

# Promoting Reintegration of National Guard Veterans and Their Partners Using a Self-Directed Program of Integrative Therapies: A Pilot Study

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**ABSTRACT** This article reports pilot data from phase I of a project to develop and evaluate a self-directed program of integrative therapies for National Guard personnel and significant relationship partners to support reintegration and resilience after return from Iraq or Afghanistan. Data are reported on 43 dyads. Intervention was an integrated multimedia package of guided meditative, contemplative, and relaxation exercises (CD) and instruction in simple massage techniques (DVD) to promote stress reduction and interpersonal connectedness. A repeated measures design with standardized instruments was used to establish stability of baseline levels of relevant mental health domains (day 1, day 30), followed by the intervention and assessments 4 and 8 weeks later. Significant improvements in standardized measures for post-traumatic stress disorder, depression, and self-compassion were seen in both veterans and partners; and in stress for partners. Weekly online reporting tracked utilization of guided exercises and massage. Veterans reported significant reductions in ratings of physical pain, physical tension, irritability, anxiety/worry, and depression after massage, and longitudinal analysis suggested declining baseline levels of tension and irritability. Qualitative data from focus groups and implications for continued development and a phase II trial are discussed.

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## INTRODUCTION

Psychological distress and adjustment difficulties among military veterans returning from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) and their relationship partners are well documented.<sup>1-3</sup> Screening efforts suggest that up to 42% of National Guard veterans and roughly one-third of all returning veterans have problems that warrant mental health treatment, yet most are not receiving treatment. Many returnees express concerns about interpersonal conflict, highlighting the potential impact of deployment-related psychological distress on the well-being of veterans' family members, friends, and coworkers.<sup>3,4</sup>

Perceived stigma associated with seeking behavioral health services remains a barrier to needed treatment.<sup>5</sup> Sayer et al<sup>6</sup> reported both individual and sociocultural barriers cited by veterans as reasons for not seeking treatment. With the numbers of veterans that will be reintegrating into community life in the coming years, the long-term impact of untreated or undertreated mental health problems is expected to impact communities for years to come.

As a distinct population, members of the National Guard face circumstances different from those of veterans of other branches of the military in terms of access to services during reintegration. Rather than returning to a base that may offer a comprehensive range of services and the camaraderie of others who have shared their experiences, they return to their home communities as "citizen soldiers." Although eligible for Veterans Administration (VA) benefits, distance to VA

facilities and Vet Centers may pose an obstacle that limits their use of those opportunities, particularly in rural states. Although other veterans who return to a base spend their days among those who recognize their service, rank, and experiences, and may also be alert to signals of mental difficulties, National Guard veterans returning to prior jobs may well be earning less pay, having less responsibility, and receiving less respect from coworkers who have never experienced them in their military capacities. From a community health perspective, National Guard veterans are a population at significant risk of being underserved in terms of mental health needs. Thus, innovative interventions that overcome the psychological, geographical, and financial obstacles to accessing formal services and help this population reintegrate and adjust to community life in the long term are needed. Of particular interest are interventions that target maladaptive coping strategies commonly addressed in cognitive behavioral interventions such as worry, self-punishment, and social avoidance, and that bolster social support as these may reduce combat-related symptoms in this population.<sup>7</sup>

This article reports pilot data from a phase I National Institute of Mental Health-funded study of a behavioral health intervention designed for autonomous use at home by National Guard veterans and partners of their choice to promote reintegration and well-being. The project is entitled "Mission Reconnect: Promoting Resilience and Reintegration of Post-Deployment Veterans and Their Families." The intervention, delivered by CD, DVD, and print, integrates instruction in evidence-based complementary therapies supporting both individual and relationship well-being. The program is designed to be self-directed with its different elements used at home, at work, or anywhere the participant finds them helpful. People may use each element of the

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program as frequently or infrequently as they like. Using it requires neither travel to VA or other facilities nor labeling oneself as in need of mental health care. The wellness-oriented techniques in this program are appropriate for people across a broad spectrum of mental health status and may be used by themselves or as an adjunct to individual or group therapies. Thus, the program may be able to reach people who are geographically isolated from services as well as people who are reluctant to use mental health services.

Mission Reconnect includes meditative, contemplative, and relaxation techniques and use of touch with a partner in the form of simple massage. Hundreds of small clinical trials indicate that mindfulness-related practices may offer significant benefits for a broad spectrum of health and mental health outcomes including stress, depression, and post-traumatic stress disorder (PTSD), including with military populations.<sup>8–10</sup> However, given the size and quality of these studies (many, for instance, lacked plausible comparison groups), their findings must be taken as suggestive rather than definitive. A recent systematic review of complementary and alternative medicine (CAM) therapies for depressive and anxiety disorders concluded that “For anxiety disorders, there is limited evidence on the effectiveness of meditation (n = 2 studies) . . . Relaxation and/or breathing retraining show promise as a CAM therapy . . . Mindfulness-based stress reduction has shown positive effects on anxiety and depressive symptoms. However, studies are poor to fair quality.”<sup>11</sup> Other systematic reviews have drawn similar conclusions.

The literature on massage is somewhat stronger, with massage methods, including simple relaxation massage, having been established as beneficial for a broad spectrum of conditions, with reductions in anxiety and pain among the most common benefits.<sup>12–18</sup>

While using these often-studied techniques, this investigation breaks new ground in part by delivering the instruction solely through self-directed media. In our own prior research, we found not only that people are able to learn simple touch and massage techniques from video with no personal instruction but also that the resulting massages produced reductions of pain, fatigue, anxiety, and depression, on a par with those of professional massage therapists.<sup>19</sup> Although mind–body techniques are now taught in many medical schools,<sup>20</sup> and their use is fairly widespread, we found no research on the effects of these techniques when taught exclusively by CD and/or audiotope even though tapes and CDs teaching mind–body techniques are ubiquitous. Although both massage and mind–body techniques are increasingly used in VA and Department of Defense sites around the country, our program’s emphasis on self-directed media delivery of instruction is, to our knowledge, novel for the military population.

A key aspect of this program is targeting the dyadic system of a veteran and trusted partner for intervention. As stated in the Iraq War Clinician Guide, “The primary source of support for the returning soldier is likely to be his or her family. We know from veterans of the Vietnam War that

there can be a risk of disengagement from family at the time of return from a war zone. We also know that emerging problems with ASD (acute stress disorder) and PTSD can wreak havoc with the competency and comfort the returning soldier experiences as a partner and parent.”<sup>21</sup>

Although it is clear that formal mental health support is warranted for a large number of returning veterans, the people in their significant relationships are seriously affected as well.<sup>22–27</sup> Early support for both the veteran and family may increase the potential for successful reintegration and family cohesion and reduce the likelihood or severity of future problems. Thus, the goal of Mission Reconnect is to offer an integrated program that leverages the relationship bond to encourage compliance, teaches stress-management skills to both the veteran and partner, and strengthens the relationship through joint use of wellness-related practices and guidance in generating compassion and appreciation for self and partner. This article reports on a phase I feasibility study of the approach.

## METHODS

### **Recruitment and Sample**

Recruitment was conducted with the cooperation of the Family Support and Assistance Programs (FSAPs) of the Army National Guard in both Vermont and Oregon. Subjects were recruited through presentations at postdeployment Yellow Ribbon events and through announcement in FSAP e-newsletters. Subjects were consented in person or by phone by the first author, and institutional review board oversight was provided by the New England Institutional Review Board, Newton, Massachusetts.

### **Baseline Phase**

Subjects completed a 30-day baseline phase (no intervention) with survey data (described below) collected at the beginning (baseline 1) and end of the 30 period (baseline 2) to establish stability of baseline levels on standardized instruments (see the section “Data Collection”).

### **Intervention Phase**

Intervention began with a 2-hour orientation meeting in which subjects were given the intervention package (CD, DVD, manual, described below), viewed the materials as a group, and received instructions for home practice and data collection.

Intervention activities were of two types: (1) mind/body practices (meditative, contemplative, and relaxation techniques) taught by audio CD and print instruction and (2) massage for stress reduction (taught by video DVD and print/photographic instruction). Subjects were instructed to practice their choice of practices at least 3 to 4 times per week for 8 weeks and to try them all at least once during the course of the 8-week intervention period.

For massage, we instructed the subjects to practice massage techniques of their choice as often as they mutually agreed each week, suggesting that they may benefit from sessions of just a few minutes on up to 30 minutes or more. This would allow us to collect data on preferences and utilization patterns. In addition to these general instructions, we asked all dyads to do one 20-minute session per week as a “massage reporting session.” This would allow us to collect data on change in veterans’ symptoms after a uniform dose of partner-delivered massage across the sample. (This weekly reporting session was not assumed to be representative of all sessions because of expected variations in duration.) We used this approach successfully in a prior study for assessing the ability of caregivers to provide relief through massage at home.<sup>19</sup>

### Data Collection

All data were collected online via PsychData.com. Data were collected both monthly and weekly. The monthly survey package was administered to both veterans and partners at baselines 1 and 2 (30 days apart), 4 weeks after beginning intervention, and again at 8 weeks (end of intervention). We used the PTSD Checklist—Civilian Version (PCL-C)<sup>28</sup> for both the veteran and the partner. The PCL-C is a 17-item self-report scale that assesses the Diagnostic and Statistical Manual for Mental Disorders (Edition 4) diagnostic symptoms of PTSD using a Likert-type response format. It has demonstrated excellent internal consistency and test–retest reliability and correlates highly with other measures of PTSD.<sup>29</sup> The PCL-C is used rather than the PCL-Military because it is important to assess veterans’ responses to military and non-military traumatic events. The PCL-C was used with partners and veterans since partners of veterans with PTSD may experience secondary trauma stress,<sup>30,31</sup> veterans with PTSD have increased tendency toward intimate partner violence,<sup>32</sup> and women who have experienced intimate partner violence have increased incidence of PTSD.<sup>33,34</sup> The incidence of PTSD among partners of OIF/OEF veterans remains understudied.

To assess depression, we used the Beck Depression Inventory II (BDI-II). This is one of the most widely used instruments for measuring depression and uses a 21-item scale with reliability and validity established in numerous studies. Respondents are asked to rate their symptoms and attitudes using a 4-point scale. Normative values for a variety of patient populations are available as reliability figures,<sup>35</sup> and comparison data on OIF veterans are provided in the section “Results.”

Subjects completed the Perceived Stress Scale (PSS-10), a 10-item Likert-scaled instrument to determine perceived stress levels over a 1-month recall period. The PSS is a validated and widely used scale for community samples with at least a junior high school education. The items are general in nature and free of content specific to any subpopulation group.<sup>36</sup>

To assess capacity for compassion toward others, we used the Compassionate Love Scale (“Close Other” version), 21 items with a single score that assesses compassionate or altruistic love. Studies with three samples ( $N = 529$ ) were used to create the scale that was tested in three new studies ( $N = 700$ ) for validation and to identify correlates of compassionate love. Correlates were seen with indices of prosocial behavior such as helping others, social support to close others, and empathy with others ( $\alpha = 0.95$ ).<sup>37</sup>

We also used the Self-Compassion Scale, a 26-item, 5-point Likert measure of 6 different aspects of self-compassion: self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification. The scale has an appropriate factor structure and demonstrates concurrent validity (e.g., correlates with social connectedness), convergent validity (e.g., correlates with lower anxiety, depression, and perfectionism, and greater satisfaction with life), discriminate validity (e.g., no correlation with social desirability or narcissism and appears to promote better coping than self-esteem),<sup>38,39</sup> and test–retest reliability ( $\alpha = 0.93$ ).<sup>40</sup>

To assess quality of life, we used the Quality of Life Inventory (QoLI),<sup>41</sup> a 32-item questionnaire with evidence for concurrent, discriminant, predictive, and criterion-related validity. It includes subscales for health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighborhood, and community and an overall score. It was validated in a study involving 3,927 clients from various clinical settings and has been found sensitive to treatment-related change in naturalistic clinical settings and samples.<sup>42</sup>

In addition to the above monthly survey instruments, both veteran and partner submitted a weekly report online each week during the 8-week intervention phase. The weekly reports recorded (1) frequency and duration of use of each intervention method offered plus (2) data from both the veteran and partner specific to the massage reporting session. Massage session data for the veteran comprised pre- and postsession ratings (recorded at time of massage on a two-sided, 5 × 8-inch session card) for levels of physical pain, physical tension, irritability, anxiety/worry, and depression, each rated for severity on a 0 to 10 scale. Massage data for the partner comprised areas of the body massaged and duration of the reporting session. All session card data were later entered by the subjects individually on their online weekly report.

Subject compensation was \$20 for each weekly report and \$25 for each monthly survey.

### Instructional Materials

#### Video Instruction

A DVD was professionally produced with the following contents: (a) Introduction to Mission Reconnect by LTC Wayne Jonas, MD (Ret.), U.S. Army Medical Corps (welcoming and endorsing the program, 2:15), (b) Overview of the Project

(W.C., purpose and goals, 1:45), A Word on PTSD (W.C., responding if symptoms arise during exercises, 1:21), How to Participate (W.C., setting aside time daily for wellness practices, willingness to test practices, 0:50), The Tools (W.C., types of practices, frequency and duration of use, 1:05), and (c) Instruction in Massage for Stress Reduction (J.K., overview, communication, preparation, affirming nonsexual intention; instruction in light massage techniques for the head and face, neck, shoulders, back, feet, and hands, using home furniture, 29:00).

*Audio Instruction*

The first two authors (W.C., J.K.) produced and recorded an audio CD with the following guided mind/body practices: “Centering” (basic mindfulness meditation instruction, 11:36, male and female voice versions), “Connecting” (contemplative guided meditation to encourage appreciation, compassion, and well-wishing for the partner and self, 7:03, male and female voice versions), “Deep Relaxation” (progressive relaxation through the body, 20:12, male voice), “Sound Into Silence” (following the tone of a struck chime into silence to facilitate meditative state, 4:16, female voice), “Movement Into Stillness” (seated, gentle rocking in progressively reduced movements until still, 5:32, female voice), and “Therapeutic Yawning” (evocation of the yawning reflex for a series of six to twelve yawns, 3:16, female voice). Subjects were encouraged to download the exercises to their mobile devices for practice any time of day they wished (though we did not collect data on devices used).

*Printed Manual*

The project manual (47 pages) includes the text of the introductory DVD material, descriptions and specific instructions for each of the guided mind/body exercises, and instructions for the massage techniques accompanied by photos.

**Follow-Up Focus Groups**

A convenience sample of 12 dyads (self-selected), who were able to attend at the scheduled meeting times, participated in two 90-minute follow-up focus groups after the completion of intervention. The purpose was to provide qualitative data on perceived impact of the program, usability of the materials, and recommendations for future development. The meetings were recorded, transcribed, and analyzed using QSR NVivo software for thematic analysis and coding of participant comments. Participants were compensated \$50 for attendance.

**Deployment-Related Interruption**

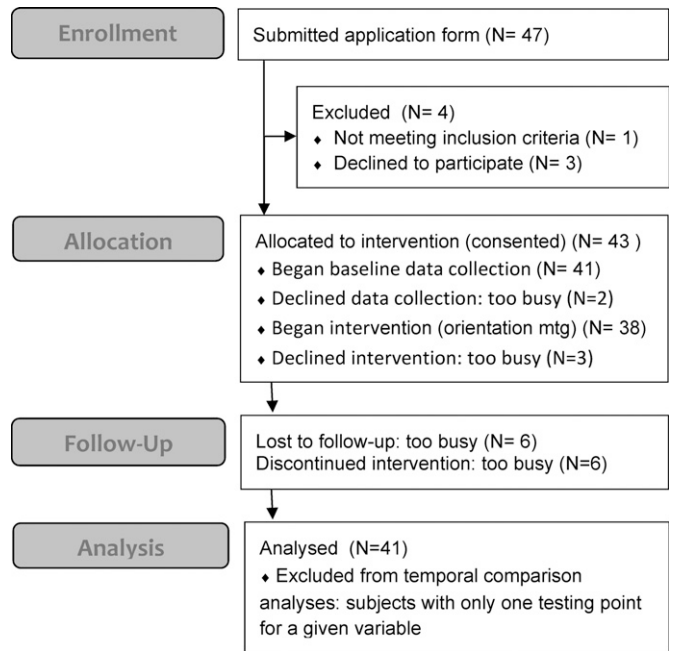
Hurricane Irene struck New England roughly midway through the intervention phase for the Vermont cohort, requiring temporary deployment of some subjects. Given study’s primary goal of assessing feasibility of the instructional approach, we decided to accommodate this by instructing affected dyads to pause their weekly reporting regimes until after the soldier returned so as to have 8 weeks of complete data

from participating dyads. We address this further in the section “Discussion.”

**RESULTS**

**Sample**

Forty-three dyads were consented (27 Vermont, 16 Oregon). Of these, 23 veterans had 1 deployment, 18 had 2 deployments, and 2 had 3 deployments; 8 were OIF only, 20 OEF only, and 15 had been in both OIF and OEF. The sample includes service members with return dates ranging from 2002 to 2011. As seen in Figure 1, of 43 consented dyads, 41 provided baseline data,



**FIGURE 1.** Subjects flow diagram (N refers to dyads).

**TABLE I.** Demographics

	Veteran	Partner
Age (Years)		
Mean	34	29.3
Median	36	31.5
SD	6.7	6.9
Sex (N)		
Male	38	4
Female	5	39
Ethnicity (N)		
White	37	37
Black	1	2
Hispanic/Latin	2	3
Native American	3	1
Education (N)		
Some High School	1	0
High School Graduate	13	9
Some College	14	18
Technical School	1	3
BA	13	12
MA	1	1

**TABLE II.** Weekly Frequency and Duration of Project Activities (*N* = 43 Dyads)

Activity	Veterans (168 Reports)		Partners (176 Reports)	
	Frequency Mean (SD)	Minutes <sup>a</sup> Mean (SD)	Frequency Mean (SD)	Minutes <sup>a</sup> Mean (SD)
Centering Exercise	1.2 (1.9)	9.0 (3.1)	1.4 (1.9)	8.8 (2.3)
Connecting Exercise	0.7 (1.0)	9.3 (3.4)	0.8 (1.1)	8.9 (2.7)
Deep Relaxation Exercise	1.3 (1.7)	12.8 (5.5)	1.1 (1.7)	12.5 (5.1)
Movement Into Stillness	0.5 (1.0)	9.1 (3.4)	0.6 (0.9)	8.7 (2.0)
Sound Into Silence	0.5 (1.1)	9.5 (3.1)	0.5 (1.0)	8.7 (2.1)
Therapeutic Yawning	2.2 (2.8)	8.2 (1.6)	1.9 (2.6)	8.5 (2.2)
Cumulative Mind/Body	6.3 (5.7)	27.0 (17.6)	6.3 (5.6)	27.6 (15.6)
Used Any of the CD	1.5 (2.0)	11.9 (5.8)	1.9 (2.4)	10.4 (4.7)
Watched Any of the DVD	0.6 (1.3)	12.5 (5.7)	0.6 (1.2)	12.4 (6.4)
Looked at the Manual	0.6 (1.2)	9.7 (3.9)	0.9 (1.4)	8.8 (2.8)
Gave Massage	1.3 (1.5)	15.6 (6.6)	1.4 (1.3)	19.4 (6.1)
Received Massage	1.5 (1.6)	18.4 (5.9)	1.1 (1.3)	16.3 (6.5)
Cumulative of All Activities	11.9 (9.2)	66.0 (38.1)	12.2 (8.8)	67.9 (31.6)

<sup>a</sup>For sessions performed, cumulative is total minutes reported per subject.

38 began intervention, and 32 completed the final follow-up (84% of intervention starters). Demographics of the sample are shown in Table I. In all cases of dropout for which we were able to attain information, reasons given were related to time commitment involved to do project activities.

**Fidelity**

Subjects averaged over six times per week using one or more of the mind/body exercises and more than 2.5 times using massage (Table II); thus, for both modalities, fidelity exceeded the minimum instructions. Minutes per week devoted to both modalities combined averaged 61 for veterans and 63.3 for partners.

**Mind/Body Practices**

Of mind/body exercises, the Therapeutic Yawning, Centering, and Deep Relaxation exercises were most used. Subjects reported using the mind/body practices an average of 6.3 times per week; veterans averaged 27 minutes (SD 17.6), and partners 27.6 minutes (SD 15.6).

**Massage Data**

Mean duration of the 136 massage reporting sessions conducted was 22.7 minutes (SD 5.5), and the most prominent

areas massaged were shoulders (75%), neck (72%), back (68%), head (36%), and feet (27%). Veterans reported highly significant reductions after massage for physical pain, physical tension, irritability, anxiety/worry, and depression (Table III). Change over time in veterans’ pre-session ratings of symptom levels was analyzed by splitting each veteran’s weekly reporting sessions into an early series and a late series, and then comparing the two series using Kendall’s tau-b (Table IV). Significant declines were seen over time in pre-session ratings for “physical tension” and “on edge/irritable.”

**Survey Data**

For all survey instruments, two baseline testings showed no significant differences; thus, the mean scores of two baseline testings were calculated for each subject for reporting as their “baseline” (Table V).

*Post-Traumatic Stress Disorder*

Baseline scores for veterans on the PCL-C (mean 34.7, SD 13.6) were close to those of a study of 355 OIF veterans by Erbes et al<sup>43</sup> (mean 35.5, SD 13.6, using the Military version of the PCL). The VA National Center for PTSD suggests cutoffs for screening and diagnostic purposes,<sup>44</sup> with a screening cutoff of 25 for both active duty OIF/OEF veterans

**TABLE III.** Symptom Ratings Pre- and Postmassage (Veterans)<sup>a</sup> (Wilcoxon Signed-Rank Tests)

Symptom	Before	After	<i>N</i>	<i>S</i>	<i>p</i>
	Mean (SD)	Mean (SD)			
Physical Pain	3.35 (2.11)	2.36 (1.46)	211	3933.5	<0.001
Physical Tension	4.12 (2.09)	2.30 (1.37)	212	8382.5	<0.001
On Edge/Irritable	3.97 (2.22)	2.06 (1.21)	212	8,055	<0.001
Anxiety/Worry	3.63 (2.21)	2.12 (1.30)	206	5,975	<0.001
Depression	2.59 (2.06)	1.77 (1.24)	212	2232.5	<0.001
Other	1.65 (2.01)	1.34 (1.11)	119	28	<0.010

<sup>a</sup>Self-ratings from 0 (not at all) to 10 (worst imaginable).

**TABLE IV.** Change in Premassage Symptom Ratings Over Time: Kendall's tau-b Results (*N* = 215 Session Reports)

Symptom	<i>t</i>	<i>p</i>
Physical Pain	-0.023	<0.665
Physical Tension	-0.124	<0.017
On Edge/Irritable	-0.111	<0.032
Anxiety/Worry	-0.048	<0.359
Depression	-0.029	<0.587
Other	-0.043	<0.536

and civilians and diagnostic cutoffs of 28 and 30 to 38, respectively.<sup>45-47</sup> Thus, there appeared to be substantial risk of PTSD in both veterans and partners in our sample, and both veterans and partners showed significant, though modest, improvements at both follow-ups.

*Depression*

Baseline depression scores for veterans (mean 12.6, SD 11.5) were higher than that of Erbes et al sample (mean 9.78, SD 7.95). The cutoffs used for the BDI-II are 0 to 9 for minimal depression, 10 to 16 for mild, 17 to 29 for moderate, and 30 to 63 for severe. Both veterans and partners showed significant reductions from the mild range to the minimal range at follow-up.

*Other Scales*

The PSS-10, Compassionate Love Scale, and Self-Compassion Scale are not diagnostic instruments, so there are no cutoffs. Partners showed significant reductions in perceived stress, and both partners and veterans had significant improvements in self-compassion at first follow-up and a trend at second follow-up. There were no significant changes on the Compassionate Love Scale, although over half of the subjects improved their scores at both follow-ups. The QoLI showed no significant outcomes on any subscales or total score. Those data are not presented here but are available on request.

**Qualitative Data (From Focus Groups)**

Participants reported practicing the exercises at home, at work, and in their vehicles. They viewed the project and each of its elements as well designed and beneficial. They endorsed the inclusion of all the elements even though they individually selected elements that best suited their personalities and/or life circumstances: "Regardless of where I was during the day, I felt like I could use Centering when I felt things getting kind of edgy and unsettled." The overall program was described as providing useful ways of managing stress and improving their couple relationship: "... the Connecting, with thinking about what I appreciated in him, that was nothing new, but sharing it with him was a new piece and it helped me to open up more", and "I think it's a great post-deployment type thing, because you are so separate for so long, it definitely did draw us back towards each other ...". The participants strongly endorsed the program and proposed its broader availability to veterans and families: "... the guys are under a lot of stress, and we are under a lot of stress at home, even without the deployment. The military world is a different world, so anything from this aspect of empowering themselves and couples is just great, so thanks for bringing it to us."

**DISCUSSION**

As noted in the section "Methods", some dyads had data collection interrupted for emergency deployment during Hurricane Irene. Given our primary goal of evaluating feasibility of the instructional approach, we deemed delayed reporting to be an appropriate, though imperfect, solution to obtain a full 8 weeks of "normal use" data. Nine dyads were affected. These partners and some veterans were free to practice to the extent they could during nonreported weeks (though some veterans were working 18-20 hours per day). Four dyads required an additional 2 weeks, 3 an additional 4 weeks, and 2 an additional 5 to 7 weeks to achieve 8 weeks of reporting. For these 9 dyads, we cannot rule out potential historical confounds, either negative (e.g., greater stress) or positive (e.g., more practice, maturation), affecting their monthly survey data.

**TABLE V.** Survey Data: Baseline vs. 4-Week and 8-Week Follow-Up (*N* = 41 Veterans, *N* = 41 Partners, Wilcoxon Signed-Rank Tests)

Instrument	Subjects	Baseline	4-Week Follow-Up				8-Week Follow-Up			
		Mean (SD)	Mean (SD)	Percentage Improved (%)	<i>S</i>	<i>p</i>	Mean (SD)	Percentage Improved (%)	<i>S</i>	<i>p</i>
PCL-C	Veterans	34.7 (13.6)	29.0 (9.6)	72.4	106.5	<0.003	29.8 (12.5)	73.3	139.5	<0.003
	Partners	31.8 (11.1)	27.5 (8.4)	59.3	81	<0.026	27.1 (10.8)	67.7	111.5	<0.009
PSS-10	Veterans	26.5 (6.8)	24.6 (6.8)	62.1	59	<0.201	25.2 (7.0)	60	83	<0.088
	Partners	26.7 (6.6)	23.2 (6.3)	66.7	97.5	<0.006	23.6 (6.9)	58.1	103	<0.016
BDI-II	Veterans	12.6 (11.5)	9.0 (7.7)	69	113	<0.008	9.6 (9.0)	66.7	129	<0.006
	Partners	10.1 (7.8)	6.3 (7.2)	66.7	88	<0.015	7.5 (9.4)	67.7	88	<0.032
Compassionate Love Scale	Veterans	83.5 (12.1)	88.1 (14.5)	72.4	58.5	<0.212	84.1 (14.4)	66.7	-35.5	<0.453
	Partners	91.1 (10.6)	91.4 (12.5)	77.8	-25	<0.513	87.2 (15.6)	64.5	-58	<0.216
Self-compassion Scale	Veterans	3.0 (0.6)	3.4 (0.7)	75.9	130.5	<0.003	3.2 (0.9)	70	84	<0.069
	Partners	3.0 (0.8)	3.3 (0.7)	63	100.5	<0.013	3.2 (0.7)	67.7	92	<0.057

One of the most important findings of this pilot study concerns compliance/fidelity. We found that postdeployment National Guard veterans and their partners were able and willing to follow the recommended utilization of the proposed health promotion activities. Williams et al, in a review of CAM therapies that they conducted for the VA, found that the studies they reviewed often reported high rates of drop-out. From this, they concluded that adherence to meditation may be problematic in a clinical setting. Although our methods do not allow a direct comparison to these studies, it appears that our adherence may have been higher, perhaps because of the support of the partner relationship.

This also contrasts with the often-lamented avoidance of help seeking or self-help commonly attributed to the military population. We observed during recruitment that most dyads entering the study were led by the partner initiating the contact (e.g., bringing the soldier to our table at a Yellow Ribbon event or telling their soldier “we need this” in response to a newsletter announcement). This affirms the viability, indeed the importance, of leveraging an existing trusted relationship as a strategy for engaging the veteran in health-promoting reintegration activity. Also, although we offered the project to veteran/partner dyads of all kinds, including parent/adult, child, sibling or friend, only one dyad entered the study that was not a spouse/life partner relationship. It appears that inclusion of massage, although deemed very helpful by those who participated in Mission Reconnect, calls for a level of intimacy that may not be seen as suitable by this population for other types of relationships. A somewhat different approach needs to be explored for nonpartnered veterans.

The data on massage for veterans suggest that partners may achieve significant acute effects for veterans’ stress-related symptoms with minimal instruction in very basic massage techniques. Perhaps, more striking was the finding that pre-session levels of most symptoms declined over time, suggesting declining background levels of most symptoms over the intervention period for veterans. Although post-massage ratings can be attributed to the massage, change in pre-massage ratings over time cannot be attributed to a single source with confidence. Participants reported during focus groups that they felt the whole program was beneficial in symptom reduction and relationship strengthening, but with no comparison group, we cannot be certain how much of their increased comfort is program effect or simply a matter of time and settling in, so to speak. This will be tested in phase II.

Although data were not collected on effects of veteran-delivered massage on partners in follow-up focus groups, there was consensus that partners wanted and appreciated receiving massage and that veterans found satisfaction in providing it. This was an unanticipated finding that we will explore further in phase II as potentially supportive of reintegration and relationship quality.

The survey data suggest that the intervention approach may yield significant reductions during the reintegration pro-

cess, for both veterans and their partners, in measures of PTSD, stress, depression, and self-compassion. Depression scores (BDI-II) for both veterans and partners dropped from the mild range to the minimal range during intervention. Mean PTSD scores were below the threshold for the clinical diagnosis (50) from baseline onward, though a substantial range in scores was seen. The change in self-compassion scores is of particular interest in light of the concept of “moral injury” as related to PTSD in OIF/OEF veterans.<sup>48</sup> The absence of significant change on the Compassionate Love Scale may be because of a ceiling effect, given that baseline scores were relatively close to the maximum possible score (105). The lack of significant effects on the QoLI may be a function of insufficient sensitivity of the instrument or too small a sample.

Finally, we recognize that reintegration and resilience are multifaceted constructs. In this feasibility study, we sought to assess potential for impact of the intervention on some variables that theoretically contribute to those broad constructs. In phase II, with feasibility established, we will focus more directly on measures of both reintegration and resilience, as well as sleep and relationship quality, in a four-armed randomized controlled trial. We plan to refine the intervention approach based on phase I data; use web-based delivery to computers and mobile devices so that it can be a fully autonomous, self-directed intervention; and then compare outcomes to a standard of care in-person program currently being used in the military to promote reintegration and resilience.

## **CONCLUSIONS**

Veterans and their partners in this sample showed willingness to engage and use the mind/body practices and massage methods offered in Mission Reconnect and appeared to benefit from them. This study suggests that leveraging a trusted relationship may offer a viable approach to implementing self-directed interventions such as this for promoting well-being during postdeployment reintegration. Given that members of this branch of military are at particular risk for being underserved, in both short-term and long-term mental health service needs, autonomous and self-directed interventions may play an increasingly important role over time.

These pilot data encourage further development of the approach followed by testing with a larger and more diverse sample as is planned for phase II. Questions remaining to be answered include optimal duration of intervention period, longevity of effects, usability of the intervention by more ethnically diverse populations, and effects for veterans from various branches of the military.

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