

Complementary Health Approaches for Healing Trauma:

A scoping review of the peer-reviewed literature

Prepared by

Pamela Jo Johnson, MPH, PhD

Associate Professor

Integrative Health & Wellbeing Research Program

Center for Spirituality & Healing

University of Minnesota

Judy Jou, PhD

Graduate Research Assistant

Integrative Health & Wellbeing Research Program

Center for Spirituality & Healing

University of Minnesota

Roni Evans, DC, MS, PhD

Associate Professor

Integrative Health & Wellbeing Research Program

Center for Spirituality & Healing

University of Minnesota

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Executive Summary

Background

The public health impact of psychological trauma exacts a large toll on those who experience trauma, the people in those individuals' lives, and society as a whole. Stemming from events or circumstances experienced as physically or emotionally harmful or life threatening, trauma can result in significantly diminished mental, physical, social, emotional, and spiritual well-being, leading to a vicious cycle of lost productivity, function and social participation. An estimated two thirds of American adults have experienced one or more potentially traumatic exposures (PTE) in their lifetime. While there are efficacious conventional trauma focused therapies available, many individuals do not respond or find them unappealing or inaccessible. This prevents a substantial proportion of trauma survivors from receiving the care they so critically need.

Complementary health approaches (CHA) have the potential to fill an important gap in trauma based care. Encompassing a wide range of modalities and approaches generally aimed at enhancing overall wellbeing and targeting some of the same symptoms commonly experienced by trauma sufferers, CHA offers a low-risk entry into trauma care.

Purpose

To conduct a scoping review to summarize the existing peer-reviewed empirical literature on the use of CHA for addressing post-traumatic stress symptoms, anxiety, and depression in adults suffering from psychological trauma.

Methods

Data sources: Searches were limited to electronic databases including Ovid Medline, PsychInfo, CINAHL, and EMBASE.

Study selection: Studies were selected if they were empirical studies that addressed the general research question of: What is known from the existing literature about the use of CHA for healing adults suffering from psychological trauma?

Inclusion criteria were:

- Intervention: complementary health approaches that can be delivered in a community setting, with an emphasis on mind-body approaches
- Population: adults, 18 years and older, who are suffering from some form of psychological trauma
- Outcomes: evaluated outcomes related to healing trauma, with an emphasis on post-traumatic stress symptoms, depression, and/or anxiety

Studies that were not empirical, not in English, and not conducted in the United States were excluded. PhD dissertations, commentaries, and reviews were also excluded. Two reviewers identified studies by screening study titles and abstracts and then examining the full text of the studies selected for inclusion.

Data extraction:

If reported, the following data elements were extracted from each study:

- CHA intervention type
- Type of trauma
- Study design and comparison group
- Outcomes measured
- Study population and setting
- Sample characteristics
- Authors' reporting findings

Results

The initial search yielded 3,577 citations; 248 of these were included in the scoping summary, and 28 were included in the final review.

From the 248 abstracts, we found a broad distribution of types of trauma in the existing literature. More than half (53%) were interventions to address PTSD symptoms, with 31% focused on military populations and 22% on general populations. Over one-quarter (26%) of the studies examined populations with trauma due to violence or abuse (physical or sexual). While 9% focused on women experiencing domestic violence, 8% focused on adults with childhood physical or sexual abuse histories, and 8% focused on interpersonal physical or sexual violence. Nearly all studies found evidence of post-intervention reductions in post-traumatic stress symptoms, depression, or anxiety. Below, we summarize key findings by intervention type and by the type of trauma addressed.

Of the 28 specific studies that met the inclusion criteria for the final review, 15 were randomized controlled trials, and 11 were single intervention studies with no comparison group. Gender distribution varied across studies, with the percentage of female participants ranging from 3% to 90% in the mixed gender studies; eight studies enrolled 100% women. It is notable, although not surprising, that the military populations were predominantly men, while the community populations were predominantly women. Participant ages across the 28 studies ranged from 18 to 83 years, with study-specific mean ages from 27.5 to 62.2 years.

White or Caucasian participants formed the largest group in 21 of the 28 studies, comprising 44% to 86% of the study populations overall. Black/African-American participants ranged from 2% to 50%, Hispanic and Latino/a participants from 3% to 26%, Asian and Pacific Islander participants from 2% to 14%, and American Indian/Alaska Native participants from 2% to 8%.

The most commonly addressed types of trauma were military-related PTSD ($n = 14$) and interpersonal violence or trauma ($n = 7$), especially in the form of domestic violence ($n = 4$). PTSD not specific to the military was addressed by four studies. Two studies addressed childhood sexual abuse, and one addressed vicarious trauma in mental health workers.

Mind-body practices comprised the vast majority of the CHA interventions, with mindfulness-based stress reduction (MBSR) ($n = 7$) and yoga ($n = 7$) being the most commonly addressed. Other CHA examined in the identified studies included mindfulness, meditation, mantram repetition, acupuncture, music therapy, mindful breathing, yogic breathing, giving testimony, healing touch, guided imagery, applied muscle relaxation, mind-body bridging for sleep management, and self-directed practice of general mind-body techniques.

PTSD symptoms were the main outcomes of interest in the majority of studies ($n = 24$), followed by depression ($n = 20$) and anxiety ($n = 13$). Other outcomes included mindfulness skills ($n = 4$), emotional regulation ($n = 2$), and indicators for both negative (e.g., anger, hostility) and positive (e.g., resilience, self-esteem) emotional and cognitive traits. Table 1 summarizes the number of studies reporting each outcome and the percentage of the 28 studies that this represents.

Nearly all studies found evidence of post-intervention reductions in post-traumatic stress symptoms, depression, or anxiety; CHA interventions were generally well accepted.

Recommendations

- There is a gender divide in terms of the type of trauma/setting studied. Military-based trauma and settings involve predominantly male participants, while studies in community settings and on interpersonal trauma enroll predominantly females. While this is possibly

reflective of the demographics exposed to each trauma type, there is great need to better understand how to address all trauma types in males and females, as well as those who identify as other.

- Non-Hispanic white populations are overrepresented in the identified studies. It is not clear whether this is due to the populations targeted for CHA interventions, limited recruitment strategies, or some other reason. American Indian, Asian, and Native Hawaiian/other Pacific Islander, as well as immigrant populations, are especially under-represented in the current research and warrant further study.
- Further attention is needed to address the accessibility of CHA. For example, MBSR programs are most often very structured and time intensive making it difficult for many people to participate due to competing life demands. If CHA is to reach its full potential, consideration must be given to offering flexible, affordable, and non-traditional delivery formats that accommodate individuals most in need.
- Results of the majority of CHA studies show promising results, especially for PTSD and mental health-related outcomes. However, only a small percentage of studies addressed other important measures such as quality of life and wellbeing. Future work should explore additional outcomes that are potentially meaningful to trauma survivors, community supporters, and other stakeholders.
- Additional emphasis should be placed on future partnership and capacity-building in community settings where novel interventions and healing are already taking place. These innovations require rigorous implementation and evaluation to enhance long-term sustainability, as well as dissemination to broader audiences to facilitate greater attention and change.

Conclusions

The research available suggests CHA have a promising role to play in healing trauma, either as an adjunct to conventional care, or as a gateway to healing among individuals who are unable or prefer not to access conventional approaches. This is particularly the case for a range of mind-body approaches, which target many of the symptoms of trauma sufferers. Further attention is needed, especially in the form of high quality research, in a broader range of populations and community settings in order to fully realize the potential of CHA for healing trauma.

Background

Psychological trauma is a serious public health concern. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), “*Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being.*” A recent study based on the most current national data (2012-2013) estimates that over two-thirds of adults in the United States have experienced one or more potentially traumatic exposures (PTE) in their lifetime.¹ The most commonly reported types of PTE in the general population were sexual abuse before age 18 (34.2%), seeing a dead body or body parts (29.3%), and victimization by an intimate partner (22.6%) among those with post-traumatic stress disorder (PTSD). For those with no PTSD, the most commonly reported types of PTE were someone else’s serious or life-threatening illness (18.4%), seeing a dead body or body parts (18.0%), and experiencing a serious or life-threatening illness (12.7%).¹ However, traumatic exposures vary significantly across demographic subgroups.¹⁻³

Over 6% of adults met the clinical criteria for a formal DSM-5 PTSD diagnosis in their lifetime, with the mean age at onset being 23.7 years. Women were twice as likely as men to have a lifetime PTSD diagnosis (8.0% vs. 4.1%, respectively), and American Indians were more than 2.5 times as likely to have a PTSD diagnosis compared with non-Hispanic whites (16.2% vs. 6.3%, respectively).¹ Even without a formal PTSD diagnosis, millions of adults suffer from a constellation of physical and mental health symptoms as a result of their trauma exposure. Manifestations vary among individuals and can include persistent re-experiencing of the trauma and distress when exposed to events reminiscent of the trauma. Other common symptoms include avoidance, altered cognition and mood, and heightened arousal and reactivity.

The social and economic burden of trauma is hard to quantify in full. Recent estimates on the cost of mental illness and major depressive disorders were in the range of \$57.5 billion in 2006 on medical expenditures alone for mental disorders⁴ and \$210 billion in total costs for major depressive disorders (MDD) in 2010.⁵ The estimated cost breakdown for MDD is \$98 billion in direct costs including medical services and prescriptions; nearly \$10 billion in suicide-related costs; and over \$100 billion in workplace costs (e.g., absenteeism and presenteeism).⁵ However, these estimates are only for those suffering MDD and do not fully reflect the personal, social, and societal costs of all of the physical and mental health consequences of psychological trauma.

Treating Trauma

The most commonly used treatment for trauma exposure and its sequelae tend to emphasize psychological care including cognitive behavioral, cognitive processing, and prolonged exposure therapies; eye-movement desensitization and relaxation training; and medications.⁶⁻⁸ However, while many conventional trauma-focused therapies can be efficacious for some, non-response rates are high.⁹ Adherence rates too are generally low, due to unwanted side effects, including difficulty tolerating trauma-focused material and drug related symptoms.¹⁰ Further, many who need treatment don’t seek it due to the stigma of mental illness and accessibility related issues.^{11,12} Consequently, there is a critical need for interventions that are more tolerable, acceptable, and readily accessible so that trauma sufferers can engage in needed healing.

Complementary Health Approaches

Complementary health approaches (CHA) have the potential to fill an important gap in trauma-informed care. Encompassing a wide range of modalities and approaches generally aimed at enhancing overall wellbeing and targeting some of the same symptoms commonly experienced

by trauma sufferers, CHA may offer a low-risk entry into trauma care. CHA is also known as complementary and alternative medicine (CAM), traditionally defined as “a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine.”¹³ More recently, the National Center for Complementary and Integrative Health (NCCIH) adopted the term “complementary health approaches,” since most people who use CAM do so in addition to conventional treatments.¹⁴ CHA generally emphasizes the optimization of overall health by harnessing the body’s natural healing abilities, versus focusing on specific disease processes. Non-pharmacological in nature, CHA encompasses a variety of products (e.g., supplements and natural products), modalities (e.g., meditation, guided imagery, progressive relaxation, acupuncture) and whole system approaches (e.g., Traditional Chinese Medicine, homeopathy). CHA are used by 34% of all US adults.¹⁵ The use of CHA for mental health problems is common.^{16,17} In a nationally representative sample, CHA utilization rates increased for anxiety (20.2% to 27.9%) and depression (40.9% to 42.7%) between 1990 and 1997 (Eisenberg).¹⁸

Purpose

The purpose of this work is to identify and summarize existing peer-reviewed studies on the use of CHA for addressing post-traumatic stress symptoms, anxiety, and depression in adults suffering from various forms of psychological trauma.

METHODS

Our approach was broadly guided by the principles of the National Center for Trauma Informed Care (NCTIC) of the Substance Abuse and Mental Health Services Administration (SAMHSA). According to SAMHSA's conceptual framework, "*Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being.*" Thus we started with a broad definition of psychological trauma and a more inclusive list of complementary health approaches. We conducted a scoping search to identify the breadth of peer-reviewed literature available using the Medline, CINAHL, Embase, and PsychInfo database search engines. The search strategy was reviewed with Catalyst Initiative. Based on the scoping search, the volume of initial literature identified, and priority interests of Catalyst Initiative, we refined the final inclusion criteria in terms of target population, type/definition of trauma, intervention types, and outcomes measured. The final scoping review includes a matrix of key elements abstracted from the articles and a narrative summary of the populations studied, types of trauma addressed, interventions used, outcomes measured, and preliminary findings related to the use of CHA for healing trauma.

The methods for this scoping review were based on the framework outlined by Arksey and O'Malley (2005) and advanced by Levac et al (2010). An overview of this framework is adapted from Levac et al, and presented in Table 1.

Table 1. Overview of Scoping Review Methodological Framework

Scoping Framework Stage	Description
1: Identifying the research question	Research questions are broad in nature and must be combined with clearly articulated scope of inquiry.
2: Identifying relevant studies	Development of a decision plan for sources to be searched and search terms to use. Breadth is important, but it must be balanced with practicalities of time, budget, and personnel resources available.
3: Study selection	Development of <i>post hoc</i> inclusion and exclusion criteria based on research question, scope of inquiry, and preliminary volume of citations. Criteria applied to identify final set of studies for inclusion.
4: Charting the data	Creation of data-charting form for extracting key elements from each included study.
5: Collating, summarizing, and reporting	Overview of the breadth of the literature, but not a synthesis. Numeric analysis of extent and nature of studies. Thematic analysis to identify key themes and gaps.

1: Identifying the Research Question

The Catalyst Initiative requested assistance with locating, reviewing, and summarizing the evidence available in the peer-reviewed literature about the use of complementary health approaches/integrative healing practices for healing trauma in adults. They expressed particular interest in community-based models and applicability for diverse communities in the local Twin Cities area. They expressed secondary interest in vicarious/caregiver trauma (i.e., secondary trauma experienced by those serving or caring for victims/survivors of trauma, such as healthcare providers, first responders, or social service workers). We aimed to identify and summarize existing peer-reviewed studies on the use of CHA for addressing health & wellbeing outcomes for adults suffering from trauma.

2: Identifying Relevant Studies

Sources

For this initial scoping review, we used electronic databases as our only source for identifying studies. The topic is particularly complex because of the variability of terminology used and the cross-disciplinary nature of this type of research. We consulted with a biomedical librarian to conduct the literature search. She recommended searching four separate databases, with the expectation that there would be some overlap and some unique studies identified in each. We worked jointly to develop the search strategy for Ovid Medline, which the librarian then adapted for searching three other databases (i.e., CINAHL, Embase, and PsychInfo).

Medline is the National Library of Medicine's journal citation database that covers more than 22 million articles published since 1946. The OVID interface allows for complex searches using controlled vocabulary through Medical Subject Headings (MeSH). **Embase** is a citation database from Elsevier Publishing that covers many of the same subjects as Medline but includes additional coverage of pharmacology and clinical medicine in journals not indexed by Medline. **CINAHL** is the Cumulative Index of Nursing and Allied Health Literature that also overlaps with Medline but includes coverage of some nursing and allied health journals not included in Medline. For a thorough health-related search, it is recommended to search both Medline and CINAHL. Finally, **PsychInfo** is distributed by the American Psychological Association and is the largest resource devoted to peer-reviewed literature in behavioral sciences and mental health. PsychInfo has some overlap with Medline, but it also contains a lot of journals not included in Medline.

Search Strategy (See Appendix 1 for search strategies employed)

CHA terms: We searched broadly on complementary health approaches (CHA) included in the National Center for Complementary and Integrate Health (NCCIH) taxonomy, as well as using additional CHA types covered in coursework by the Center for Spirituality & Healing (e.g., nature-based therapies, music therapy). Many of the search terms were umbrella terms that we "exploded," (which means that it includes all categories that are indexed underneath that term). These terms included Complementary Therapies, Mind-Body Therapies, and Holistic health, as well as more specific types of therapies like acupuncture, healing touch, music therapy, or mindfulness.

Trauma terms: In order to be inclusive of a broad range of psychological trauma, we used several search terms representing post-traumatic stress, psychological trauma, combat trauma, and domestic violence. Each of these terms is an umbrella term that, when exploded, includes a variety of trauma types. For example, "domestic violence" as an inclusive search term also includes "child abuse", "childhood sexual abuse", and "spousal abuse" among others.

Search constraints: For the initial search, we only applied constraints of English language and NOT books.

3: Study Selection

A biomedical librarian conducted literature searches of the four databases using the search terms and constraints described above. An electronic database with a total of 3,577 citations was received from the librarian. An initial set of exclusion criteria was applied, including: no author/abstract information (n=638), non-human studies (n=61), and duplicates (536). This resulted in 2,432 articles that underwent title screening by two reviewers (PJJ & JJ). Discrepancies were adjudicated through discussion, and a final set of 386 abstracts were tagged for review.

A set of criteria was defined for further exclusion that was used by both reviewers to classify the reason for exclusion. These criteria included: 0 - Not human, 1 - Not English, 2 - Not adults, 3 - Not United States, 4 - Does not meet trauma criteria (i.e., not clearly focused on some aspect of psychological trauma), 5 - Does not meet CHA criteria (e.g., excluded psychotherapy with adjunctive CHA that requires a clinical setting, arts, music, exercise, recreation, animal, and nature therapies), 6 - Does not meet intervention study criteria (i.e., not an empirical study with pre/post outcomes), 7 - other reason (e.g., dissertations, reviews, conceptual). We applied the exclusion criteria hierarchically such that the first criterion met was the one applied, even though there may have been more than one reason to exclude. Both reviewers screened the 386 abstracts noting whether to include or exclude in the full review and if exclude, the reason why. Inclusion/exclusion status and reasons for exclusion were compared and all discrepancies adjudicated through discussion.

Full abstract screening exclusions		386
Other: dissertations	43	343
Other: background material	70	273
Not human	0	273
Not English	0	273
Not Adults	1	272
Not United States	14	258
Does not meet trauma criteria	10	248
Does not meet CHA criteria	147	101
Does not meet intervention criteria	31	70

Seventy studies were selected for full-text screening. From these 70 articles, 3 were not accessible¹⁹⁻²¹ leaving 67 for the initial full-text screening. Thirty-five articles were excluded at screening while 32 were selected for full-text review. Of these, four were further excluded²²⁻²⁵ due to not having any outcome measures comparable to the other studies, leaving a final selection of 28 articles representing empirical studies of CHA for healing trauma.²⁶⁻⁵³

Full text screening exclusions		70
Could not access full text	3	67
Not United States	5	62
Does not meet trauma criteria	5	57
Does not meet CHA criteria	9	48
Does not meet intervention criteria	15	33
Other	5	28

4: Charting the Data

A preliminary data charting form was created to summarize the studies in terms of type of trauma, type of CHA intervention, population studied, inclusion/exclusion status, and reason for exclusion. (See Appendix 4 for data on the 70 articles that were included in full-text screening.) A final data extraction form was created to summarize the 28 studies and included target population and setting, sample size, types of trauma, CHA intervention used, study design, outcomes evaluated, and key findings (See Appendix 3). An additional summary table was used to extract and document a high-level overview of the 28 studies including sample characteristics (See Appendix 2).

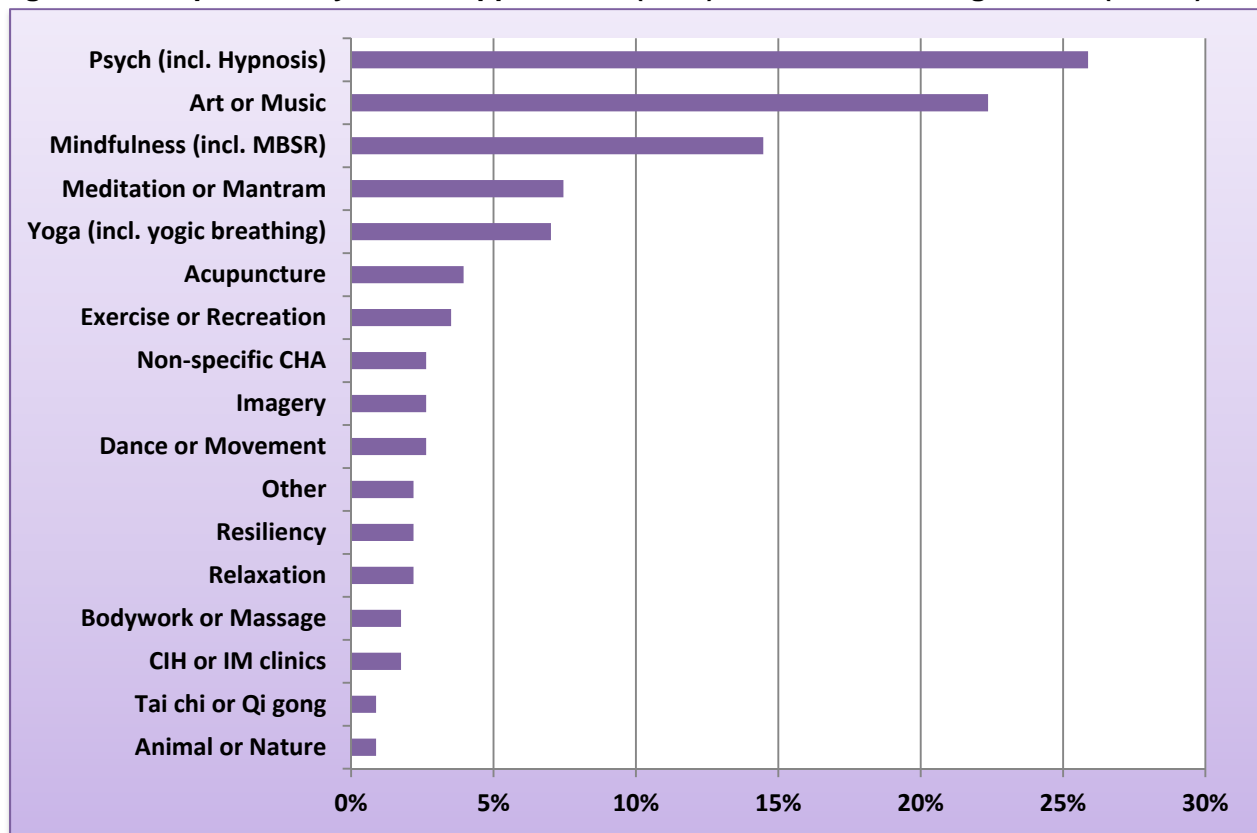
5: Collating, Summarizing, and Reporting

A total of 386 abstracts were screened, and 248 studies were identified focused on adults in the United States that appeared to meet our trauma criteria. The first section provides an overview of the literature, based on abstract review alone (n=248 abstracts), of the types of CHA interventions studied and the types of trauma addressed in the literature more broadly. The subsequent section is a review of the 28 studies that met all inclusion criteria after full-text screening.

Types of Interventions

Of the 248 abstracts reviewed, 147 were ultimately excluded because they did not meet the CHA intervention criteria of interest, but the distribution of CHA types in the broader research literature is informative. After excluding 20 that did not have any type of CHA, the most predominant interventions (26%) were psychiatric care that included a CHA component such as hypnosis or acupoint tapping with prolonged exposure therapy. The second most common types of studies were interventions based on art (e.g., quilting, mandalas) and music (e.g., drumming, CDs for relaxation). Figure 1 displays the distribution of CHA types studied in the 228 abstracts reviewed. While some of the interventions were conducted in non-clinical settings and populations, the remainder could also feasibly be implemented in community settings, despite being studied as interventions in clinic populations. Mindfulness, meditation, and yoga studies combined made up nearly one-third (29%) of the studies on CHA for healing trauma that we identified.

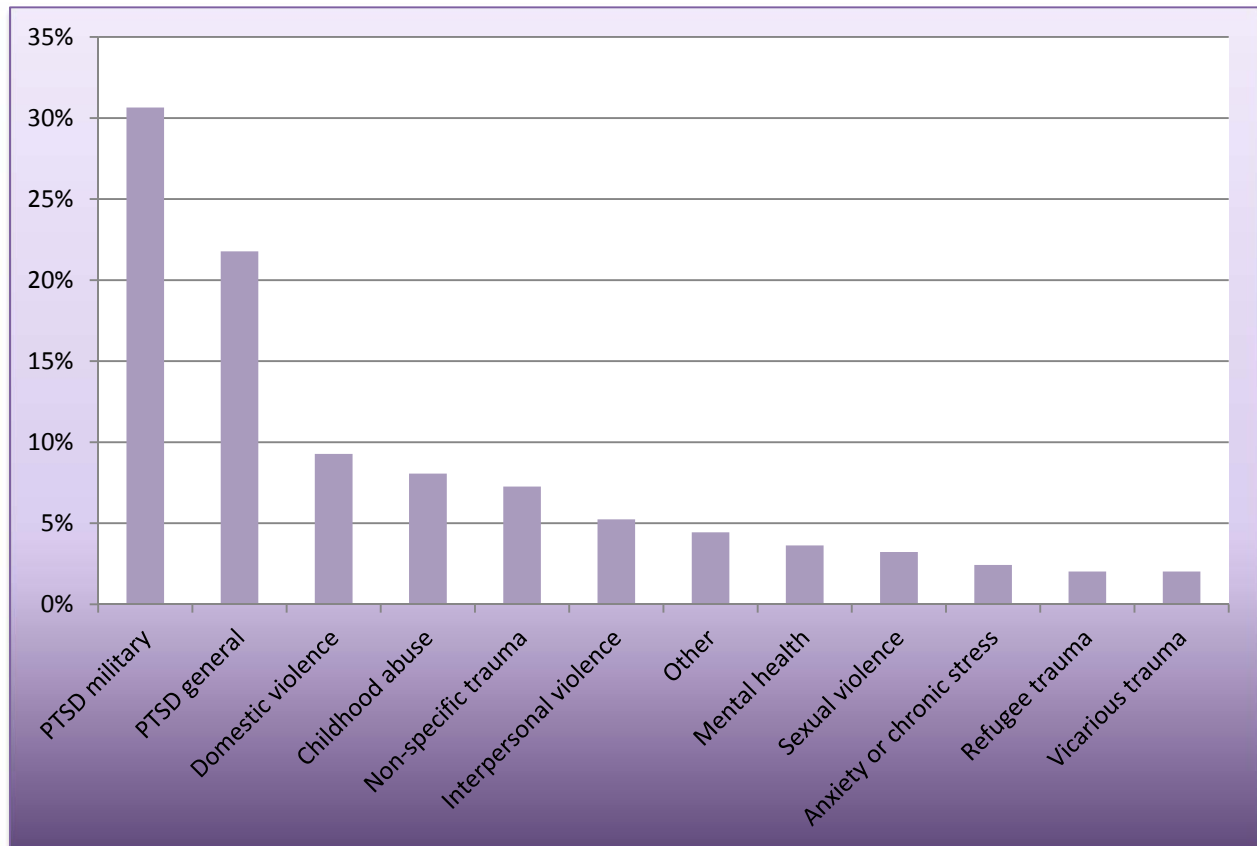
Figure 1. Complementary Health Approaches (CHA) studied for healing trauma (n=228).



Types of Trauma

In these 248 abstracts reviewed, there was a broad distribution of types of trauma studied. Figure 2 shows the distribution of trauma types described in the 248 abstracts. More than half (53%) were interventions to address PTSD symptoms, with 31% focused on military populations and 22% on general populations. Over one-quarter (26%) of the studies examined populations with trauma due to violence or abuse (physical or sexual). While 9% focused on women experiencing domestic violence, 8% focused on adults with childhood physical or sexual abuse histories, and 8% focused on interpersonal physical or sexual violence, there seemed to be some overlap in terms of the histories of current and past violence as well as domestic and stranger perpetrators in some of these populations.

Figure 2. Types of trauma addressed by CHA interventions in selected abstracts (n=248).



FINAL RESULTS: Review of 28 Studies

After reviewing the 248 abstracts, 70 studies were identified for full-text screening (See Appendix 4). The inclusion/exclusion criteria were again applied. Twenty-eight studies met all the criteria for full-text review. The following provides summary characteristics of these 28 studies followed by a section on key findings by intervention type.

Study populations and settings (see Appendix 2)

Veterans (n = 12) and active duty military personnel (n = 2) comprised half of the study populations included. As the review included only intervention studies, each was limited to a single geographic location in the U.S., with coverage in all four U.S. Census regions (Northeast, Midwest, South, West). Eleven studies recruited from a Veteran Affairs (VA) Medical Center or military base. Nine studies recruited samples from the general community of a particular city. Three studies recruited women from domestic violence shelters or programs; two recruited from community clinics; and one each recruited from a hospital, a university, or a mental health agency. Sample sizes ranged from seven to 146, with a mean sample size of 51 and a median sample size of 43.

Sample characteristics (see Appendix 2)

Gender distribution varied across studies with the percentage of female participants ranging from 3% to 90% in the mixed gender studies and eight studies enrolling 100% women. It is notable, although not surprising, that the military populations were predominantly men, while the community populations were predominantly women. Participant ages across the 28 studies ranged from 18 to 83 years, with study-specific mean ages ranging from 27.5 to 62.2 years.

White or Caucasian participants formed the largest group in 21 of the 28 studies, and they comprised 44% to 86% of the study populations overall. The proportion of Black/African-American participants range from 2% to 50%, Hispanic and Latino/a participants from 3% to 26%, Asian and Pacific Islander participants from 2% to 14%, and American Indian/Alaska Native participants from 2% to 8%.

Types of trauma (see Appendix 3)

The most commonly addressed types of trauma were military-related PTSD (n = 14) and interpersonal violence or trauma (n = 7), especially in the form of domestic violence (n = 4). PTSD not specific to the military was the subject of four articles, while two addressed childhood sexual abuse, and one addressed vicarious trauma in mental health workers.

Types of intervention (see Appendix 3)

Mind-body practices comprised the vast majority of the interventions, with mindfulness-based stress reduction (MBSR) (n = 7) and yoga (n = 7) being the most commonly used. Mindfulness, meditation, mantram repetition, acupuncture, and music therapy were the subjects of two studies each. The remaining five studies evaluated other types of mind-body practices, including mindful breathing, yogic breathing and giving testimony, healing touch and guided imagery, applied muscle relaxation, mind-body bridging for sleep management, and self-directed practice of general mind-body techniques. The duration of interventions ranged from one to 12 weeks, with several clustered at four, six, and eight-weeks in duration.

Study designs and comparison groups (see Appendix 3)

The 28 reviewed articles contained a mix of study design types. Randomized controlled trials (RCTs) or studies using some form of random assignment were the most frequently observed (n = 15), followed by single-arm pre/post or repeated measures interventions (n = 12). Three were pilot studies and one featured a 2x2 factorial design. The majority of studies used convenience

sampling to recruit participants from nearby military- or university-related locations, clinics, or shelters.

Comparison groups varied across studies. The majority of studies used treatment-based populations, and the CHA intervention was an adjunct to usual care compared to usual care alone (n=6) or compared to some other active control (n=8) such as education or “sitting quietly” versus mindfulness. In two of the active control studies, more than one intervention was compared. In two studies, the comparison group only completed assessments with no active intervention, in one study the intervention group was compared to a waitlist control group and in one other the treatment group was benchmarked against external data. In 11 studies, there was no comparison group, meaning that the pre-intervention values were only compared with post-intervention values on the same people.

Outcomes and measures (see Appendix 3)

PTSD symptoms was the main outcome of interest in the majority of studies (n = 24), followed by depression (n = 20) and anxiety (n = 13). Other outcomes included mindfulness skills (n = 4), emotional regulation (n = 2), and indicators for both negative (e.g., anger, hostility) and positive (e.g., resilience, self-esteem) emotional and cognitive traits. Table 1 summarizes the number of studies reporting each outcome and the percentage of the 28 studies reviewed that this represents.

Table 1. Outcomes of Interest		
	Number of Studies	Percent of Studies
Primary		
PTSD	24	86%
Depression	20	71%
Anxiety	13	46%
Health-related		
Quality of Life (QOL)	4	14%
Stress	3	11%
Health Status	2	
Self-perception		
Mindfulness	4	14%
Self-esteem/self-compassion	2	7%
Acceptance	1	4%
Resilience	1	4%
Affect		
Emotional regulation	2	7%
Anger	1	4%
Behavioral activation	1	4%
Hostility	1	4%

PTSD symptoms were most commonly measured using some version of the PTSD Checklist (PCL), with six using the original scale, four using the military-specific version (PCL-M), nine using the civilian version (PCL-C), and one using an event-specific version (PCL-S). Two studies used the Clinician-Administered PTSD Scale (CAPS), while two used either the PTSD Symptom Scale (PSS-SR) or its modified version (MPSS-SR).

Anxiety measures were more varied. The most common was the State-Trait Anxiety Inventory (STAI), used in six studies. Other measures for anxiety included Brief Symptoms Inventory 18 (BSI-18), used by two studies; and the Beck Anxiety Inventory (BAI), the Hopkins Symptom Checklist (HSCL-18), the Mood and Anxiety Symptom Questionnaire (MASQ), the Symptom Checklist (SCL-90), and the Visual Analogue Scale for Anxiety (VAS), each of which was used in one study.

Depression was most commonly measured by the Beck Depression Inventory (BDI-II), and the Center for Epidemiologic Studies Depression Scale (CES-D), which were used in eight and four studies, respectively. Two studies used the Patient Health Questionnaire (PHQ-9), while one study each used the BSI-18, the HSCL-25, the MASQ, the Positive and Negative Affect Schedule (PANAS-X), and the VAS for Depression.

Comparable measures were also used in describing several of the other health-related outcomes, including versions of the Short Form Health Survey (SF8, SF12, and SF36) for health status, the Perceived Stress Scale (PSS) for stress, the Five Facet Mindfulness Questionnaire (FFMQ) and Mindful Attention Awareness Scale (MAAS) for mindfulness, and the Pittsburgh Sleep Quality Index (PSQI) for sleep.

KEY FINDINGS

Nearly all studies found evidence of post-intervention reductions in post-traumatic stress symptoms, depression, or anxiety. Below we summarize key findings by intervention type and by type of trauma addressed.

MBSR Interventions

MBSR interventions were the focus of seven studies. Two studies were randomized trials,^{43,47} and five were observational studies using a pre-post design with no comparison group.^{32,36,42,44} Of these, three addressed military populations with PTSD,^{42,43,47} two focused on childhood sexual abuse survivors,^{32,44} one addressed PTSD in a civilian population,³⁶ and one focused on women with experiences of interpersonal trauma before the age of 18.³⁵

Overall, the results of MBSR studies were generally positive, with significant improvements in PTSD symptoms reported immediately following the intervention^{32,35,36,44,47} and up to six months post-intervention.⁴² Other reported benefits included reductions in depression severity^{35,36,42,44} and anxiety^{32,35,42} and increases in mindfulness.^{32,42}

Veterans with PTSD. Results of MBSR studies focusing on veterans with PTSD were somewhat varied. The largest of these was the randomized trial by Polusny et al., (See Illustration 1).⁴⁷ In that trial, veterans participating in MBSR demonstrated a seven percentage point greater reduction in both PTSD symptom severity and depressive symptoms compared to those engaged in a present-centered group therapy. In the smaller randomized study by Kearney et al., no significant advantage was found in terms of PTSD symptoms when MBSR was added to usual care. However, a greater number of veterans in the MBSR group reported meaningful changes in mental health domains on quality of life measures 4 months post-intervention.⁴³ In an observational study by Kearney et al., 40% of vets had clinically significant reductions in PTSD symptoms at 2 months and 48% at 6 months. Overall, significant reductions in PTSD symptoms, depression, and anxiety, and improvements in mindfulness were found at 2 months and sustained at 6 months post-intervention.⁴²

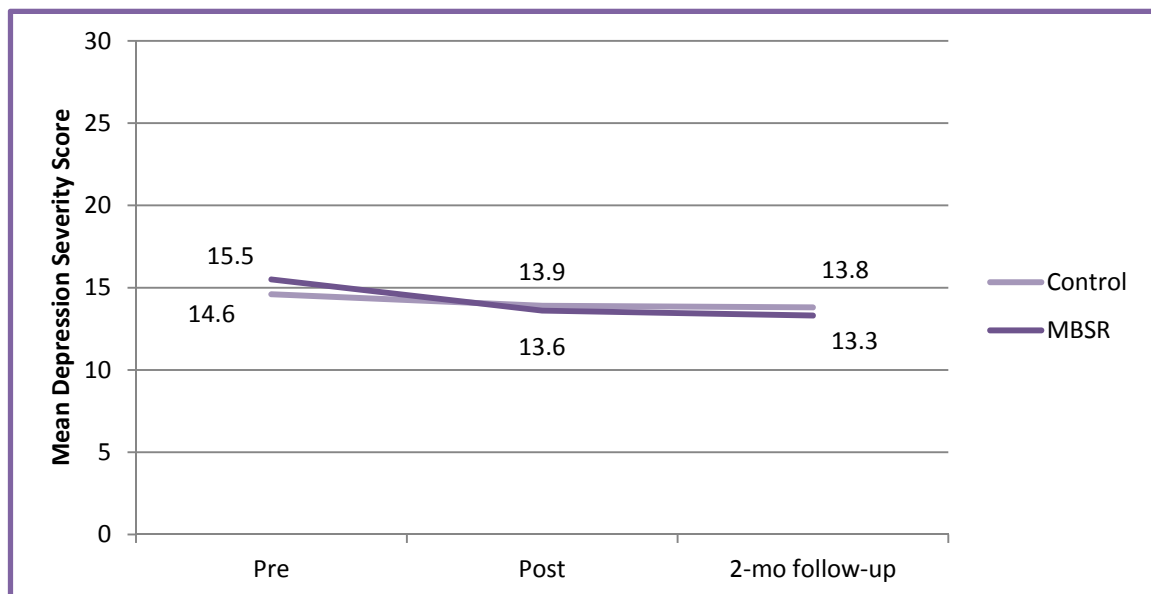
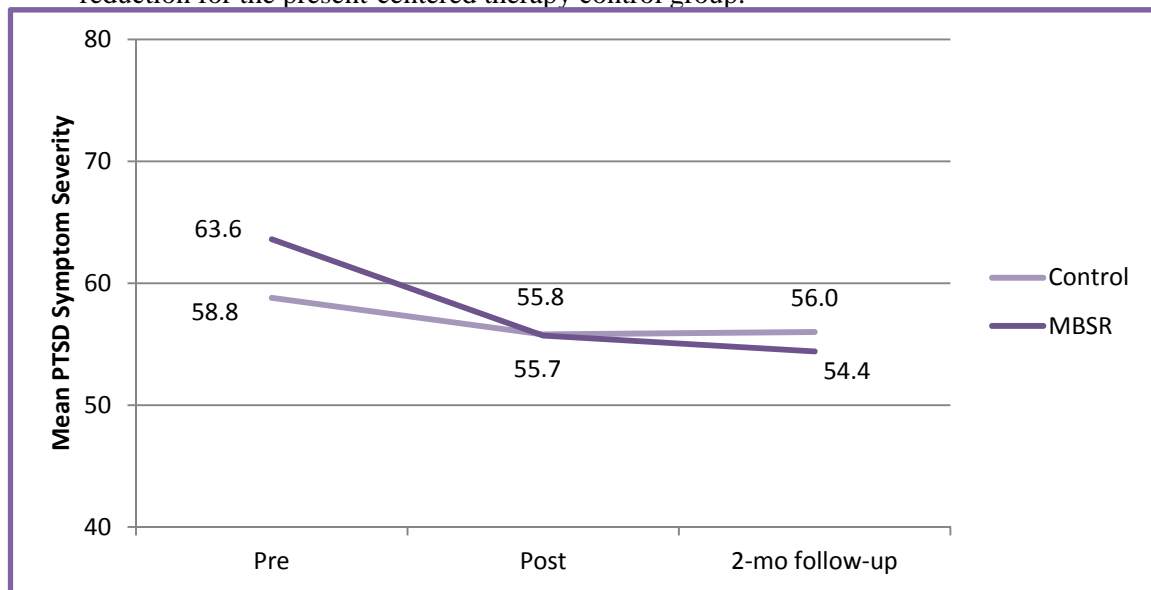
Illustration 1: Veterans at the Minneapolis VA Medical Center (n = 116)

Population: Veterans with a current PTSD diagnosis were recruited through advertisements and referral at the VA Medical Center. A total of 116 veterans were enrolled and randomized for the study, 58 in each group. See Study #7 in Appendices 3 and 4.

Intervention: Randomly assigned to receive MBSR therapy [8 weekly 2.5 hour group sessions and a day long retreat] or present-centered group therapy [9 weekly 1.5 hour group sessions].

Key Findings:

- *PTSD symptom severity:* The MBSR intervention group had a 12% reduction in PTSD symptom severity from baseline to immediately post-intervention compared with a 5% reduction for the present-centered therapy control group.
- *Depressive symptoms:* The MBSR intervention group had a 12% reduction in depressive symptom severity from baseline to immediately post-intervention compared with a 5% reduction for the present-centered therapy control group.



⁴⁷ Polusny MA, Erbes CR, Thuras P, et al. Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder Among Veterans: A Randomized Clinical Trial. *JAMA*. 2015;314(5):456-465.

Civilian Adult Survivors of Childhood Sexual Abuse. Two observational studies focusing on childhood sexual abuse survivors reported decreases in PTSD symptoms, depression, and anxiety after the completion of MBSR (See Illustration 2), with one study also documenting improved mindfulness.^{32,44} Many of the outcomes were sustained long-term.³²

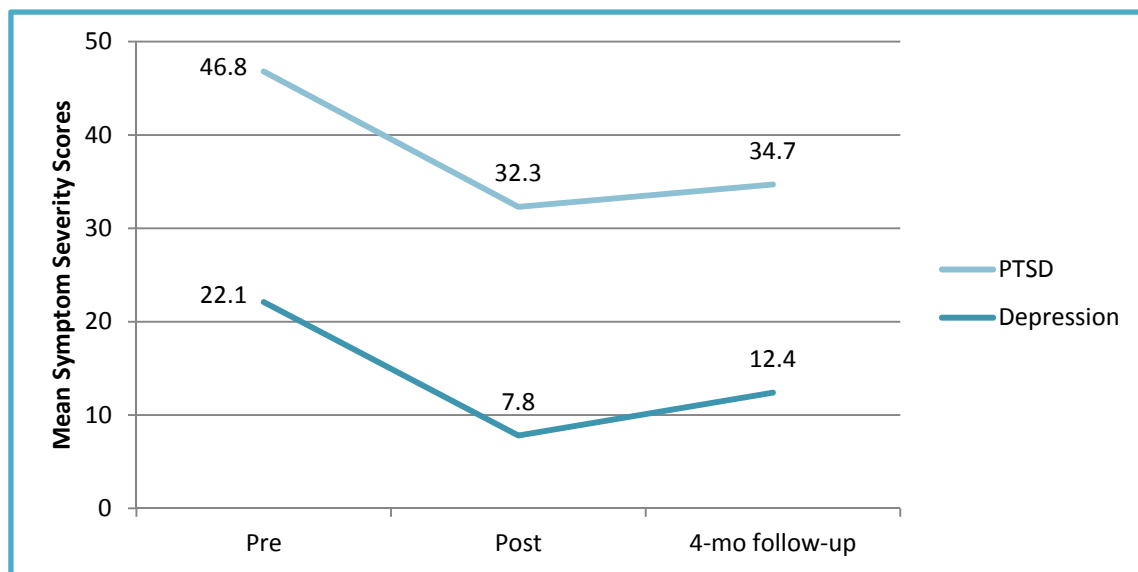
Illustration 2: Adult survivors of childhood sexual abuse (n = 27)

Population: Twenty-seven adult survivors of childhood sexual abuse were recruited from the Baltimore area community. See Study #15 in Appendices 3 and 4.

Intervention: Participants received MBSR training [8 weekly 2.5 hour group sessions and a 5 hour silent retreat]. There was no comparison group

Key Findings:

- *PTSD symptom severity:* The MBSR participants had a 31% reduction in PTSD symptom severity from baseline to immediately post-intervention.
- *Depressive symptoms:* The MBSR participants had a 65% reduction in depressive symptoms from baseline to immediately post-intervention.
- *Anxiety:* The MBSR participants had a 47% reduction in anxiety symptoms from baseline to immediately post-intervention (mean score of 1.7 reduced to 0.9).



⁴⁴ Kimbrough E, Magyari T, Langenberg P, Chesney M, Berman B. Mindfulness intervention for child abuse survivors. *Journal of Clinical Psychology*. 2010;66(1):17-33.

Civilian Adults with PTSD. One small observational study focused on civilian adults with PTSD. Positive outcomes were reported for decreases in PTSD symptoms and depression after the completion of MBSR.³⁶

Civilian Trauma-Exposed Women. One observational study examined MBSR offered in a community clinic for low-income women who had been exposed to interpersonal trauma before the age of 18 (see Illustration 2). Large reductions in PTSD symptoms, depression and anxiety were observed immediately post-intervention and at 4 weeks follow up.³⁵

Meditation, Mindfulness, or Mantram Repetition

Meditation interventions were the focus of five studies. Two studies were randomized control trials, both addressing veterans with PTSD. One compared mantram repetition plus usual care to usual care alone,²⁷ while the other compared mindfulness techniques (i.e., body scan, mindful breathing) to active control groups practicing slow breathing or sitting quietly.²⁹ Three observational studies with no comparison group were also identified that examined mindfulness for women with experiences of interpersonal violence,⁵¹ mental health workers in the aftermath of Hurricane Katrina,⁵³ and mantram repetition with veterans with PTSD.²⁶

Overall, the results of meditation intervention studies were positive, suggesting that meditation, mindfulness, and mantram repetition techniques are effective in reducing PTSD symptoms,^{27,29,53} anxiety,^{26,51,53} and depression.^{27,29} Other reported benefits included improvements in quality of life,^{26,27} self-compassion,⁵¹ and spiritual well-being.²⁶

Veterans with PTSD. The two randomized trials examining meditation techniques for veterans with PTSD yielded positive results. The largest of these was the randomized trial by Borman et al. (See Illustration 3).²⁷ In that trial, veterans participating in a mantram repetition program demonstrated clinically meaningful improvement in PTSD symptom severity compared to the usual care control group. The mantram repetition group also had significant reductions in depressive symptoms compared to the usual care group, but was not significantly different from usual care in terms of anxiety. In the randomized trial by Colgan et al., veterans participating in mindfulness techniques of body scan and mindful breathing had significantly greater decreases in PTSD symptoms and depression severity compared to the non-mindfulness slow breathing and sitting quietly control groups.²⁹ Participants in the observational study by Borman et al., reported similarly positive outcomes post-intervention including stress and anxiety symptom reduction and improved quality of life and spiritual wellbeing.²⁶

Civilian Trauma-Exposed Women. One observational study, which consisted of a 1.5 hour psychology lab experiment with female survivors of interpersonal violence, compared different modes of processing events (i.e., analytic, experiential) compared with counting verbs describing each event.⁵¹ Reductions were observed in anxiety and negative affect, as well as improvements in self-kindness and mindfulness for those instructed on mindful processing.

Mental Health Workers. A small observational study assessed outcomes in mental health agency staff 10 weeks after Hurricane Katrina (See Illustration 4).⁵³ Staff took part in a meditation workshop and then were asked to complete eight weeks of home meditation practice. Improvements were reported in PTSD symptom severity, depressive symptoms, and anxiety.

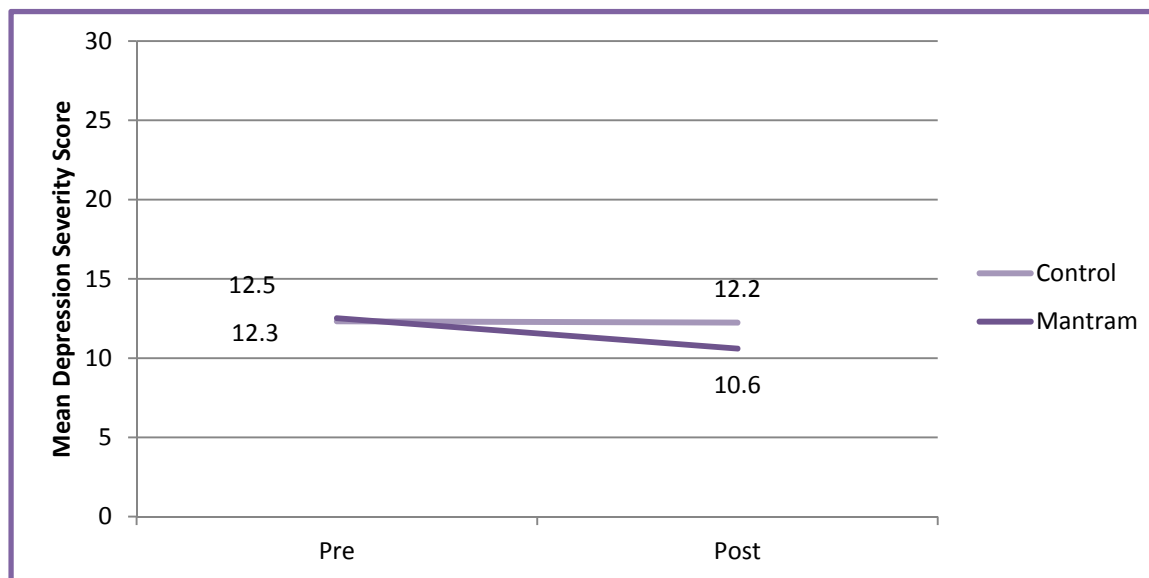
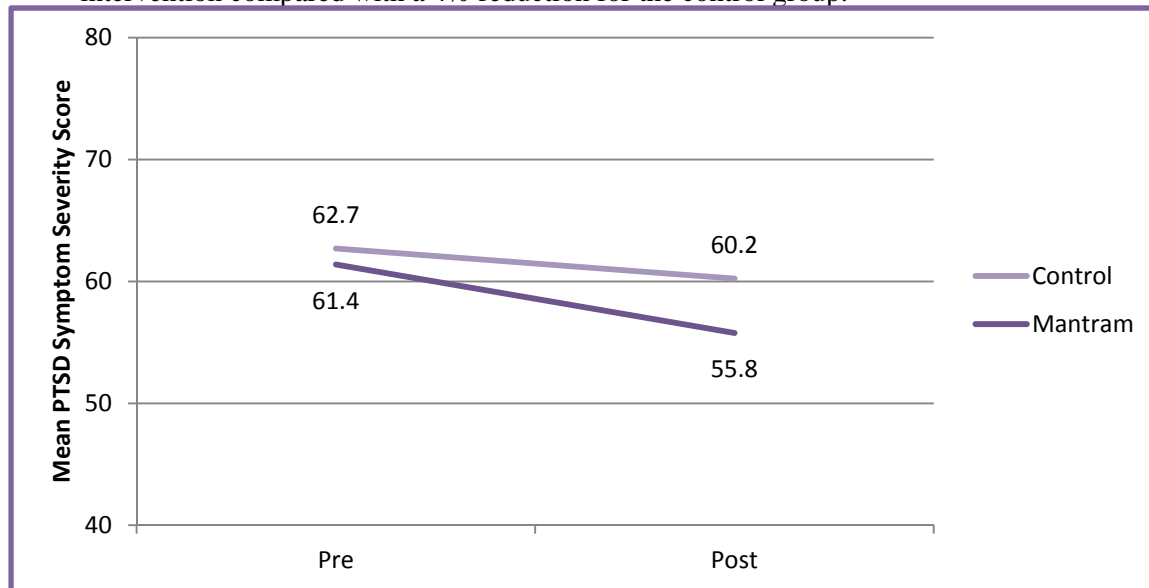
Illustration 3: Veterans in Southern California (n = 146)

Population: Outpatient veterans who reported trauma during military duty and sought care at a VA clinic. A total of 146 veterans with a PTSD diagnosis were enrolled and randomized, with 71 allocated to treatment and 75 allocated to the control group. See Study #2 in Appendices 3 and 4.

Intervention: Mantram Repetition Program (MRP) [6 weekly 90-minute group sessions] in addition to usual care versus usual care alone.

Key Findings:

- *PTSD symptom severity:* The MRP group had a 9% reduction in PTSD symptom severity from pre- to post-intervention compared with a 4% reduction for the control group.
- *Depressive symptoms:* The MRP group had a 15% reduction in depressive symptoms from pre- to post-intervention compared with a 1% reduction for the control group.
- *Anxiety:* The MRP group had a 10% reduction in anxiety symptoms from pre- to post-intervention compared with a 4% reduction for the control group.



²⁷ Bormann JE, Thorp SR, Wetherell JL, Golshan S, Lang AJ. Meditation-based mantram intervention for veterans with posttraumatic stress disorder: A randomized trial. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2013;5(3):259-267.

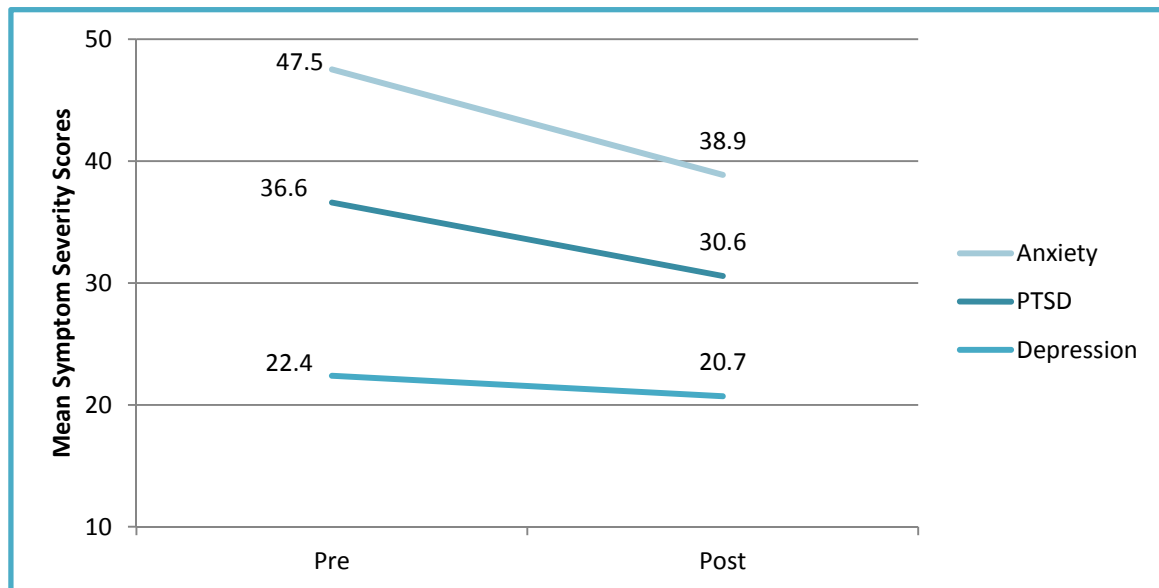
Illustration 4: Mental health workers after Hurricane Katrina (n = 20)

Population: Staff of a publicly-funded mental health agency in New Orleans. Participants included both clinicians and administrative staff of the agency. See Study #26 in Appendices 3 and 4.

Intervention: 10 weeks after Hurricane Katrina, a Meditation Retreat was offered for staff of a mental health agency that included a 4-hour meditation workshop along with instruction and materials for an 8-week home study meditation program.

Key Findings:

- *PTSD symptom severity:* The meditation participants had a 16% reduction in PTSD symptom severity from baseline to immediately post-intervention.
- *Depressive symptoms:* The meditation participants had an 8% reduction in depressive symptoms from baseline to immediately post-intervention.
- *Anxiety:* The meditation participants had an 18% reduction in anxiety symptoms from baseline to immediately post-intervention.



⁵³ Waelde LC, Uddo M, Marquett R, et al. A pilot study of meditation for mental health workers following Hurricane Katrina. *Journal of Traumatic Stress*. 2008;21(5):497-500.

Yoga-Based Interventions

Yoga was the focus of seven studies. Study designs included four randomized control trials using waitlist,⁴⁸ assessment only,^{31,45} and education control groups,⁵² one randomized pilot feasibility study,²⁸ and two observational studies with no comparison group.^{41,49} Of these, three addressed military populations with PTSD,^{41,48,49} two addressed a mix of military and civilian women with PTSD,^{31,45} one addressed women with experiences of non-specific interpersonal violence,⁵² and one addressed women survivors of domestic violence.²⁸

Overall, yoga interventions produced mixed results; this is likely attributable to relatively small sample sizes in all of the studies. Three studies reported decreases in PTSD symptoms,^{41,48,52} while one reported no change.⁴⁹ Two studies reported improvements in anxiety, while one reported none. One found improvements in terms of depressive symptoms, while another found no change pre- and post-intervention. The two studies that examined hyperarousal as an outcome both noted improvements; however, one reported no change in anger.

Veterans with PTSD. Results of studies focusing on veterans with PTSD were mixed. One small randomized trial compared daily 3-hour yoga sessions for one week with a waitlist control group and found reduced PTSD symptoms and overall mood and anxiety symptoms for the yoga group (See Illustration 5), which were sustained to one year follow-up.⁴⁸ Two very small observational studies with no comparison groups demonstrated a significant reduction in overall PTSD severity,⁴¹ while the other did not.⁴⁹

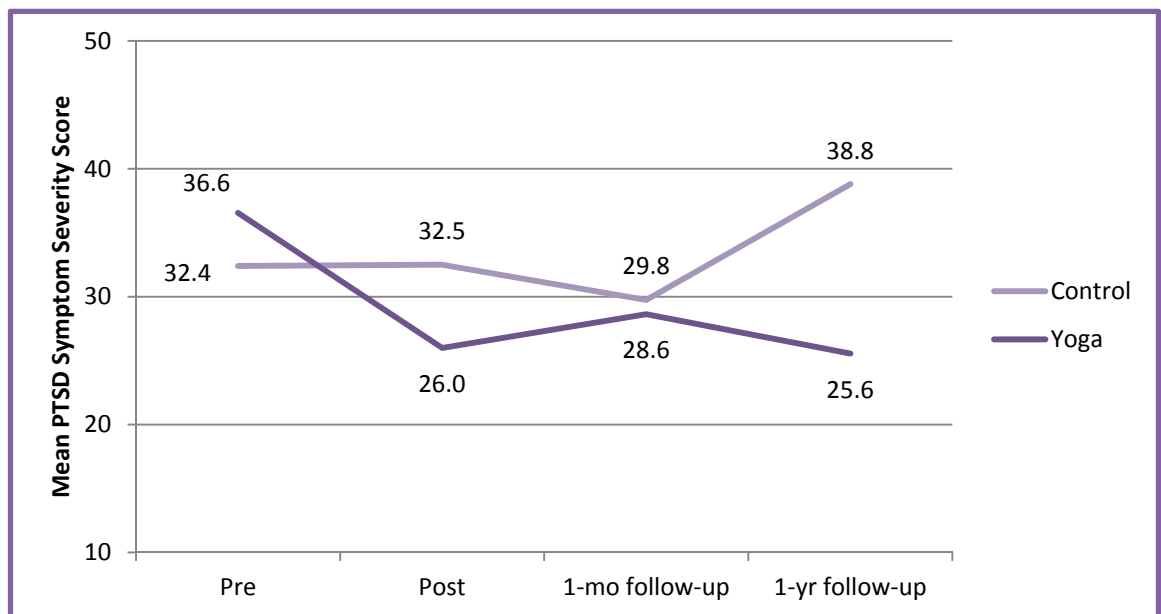
Illustration 5: Veterans personnel in Madison, WI (n=21)

Population: Veterans with service in Iraq or Afghanistan recruited through flyers in the community and local veteran or military organizations. See Study #8 in Appendices 3 and 4.

Intervention: Daily 3-hour group sessions of Sudarshan Kriya yoga [a group-oriented, manual-based, controlled breathing meditation including breathing exercises with stretching] compared to a waitlist control group.

Key Findings:

- *PTSD symptom severity:* The yoga participants had a 29% reduction in PTSD symptom severity from baseline to immediately post-intervention compared to no change in the control group. Symptom reduction was sustained to one-year follow-up.
- *General distress depression:* Yoga participants had a 21% reduction in depression scores compared to a 10% reduction in the control group.
- *General distress anxiety:* Yoga participants had a 19% reduction in anxiety scores compared to a 9% reduction in the control group.



⁴⁸ Seppala EM, Nitschke JB, Tudorascu DL, et al. Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study. *Journal of Traumatic Stress*. 2014;27(4):397-405.

Veteran and civilian women with PTSD. Two small randomized trials focused on a mix of veteran and civilian women with PTSD randomized to 12, 75-minute yoga sessions offered over a 6- to 12-week period versus an assessment-only control.^{31,45} One found preliminary evidence of reduced expressive suppression and increased psychological flexibility in the yoga group;³¹ the other found decreases in hyperarousal and anxiety for both yoga and control groups.⁴⁵

Civilian women with histories of interpersonal violence. Two randomized studies assessed with women who had histories of interpersonal violence, including domestic violence. The largest of these found reductions in PTSD symptoms in both the yoga intervention and education control groups; only the yoga group, however, maintained the effects after the end of the intervention period (See Illustration 6).⁵² The other study was a smaller randomized pilot feasibility study evaluating yoga in addition to usual care at a domestic violence aftercare program versus usual care alone.²⁸ Only baseline values were reported.

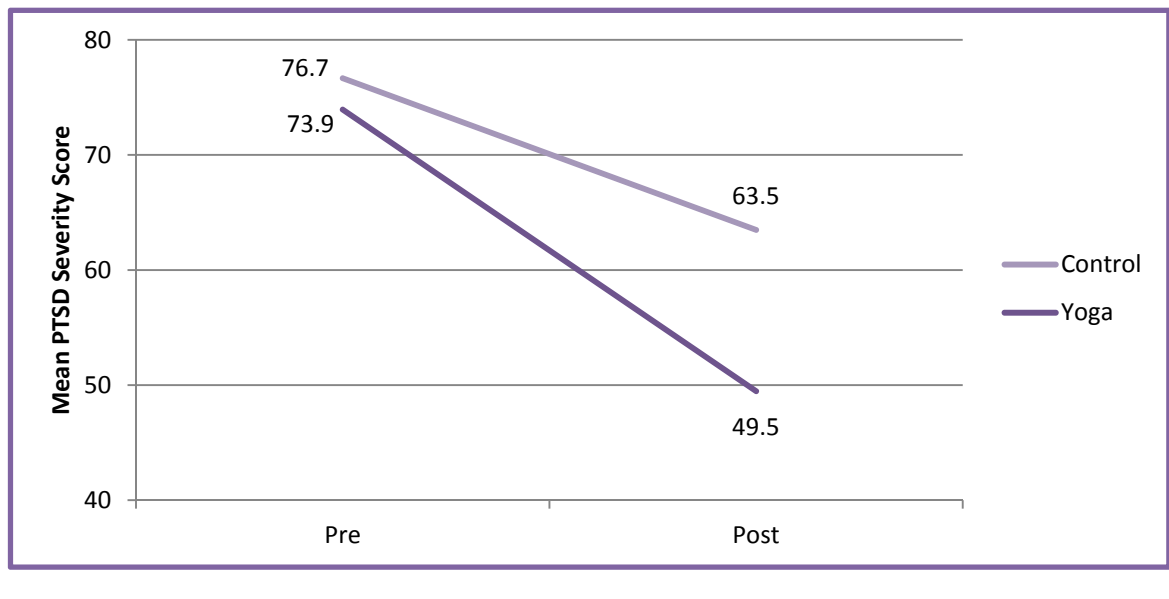
Illustration 6: Women with histories of interpersonal violence (n=64)

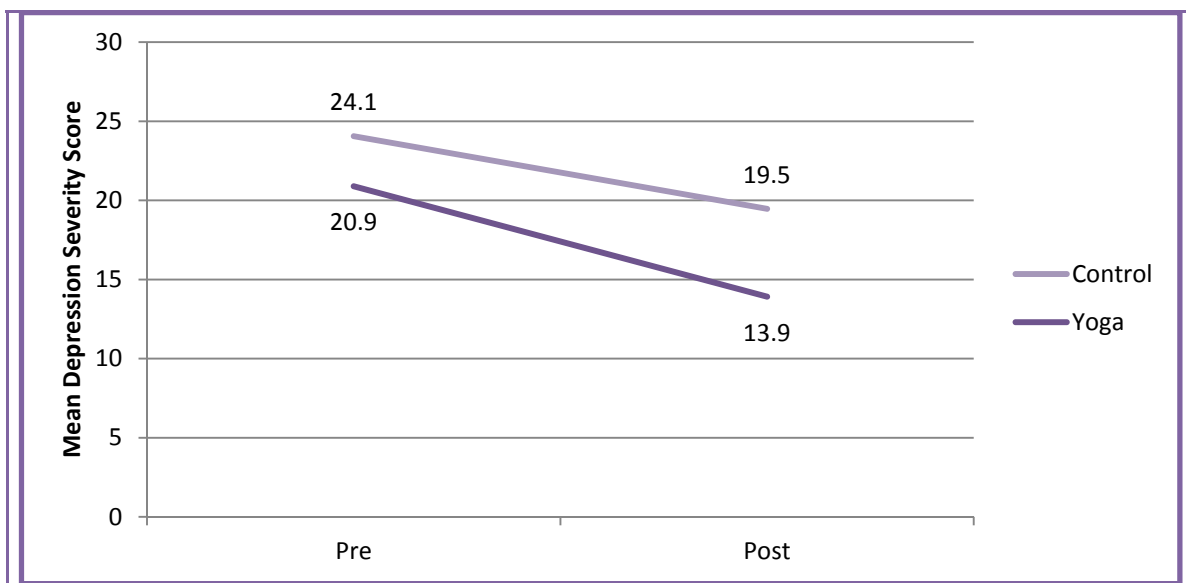
Population: 64 women with history of interpersonal violence resulting in chronic, treatment-resistant PTSD were randomly assigned with 32 each in the treatment and control groups. See Study #19 in Appendices 3 and 4.

Intervention: Weekly, 1-hour trauma-informed yoga over 10 weeks versus weekly, 1-hour supportive women’s health education.

Key Findings:

- *PTSD symptom severity:* The yoga intervention group had a 33% reduction in PTSD symptom severity from baseline to immediately post-intervention compared with a 17% reduction for the control group.
- *Depressive symptoms:* The yoga intervention group had a 33% reduction in depressive symptom severity from baseline to immediately post-intervention compared with a 19% reduction for the control group.





⁵² van der Kolk BA, Stone L, West J, et al. Yoga as an adjunctive treatment for posttraumatic stress disorder: a randomized controlled trial. *Journal of Clinical Psychiatry*. 2014;75(6):e559-565.

Other Intervention Types

Nine studies addressed a mix of other intervention types including acupuncture,^{33,39} mind-body practices,^{30,46} healing touch with guided imagery,⁴⁰ music therapy with relaxation,^{37,50} applied muscle relaxation,³⁸ and giving testimony with yogic breathing.³⁴ Study designs included seven studies with random assignment to a treatment or a comparison group,^{33,34,37-40,46} and two observational studies with no comparison group.^{30,50} Of the nine studies, four addressed military populations with PTSD,^{30,33,40,46} two addressed civilians with PTSD,^{38,39} and three addressed women survivors of domestic violence.^{34,37,50}

Overall, this mix of interventions was generally associated with improved outcomes. The largest study was a randomized trial examining the benefits of adding healing touch with guided imagery to usual medical care for active duty military personnel with PTSD.⁴⁰ Significant and substantial reductions in PTSD symptoms and depression were observed in favor of the healing touch/guided imagery group (See Illustration 7). Two modest sized randomized studies focused on acupuncture^{15,21} also yielded promising outcomes. One study found acupuncture combined with usual care was significantly better than usual care alone for reducing PTSD symptoms and depression in active duty military personnel (See Illustration 8). The other trial study examined acupuncture, cognitive behavioral therapy and waitlist control for civilian adults with PTSD. Those receiving acupuncture reported PTSD symptom reduction at end treatment and at 3 month follow up similar to what was reported for the cognitive behavioral therapy group, and greater than what was observed for waitlist. Giving testimony with yogic breathing also demonstrated benefit for women with a history of domestic violence,¹⁶ while muscle relaxation³⁸ was less effective than cognitive behavioral therapy for Latinas with PTSD.²⁰ Two studies offered promising but preliminary evidence that music therapy with relaxation may reduce anxiety and depression in women survivors of domestic violence (See illustration 9).^{19,32}

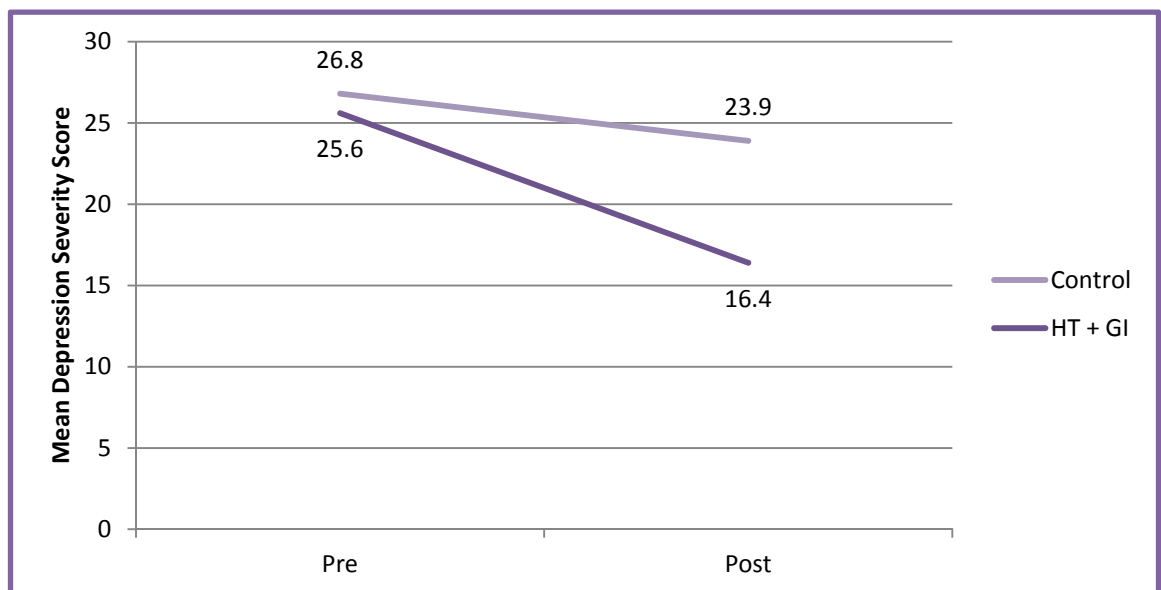
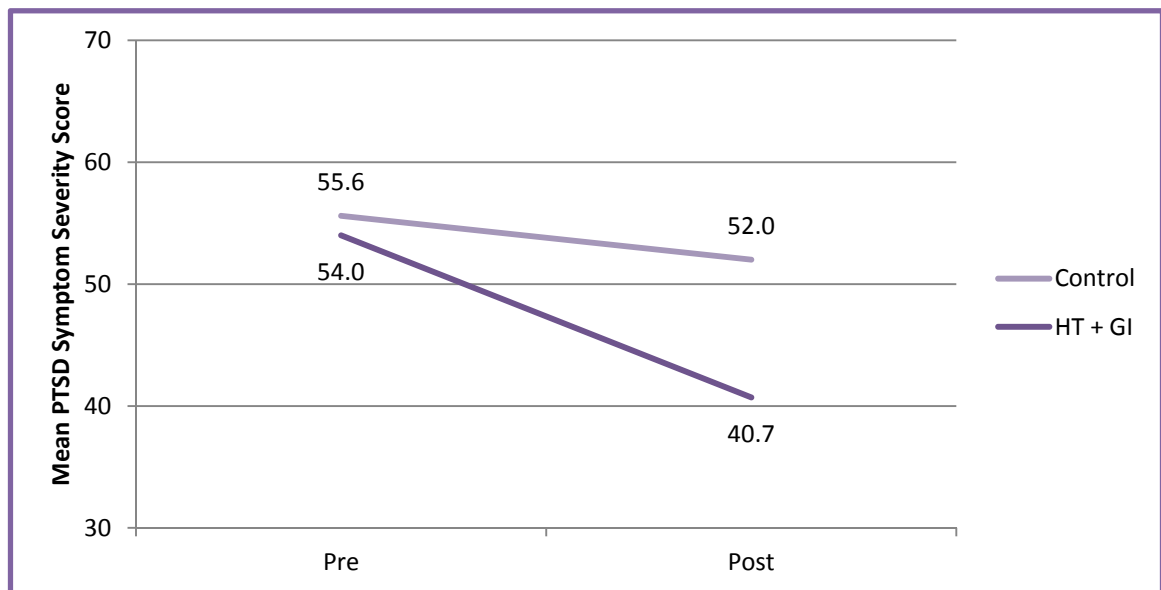
Illustration 7: Active duty military at Camp Pendleton, California (n = 123)

Population: Active duty Marines returning from a combat zone were identified at the Deployment Health Clinics. A total of 123 were randomized to treatment (n = 68) or control (n = 55). See Study #12 in Appendices 3 and 4.

Intervention: Six healing touch plus guided imagery treatments over three weeks in addition to usual care compared with usual care alone.

Key Findings:

- *PTSD symptom severity:* The healing touch with guided imagery intervention group had a 25% reduction in PTSD symptom severity from baseline to immediately post-intervention compared with a 6% reduction for the usual care control group.
- *Depressive symptoms:* The healing touch with guided imagery intervention group had a 36% reduction in depressive symptom severity from baseline to immediately post-intervention compared with a 11% reduction for the usual care control group.



⁴⁰ Jain S, McMahon GF, Hasen P, et al. Healing Touch with Guided Imagery for PTSD in returning active duty military: a randomized controlled trial. *Military Medicine*. 2012;177(9):1015-1021.

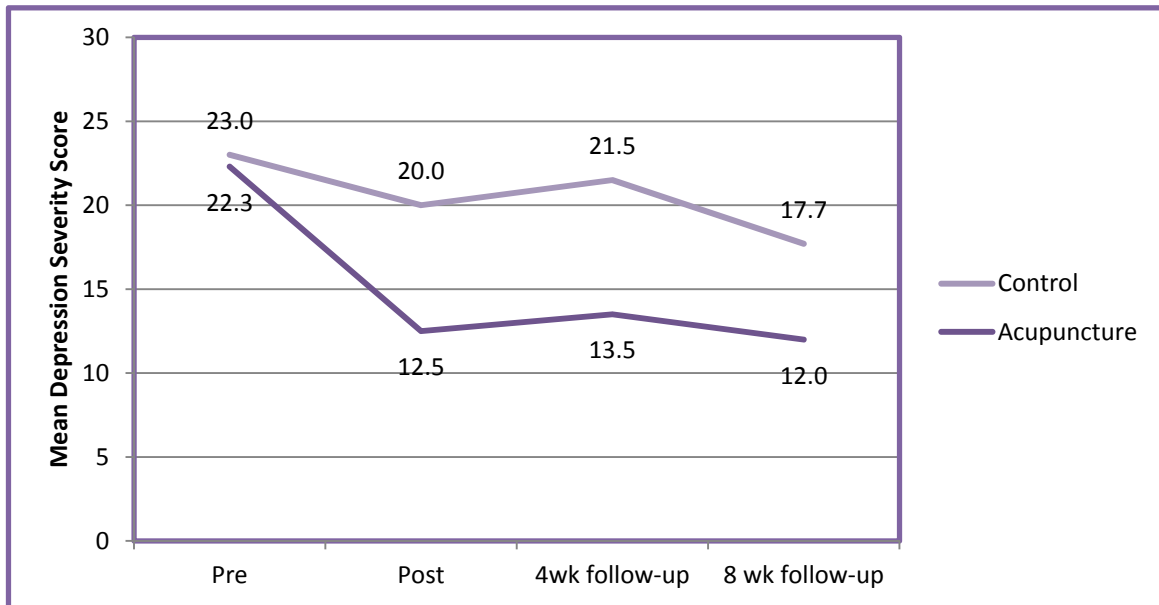
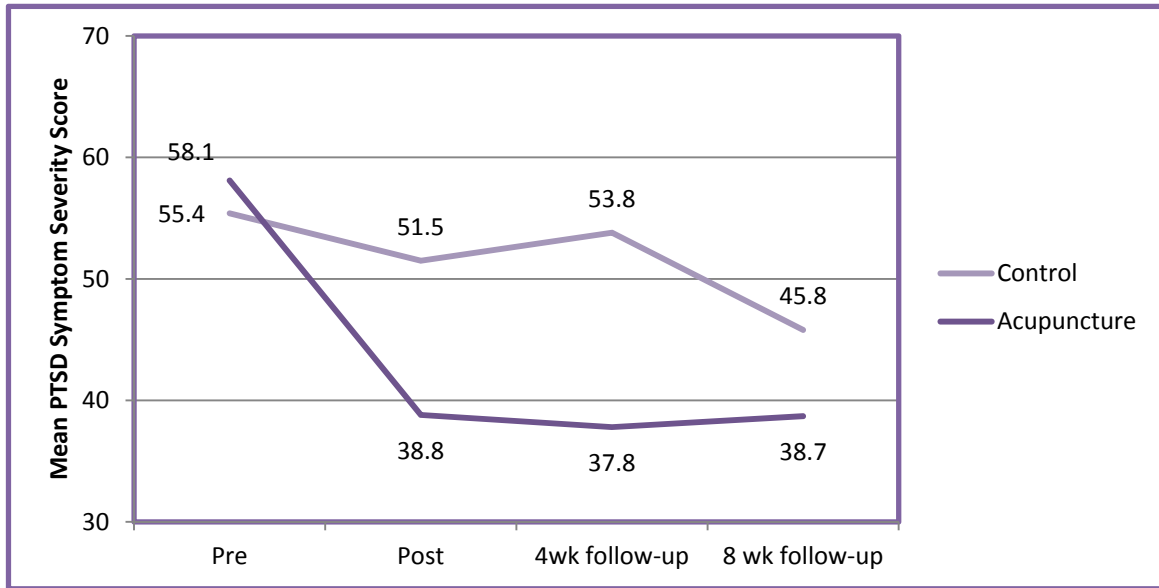
Illustration 8: Active duty military at Walter Reed Army Medical Center (n = 55)

Population: Active duty military personnel with PTSD were recruited from primary care clinics at Walter Reed Army Medical Center (WRAMC) as well as self-referrals from advertisements at WRAMC. See Study #11 in Appendices 3 and 4.

Intervention: Eight 60 minute acupuncture treatments over four weeks in addition to usual care compared with usual care alone.

Key Findings:

- *PTSD symptom severity:* The acupuncture intervention group had a 33% reduction in PTSD symptom severity from baseline to immediately post-intervention compared with a 7% reduction for the usual care control group.
- *Depressive symptoms:* The acupuncture intervention group had a 44% reduction in depressive symptom severity from baseline to immediately post-intervention compared with a 13% reduction for the usual care control group.



³³ Engel CC, Cordova EH, Benedek DM, et al. Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. *Medical Care*. 2014;52(12 Suppl 5):S57-64.

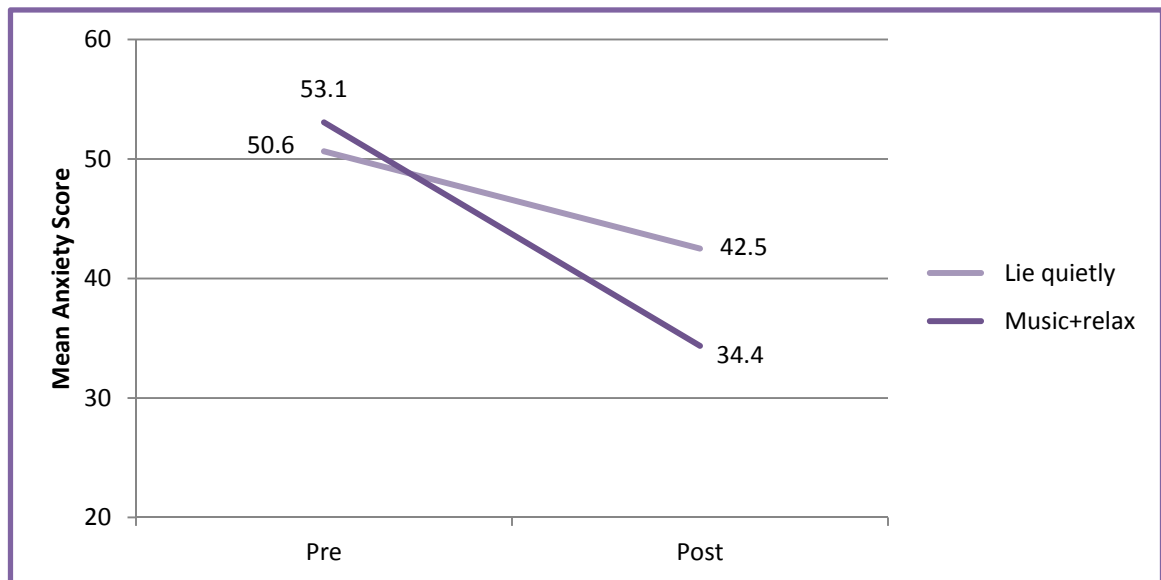
Illustration 9: Women at a domestic violence shelter in the Midwest (n = 28)

Population: Twenty-eight women from an upper Midwestern city recruited from two battered women’s shelters. Women were randomly assigned to the intervention or control groups with 14 participants in each. See Study #22 in Appendices 3 and 4.

Intervention: Customized music CD with music of the participants choice and a 20 minute progressive relaxation script over the music compared with instructions to lie quietly for 20 minutes. Daily 30 minute practice sessions for five days with instructions to use the techniques at bedtime.

Key Findings:

- *Anxiety:* Participants receiving music therapy with progressive relaxation had a 35% reduction in anxiety symptoms from baseline to post-intervention compared to a 16% reduction for the “lie quietly” control group.



³⁷ Hernandez-Ruiz E. Effect of music therapy on the anxiety levels and sleep patterns of abused women in shelters. *Journal of Music Therapy*. 2005;42(2):140-158.

Summary & Recommendations

Trauma has many faces, and no one is immune to trauma. The studies that we identified were restricted to adults, but they included a mix of military and civilians, men and women, a wide range of age groups, and a racially/ethnically diverse group of survivors, although the majority were non-Hispanic White. Given the prevalence of trauma-related symptoms, the significant individual and societal costs, and the lack of conventional options in which individuals are able and willing to engage, there is a critical need to identify safe, effective, acceptable, and accessible trauma-informed healing approaches. With an emphasis on overall health and wellbeing and generally low-risk profiles, CHA have the potential to play an important role in healing trauma. While growing attention has been paid to research investigating CHA as a means to diminish trauma's negative effects, there is still substantial room for rigorous and relevant work to advance the field and reach to those most in need.

A variety of CHA have been and are being applied to the treatment of PTSD, anxiety, depression, and other emotional and behavioral symptoms resulting from trauma. Existing interventions largely take the form of mind-body practices and have focused primarily on trauma related to military service, interpersonal and domestic violence, and childhood abuse survivors. While techniques such as MBSR have been reported to produce long-term improvements in symptoms of PTSD and depression, findings on other intervention types, such as yoga, have been less consistent to date. The low-risk nature of many CHA makes them especially suitable for serving as adjunct interventions to other traditional trauma-based interventions. This is especially true for mind-body approaches, which aim to enhance individual awareness and emotional regulation using some of the same elements (e.g., relaxation, mindfulness) as conventional psychological trauma treatments.

Using CHA for healing trauma is an emerging field, and there is still considerable work to be done. Most of the research is occurring in military or clinical settings, many using interventions that could also be delivered in community organizations. Additionally, we know anecdotally that there is innovative work in community settings that has not yet reached the published literature. Recommendations for moving this forward are summarized below.

Recommendations

- There is a gender divide in terms of the type of trauma/setting studied. Military-based trauma and settings involve predominantly male participants, while studies in community settings and on interpersonal trauma enroll predominantly females. While this is possibly reflective of the demographics exposed to each trauma type, there is great need to better understand how to address all trauma types in males and females, as well as those who identify as other.
- Non-Hispanic white populations are overrepresented in the identified studies. It is not clear whether this is due to the populations targeted for CHA interventions, limited recruitment strategies, or some other reason. American Indian, Asian, and Native Hawaiian/other Pacific Islander, as well as immigrant populations are especially under-represented in the current research and warrant further study.
- Further attention is needed to address the accessibility of CHA. For example, MBSR programs are most often very structured and time intensive making it difficult for many people to participate due to competing life demands. If CHA is to reach its full potential, consideration must be given to offering flexible, affordable, and non-traditional delivery formats that accommodate individuals most in need.

- The majority of CHA studies show promising results, especially for PTSD and mental health-related outcomes. However, only a small percentage of studies addressed other important measures such as quality of life and wellbeing. Future work should explore additional outcomes that are potentially meaningful to trauma survivors, community supporters, and other stakeholders.
- Additional emphasis should be placed on future partnership and capacity-building in community settings where novel interventions and healing are already taking place. These innovations require rigorous implementation and evaluation to enhance long-term sustainability, as well as dissemination to broader audiences to facilitate greater attention and change.

Limitations

This scoping review should be considered in light of several limitations. First, this review focused only on empirical studies identified through four electronic peer-reviewed publication databases. By definition, we excluded previous literature reviews on the topic and did not hand search references of the studies we identified, which would have likely produced additional studies. Additionally, we did not search websites, books, unpublished reports or other gray literature (i.e., that which falls outside the peer-reviewed publication literature). Also, this scoping review did not include a formal evaluation of individual study quality (i.e., it was not a systematic review). With only a little over half of the identified studies including randomization, and several with small sample sizes and no comparison group, it is clear there is substantial room for improving the methodological rigor of CHA trauma based research. Despite these limitations, the results of this scoping review are generally congruent with systematic reviews of the literature that have found promising results for CHA, especially mind-body approaches.⁵⁴⁻⁵⁶

Due to the terms used in our initial search, many of the studies reviewed focused on military personnel with PTSD and women who have experienced violence. This limits our findings to these populations and may have excluded relevant studies pertaining to other types of trauma, such as vicarious or caregiver trauma, childhood abuse (which was captured only directly through our search terms for interpersonal violence), historical trauma, and others. Trauma types that were noted initially as secondary interests, such as vicarious or caregiver trauma, were not the main focus of this scoping review. As such, we did not use a comprehensive search strategy to specifically identify these types of studies. A future review on the topic of vicarious trauma, such as that experienced by nurses, first-responders, social workers, or crisis counselors, would need more targeted search terms. Historical trauma or collective trauma was also of interest but conducting a broad scoping search of the empirical literature on CHA for healing trauma did not produce studies on collective or historical trauma meeting our criteria for review. Some articles addressing the topic of historic trauma were identified but most of them were either commentaries on the topic or descriptive overviews of programs that were not empirical intervention studies. Again, a future review on the topic of historical trauma would likely require more targeted search terms and searching beyond the peer-reviewed literature.

Another limitation pertains to the settings in which most of the studies included in this review were conducted. Interventions that were administered in clinical or laboratory environments, or those whose participants consisted largely of clinic populations may not reflect the experiences in more “real-world” environments. More research is needed in order to identify and design CHA for trauma-related conditions that can be implemented effectively in community settings.

Finally, our review was limited to literature published in peer-reviewed journals, which does not include many novel community-based CHA efforts that have yet to be described in the peer-reviewed literature. Identifying and exploring these programs will add substantively to the

current understanding of potential ways to deliver novel, effective CHA therapies in community-based settings to promote healing for survivors of trauma.

Conclusions

The research available suggests CHA have a promising role to play in healing trauma either as an adjunct to conventional care, or as a gateway to healing among individuals who are unable or prefer not to access conventional approaches. This is particularly the case for a range of mind-body approaches, which target many of the symptoms of trauma sufferers. Further attention is needed, especially in the form of high quality research, in a broader range of populations and community settings, in order to fully realize the potential of CHA for healing trauma.

References

1. Goldstein RB, Smith SM, Chou SP, et al. The epidemiology of DSM-5 posttraumatic stress disorder in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions-III. *Social psychiatry and psychiatric epidemiology*. 2016.
2. Roberts AL, Gilman SE, Breslau J, Breslau N, Koenen KC. Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychol Med*. 2011;41(1):71-83.
3. Kilpatrick DG, Resnick HS, Milanak ME, Miller MW, Keyes KM, Friedman MJ. National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM-5 criteria. *J Trauma Stress*. 2013;26(5):537-547.
4. Soni A. The Five Most Costly Conditions, 1996 and 2006: Estimates for the U.S. Civilian Noninstitutionalized Population. *Statistical Brief #248*. 2009; http://www.meps.ahrq.gov/mepsweb/data_files/publications/st248/stat248.pdf.
5. Greenberg PE, Fournier AA, Sisitsky T, Pike CT, Kessler RC. The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *J Clin Psychiatry*. 2015;76(2):155-162.
6. Bradley R, Greene J, Russ E, Dutra L, Westen D. A multidimensional meta-analysis of psychotherapy for PTSD. *Am J Psychiatry*. 2005;162(2):214-227.
7. Foa E, Hembree E, Rothbaum B. *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences - Therapist guide*. New York, NY: Oxford University Press; 2007.
8. Foa E, Keane T, Friedman MJ. *Effective treatments for posttraumatic stress disorder: Practice guidelines from the International Society for Traumatic Stress Studies*. New York, NY: Guilford; 2000.
9. Schottenbauer MA, Glass CR, Arnkoff DB, Tendick V, Gray SH. Nonresponse and dropout rates in outcome studies on PTSD: review and methodological considerations. *Psychiatry*. 2008;71(2):134-168.
10. Hembree EA, Foa EB. Interventions for trauma-related emotional disturbances in adult victims of crime. *J Trauma Stress*. 2003;16(2):187-199.
11. Hoge CW, Auchterlonie JL, Milliken CS. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA*. 2006;295(9):1023-1032.
12. Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *N Engl J Med*. 2004;351(1):13-22.
13. National Center for Complementary and Alternative Medicine. *Exploring the Science of Complementary and Alternative Medicine: Third Strategic Plan 2011-2015*. Washington DC: National Institutes of Health;2011.

14. National Center for Complementary and Integrative Health. Complementary, Alternative, or Integrative Health: What's in a name? 2015; https://nccih.nih.gov/sites/nccam.nih.gov/files/CAM_Basics_Whats_In_A_Name_03-26-2015.pdf. Accessed Jul 23, 2015.
15. Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL. Trends in the use of complementary health approaches among adults: United States, 2002-2012. *Natl Health Stat Report*. 2015(79):1-16.
16. Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Report*. 2008(12):1-23.
17. Kessler RC, Soukup J, Davis RB, et al. The use of complementary and alternative therapies to treat anxiety and depression in the United States. *Am J Psychiatry*. 2001;158(2):289-294.
18. Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. *JAMA*. 1998;280(18):1569-1575.
19. Cronin C, Conboy L. Using the NADA protocol to treat combat stress-induced insomnia: A pilot study. *Journal of Chinese Medicine*. 2013(103):50-56.
20. King HC, Spence DL, Hickey AH, Sargent P, Elesh R, Connelly CD. Auricular acupuncture for sleep disturbance in veterans with post-traumatic stress disorder: A feasibility study. *Military Medicine*. 2015;180(5):582-590.
21. Roy MJ, Highland KB, Costanzo MA. GETSmart: Guided education and training via smart phones to promote resilience. *Annual Review of CyberTherapy and Telemedicine*. 2015;13:123-128.
22. Dale LP, Carroll LE, Galen GC, et al. Yoga practice may buffer the deleterious effects of abuse on women's self-concept and dysfunctional coping. *Journal of Aggression, Maltreatment & Trauma*. 2011;20(1):90-102.
23. Kearney DJ, Malte CA, McManus C, Martinez ME, Felleman B, Simpson TL. Loving-kindness meditation for posttraumatic stress disorder: a pilot study. *Journal of Traumatic Stress*. 2013;26(4):426-434.
24. Martin EC, Dick AM, Scioli-Salter ER, Mitchell KS. Impact of a Yoga Intervention on Physical Activity, Self-Efficacy, and Motivation in Women with PTSD Symptoms. *Journal of Alternative & Complementary Medicine*. 2015;21(6):327-332.
25. Price C. Body-oriented therapy in sexual abuse recovery: a pilot-test comparison. *Journal of Bodywork & Movement Therapies*. 2006;10(1):58-64 57p.
26. Bormann JE, Smith TL, Becker S, et al. Efficacy of frequent mantram repetition on stress, quality of life, and spiritual well-being in veterans: a pilot study. *Journal of Holistic Nursing*. 2005;23(4):395-414.
27. Bormann JE, Thorp SR, Wetherell JL, Golshan S, Lang AJ. Meditation-based mantram intervention for veterans with posttraumatic stress disorder: A randomized trial. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2013;5(3):259-267.

28. Clark CJ, Lewis-Dmello A, Anders D, et al. Trauma-sensitive yoga as an adjunct mental health treatment in group therapy for survivors of domestic violence: a feasibility study. *Complementary Therapies in Clinical Practice*. 2014;20(3):152-158.
29. Colgan DD, Christopher M, Michael P, Wahbeh H. The body scan and mindful breathing among veterans with PTSD: Type of intervention moderates the relationship between changes in mindfulness and post-treatment depression. *Mindfulness*. 2016;7(2):372-383.
30. Collinge W, Kahn J, Soltysik R. Promoting reintegration of National Guard veterans and their partners using a self-directed program of integrative therapies: a pilot study. *Military Medicine*. 2012;177(12):1477-1485.
31. Dick AM, Niles BL, Street AE, DiMartino DM, Mitchell KS. Examining mechanisms of change in a yoga intervention for women: the influence of mindfulness, psychological flexibility, and emotion regulation on PTSD symptoms. *Journal of Clinical Psychology*. 2014;70(12):1170-1182.
32. Earley MD, Chesney MA, Frye J, Greene PA, Berman B, Kimbrough E. Mindfulness intervention for child abuse survivors: a 2.5-year follow-up. *Journal of Clinical Psychology*. 2014;70(10):933-941.
33. Engel CC, Cordova EH, Benedek DM, et al. Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder. *Medical Care*. 2014;52(12 Suppl 5):S57-64.
34. Franzblau SH, Echevarria S, Smith M, Van Cantfort TE. A preliminary investigation of the effects of giving testimony and learning yogic breathing techniques on battered women's feelings of depression. *Journal of Interpersonal Violence*. 2008;23(12):1800-1808.
35. Gallegos AM, Lytle MC, Moynihan JA, Talbot NL. Mindfulness-based stress reduction to enhance psychological functioning and improve inflammatory biomarkers in trauma-exposed women: A pilot study. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2015;7(6):525-532.
36. Goldsmith RE, Gerhart JI, Chesney SA, Burns JW, Kleinman B, Hood MM. Mindfulness-based stress reduction for posttraumatic stress symptoms: building acceptance and decreasing shame. *Journal of Evidence-Based Complementary & Alternative Medicine*. 2014;19(4):227-234.
37. Hernandez-Ruiz E. Effect of music therapy on the anxiety levels and sleep patterns of abused women in shelters. *Journal of Music Therapy*. 2005;42(2):140-158.
38. Hinton DE, Hofmann SG, Rivera E, Otto MW, Pollack MH. Culturally adapted CBT (CA-CBT) for Latino women with treatment-resistant PTSD: a pilot study comparing CA-CBT to applied muscle relaxation. *Behaviour Research & Therapy*. 2011;49(4):275-280.
39. Hollifield M, Sinclair-Lian N, Warner TD, Hammerschlag R. Acupuncture for posttraumatic stress disorder: a randomized controlled pilot trial. *Journal of Nervous & Mental Disease*. 2007;195(6):504-513.
40. Jain S, McMahon GF, Hasen P, et al. Healing Touch with Guided Imagery for PTSD in returning active duty military: a randomized controlled trial. *Military Medicine*. 2012;177(9):1015-1021.

41. Johnston JM, Minami T, Greenwald D, Li C, Reinhardt K, Khalsa SBS. Yoga for military service personnel with PTSD: A single arm study. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2015;7(6):555-562.
42. Kearney DJ, McDermott K, Malte C, Martinez M, Simpson TL. Association of participation in a mindfulness program with measures of PTSD, depression and quality of life in a veteran sample. *Journal of Clinical Psychology*. 2012;68(1):101-116.
43. Kearney DJ, McDermott K, Malte C, Martinez M, Simpson TL. Effects of participation in a mindfulness program for veterans with posttraumatic stress disorder: a randomized controlled pilot study. *Journal of Clinical Psychology*. 2013;69(1):14-27.
44. Kimbrough E, Magyari T, Langenberg P, Chesney M, Berman B. Mindfulness intervention for child abuse survivors. *Journal of Clinical Psychology*. 2010;66(1):17-33.
45. Mitchell KS, Dick AM, DiMartino DM, et al. A pilot study of a randomized controlled trial of yoga as an intervention for PTSD symptoms in women. *Journal of Traumatic Stress*. 2014;27(2):121-128.
46. Nakamura Y, Lipschitz DL, Landward R, Kuhn R, West G. Two sessions of sleep-focused mind-body bridging improve self-reported symptoms of sleep and PTSD in veterans: A pilot randomized controlled trial. *Journal of Psychosomatic Research*. 2011;70(4):335-345.
47. Polusny MA, Erbes CR, Thuras P, et al. Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder Among Veterans: A Randomized Clinical Trial. *JAMA*. 2015;314(5):456-465.
48. Seppala EM, Nitschke JB, Tudorascu DL, et al. Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study. *Journal of Traumatic Stress*. 2014;27(4):397-405.
49. Staples JK, Hamilton MF, Uddo M. A yoga program for the symptoms of post-traumatic stress disorder in veterans. *Military Medicine*. 2013;178(8):854-860.
50. Teague AK, Hahna ND, McKinney CH. Group music therapy with women who have experienced intimate partner violence. *Music Therapy Perspectives*. 2006;24(2):80-86.
51. Valdez CE, Lilly MM. Self-compassion and trauma processing outcomes among victims of violence. *Mindfulness*. 2016;7(2):329-339.
52. van der Kolk BA, Stone L, West J, et al. Yoga as an adjunctive treatment for posttraumatic stress disorder: a randomized controlled trial. *Journal of Clinical Psychiatry*. 2014;75(6):e559-565.
53. Waelde LC, Uddo M, Marquett R, et al. A pilot study of meditation for mental health workers following Hurricane Katrina. *Journal of Traumatic Stress*. 2008;21(5):497-500.
54. Banks K, Newman E, Saleem J. An overview of the research on mindfulness-based interventions for treating symptoms of posttraumatic stress disorder: A systematic review. *Journal of Clinical Psychology*. 2015;71(10):935-963.
55. Kim SH, Schneider SM, Kravitz L, Mermier C, Burge MR. Mind-body practices for posttraumatic stress disorder. *Journal of Investigative Medicine*. 2013;61(5):827-834.

56. Wahbeh H, Senders A, Neuendorf R, Cayton J. Complementary and alternative medicine for posttraumatic stress disorder symptoms: A systematic review. *Journal of Evidence-Based Complementary & Alternative Medicine*. 2014;19(3):161-175.

Appendices

1. Search Strategies
2. Summary of reviewed studies and sample characteristics (n = 28)
3. Data extraction for full-text review (n = 28)
4. Data extraction for full-text screening (n = 70)

Appendix 1. Search Strategies

Ovid MEDLINE(R) <1946 to March Week 4 2016>	
#	Search Statement
1	Stress Disorders, Post-Traumatic/
2	(post-trauma* stress or posttrauma* stress).mp.
3	Psychological Trauma/ or emotional trauma*.mp. or psychological trauma*.mp.
4	Combat Disorders/ or (combat disorder* or combat fatigue or combat stress*).mp.
5	Domestic Violence/ or domestic violence.mp.
6	exp Intimate Partner Violence/ or (partner violence or spouse abuse).mp.
7	or/1-6
8	exp Complementary Therapies/
9	exp Acupuncture Therapy/ or acupuncture.mp.
10	exp Holistic Health/ or holistic health.mp.
11	Horticultural Therapy/ or horticultural therap*.mp.
12	exp Mind-Body Therapies/ or mind-body therap*.mp.
13	(qi gong or qigong or guided imagery or meditation or meditate or relaxation therapy or relaxation training or tai chi or yoga).mp.
14	Mindfulness/ or mindfulness.mp.
15	Spiritual Therapies/ or (energy healing or healing touch or Reiki or spiritual therap*).mp.
16	exp sensory art therapies/ or art therap*.mp. or music therap*.mp.
17	exp Therapy, Soft Tissue/ or (acupressure or soft tissue therap*).mp.
18	Autogenic Training/ or (Autogenic Training or progressive muscle relaxation).mp.
19	(Feldenkrais or Trager or Alexander Technique).mp.
20	Resilience, Psychological/ or resilience training.mp.
21	Exercise Movement Techniques/ or movement therap*.mp. or pilates.mp.
22	or/9-21
23	7 and 22
24	limit 23 to english language

Embase <1974 to 2016 Week 14>

#	Search Statement
1	exp posttraumatic stress disorder/
2	psychotrauma/ or psycho* trauma*.mp.
3	(post-trauma* stress or posttrauma* stress).mp.
4	(combat disorder* or combat fatigue or combat stress*).mp.
5	domestic violence/ or domestic violence.mp.
6	partner violence/ or partner violence.mp. or spouse abuse.mp.
7	exp acupuncture/ or acupuncture.mp.
8	holistic health.mp.
9	exp alternative medicine/
10	(art therap* or energy healing or healing touch or horticultur* therap* or mind-body therap* or music therap* or Reiki or spiritual therap* or yoga).mp.
11	exp kinesiotherapy/ or exercise movement techniques.mp.
12	exp bodywork/ or Feldenkrais.mp. or Trager.mp. or Alexander Technique.mp.
13	mindfulness/ or mindfulness.mp.
14	resilienc* training.mp.
15	exp soft tissue therapy/ or soft tissue therap*.mp.
16	progressive muscle relaxation.mp. or relaxation training/ or relaxation training.mp. or relaxation therap*.mp.
17	guided imagery/ or guided imagery.mp.
18	qigong/ or tai chi/ or qigong.mp. or qi gong.mp. or tai chi.mp.
19	or/7-18
20	1 or 2 or 3 or 4 or 5 or 6
21	7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18
22	20 and 21
23	limit 22 to english language
24	limit 23 to (book or book series or chapter or conference abstract or conference paper or conference proceeding or "conference review" or editorial)
25	23 not 24

PsycINFO <1987 to March Week 5 2016>

#	Search Statement
1	exp posttraumatic stress disorder/
2	(post-trauma* stress or posttrauma* stress).mp.
3	emotional trauma/ or emotional trauma.mp. or psychological trauma.mp.
4	combat experience/ or (combat disorders or combat fatigue or combat stress*).mp.
5	domestic violence/ or domestic violence.mp.
6	exp partner abuse/ or (partner abuse or spouse abuse).mp.
7	battered females/ or (battered female* or battered wom?n).mp.
8	or/1-7
9	exp alternative medicine/
10	(acupuncture or acupressure).mp.
11	holistic health/ or holistic health.mp.
12	horticulture therapy/ or (horticultural therap* or horticulture therap*).mp.
13	guided imagery/ or guided imagery.mp.
14	meditation/ or (meditate or meditation).mp.
15	mind body therapy/ or mind body therap*.mp.
16	exp relaxation therapy/ or (relaxation training or relaxation therap*).mp.
17	yoga/ or yoga.mp. or tai chi.mp. or qigong.mp. or qi gong.mp.
18	mindfulness/ or mindfulness.mp.
19	(spiritual therap* or energy healing or healing touch or reiki).mp.
20	exp creative arts therapy/ or (art therap* or music therap* or sensory therap*).mp.
21	autogenic training/ or autogenic training.mp.
22	(Feldenkrais or Trager or Alexander Technique).mp.
23	resilienc* training.mp.
24	movement therapy/ or (movement therap* or pilates).mp.
25	or/9-24
26	8 and 25
27	limit 26 to english language
28	limit 27 to ("0200 book" or "0240 authored book" or "0280 edited book" or chapter or "comment/reply" or editorial or review-book)
29	27 not 28

CINAHL Plus with Full Text

1. Stress Disorders, Post-Traumatic/
2. (post-trauma* stress or posttrauma* stress).mp.
3. Psychological Trauma/ or emotional trauma*.mp. or psychological trauma*.mp.
4. Combat Disorders/ or (combat disorder* or combat fatigue or combat stress*).mp.
5. Domestic Violence/ or domestic violence.mp.
6. exp Intimate Partner Violence/ or (partner violence or spouse abuse).mp.
7. or/1-6
8. exp Complementary Therapies/
9. exp Acupuncture Therapy/ or acupuncture.mp.
10. exp Holistic Health/ or holistic health.mp.
11. Horticultural Therapy/ or horticultural therap*.mp.
12. exp Mind-Body Therapies/ or mind-body therap*.mp.
13. (qi gong or qigong or guided imagery or meditation or meditate or relaxation therapy or relaxation training or tai chi or yoga).mp.
14. Mindfulness/ or mindfulness.mp.
15. Spiritual Therapies/ or (energy healing or healing touch or Reiki or spiritual therap*).mp.
16. exp sensory art therapies/ or art therap*.mp. or music therap*.mp.
17. exp Therapy, Soft Tissue/ or (acupressure or soft tissue therap*).mp.
18. Autogenic Training/ or (Autogenic Training or progressive muscle relaxation).mp.
19. (Feldenkrais or Trager or Alexander Technique).mp.
20. Resilience, Psychological/ or resilience training.mp.
21. Exercise Movement Techniques/ or movement therap*.mp. or pilates.mp.
22. or/9-21
23. 7 and 22
24. limit 23 to english language

Appendix 2. Summary characteristics of studies in full-text review (n=28 studies)

		Study Population				Sample Characteristics			
ID	Study	Location	Population	Setting	Obs	% Women	Age	% White	Race/ethnicity
MBSR Interventions (n = 7 studies)									
7	Polusny, 2015	Minneapolis	Vets	VA	116	16%	Mean = 58.5	84%	84% White, 8% Black, 3% Other, 5% Mixed
28	Kearney, 2013	Seattle	Vets	VA	47	21%	Mean = 52	68%	68% white, 15% Af-Am, 6% Hispanic/Latino, 6% API/AIAN, 4% other
5	Kearney, 2012	Seattle	Vets	VA	92	24%	Mean = 51	84%	84% White, 4% Black, 7% Hispanic, 2% API/AIAN, 2% Other
27	Goldsmith, 2014	??	Adults	Hospital	9	90%	Mean = 44	44%	44% Caucasian, 33% Af-Am, 11% Asian, 11% Other
15	Kimbrough, 2010	Baltimore	Adults	Community	27	89%	23-68, Mean = 45	78%	78% White, 22% Other
16	Earley, 2014	Maryland	Adults	Community	19	N/A	N/A	N/A	N/A
17	Gallegos, 2015	New York	Women	Clinic	50	100%	Mean = 44.1	54%	54% White, 26% Black, 4% Hispanic, 4% AIAN, 6% Multiracial, 6% Unknown
Mindfulness, Meditation, or Mantram Repetition Interventions (n = 5 studies)									
2	Bormann, 2013	Southern California	Vets	VA	146	3%	23-84	58%	58% White, 25% Af-Am, 10% Hispanic, 7% Other
3	Colgan, 2016	Oregon	Vets	University	102	6%	25-65, Mean = 52	77%	77% White, 3% Af-Am, 4% AIAN, 2% Asian, 4% Hispanic, 1% Other
1	Bormann, 2005	San Diego	Vets	VA	62	10%	33-84, Mean = 61.8	65%	65% White, 6% Asian, 5% AIAN, 3% Black, 3% Hispanic, 18% Other/NA
18	Valdez, 2016	Midwest	Women	Community & University	63	100%	18-67, Mean = 31.5	51%	51% Caucasian, 21% Hispanic/Latino, 30% Black/Af-Am, 2% AIAN, 2% Asian, 6% Decline
26	Waelde, 2008	New Orleans	MH staff	Agency	20	85%	31-67, Mean = 49	40%	60% Af-Am, 40% Caucasian

Study Population					Sample Characteristics				
ID	Study	Location	Population	Setting	Obs	% Women	Age	% White	Race/ethnicity
Yoga Interventions (n = 7 studies)									
8	Seppala, 2014	Wisconsin	Vets	Community	21	N/A	Mean = 28.6	86%	86% Caucasian, 14% Other
13	Dick, 2014	NorthEast	Vet & civilian Women	VA	38	100%	Mean = 44.4	53%	53% White, 37% Black, 5% Asian, 5% Mixed/Other
25	Mitchell, 2014	NorthEast	Vet & civilian Women	VA	38	100%	Mean = 44.4	53%	53% White, 37% Black, 5% Asian, 5% Mixed/Other
19	Van der Kolk, 2014	MA	Women	Community	64	100%	Mean = 42.9	78%	78% White, 14% Hispanic
20	Clark, 2014	Minnesota	Women	Shelter	17	100%	Mean = 42.6	71%	71% White, 6% Af-Am, 6% Latina, 6% AIAN, 12% Other
10	Johnston, 2015	Boston	Military	Community	12	8%	36-63, Mean = 51	50%	50% White, 50% Black
9	Staples, 2013	Louisiana	Military	VA	12	17%	58-64, Mean = 62.2	42%	50% Black, 42% White, 8% AIAN
Other Intervention Types (n = 9 studies)									
11	Engel, 2014	Walter Reed	Active Duty	Base	55	29%	Mean = 34.8	49%	49% White, 31% Af-Am, 20% Other
6	Nakamura, 2011	Salt Lake City	Vets	VA	58	5%	Mean = 52	N/A	N/A
12	Jain, 2012	Camp Pendleton	Active Duty	Base	123	9%	Mean = 27.5	69%	69% Caucasian, 26% Hispanic, 2% Af-Am, 3% API
14	Hollifield, 2007	New Mexico	Adults	Community	59	67%	Mean = 41.6	69%	69% Non-Hisp Caucasian, 19% Hisp Caucasian, 3% Af-Am, 3% Other
21	Franzblau, 2008	North Carolina	Women	Community	40	100%	18-45	50%	50% Caucasian, 50% Af-Am
24	Hinton, 2011	Boston	Latina	Clinic	24	100%	Mean = 49.5	0%	100% Latina

ID	Study	Study Population				Sample Characteristics			
		Location	Population	Setting	Obs	% Women	Age	% White	Race/ethnicity
22	Hernandez-Ruiz, 2005	Midwest	Women	Shelter	28	100%	Mean = 35.4	N/A	N/A
4	Collinge, 2012	Oregon & Vermont	Vets	Community	43 dyads	50%	Mean = 34	86%	86% White, 2% Black, 5% Hispanic, 7% AIAN
23	Teague, 2006	Mid-Atlantic	Women	Shelter	7	100%	22-73, Mean = 37	86%	86% Caucasian, 14% Asian

Appendix 3. Data extraction for full-text review (n=28 studies)

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
MBSR Interventions (n = 7 studies)							
7	Polusny, 2015	Veterans with PTSD in Minneapolis VA (n=116)	Military PTSD	MBSR	RCT MBSR vs. Present-Centered Therapy (Active control)	PTSD (PCL, CAPS) Depression (PHQ-9)	<ul style="list-style-type: none"> MBSR group had reduced self-reported PTSD symptoms, No difference from control group in PTSD diagnosis
28	Kearney, 2013	Veterans, Seattle VA (n=47)	Military PTSD	MBSR 2.5 hr weekly X 8 wks	RCT Pre/post (2 mo/4mo) MBSR+UC vs. UC only	PTSD (PCL-C) Depression (PHQ-9) Health states (SF-8) Life Events Checklist (LEC)	<ul style="list-style-type: none"> Intention-to-treat analyses found no reliable effects of MBSR on PTSD or depression. Mental HRQOL improved post-treatment but no effect at 4 months. At 4-month, more vets in MBSR had clinically meaningful change in mental HRQOL, and in both mental HRQOL and PTSD symptoms.
5	Kearney, 2012	Veterans, Seattle VA (n=92)	Military PTSD	MBSR 2.5 hr weekly X 8 wks	Follow-up of MBSR Pre/post No Control	PTSD (PCL-C) Depression (PHQ-9) Health states (SF-8) Behavioral activation (BADS)	<ul style="list-style-type: none"> 40% of vets had clinically significant reduction in PTSD symptoms at 2 months, and 48% at 6 months Significant reductions in depression & anxiety, increase in mindfulness at 2- and 6-months post-intervention
27	Goldsmith, 2014	Adults w/ PTSD (no location) (n=9)	PTSD	MBSR Weekly X 8 wks	Pilot Pre/post No Control	PTSD (PCL-C) Depression (BDI-II) Acceptance (AAQ) Trauma Appraisal (TAQ)	<ul style="list-style-type: none"> MBSR reduced posttraumatic stress symptoms and depression Data also demonstrate that developing acceptance of emotional experiences and reducing shame may be an important part of recovery for adult survivors of trauma
15	Kimbrough, 2010	Adult CSA survivors in Baltimore area (n=27)	Child sexual abuse	MBSR	Convenience sample Pre/Post No Control	PTSD (PCL) Depression (BDI-II)	<ul style="list-style-type: none"> Reduction in depressive & PTSD symptoms at 8 weeks; mostly sustained to 24 wks

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
16	Earley, 2014	Adults in MD (n=19)	Child sexual abuse	MBSR	Pre/Post No Control	PTSD (PCL) Depression (BDI-II) Anxiety (BSI) Mindfulness (MAAS)	<ul style="list-style-type: none"> Long-term improvements in depression, PTSD, anxiety symptoms, and mindfulness scores.
17	Gallegos, 2015	Trauma-exposed low-income women at community clinic, NY (n=50)	Interpersonal trauma before age 18	MBSR 2 hrs X 8 wks + 4 hr retreat	Single arm intervention pre/post No Control	Anxiety (STAI) Depression (CES-D) PTSD (MPSS-SR) Stress (PSS) Mindfulness Skill (FFMQ) Emotion Regulat (DERS)	<ul style="list-style-type: none"> Significant PTSD, depression, anxiety symptom reduction from baseline to completion AND at 4-weeks post
Mindfulness, Meditation, or Mantram Repetition Interventions (n = 5 studies)							
2	Bormann, 2013	Ambulatory veterans in So. Cal. (n=146)	Military PTSD	Mantram repetition 90 min session x 6 wks	RCT MRP+UC vs. UC	PTSD (PCL) Anxiety (BSI-18) Depression (BSI-18) Health (SF12)	<p>Compared to UC, MRP+UC had:</p> <ul style="list-style-type: none"> clinically significant PTSD symptom improvement modest but significant effect on depressive symptoms and mental-health-related quality of life, but no effect on anxiety
3	Colgan, 2016	Veterans in Oregon (n=102)	Military PTSD	Body Scan (BS) Mindful breathing (MB) Slow breathing (SB) Sit quietly (SQ Control) 60 min session X 6 wks	Secondary analysis of RCT BS or MB vs. SB or SQ (Active control)	PTSD (PCL-C) Depression (BDI-II)	<ul style="list-style-type: none"> Mindfulness groups had significant decreases in PTSD and depression severity, increases in mindfulness, non-mindfulness groups did not.

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
1	Bormann, 2005	Ambulatory veterans in San Diego (n=62)	Military PTSD	Mantram repetition 90 min session x 5 wks	Pilot Study Convenience sample Pre/post No Control	PTSD (PCL) Anxiety (STAI) Stress (PSS)	<ul style="list-style-type: none"> Reduced symptoms of stress & anxiety Improved quality of life and spiritual well-being
18	Valdez, 2016	Female trauma survivors in the Midwest (n=63)	Interpersonal violence	Mindfulness	Single arm intervention Pre/post No Control	Anxiety (BAI) Pos/neg affect (PANAS-X)	<ul style="list-style-type: none"> Greater self-kindness & mindfulness generally associated w/ lower anxiety & negative affect
26	Waelde, 2008	Mental health agency staff in New Orleans (n=20)	PTSD (from Hurricane Katrina)	Meditation workshop & 8 wk home study program	Pilot Pre/post No Control	PTSD (PCL-S) Depression (CES-D) Anxiety (STAI-S)	<ul style="list-style-type: none"> Meditation associated with decreased PTSD & anxiety symptoms
Yoga Interventions (n = 7 studies)							
8	Seppala, 2014	Male veterans of Iraq/Afghan war ? WI (n=21)	Military PTSD	3-hr group yoga x 7 days	Longitudinal RCT Yoga vs. Waitlist control	PTSD (PCL-M) Anxiety (MASQ) Depression (MASQ)	<ul style="list-style-type: none"> Yoga group showed significantly reduced PTSD scores and anxiety symptoms from baseline to post-intervention. PTSD symptom reduction was sustained to 1-year follow-up.
13	Dick, 2014	Veteran and civilian Women at NE US VAMC (n=38)	PTSD	Yoga 12 75-min sessions (weekly for 12 wk or twice-weekly for 6 wk)	RCT Yoga vs. Assessment control	PTSD (PCL-C) Mindfulness (MAAS) Emotion Regulation (ERQ) Psych Flex (AAQ-II)	<ul style="list-style-type: none"> Preliminary findings suggest that yoga may reduce expressive suppression and may improve PTSD symptoms by increasing psychological flexibility
25	Mitchell, 2014	Veteran and civilian Women at NE US VAMC (n=38)	PTSD	Yoga (weekly for 12 wks or twice weekly for 6 wks)	RCT Yoga vs. Assessment control	PTSD (PC-PTSD, PCL-C) Depression (CES-D) Anxiety (STAI)	<ul style="list-style-type: none"> Decrease in hyperarousal & anxiety in both groups

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
19	Van der Kolk, 2014	Women w/ histories of interpersonal violence ? in MA (n=64)	Interpersonal violence	Trauma-informed yoga, weekly 1-hr classes for 10 wks	RCT Yoga vs. Health Educ (active control)	PTSD (CAPS) Depression (BDI-II)	<ul style="list-style-type: none"> Decrease in PTSD symptoms for both control & intervention groups during 1st half of treatment; effects maintained only in yoga group
20	Clark, 2014	Women attending DAP aftercare in Mpls (n=17)	Domestic Violence	Trauma Sensitive Yoga – 12 wk	Pilot feasibility Yoga + UC vs. UC	PTSD (PCL-C) Anxiety (STAI) Depression (PHQ-9)	<ul style="list-style-type: none"> Did not report changes in outcomes
10	Johnston, 2015	Military w/ PTSD in Boston (n=12)	Military PTSD	Yoga	Single arm intervention pre/post w/ benchmarking	PTSD (CAPS) Resilience (RS) Mindfulness Skill (FFMQ)	<ul style="list-style-type: none"> Significant reduction in overall PTSD severity Significant reduction in all 3 symptom clusters: re-experiencing, avoidance, hyperarousal
9	Staples, 2013	Military in New Orleans (n=12)	Military PTSD	6 wk yoga intervention, held 2x/wk	Pilot Pre/Post No Control	PTSD (PCL-M) Sleep quality (PSQI) Anger (STAXI-2)	<ul style="list-style-type: none"> Yoga effective for hyperarousal & sleep; not for overall PTSD or anger
Other Intervention Types (n = 9 studies)							
11	Engel, 2014	Active duty, Walter Reed (n=55)	Military PTSD	Acupuncture + UC (8 60 min tx over 4 wks)	RCT UC+acu vs. UC	PTSD (PCL-C) Depression (BDI-II) QOL (SF-36)	<ul style="list-style-type: none"> Improvement in PTSD severity significantly greater for UC+acupuncture than UC alone Acupuncture also associated with significantly greater improvements in depression
6	Nakamura, 2011	Veterans w/ sleep disturbance in SLC VA (n=58)	Military PTSD	Mind-body bridging (MBB) for sleep management	RCT MBB vs. UC	Depression (CES-D) PTSD (PCL-M) Sleep (MOS-SS) QOL (MOS-SF-36V)	<ul style="list-style-type: none"> Intervention group showed improved sleep, PTSD symptoms, & mindfulness

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
12	Jain, 2012	Active duty military Camp Pendleton (n=123)	Military PTSD	Healing touch + guided imagery + UC (6 tx over 3 wks)	RCT HT+GI+UC vs. UC	PTSD (PCL-M) Depression (BDI-II) QOL (SF-36) Hostility (Cook-Medley)	<ul style="list-style-type: none"> • Significant and substantial reductions in PTSD symptoms and depression for HT+GI • Reduction in cynicism as well as improved mental quality of life for those with HT+GI
14	Hollifield, 2007	Adults w/ PTSD in NM (n=59)	PTSD	Acupuncture (1 hr tx, 2x/wk x 12 wks)	RCT Acu vs. CBT vs. Waitlist control (active control)	PTSD (PSS-SR) Depression (HSLC-25) Anxiety (HSLC-25)	<ul style="list-style-type: none"> • Compared with WLC, acu provided large treatment effects for PTSD similar in magnitude to CBT • Symptom reductions at end treatment were maintained at 3-month follow-up for both.
21	Franzblau, 2008	Women with DV hx in Fayetteville, NC (n=40)	Domestic violence	Giving testimony & Yogic breathing	2x2 Factorial (active control)	Depression (BDI-II)	<ul style="list-style-type: none"> • Learning yogic breathing techniques alone and combined with giving testimony significantly reduces feelings of depression.
24	Hinton, 2011	Latinas w/ PTSD at Boston community clinic (n=24)	PTSD	Culturally adapted CBT vs. Applied muscle relaxation	Pilot random assign CA-CBT vs. AMR (active control)	PTSD (PCL) Anxiety (SCL-90-R)	<ul style="list-style-type: none"> • Large reductions in PTSD symptoms from pretreatment to posttreatment in the CA-CBT group but only modest improvements in the AMR group
22	Hernandez-Ruiz, 2005	Women at DV shelter in Midwest (n=28)	Domestic violence	Music therapy w/ progressive relax (20 mins)	Music+PMR vs. silence (active control)	Anxiety (STAI) Sleep (PSQI)	<ul style="list-style-type: none"> • Music therapy constituted an effective method for reducing anxiety levels
4	Collinge, 2012	Veterans & partners in OR and VT (n=43 dyads)	Military PTSD & secondary trauma	Self-directed program Mind-body practices (DVD & CD)	Convenience sample Pre/post No Control	PTSD (PCL-C) Depression (BDI-II) Stress (PSS) Compassion (Comp Love Scale; Self-comp scale) QOL (QOLI)	<ul style="list-style-type: none"> • PTSD: both vets/partners showed significant, though modest, improvement at follow-up • Depression: both vets and partners showed significant reductions from the mild range to the minimal range at follow-up

ID	Authors, year	Target population, setting, sample size	Type of trauma	Intervention (CHA types, dose, frequency)	Study design & Comparator	Outcomes evaluated	Key Findings reported by authors
23	Teague, 2006	Women in transitional housing in Mid-Atlantic state (n=7)	Domestic violence	6 sessions of music therapy over 3 months	Single arm, repeated measures No Control	Anxiety (VAS) Depression (VAS) Self-esteem (VAS)	<ul style="list-style-type: none"> • Significant decrease in depression & anxiety; • no change in self-esteem

NOTES: VA = Veteran Affairs (clinic or medical facility); PTSD = Post-Traumatic Stress Disorder; DAP = Domestic Abuse Project; DV = Domestic Violence; MRP = Mantram Repetition Program; CBT = Cognitive Behavioral Therapy.

RTC = Randomized Control Trial; UC = Usual care.

Appendix 4. Data extraction from full text screening (n=70 studies)

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
1	Efficacy of frequent mantram repetition on stress, quality of life, and spiritual well-being in veterans: a pilot study	J. E. Bormann, et al.	2005			Ambulatory veterans in San Diego (n=62)	Mantram	PTSD-vets
2	Meditation-based mantram intervention for veterans with posttraumatic stress disorder: A randomized trial	J. E. Bormann, et al.	2013			Ambulatory veterans in So. Cal. (n=146)	Mantram	PTSD-vets
3	The body scan and mindful breathing among veterans with PTSD: Type of intervention moderates the relationship between changes in mindfulness and post-treatment depression	D. D. Colgan, et al.	2016			Veterans in Oregon (n=102)	Mindfulness	PTSD-vets
4	Promoting reintegration of National Guard veterans and their partners using a self-directed program of integrative therapies: a pilot study	W. Collinge et al.	2012			Veterans & partners in OR and VT (n=43 dyads)	Meditation	PTSD-vets
5	Association of participation in a mindfulness program with measures of PTSD, depression and quality of life in a veteran sample	D. J. Kearney, et al.	2012			Veterans, Seattle VA (n=92)	MBSR	PTSD-vets
6	Two sessions of sleep-focused mind-body bridging improve self-reported symptoms of sleep and PTSD in veterans: A pilot randomized controlled trial	Y. Nakamura, et al.	2011			Veterans w/ sleep disturbance in SLC (n=58)	Mindfulness	PTSD-vets
7	Mindfulness-Based Stress Reduction for Posttraumatic Stress Disorder Among Veterans: A Randomized Clinical Trial	M. A. Polusny, et al.	2015			Veterans with PTSD in Minneapolis (n=116)	MBSR	PTSD-vets

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
8	Breathing-based meditation decreases posttraumatic stress disorder symptoms in U.S. military veterans: a randomized controlled longitudinal study	E. M. Seppala, et al.	2014			Male veterans of Iraq/Afghan war ? WI (n=21)	Yoga	PTSD-vets
9	A yoga program for the symptoms of post-traumatic stress disorder in veterans	J. K. Staples, et al.	2013			Military in New Orleans (n=12)	Yoga	PTSD-vets
10	Yoga for military service personnel with PTSD: A single arm study	J. M. Johnston, et al.	2015			Military w/ PTSD in Boston (n=12)	Yoga	PTSD-vets
11	Randomized effectiveness trial of a brief course of acupuncture for posttraumatic stress disorder	C. C. Engel, et al.	2014			Active duty, Walter Reed (n=55)	Acupuncture	PTSD-vets
12	Healing Touch with Guided Imagery for PTSD in returning active duty military: a randomized controlled trial	S. Jain, et al.	2012			Active duty military Camp Pendleton (n=123)	Healing touch	PTSD-vets
13	Examining mechanisms of change in a yoga intervention for women: the influence of mindfulness, psychological flexibility, and emotion regulation on PTSD symptoms	A. M. Dick, et al.	2014			Veteran and civilian Women at NE US VAMC (n=38)	Yoga	PTSD
14	Acupuncture for posttraumatic stress disorder: a randomized controlled pilot trial	M. Hollifield, et al.	2007			Adults w/ PTSD in NM (n=59)	Acupuncture	PTSD

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
15	Mindfulness intervention for child abuse survivors	E. Kimbrough, et al.	2010			Adult CSA survivors in Baltimore area (n=27)	MBSR	Childhood sex abuse
16	Mindfulness intervention for child abuse survivors: a 2.5-year follow-up	M. D. Earley, et al.	2014			MD (n=19)	MBSR	Childhood sex abuse
17	Mindfulness-based stress reduction to enhance psychological functioning and improve inflammatory biomarkers in trauma-exposed women: A pilot study	A. M. Gallegos, et al.	2015			Trauma-exposed low-income women at community clinic, NY (n=50)	MBSR	Interpersonal violence
18	Self-compassion and trauma processing outcomes among victims of violence	C. E. Valdez and M. M. Lilly	2016			Female trauma survivors in the Midwest (n=63)	Mindfulness	Interpersonal violence
19	Yoga as an adjunctive treatment for posttraumatic stress disorder: a randomized controlled trial	B. A. van der Kolk et al.	2014			Women w/ histories of interpersonal violence in MA (n=64)	Yoga	Interpersonal violence
20	Trauma-sensitive yoga as an adjunct mental health treatment in group therapy for survivors of domestic violence: a feasibility study	C. J. Clark, et al.	2014			Women attending DAP aftercare in Mpls (n=17)	Yoga	Domestic violence
21	A preliminary investigation of the effects of giving testimony and learning yogic breathing techniques on battered women's feelings of depression	S. H. Franzblau, et al.	2008			Women with DV history in Fayetteville, NC (n=40)	Breathwork	Domestic violence
22	Effect of music therapy on the anxiety levels and sleep patterns of abused women in shelters	E. Hernandez-Ruiz	2005			Women at DV shelter in Midwest (n=28)	Music	Domestic violence

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
23	Group music therapy with women who have experienced intimate partner violence	A. K. Teague, et al.	2006			Women in transitional housing in Mid-Atlantic state (n=7)	Music	Domestic violence
24	Culturally adapted CBT (CA-CBT) for Latino women with treatment-resistant PTSD: a pilot study comparing CA-CBT to applied muscle relaxation	D. E. Hinton, et al.	2011			Latinas w/ PTSD at Boston community clinic (n=24)	Relaxation	PTSD
25	A pilot study of a randomized controlled trial of yoga as an intervention for PTSD symptoms in women	K. S. Mitchell, et al.	2014			Women w/ PTSD in NE (n=38)	Yoga	PTSD
26	A pilot study of meditation for mental health workers following Hurricane Katrina	L. C. Waelde, et al.	2008			Mental health agency staff in New Orleans (n=15)	Meditation	secondary trauma
27	Mindfulness-based stress reduction for posttraumatic stress symptoms: building acceptance and decreasing shame	R. E. Goldsmith, et al.	2014			Adults w/ PTSD (no location) (n=9)	MBSR	PTSD
28	Effects of participation in a mindfulness program for veterans with posttraumatic stress disorder: a randomized controlled pilot study	D. J. Kearney, et al.	2013			Vets (n=47)	MBSR	PTSD-vets
	Treatment of acute posttraumatic stress disorder in rape victims: An experimental study	E. Echeburua, et al.	1996	3 - Not United States		Spain	Relaxation	Interpersonal violence
	A yoga intervention for posttraumatic stress: A preliminary randomized control trial	F. Jindani, et al.	2015	3 - Not United States		Toronto	Yoga	PTSD

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	A journey to embodied healing: Yoga as a treatment for post-traumatic stress disorder	F. Jindani and G. F. S. Khalsa	2015	3 - Not United States		Toronto	Yoga	PTSD
	Effects of sensory-enhanced yoga on symptoms of combat stress in deployed military personnel	C. C. Stoller, et al.	2012	3 - Not United States		Deployed in Iraq	Yoga	PTSD-vets
	Significant reductions in posttraumatic stress symptoms in Congolese refugees within 10 days of Transcendental Meditation practice	B. Rees, et al.	2014	3 - Not United States		Congolese refugees in Uganda	Meditation	Refugee trauma
	PTSD symptom reduction with mindfulness-based stretching and deep breathing exercise: randomized controlled clinical trial of efficacy	S. H. Kim, et al.	2013	4 - Does not meet trauma criteria	PTSD symptoms, but no specified type of trauma	Nurses in NM w/ PTSD symptoms (n=29)	Mindfulness	??
	A pilot study: can a short-term complementary and alternative medicine intervention combat stress?	S. Sanghani, et al.	2008	4 - Does not meet trauma criteria	stress, but no indication of trauma-related		Yoga	
	The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder	S. Reddy, et al.	2014	4 - Does not meet trauma criteria	focused on substance use in a PTSD population	Women 18-65 w/ PTSD	Yoga	
	Pilot study of the effects of mixed light touch manual therapies on active duty soldiers with chronic post-traumatic stress disorder and injury to the head	L. Davis, et al.	2016	4 - Does not meet trauma criteria		Active duty with head injury (n=10)	Body work	PTSD-vets
	Acupuncture and traditional Chinese medicine for survivors of torture and refugee trauma: a descriptive report	E. S. Highfield, et al.	2012	4 - Does not meet trauma criteria	descriptive, focused on pain	Refugees at Boston Med Center (n=50)	Acupuncture	Refugee trauma

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	Changes in facets of mindfulness and posttraumatic stress disorder treatment outcome	M. Tyler Boden, et al.	2012	5 - Does not meet CHA criteria	cognitive therapy	Vets residential PTSD treatment (n=48)	psych	PTSD
	Group auricular acupuncture for PTSD-related insomnia in veterans: A randomized trial	M. K. Prisco, et al.	2013	5 - Does not meet CHA criteria	focused on sleep in a PTSD population	Vets at DC VA med Center (n=25)	Acupuncture	PTSD-vets
	Treatment of posttraumatic stress disorder with relaxation and biofeedback training	E. J. Hickling, et al.	1986	5 - Does not meet CHA criteria	biofeedback & relaxation training as part of clinical treatment	Vets at VA med center (n=6)	Biofeedback	PTSD-vets
	Mantram repetition fosters self-efficacy in veterans for managing PTSD: A randomized trial	D. Oman and J. E. Bormann	2015	5 - Does not meet CHA criteria	case management	Outpatient vets (n=132)	Mantram	PTSD-vets
	A randomized clinical trial of primary care brief mindfulness training for veterans with PTSD	K. Possemato, et al.	2016	5 - Does not meet CHA criteria	primary care	Vets in primary care (n=82)	Mindfulness	PTSD-vets
	Changes in mindfulness following a mindfulness telehealth intervention	B. L. Niles, et al.	2013	5 - Does not meet CHA criteria	associations with mindfulness skills	Male vets (n=24)	Mindfulness	PTSD-vets
	The efficacies of three relaxation regimens in the treatment of PTSD in Vietnam War veterans	C. G. Watson, et al.	1997	5 - Does not meet CHA criteria	clinical breathing therapies	Vietnam vets (n=90)	NONE	PTSD-vets
	A resilience-oriented treatment for posttraumatic stress disorder: results of a preliminary randomized clinical trial	M. Kent, et al.	2011	5 - Does not meet CHA criteria	Clinical program	Vets (n=39)	Resiliency	PTSD-vets

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	Mindfulness is associated with fewer PTSD symptoms, depressive symptoms, physical symptoms, and alcohol problems in urban firefighters	B. W. Smith, et al.	2011	5 - Does not meet CHA criteria	associations	Urban firefighters (n=124)	NONE	Secondary trauma
	Effects of the transcendental meditation technique on trait anxiety: a meta-analysis of randomized controlled trials	D. W. Orme-Johnson and V. A. Barnes	2014	6 - Does not meet intervention study criteria	systematic review		Meditation	Anxiety
	Mindfulness-Based Stress Reduction for Low-Income, Predominantly African American Women With PTSD and a History of Intimate Partner Violence	M. A. Dutton, et al.	2013	6 - Does not meet intervention study criteria	conceptual		MBSR	Domestic violence
	Music for the soul: A music therapy program for battered women	J. Whipple and R. S. Lindsey	1999	6 - Does not meet intervention study criteria	conceptual		Music	Domestic violence
	Developing a trauma-informed, emergency department-based intervention for victims of urban violence	T. J. Corbin, et al.	2011	6 - Does not meet intervention study criteria	conceptual	ER-based	Trauma-informed clinical care	Interpersonal violence
	Trauma-informed Mindfulness-Based Stress Reduction: A promising new model for working with survivors of interpersonal violence	A. Kelly	2015	6 - Does not meet intervention study criteria	conceptual		MBSR	Interpersonal violence
	PTSD symptoms, substance use, and Vipassana mediation among incarcerated individuals	T. L. Simpson, et al.	2007	6 - Does not meet intervention study criteria	focused on substance use	Incarcerated	Meditation	PTSD

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	Mindfulness and metta-based trauma therapy (MMTT): Initial development and proof-of-concept of an internet resource	P. Frewen, et al.	2015	6 - Does not meet intervention study criteria	feasibility	Online participants (n=177)	Mindfulness	PTSD
	Mindful awareness in body-oriented therapy for female veterans with post-traumatic stress disorder taking prescription analgesics for chronic pain: a feasibility study	C. J. Price, et al.	2007	6 - Does not meet intervention study criteria	feasibility	Female vets at Puget Sound VA (n=14)	Body work	PTSD-vets
	Responses to Mantram Repetition Program from Veterans with posttraumatic stress disorder: a qualitative analysis	J. E. Bormann, et al.	2013	6 - Does not meet intervention study criteria	qualitative	Outpatient vets (n=65)	Mantram	PTSD-vets
	A spiritually based group intervention for combat veterans with posttraumatic stress disorder: feasibility study	J. E. Bormann, et al.	2008	6 - Does not meet intervention study criteria	feasibility	Vets (n=29)	Mantram	PTSD-vets
	Spiritual Wellbeing Mediates PTSD Change in Veterans with Military-Related PTSD	J. Bormann, et al.	2012	6 - Does not meet intervention study criteria	focus on mechanism of mantram on PTSD symptoms	Vets with case management (n=66)	Mantram	PTSD-vets
	Impact of Transcendental Meditation on Psychotropic Medication Use Among Active Duty Military Service Members With Anxiety and PTSD	V. A. Barnes, et al.	2016	6 - Does not meet intervention study criteria	Associations	Service members (n=74)	Meditation	PTSD-vets
	Transforming trauma: a qualitative feasibility study of integrative restoration (iRest) yoga Nidra on combat-related post-traumatic stress disorder	L. Stankovic	2011	6 - Does not meet intervention study criteria	qualitative	Vets in SF Bay area (n=16)	Mindfulness	PTSD-vets

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	Mindful attention increases and mediates psychological outcomes following mantram repetition practice in veterans with posttraumatic stress disorder	J. E. Bormann, et al.	2014	6 - Does not meet intervention study criteria	focused on mechanism of mantram, main results in study already included in review	Outpatient vets (n=146)	Mindfulness	PTSD-vets
	Loving-kindness in the treatment of traumatized refugees and minority groups: a typology of mindfulness and the nodal network model of affect and affect regulation	D. E. Hinton, et al.	2013	6 - Does not meet intervention study criteria	conceptual		Mindfulness	Refugee trauma
	Loving-kindness meditation for posttraumatic stress disorder: a pilot study	D. J. Kearney, et al.	2013	7 - other reason	No measures comparable with other studies	Vets	Meditation	PTSD-vets
	Body-oriented therapy in sexual abuse recovery: a pilot-test comparison	C. Price	2006	7 - other reason	No measures comparable with other studies	Women in community (n=8)	Body work	Childhood sex abuse
	Body-oriented therapy in sexual abuse recovery: a pilot-test comparison	C. Price	2006	7 - other reason	DUPLICATE			
	Yoga practice may buffer the deleterious effects of abuse on women's self-concept and dysfunctional coping	L. P. Dale, et al.	2011	7 - other reason	No measures comparable with other studies	Yoga studio	Yoga	Interpersonal violence
	Impact of a Yoga Intervention on Physical Activity, Self-Efficacy, and Motivation in Women with PTSD Symptoms	E. C. Martin, et al.	2015	7 - other reason	No measures comparable with other studies	Women with PTSD (n=38)	Yoga	PTSD
	Using the NADA protocol to treat combat stress-induced insomnia: A pilot study	C. Cronin and L. Conboy	2013	7 - other reason	could not get	Vets (n=5)	Acupuncture	PTSD-vets

ID	Title	Author	Year	Reason for exclusion	Notes	Population	CHA	Trauma
	Auricular acupuncture for sleep disturbance in veterans with post-traumatic stress disorder: A feasibility study	H. C. King, et al.	2015	7 - other reason	could not get	Vets (n=30)	Acupuncture	PTSD-vets
	GETSmart: Guided education and training via smart phones to promote resilience	M. J. Roy, et al.	2015	7 - other reason	could not get	Vets	Resiliency	PTSD-vets