Effects of Integrative PTSD Treatment in a Military Health Setting

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Abstract

Research indicates that the current standard of care for combat-related stress disorders and related conditions is not maximally effective, nor does it fully address the biopsychological aspects, complexity, and overlap of precursors and comorbidities characteristic of posttraumatic stress disorder (PTSD). There is need for comprehensive interventions based upon both neuroscientific information and new integrative care models. The Warrior Combat Stress Reset Program (Reset), an innovative intensive outpatient behavioral health program at the Carl R. Darnall Army Medical Center at Fort Hood, Texas, provided integrative care for active-duty service members for the treatment of PTSD symptoms from 2008 to 2015. The Reset protocol combined trauma-focused behavioral health techniques with complementary and alternative medicine (CAM) modalities including acupuncture, massage, Reiki, reflexology, and yoga. A retrospective, observational, quasi-experimental design was employed to determine the change in health outcomes from pre- to posttreatment. Treatment outcomes were analyzed for 764 service members who attended the 3-week behavioral health program between 2008 and 2013. Results indicate significant reductions in PTSD symptoms (PTSD Checklist–Military version; $p < .001$), anxiety (Beck Anxiety Inventory; $p < .001$), depression (Beck Depression Inventory II; $p < .001$), and pain (Oswestry Pain Index; $p < .001$) from pre- to posttreatment. Outcome analysis by year indicates steady improvements in treatment gains for these major outcomes over time. Advancement is occurring in the search for effective, evidence-based treatments for PTSD. Reset demonstrated promise for reducing symptoms of PTSD, anxiety, and depression through its integrative approach combining traditional and trauma-focused psychological therapy with CAM treatments.

Keywords: military, PTSD, posttraumatic stress disorder, integrative medicine, complementary medicine, alternative medicine, CAM, EFT, Emotional Freedom Techniques, EMDR

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Introduction

Military personnel are among the most at-risk populations for exposure to traumatic events and

the development of posttraumatic stress disorder (PTSD; Prigerson, Maciejewski, & Rosenheck, 2001; Schlenger et al., 2002), with an estimated 28% of PTSD cases in Americans resulting from combat trauma (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Previous research has shown that deployment and exposure to combat results in increased risk of psychiatric and physical illnesses (i.e., acute stress disorder [ASD], PTSD, major depression, substance abuse, chronic pain, headache), reduced quality of life, functional impairment in social and employment settings, increased use of health care services, and a substantial socioeconomic burden to society.

Currently, pharmacological and psychological interventions are used in the treatment of combat-related PTSD in veteran populations. The conventional PTSD treatment approach is grounded in cognitive-behavioral theory. New trauma-focused treatment includes use of other behavioral health interventions, innovative combinations of treatments, and complementary and alternative medicine (CAM) modalities. It has been estimated that up to 40% of those with PTSD diagnoses use some type of CAM (Libby, Pilver, & Desai, 2013).

A number of recent studies of CAM have demonstrated both the efficacy and acceptability of CAM modalities in veteran populations. Tan and colleagues (2007) reviewed a large volume of the CAM efficacy literature and noted that many CAM modalities had positive results with chronic pain conditions. Tan, Dao, Smith, Robinson, and Jensen (2010) reported on the results of adding CAM modalities to a Veterans Administration (VA) pain clinic. The benefits that followed the introduction of CAM therapies included: improved attendance and involvement in group-based therapies, reduction in self-reported pain and anxiety, improved sleep, and an increased sense of emotional well-being. The data also demonstrate that CAM therapies were associated with an average pain reduction of about 1 unit on a 0–10 numerical rating scale.

Church and Brooks (2014) used CAM and energy psychology techniques with veterans and family members, resulting in very strong reductions in PTSD symptoms. The authors concluded that significant reduction in PTSD symptoms is consistent with other published reports of EP treatment. The authors also note that results indicate that a multimodal CAM intervention incorporating EP may offer benefits to family members in addition to the veterans suffering from PTSD.

Integrative medicine (IM) refers to a family of holistic practices used in conjunction with conventional medicine that combines conventional allopathic and CAM modalities to address the biological, psychological, social, and spiritual aspects of health and illness. This blending of therapies and services generally exceeds the collective effect of the individual practices (Boon, Verhoef, O'Hara, Findlay, & Majid, 2004) and allows for a seamless continuum of decision-making and patient-centered care and support.

Program Description

The Warrior Combat Stress Reset Program (Reset), an intensive outpatient program at Fort Hood, Texas, operated from August 2008 to September 2015 with the goal of providing effective integrative care for active-duty soldiers for the comprehensive treatment of PTSD symptoms. After a yearlong planning process, the Reset Task Force designed a multimodal, multiphase, intensive day-treatment program. The final model included a 3-week Day Treatment phase in which up to 12 soldiers entered as a cohort and participated 5 days a week, 8 hours per day. All subjects participated in a matrix of behavioral health activities and CAM modalities including acupuncture, massage, Reiki, reflexology, and yoga.

During the intensive 3-week Day Treatment first phase, an individual soldier would engage in about 36 group sessions, 12 individual therapy sessions, and up to 36 CAM sessions. Homework such as mind-body relaxation, use of cranial electrical stimulation (CES) devices, journal work, and in-vivo exposure exercises were also assigned. The follow-up second phase included weekly group, CAM, and individual sessions for an additional 6 to 8 weeks. Soldiers were able to continue some level of supportive care in the program as long as they were in the Army.

The program was targeted to cover all facets of the PTSD symptom picture in three stages, with stage 1 focused on reducing hyperarousal, which was seen as the key that controlled many of the other common PTSD symptom clusters: sleep disorders, emotional reactivity, conditioned triggers, and avoidance behaviors. The plan was to use CAM and mind-body approaches in the initial

stage to produce mental, emotional, and physical quieting, via both passive techniques: CAM modalities, cranial electrical stimulation (CES), and active self-regulation training (breathing and relaxation techniques, Emotional Freedom Techniques [EFT], meditation, and visualization).

As a second stage, other intrusive symptoms were targeted (sleep disturbances, pain, headaches, residual post-concussion symptoms, avoidance). In the Fort Hood Reset population of moderate to severe PTSD soldiers, virtually 100% would have qualified for a chronic pain syndrome diagnosis; about 80% had headaches of one type or another; and roughly 40% had concussion histories with complaints of memory and cognitive dysfunction. Sleep disturbances (insomnia, nightmares) were ubiquitous. Neurofeedback training, acupuncture, massage, yoga, tai chi, Reiki, and CES were typically useful in this phase. In addition, the soldiers began to use their new skills and tools for imaginal and in-vivo exposure activities to confront situations previously avoided.

The third stage of the day-treatment process targeted the specific trauma memories that initiated the evolution of PTSD symptoms. Soldiers completed a personal trauma history timeline including "triggers," avoidance patterns, and trauma events during the first week. The timeline included pre-military events as well as deployment and non-deployment military experiences. The specific targets were what were termed "hooks," the specific moments in time when difficult events became trauma index instances. The self-assessment model used was from the Navy Combat and Operational Stress Program that developed a clinical classification of trauma events into three clusters (Litz et al., 2009). This typology is not a diagnostic subcategorization of PTSD but was clinically useful in helping soldiers conceptualize their experiences.

These typologies were translated operationally for the study population as follows:

1. Shock & Awe Events: High-intensity negative events that produced persistent triggers or conditioned "flinch" responses, hypervigilance, avoidance, and general hyperarousal patterns. This is roughly related to the basic DSM PTSD description included in Criterion A.
2. Loss, Grief, and Guilt Events: These include "wounds" to relationships, grief from death of comrades, guilt over things done or not done, and survivor guilt responses. Observed residuals included emotional numbing, self-blame, social withdrawal, anger, and depression.
3. Moral Injury Events: Events involving deep inner conflict related to ideals or values of right and wrong are particularly impactful, initiated by instances of betrayal, disillusionment, disappointment, and irresponsibility. Occasionally, this involved self-judgment over things done or not done but more often involved wrongness of enemy actions, command decisions, events in general, or existential, philosophical, or religious impacts. Reactions included explosive rage triggered by "stupid people," cynicism, disillusionment, and despair. A common slang term was "having a broken 'give-a-shit.'"

These typologies were used to target trauma-focused interventions in group or individual treatment. Gestalt techniques, cognitive behavioral interventions, guided imagery/hypnosis, Eye Movement Desensitization and Reprocessing (EMDR), and Emotional Freedom Techniques (EFT) were often used, as well as journal exercises, expressive art work, and meditation.

Data Collection

Program evaluation design was built into the Reset Program from the beginning. A coded paper data file was created for each applicant, beginning with Patient #1. Evaluation screening instruments for admission, pre-evaluations completed on Cohort Day 1, post-evaluations completed on Graduation Day after the 3-week intensive Phase, CAM session forms, and follow-up evaluations (as possible) were coded and saved. When the resources were available in 2012, the retrospective formal analysis began and the data files were entered into a secure computer database. See Appendix 1 for the complete dataset.

The battery of screening tools and tests given to each patient included well-researched and validated clinical and research instruments as well as some lesser-known assessments. These varied instruments were built into the program design to evaluate soldiers for inclusion and exclusion conditions as well as to assess outcomes. In addition, the program evaluation feedback enabled learning

from soldiers what was most effective, allowing the clinic team to make dynamic program modifications in the Reset process and content to obtain the best results possible.

Screening tools were administered to applicants prior to being accepted into the program to assess psychopathology, developmental history of trauma, PTSD, depression, anxiety symptoms, combat experiences, incidents related to explosions and head injuries, readiness, and intent for remaining in the army. A pretreatment battery was administered on the first day of treatment, assessing amenability to treatment, general military experiences, mood factors, resiliency, need for approval, belief in behavioral health, level of pain, hardiness, posttraumatic growth, self-reported PTSD, depression, and anxiety symptoms. A similar battery was given on the last day of treatment to assess change in attitudes and health outcomes.

Inclusion/exclusion criteria were somewhat flexible since Reset was an active treatment program rather than a research project. Criteria generally included active-duty status, at least one deployment, moderate to severe PTSD symptoms, no immediate suicidal ideation/homicidal ideation (SI/HI), no active substance abuse, no unresolved legal or Uniform Code of Military Justice (UCMJ) actions, Axis II characteristics low, and adequate readiness for intensive outpatient treatment. Previous involvement in active behavioral health treatment was preferred. Reset was not a research program but served as part of the Behavioral Health Department continuum of PTSD care. Referrals came from other Behavioral Health Department units, medical providers, chain of command, chaplains, spouses, and prior graduates of the program. The evaluation process included the psychological testing and screening tools, medical records review of prior health history, and a clinical interview. Applications were typically staffed by the treatment team. The Reset Program typically had a waiting list for screening and between acceptance and entering a cohort. Soldiers continued their usual care while they awaited admission.

Integrative Model and Process

Using a holistic philosophy, the integrative program depended on the synergy between standard and trauma-focused psychological therapies, mind-body treatments, and CAM therapies to (1) reduce hyperarousal, pain, and symptomatic triggers and improve sleep and self-regulation; (2) decrease avoidance behaviors and (3) facilitate recovery from "triggers" and intrusive memories. During the 3-week intensive outpatient treatment period, the cohorts of up to 12 soldiers were immersed in the day-treatment regime for 8 hours a day, 5 days a week, including (1) eclectic individual psychotherapy (i.e., cognitive therapy, supportive therapy, EMDR, hypnosis and imagery, and EFT); (2) process-oriented group therapy, including psychodrama and gestalt experiential procedures; (3) coping skills group therapy (cognitive behavioral therapies, art therapy, guided imagery, journaling, nutrition, and relaxation skills); (4) self-regulation training group sessions (i.e., meditation, mind-body relaxation techniques, self-desensitization training, self-monitoring/self-awareness, and coping skills training); and (5) daily multiple types of CAM therapy sessions (i.e., acupuncture, massage, Reiki, reflexology, sound/music therapies, tai chi, and yoga). A 6 to 8 week follow-up period included weekly group and individual psychotherapy with CAM interventions tailored to the specific needs of the soldier. See Figure 1 for a list of the Reset interventions. All soldiers participated in all modalities in the first 3-week phase and then had individually selected follow-up plans.

Soldiers developed a set of individualized treatment goals in collaboration with their primary provider at the outset of the program. Basic program goals included reduced hyperarousal, decreased avoidance, decreased pain, and identification of specific trauma events for intervention. Other more individual goals covered targets such as decreased anger outbursts, improved communication with family, increased social life, and less isolation.

Methods

In 2012, the Reset Program received army approval for external grant support from Samueli Institute for a comprehensive program evaluation project, including external staff to gather a variety of interview data and enter the retrospective patient data, a project coordinator, a database, and statistical analysis support. The project continued through 2014 and included two visits by a Samueli team to interview staff, soldiers, commanders, family members, and other providers from medical and Behavioral Health Departments. This report

- Medications (sleep, anxiety, depression)
- Cognitive Therapy
- Exposure Therapy (imaginal, in vivo)
- Stress Reduction
- Individual Therapy
- Support/Process Groups
- Mind/Body Relaxation
- Psycho-education Sessions
- CAM Modalities
- Acupuncture
- Massage
- Reiki/Bioenergy Therapies
- Yoga/Meditation
- Reflexology
- EMDR
- EFT ("Tapping")
- Tai Chi
- Aromatherapy
- Music/Sound
- Neurofeedback (for traumatic brain injury [TBI] or PTSD)
- Alpha-Stim
- Cranial Electrical Stimulation (CES)

Figure 1. Reset interventions.

covers primarily the analysis of the pre-post data from the graduates of the program during the first 5 years, 2008 to 2013. The rest of the dataset will be reported in a later paper.

The overall program evaluation focused on the effectiveness of the Reset Program in reducing PTSD and other behavioral health symptoms through integrating traditional psychological treatments, mind-body treatments, and CAM therapies. The specific aims of this project were to: (1) conduct a retrospective outcomes analysis to ascertain the extent to which the proposed goals, objectives, and aims were achieved—program effectiveness; 2) conduct a program evaluation (a) to determine whether Reset was implemented according to its own guidelines—its fidelity; (b) to identify facilitators and barriers to program expansion and/or replication at other locations—its replicability; and (c) to determine the effect on knowledge, attitudes, behaviors, and satisfaction of the program participants—its effectiveness and acceptability.

The research team conducted a mixed methods program evaluation that assessed Reset's structure, process, and outcomes to generate information about its effectiveness. By using this approach, the evaluation team combined qualitative and quantitative data so that statistically reliable information obtained from quantitative measurement might be supported and enriched by information from program participant and stakeholder explanations. The logic model in Figure 2 illustrates the team's program evaluation process. This project underwent

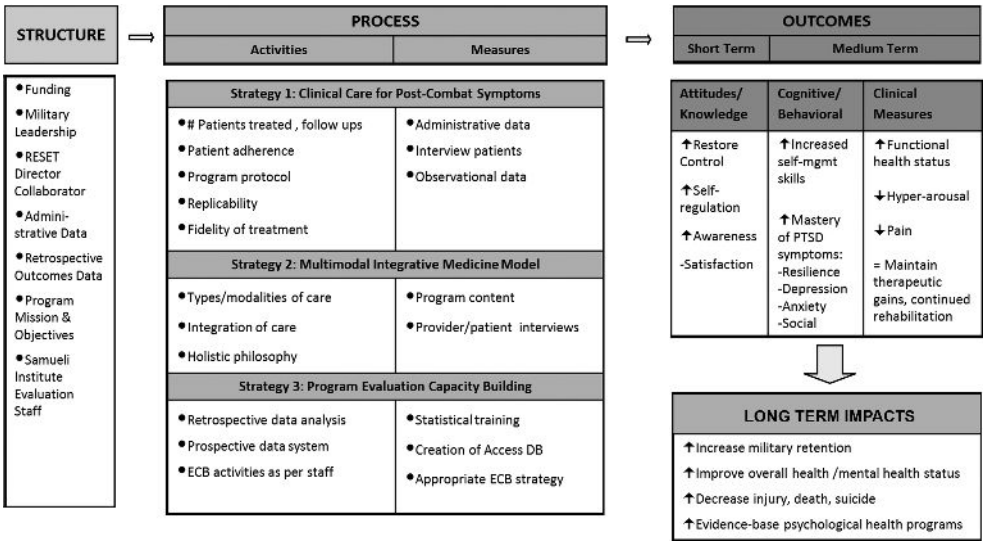

Figure 2. Logic model of the Warrior Combat Stress Reset Program evaluation.

Institutional Review Board and second-level review, and was deemed exempt by Brooke Army Medical Center and Human Research Protection Office (HRPO) at U.S. Army Medical Research and Materiel Command (MRMC). All soldier subjects signed appropriate Army forms for consent to treat. This paper will focus on the quantitative health outcomes and satisfaction with the treatment and its components.

Participants

The evaluation team performed a retrospective review, analyzing 764 de-identified patient files, representing 65 cohorts of up to 12 soldiers, dating from August 2008 through March 2013. Participants were active-duty service members who were treated at the Reset Program. Program entrance requirements include a diagnosis of PTSD and a history of deployment to a combat zone.

Measures

Each patient file included a battery of 21 instruments (see Appendix 1) administered at intake, pre- and post-program that measured PTSD symptoms, anxiety, depression, pain, and other health outcomes. The program used valid and reliable instruments, such as the PTSD Checklist–Military version (PCL-M), Beck Depression Inventory–Version 2 (BDI-II), Beck Anxiety Inventory, (BAI), the Oswestry Pain Index, the Post Traumatic Growth Inventory (PTGI), and the Dispositional Resilience Scale (DRS15). The Personality Assessment Inventory (PAI) was utilized for patients at screening. The PAI contains four validity scales that screen for over- or under-reporting of symptoms. Less than 10% of participants showed scores outside the validity parameters.

Participant Satisfaction

Patient perception of the program's effectiveness and acceptability was measured through a patient survey evaluation form administered on the last day of the 3-week intensive outpatient program.

Design—Analysis and Results

To test the hypothesis that soldiers treated at Reset demonstrate fewer combat stress/PTSD symptoms compared to before participating in the program, the change in instrument scores of each patient was computed. One sample paired *t*-test was applied to compare pre- and postintervention outcomes. For instruments with less than 20 items, nonparametric matched-pair signed-rank test was applied. For multiple category items, Mantel-Haenszel strategy for repeated categorical measures was utilized. For continuous variables, we analyzed total scores.

To estimate the effects of CAM therapies, longitudinal models were used as exploratory tools. Since satisfaction and symptom relief ratings for CAM therapies were measured repeatedly, we used generalized estimating equations (GEE) to account for the within-subject correlations. A 95% confidence interval was used to assess whether the differences and averages of before and after treatment ratings of pain, anxiety, and mood were statistically significant.

Descriptive data such as means, standard deviations, median, and proportion were reported for participants' Reset program evaluation forms. Nonparametric tests and linear mixed models were performed to evaluate change in outcome measures.

Data were analyzed utilizing Pearson's correlation coefficients to assess relationships between computed outcome change scores and pretreatment measures.

Results

Outcome measures assessing cognitive, behavioral, and clinical symptoms were collected before and after the program to measure overall progress.

Demographics

The mean age of Reset patients was 33, with an age range of 22 to 62. Those married or in a relationship numbered 77%; with 37% educated at the GED/high school level, 55% having some college, and 8% possessing a degree. The cohorts were divided into junior enlisted rank (E-1 to E-5; 44%), and senior enlisted and officer groups (E-6 to LTC; 56%). All participants had deployed: 19% had deployed once, 61% had deployed two or three times, and 20% had deployed four or more times.

Effectiveness: Health-Related Outcomes

All health-related outcomes (PTSD, depression, anxiety, pain, and resilience) show statistically

Table 1: *Overall Health Outcomes (2008–2013)*

Outcome measure	Pre-Tx mean	Post-Tx mean	Mean difference	*P*-value	N
PTSD (PCL-M)	64.6	54.9	–10.2	< .0001	586
Depression (BDI-II)	30.3	21.5	–9.0	< .0001	562
Anxiety (BAI)	27.0	20.9	–6.3	< .0001	567
Pain (Oswestry)	34.3	32.1	–2.4	< .0001	537
Resilience (DRS15)	13.9	15.1	+1.4	< .0001	550
Resilience (PTGI)	48.2	54.5	+6.8	< .0001	549

significant improvements from pre- to posttreatment. See Table 1 for overall results since the inception of the program in 2008 through part of 2013.

The Dispositional Resilience Scale (DRS15) is a short form measure of stress-resistance or hardiness. Individuals high in hardiness are described as committed to life and work, are actively engaged with their environment, believe they can control their circumstances, and seek challenges. The Posttraumatic Growth Inventory (PTGI) is an instrument for assessing positive outcomes reported by persons who have experienced traumatic events. The assessment includes factors of new possibilities, relating to others, personal strength, spiritual change, and appreciation of life. Both of these measures showed positive and significant changes.

Because the program staff made deliberate changes to the program each year, it was of interest to examine year-by-year changes in the major health outcomes (PTSD, anxiety, and depression). Improvements in pre- to posttreatment PTSD scores generally increase each year (Table 2). PCL changes of 5 points are typically seen as clinically significant.

Similar improvements are shown in year-by-year depression scores as measured by the Beck Depression Inventory–Version 2 (see Table 3). There is statistical significance, and the scores indicate progress in moving from severe to moderate or mild depression.

Anxiety improved year after year as measured by the Beck Anxiety Inventory, which measures prolonged state anxiety. Statistical significance is seen, and the scores show movement from severe anxiety to moderate anxiety (see Table 4).

The trend toward increasing effectiveness over the years is interpreted as reflecting the addition of more CAM services across 2008 (no CAM services) to 2009 (1 day per week of CAM services) through the rest of the years 2010–2013 where CAM services were full time, 5 days a week. In addition, annual adjustments in the content and delivery of the trauma-focused behavioral health interventions were made over the holiday break each year.

Table 2: *Year-by-Year Health-Related Outcomes—PTSD (PCL-M)*

Year	Pre-Tx mean	Post-Tx mean	Difference	*P*-value	N
2008*	61.0	59.2	–2.83	< .0001	41
2009**	65.7	59.2	–6.42	< .0001	102
2010***	64.6	55.7	–9.3	< .0001	139
2011	61.6	50.3	–11.3	< .0001	106
2012	66.5	52.9	–14.6	< .0001	128
2013	66.9	53.0	–13.7	< .0001	29

*No CAM services; **1 day/week CAM; ***Full-time CAM services.

Table 3: *Year-by-Year Health-Related Outcomes—Depression (BDI-II)*

Year	Pre-Tx mean	Post-Tx mean	Difference	*P*-value	N
2008*	22.7	20.4	–1.5	NS	15
2009**	29.5	23.5	–6.3	< .0001	96
2010***	31.2	24.2	–6.9	< .0001	142
2011	28.6	17.2	–11.4	< .0001	116
2012	32.6	21.1	–11.7	< .0001	124
2013	30.3	20.0	–10.2	0.0001	22

*No CAM services; **1 day/week CAM; ***Full-time CAM services.

CAM Outcomes

Patients completed a numerical rating scale (NRS) for their current pain, anxiety, and mood before and after each CAM session. The NRS requires patients to rate their pain from 0 to 10 (11-point scale) with 0 representing the absence end of the pain intensity continuum (i.e., no pain) and 10 representing the other extreme of pain intensity (i.e., pain as bad as it could be). The number that the patient selects represents his or her pain intensity score. NRS validity has been well documented and demonstrates positive and significant correlations with other measures of pain intensity (Farrar, Troxel, Stott, Duncombe, & Jensen, 2008). On average, a 1.7 to 2 point improvement in the NRS scores for pain, anxiety, and mood is shown from pre– to post–CAM treatment. These results are statistically significant. No adverse events were noted related to CAM sessions. A few soldiers were needle phobic and generally resolved their anxiety via EFT and education or were allowed to decline acupuncture. A few soldiers raised religious objections to Reiki and either did not participate or went ahead after education (see Table 5).

Reset Program Effectiveness: Patient Satisfaction

Soldiers rated satisfaction with treatment modalities and the overall program on a 5-point Likert-type scale ranging from "extremely helpful" to "not helpful." A large majority of soldiers found Reset helpful or very helpful in addressing hyperarousal and their individual issues. As a side note, dropouts numbered less than 10 soldiers out of 1,400 over the life of the program. The selection process appears to have worked. The individuals who dropped out usually had their treatment interrupted by external circumstances of life (family crisis, problems with children, marital problems). Only two soldiers dropped out after a few days in the program due to excessive anxiety or other dissatisfaction with the experience. They returned to their prior usual care. The results in Table 6 display the percentage of patients who chose "extremely helpful" (score 5/5) or "very helpful" (score 4/5) when asked to assess satisfaction with CAM, mind-body, and standard psychological treatments, with a general improvement in satisfaction ratings across the years measured. This is

Table 4: *Year-by-Year Health-Related Outcomes—Anxiety Symptoms (BAI)*

Year	Pre-Tx mean	Post-Tx mean	Difference	*P*-value	N
2008*	28.2	23.9	–4.2	< .0001	32
2009**	29.7	24.4	–5.2	< .0001	102
2010***	26.5	13.3	–5.9	< .0001	127
2011	24.9	18.0	–7.2	< .0001	115
2012	26.9	20.1	–7.8	< .0001	120
2013	26.64	21.31	–3.63	NS	24

*No CAM services; **1 day/week CAM; ***Full-time CAM services.

Table 5: *CAM Impact on Numerical Pain and Symptom Scales (0–10)*

Modality*	Pain	Anxiety	Mood	*P*-value	N
Massage	–1.9	–1.9	–1.8	< .0001	363
Reflexology	–1.7	–1.8	–1.8	< .0001	230
Reiki	–1.7	–2.0	–1.8	< .0001	574

*Average change in 0–10 subjective state after each 1-hour session.

suggestive that the yearly changes in the program process were helpful.

Discussion

Given that the presence of complex comorbidities such as chronic pain and headaches, substance abuse, and post-concussion symptoms complicates the treatment of PTSD and worsens the prognosis for recovery (Grinage, 2003; Riggs, Rukstalis, Volpicelli, Kalmanson, & Foa, 2003; Zlotnick, Warshaw, Shea, & Keller, 1999), integrative medicine (IM) may be particularly beneficial in treating this patient population because it allows for the diverse treatment of multiple concomitant symptoms, the promotion of self-management and self-care skills, and the collaboration between patient and provider to determine the best course of care and individualized follow-up. IM at Reset promoted total wellness and healing through the integrative, interdisciplinary collaboration of a variety of providers to treat the whole person, rather than fragmented care based on organ systems and disease conditions.

The Reset Program was assessed as very successful in meeting its stated goals and objectives, and the improvements in health outcomes were both statistically and clinically significant. Satisfaction with the program was very high for patients and corroborates the improvements in quantitative health outcomes. Results of this evaluation indicate significant reductions in PTSD, pain, anxiety, and depression from pre- to post-treatment and suggest that CAM sessions may have a positive impact on traditional treatment effectiveness, patient adherence, and loss to follow-up. Patients reported significant pre-post session improvements in pain, anxiety, and mood for therapeutic massage, reflexology, and Reiki. Dropouts were few and complications were not an issue.

By examining outcome data separately for each operational year of the program, a pattern emerged that would not have been apparent if the data were aggregated. We noticed steady improvements over time in pain, PTSD, anxiety, and depression outcomes and in overall satisfaction, which we attribute to changes to the program implemented by

Table 6: *Patient Satisfaction with Program Components (% rating 4/5 or 5/5)*

Modality	2008*	2009**	2010***	2011	2012	2013
Individual Tx	97.7%	92.6%	89.3%	91.6%	92.5%	87.5%
Group–Process	95.5%	84.8%	65.5%	79.2%	85.6%	100%
Group–Coping	77.3%	64.7%	74.1%	76.0%	85.6%	75.0%
Group–Self-regulation	52.3%	71.3%	61.3%	76.3%	82.6%	75.0%
Overall–Hyperarousal	52.3%	68.7%	60.0%	74.8%	72.7%	75.0%
Overall–Issues	*Unavail.*	75.5%	74.8%	82.5%	86.3%	100%
Acupuncture	*Unavail.*	76.5%	72.1%	72.7%	72.5%	75.0%
CES (Alpha Stim)	*Unavail.*	74.1%	78.4%	76.4%	83.2%	100%
EFT	*Unavail.*	40.0%	40.9%	58.9%	50.9%	37.5%
Massage	*Unavail.*	95.2%	86.7%	90.2%	91.5%	100%
Reflexology	*Unavail.*	87.7%	77.7%	89.4%	87.8%	100%
Reiki	*Unavail.*	59.0%	70.8%	71.2%	61.4%	62.5%
Yoga	*Unavail.*	57.7%	43.1%	41.2%	46.5%	62.5%

*No CAM services; **1 day/week CAM; ***Full-time CAM services.

the staff each year after their annual review of practices. The major differences noted were the increase in the type and availability of CAM treatments and an expansion of the group therapy offerings.

An important observation was that the dropout rate was exceptionally low compared to previous studies of veterans, in which dropouts were as high as 90% over a year's time (Seal et al., 2010). In fact, many Reset graduates continued to use CAM or group services as possible, as long as they were on active duty.

While the program clearly achieved significant functional and health benefits, the observational design of the current study precludes us from drawing conclusions about the comparative effectiveness of this program in relation to other treatment options. Further analysis of the data may elucidate a potential dose-response relationship between the frequency and types of CAM treatments and health outcomes. As this is a clinical program evaluation rather than a research project, dismantling of effects attributed to any particular modality is not possible. While this may be a target of future studies, it is the opinion of the Reset staff that the effects are controlled by the holistic synergy of the overall program. However, there are suggestions that further varying the mix of modalities and increasing the emphasis on some trauma-focused approaches such as EFT and EMDR could further strengthen the effects.

For example, EFT showed surprisingly low satisfaction scores that varied from roughly 40% to almost 60%. Reviewing the way this modality was applied across the years of the data collection offers some explanation. All soldiers were taught EFT as a self-care tool in a group setting. Some soldiers had an extremely favorable response to EFT and used it consistently as self-care; others did not go on to develop personal use of the technique. As only part of the clinical staff were skilled in this specific trauma-focused modality, only some of the subjects received intensive 1:1 EFT sessions. The 1:1 applications were most intensely utilized during the 2 years of the highest satisfaction. For a future article or presentation, we will need to go back to the data and try to extract those soldiers who were assigned to the individual EFT therapists.

Other limitations to the study include the lack of a follow-up time point to gauge if positive gains were sustained over time, lack of a comparison group, and lack of randomization, which would have limited alternative causal explanations. These design elements are recommended as the next phase of study for programs of IM for PTSD.

Conclusions

The Reset Program appears to have been very successful in meeting its stated goals and objectives. The program implementation matched the program's intent. The improvements in health outcomes were both statistically and clinically significant. Patient satisfaction with the program was very high.

Results of this evaluation indicate significant reductions in PTSD, anxiety, depression, and pain, and improvements in resilience from pre- to post-treatment and suggest that CAM sessions may have a positive impact on conventional behavioral health treatment effectiveness in this complex population. The results are in line with other reports of IM and CAM applications. Although fiscal impacts were not estimated, the IM approach is likely cost-effective due to the long-term social and disability costs of veterans with PTSD and the associated comorbidities.

Postscript

As of October 1, 2015, the Warrior Combat Stress Reset Program has ended. The clinic operation no longer functions as an integrative program. In line with new U.S. Army Behavioral Health Guidelines for standardization of behavioral health services across the whole army, the Reset Program was renamed the Behavioral Health Intensive Outpatient Clinic and transformed into a general intensive outpatient program (IOP) intended to fill the continuum of care between routine outpatient care and inpatient admission. The CAM contract has not been renewed and trauma-focused services have been modified in favor of approved evidence-based group treatments (cognitive and exposure therapies), with half-day services in 5-week blocks available for soldiers with the whole spectrum of mental health diagnoses. CAM services (massage and acupuncture) continue to be available in the TBI program and the comprehensive pain program.

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APPENDIX

Appendix 1: *Data Collection Overview (Not all included in this analysis)*

Instrument	Time administered			Description
	Screen	Pre-	Post-	
Warrior Reset Contact Information Form	x			Demographic information
Limits of Confidentiality (DA Form)	x			HIPAA Requirement
Deployment Risk and Resiliency Inventory (DRRI)	x			Full DRRI has 14 key deployment-related risk and resiliency factors (5 parts used)
Medical Record Supplemental Data	x			Questions covering combat experiences, including explosions and loss of consciousness
Status of Army Service	x			Projected future status of military service
PTSD Checklist–Military Version (PCL-M)	x	x	x	17 item, self-reported PTSD symptoms
Beck Depression Inventory, Version 2 (BDI-II)	x	x	x	Self-reported depression symptoms
Beck Anxiety Inventory (BAI)	x	x	x	Self-reported anxiety symptoms
Personality Assessment Inventory (PAI)	x			Personality assessment, including validity scales
CEQ—Pre		x		Amenability to treatment
General military experiences		x		Survey of experiences, attitudes, beliefs
Positive/Negative Affect Schedule (PANAS)		x		Mood measure
Conner-Davidson Resilience Scale (CD-RISC)		x		Resiliency measure
Crown-Marlowe Social Desirability Scale (MCSDS)		x		Need for approval scale
Mental Health Beliefs Questionnaire		x		Belief in mental health treatment
Dallas Pain Drawing Grid		x	x	Pictorial self-report of pain
Oswestry Pain Index		x	x	Self-report of pain
Dispositional Resilience Scale–15 (DRS15)		x	x	Self-report of hardiness
Post-Traumatic Growth Inventory		x		Positive growth and meaning change after trauma
Combat Experiences Scale (CES)		x		
CEQ—Post			x	Impact of treatment
Reset Program Evaluation Survey			x	Feedback re: helpfulness of all parts of the program
WCSRP CAM Therapies Rating	Pre-Post each CAM treatment session (15–20 each Soldier)			Rating of change in pain, stress, mood at each CAM session