28	-	-	-	-	25
% Employed	-	-	-	-	67	-	-	-	-	58	-	-	-	-	63
% Protestant	-	-	-	-	58	-	-	-	-	63	-	-	-	-	61
% Catholic	-	-	-	-	34	-	-	-	-	8	-	-	-	-	22
% Other religious affiliation	-	-	-	-	8	-	-	-	-	29	-	-	-	-	17

Note. SD = standard deviation, PCL = PTSD checklist; PTSD = posttraumatic stress disorder.

differences even if they exist. Among veterans who initiated participation in a BSS group, 94% completed the group. There was no drop out from the wait-list control group.

As compared with other recent studies of PTSD in veterans (Lu, Wagner, Van Male, Whitehead, & Boehnlein, 2009; Rona et al., 2009), both the control and the intervention groups had relatively low PCL scores. One important difference in recruitment is that most other intervention studies required that participants meet full criteria for a diagnosis of PTSD, while in this study, trauma exposure was the standard for inclusion, and 35% of the sample did not exceed the cutoff score that suggests possible PTSD. The inclusion of veterans who were trauma-exposed, but did not carry a diagnosis, was deliberate. One of the goals of this program of research is to create interventions that could be provided in community settings without the stigma of an explicit "mental health" focus, and, thus, that can be offered to individuals regardless of their mental health diagnosis. Furthermore, by including individuals with similar trauma exposure, but lower levels of psychopathology, the group intervention will include individuals who model effective coping and thus may enhance the effectiveness of the intervention.

Hypotheses were evaluated using analysis of variance (ANOVA) procedures to compare the control and treatment groups on posttreatment PTSD scores. To address potential confounding variables, we examined the relationship between demographic variables and baseline PTSD scores to select variables for inclusion as covariates in analysis. Demographic variables that emerged as correlates of PTSD symptoms included ongoing use of psychiatric medication ($r = .51$, $p < .001$) and ongoing use of psychotherapy ($r = .45$, $p = .001$). Preliminary analyses were run to determine if use of psychiatric medication and psychotherapy had separate effects on pretreatment or posttreatment PTSD scores. Analyses using each variable individually, as well as the two combined, yielded very similar findings. Because of the small sample size and the threats to validity incurred with small cell sizes, use of psychiatric medication and psychotherapy were combined as one variable labeled "In Treatment." Other demographic variables did not correlate with pretreatment PCL scores. In this sample, the number of traumatic events experienced, as measured by the TLEQ, did not correlate with PCL scores at a statistically significant level ($r = .20$, $p = .14$). This is inconsistent with previous literature (Harris et al., 2008a,b). This is likely related to the TLEQ's procedure for measuring combat trauma, which ceilings at "more than 5" traumatic events in the combat theater. Most combat trauma survivors in this sample were deployed for a year or more and had experienced far more than five traumatic events in theater; therefore, the measure failed to capture relevant variance and yield the expected relationship between numbers of traumatic events and PTSD symptoms. Race (dummy coded as majority/minority race) was included to examine the effect of race on outcomes (Hypothesis 2).

To test the hypothesis of BSS effectiveness, a 2 (treatment condition) by 2 (race) by 2 (other treatment status) analysis of covariance (ANCOVA) was used, including Week 8 PCL scores as the dependent variable and baseline PCL scores as a covariate. To reduce experiment-wise Type I error, alpha was set at .025. Results are summarized in Table 2. Main effects emerged for the covariate of baseline PTSD scores, $F(1, 46) = 31.56$, $p < .001$, and the main effect of experimental condition, $F(1, 46) = 5.93$, $p = .02$. No interactions emerged as statistically significant, although it should be noted that race by experimental versus control condition, $F(1, 46) = 3.29$, $p = .08$, and race by use of traditional mental health treatment, $F(1, 46) = 5.00$, $p = .03$, approached statistical significance. Participation in the intervention accounted for 11% of the variance in PCL scores. Raw and adjusted means are presented in Table 3. The raw score difference between the two groups was 12.68, but it likely reflects group differences in baseline PCL scores and other covariates. Once posttreatment means were adjusted for all other variables in the model, including race, treatment status, and pretreatment PTSD scores, the difference between the treatment group and control group was 12.23, which exceeded our established threshold for clinical significance. After treatment, 46% of the treatment group and 69% of the control group scored above the cutoff for PTSD.

Given that statistical tests of interactions tend to be underpowered, we examined the trends relevant to near significant interactions, by computing the correlations between experimental and control conditions and Week 8 PCL scores for majority and minority race groups. The

Table 2
ANCOVA Results

Variable	<i>F</i>	<i>p</i>
Baseline PCL scores	31.56	<.001*
In mental health treatment	0.11	0.75
Race	0.00	0.96
Experimental condition	5.93	0.02*
In mental health treatment × condition	0.07	0.79
In mental health treatment × race	5.00	0.03
Race × condition	3.29	0.08
In mental health treatment × race × condition	0.63	0.43

Note. ANCOVA = analysis of covariance; PCL = PTSD checklist; degree of freedom = 1 for all variables.
* $p \leq .025$.

Table 3
Estimated Marginal Means and Standard Errors

Variable	Baseline				End of intervention			
	Raw score	<i>SE</i>	Estimated mean	<i>SE</i>	Raw score	<i>SE</i>	Estimated mean	<i>SE</i>
Control group	49.45	16.82	48.32	3.70	49.68	18.26	49.31	3.00
Intervention group	41.35	17.45	42.53	4.21	37.00	16.36	37.09	3.99

Note. *SE* = standard error.

correlation between condition and Week 8 PCL scores was $-.05$ ($p = .62$) for the majority group and $-.46$ ($p = .01$) for the minority group, suggesting that members of minority ethnic groups may have derived more benefit from the intervention than members of the majority ethnic group. We also computed the correlations between use of traditional mental health services and Week 8 PCL scores for majority and minority race groups. For the majority group, the correlation between use of traditional mental health services and PCL scores was $.47$ ($p < .001$), while for the minority group the same correlation was $.23$ ($p = .22$), which may mean that Caucasians with high levels of symptoms were more likely to seek traditional treatment, and symptom severity did not appear to be a strong predictor of seek traditional treatment seeking for minorities.

To further examine variables relevant for veterans who met criteria for PTSD at the beginning of the study but did not meet criteria at the end of the study, we completed two logistic regression analyses predicting PTSD screening status (screening positive vs. negative). The first logistic regression predicted PTSD screening status at baseline using the entire sample. Treatment condition (experimental vs. control), race (Caucasian vs. other), and other treatment status (receiving other treatment vs. nontreatment) were entered as predictors. At baseline, with the effects of the race and other treatment status controlled, the overall χ^2 for prediction of PTSD status was significant ($\chi^2 = 11.12$, degree of freedom [*df*] = 3, $p = .01$). As one would expect, individuals screening for PTSD were more likely to be in other treatments ($B = 1.72$, Wald = 6.91, $p = .009$), but no other predictors were significant (see Table 4). The second logistic regression analysis focused on those individuals who had met screening status for PTSD at the baseline but no longer did posttreatment. The same group of predictors was used to predict PTSD screening status at the 8-week assessment point within the group of veterans who had screened positive for PTSD at baseline ($n = 35$). At the end of the intervention, the set of predictors again significantly predicted PTSD status ($\chi^2 = 8.75$, $df = 3$, $p = .03$). Examining individual predictors in Table 5, we found that those in other types of treatments were once more at greater likelihood to be in the PTSD positive group ($B = 2.33$,

Table 4
Predicting Baseline PTSD Status

Variable	<i>B</i>	Wald	<i>p</i>
In mental health treatment	1.72	6.91	<.001
Race	0.30	0.58	0.45
Experimental condition	-1.14	2.87	0.09

Note. PTSD = posttraumatic stress disorder; PTSD status as assessed by the PTSD checklist.

Table 5
Predicting Week 8 PTSD Status

Variable	<i>B</i>	Wald	<i>p</i>
In mental health treatment	2.33	4.56	0.03
Race	-0.72	1.73	0.18
Experimental condition	-1.81	2.79	0.09

Note. PTSD = posttraumatic stress disorder; PTSD status as assessed by the PTSD checklist.

Wald = 4.56, $p = .03$). Although there was a trend for those receiving the intervention to be in the non-PTSD group ($B = -1.81$, Wald = 2.79, $p = .09$), this trend did not reach significance.

As a final test of the treatment, we examined change in PTSD scores for participants in the control condition who chose to participate in the group after their wait period ($n = 22$). PCL scores in this subgroup went from 49.45 at baseline to 50.3 at the start of their treatment phase to 42.27 at the end of treatment. This change from pretreatment to posttreatment (7.18 points) was statistically significant (within-group $t = 2.77$, $df = 20$, $p = .01$). A supplemental repeated measures ANOVA was run to determine if follow-up participation by members of the wait-list control group evidenced a similar pattern of improvement as found in members in the treatment condition. Independent variables included (a) initial assignment to control or intervention condition and (b) time (pretreatment vs. posttreatment PCL scores). In this analysis, the interaction of initial group assignment and time did not emerge as statistically significant, $F(1, 37) = .146$, $p = .71$, indicating that both groups appeared to derive similar benefit from the intervention.

Discussion

Data supported the hypothesis that the BSS intervention would reduce symptoms of PTSD among veterans willing to volunteer for a spiritually integrated intervention. These results are consistent with previous studies of spiritually integrated interventions for trauma survivors, which have uniformly found positive effects (Cole, 2005; Decker, 2007; Dyer Layer et al., 2004; Murray-Swank & Pargament, 2005, 2008). The hypothesis that the BSS intervention would be more effective for members of minority ethnic groups was not supported, although a trend of greater benefit for minorities approached significance. Given the modest *N* for this sample, future studies on the potential for enhanced benefit for minorities using this intervention are indicated. Given established research findings that minorities prefer spiritual support rather than traditional mental health treatment (Marwaha & Livingston, 2002; Mays et al., 1996; Molock et al., 2008; Purdy et al., 1983), the BSS intervention may have potential to facilitate more effective treatment for this population; further studies would be critical to further evaluate this possibility. The subsignificant trend in this study, indicating that symptom severity was a better predictor of use of mental health services for Caucasians, is consistent with the previous literature noting that minority ethnic groups often seek out alternatives to traditional mental health treatment (Marwaha & Livingston; Mays et al.; Molock et al.; Purdy et al.).

This study differs from previous tests of spiritually integrated interventions for trauma survivors in that it (a) includes a control group, (b) involves random assignment to experimental and control conditions, and (c) includes a larger N than any previous study. Given this study's methodological rigor, this is the best evidence to date that addressing spiritual concerns can reduce symptoms of PTSD in trauma survivors. Even so, the use of a wait-list rather than a placebo control group has the potential to positively bias results, as veterans were not blind to their treatment condition. Furthermore, it should be noted that the difference in prechange and postchange between groups on posttest using raw means was modest and below our established threshold for defining clinically significant change. Clinically significant differences between groups emerged when using means adjusted for pretreatment PTSD, race, and treatment status. Changes within groups did not meet the threshold for clinically significant change. Thus, although this evidence provides some support for the continued use of the BSS protocol with military veteran trauma survivors, there is a clear need for continued research with this intervention and other spiritually integrated approaches. The modest effect size for changes in trauma symptoms is not surprising, given that the intervention directly targets spiritual distress, rather than trauma symptoms.

BSS appears helpful for veterans who seek to use spiritual resources to cope with the sequelae of trauma. It may be particularly useful for veterans who would ordinarily avoid mental health treatment because of stigma but would attend a support group for veterans at a local religious organization. A positive experience in a BSS group may provide adequate support for veterans with modest trauma-related distress and a path to higher levels of service for those who need it. It may provide "treatment dropouts" from traditional care with an acceptable way to re-engage with some form of treatment. Discussions with participants suggested that BSS was a helpful additional treatment element for the veterans who were already using traditional treatment resources; many had reported spiritual concerns relevant to their recoveries. BSS may be most useful as a complement to traditional trauma recovery treatment plans. This may be especially appropriate when conventional mental health providers recognize the spiritual needs their clients present but lack the expertise, time, or inclination to provide spiritually oriented interventions. Further BSS research is warranted: Future studies should explore the extent to which spiritually integrated interventions such as this one are preferred by veterans who are otherwise disinclined to pursue mental health care, as this remains an empirical question.

Not all trauma survivors are open to spiritually oriented interventions, even though over 90% of both veterans and the American public believe in a Higher Power (Fontana & Rosenheck, 2004; Shafranske, 2001), and 89% of veterans identify as Christian (Fontana & Rosenheck, 2004). Although an effort was made to develop an intervention that is potentially effective across all religious groups, in fact, most studies of spirituality and trauma outcomes are also based on predominantly Christian samples (Harris et al., 2008a,b; Pargament, Koenig, & Perez, 2000). Although available research on Muslim (Kira et al., 2006) and Jewish (Laufer & Soloman, 2006) trauma survivors is consistent with findings based on predominantly Christian samples, there are few studies in non-Christian groups. Of note, all of the non-Christian veterans in this study qualitatively reported that they found BSS helpful. BSS of course is not intended as a comprehensive PTSD treatment; it provides spirituality-specific coping skills that support ongoing recovery from trauma exposure. Many veterans stated that they would have preferred that the intervention continue for more than 8 weeks.

There are several limitations of this study. Although larger than previous studies, the N was modest. Cell sizes for more refined comparisons (such as those including race and other treatment status) were thus small, and further tests of differences in effect, because of education, gender, marital status, etc., were not possible because small cell sizes threatened the validity of these analyses. A study with a higher N and corresponding higher levels of power may be able to better evaluate the effects of this or similar interventions as well as to better examine variables related to treatment response. This study did not use an active control group, and so it is possible that the BSS content was not the primary cause of the PCL score reductions. Other therapeutic factors, such as finding other veterans with similar values and concerns, social support from the group, rapport with group leaders, and effects of the prayer

log, that may overlap with the known positive mental health effects of journaling no doubt also contributed to the positive outcomes, but in unknown proportions. Furthermore, some aspects of group content, particularly some elements of the forgiveness sessions, overlap with components of some cognitive behavioral therapies, and so the content of the intervention is not exclusively spiritual. Further studies with active placebo groups are indicated.

As noted above, demand characteristics are likely to be increased in wait-list studies relative to placebo control designs, as all participants know whether they are receiving a treatment. Similarly, members of the control group are not subject to therapist allegiance effects, which is another potential confound. Self-selection has potential to confound this study, in that only veterans who are interested in spirituality would be likely to volunteer. On one level, this is not a threat to ecological validity, as use of a spiritually integrated intervention with a client who is not interested in that approach would be unethical, and so the sample mirrors the expected clinical use of the intervention. On the other hand, for those with spiritualities including an evangelical component, participants may have been highly motivated to respond to demand characteristics by reporting improvements associated with the intervention. Demand characteristics may be increased because participants were not blind to their intervention versus control group status. Future studies with placebo or active control groups would be useful to address these concerns. The present study provides no data about the extent to which gains made in this protocol are maintained; future studies would be necessary to further examine this issue.

Approximately 15% of the veterans in this sample were preparing to apply or actively applying for disability benefits, and they may have been motivated to report maintained symptoms in an effort to support their disability claim, which also has the potential to confound findings. Vietnam veterans comprised approximately 36% of the sample; previous research has identified this cohort of veterans as treatment refractory (Fontana & Rosenheck, 1996; Hammarberg & Silver, 1994; Ruzek et al., 2001), which could act as another potential confound.

By comparison to most other intervention studies, participants in this sample had lower baseline PCL scores. This was expected, given that the criterion for inclusion was trauma exposure, rather than a diagnosis of PTSD. The lower baseline PTSD scores may have suppressed findings of change as compared with other studies of interventions for PTSD, in that the lower baseline would reduce the contribution of regression to the mean in the findings. This less severely ill sample may also limit generalizability for the study to individuals with mild to moderate PTSD. Additional studies may be necessary to determine the utility of this intervention for more severe PTSD. This intervention was not designed to completely resolve symptoms of PTSD, but to address only spiritual issues that may be relevant. At the end of the initial 8-week trial, 46% of the treatment group (and 69% of the untreated control group) were still above cutoff scores for probable PTSD, substantiating that for many, this intervention should be a complement to more comprehensive treatment approaches.

It should be noted that although not statistically significant, the control group had higher mean PCL scores at baseline than the intervention group. Although the ANCOVA procedure does address this statistically, further replication would be appropriate to further rule-out this concern. Another limitation of the study is the use of self-report measures, rather than structured clinical interviews for diagnoses.

In summary, results indicated that participation in the BSS protocol results in a statistically significant reduction in PTSD symptoms. Findings regarding the clinical significance of the reduction of symptoms are, at best, ambiguous. This is to be expected for a complementary intervention specifically designed to treat the negative spiritual sequelae of trauma, rather than treating trauma symptoms directly. The findings from this initial randomized control trial suggest that future studies incorporating larger sample sizes and more rigorous assessment of outcomes are warranted.

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