

A Systematic Review of Complimentary Therapies to Treat Symptoms of Post-Traumatic Stress
Disorder in the Aftermath of Domestic Abuse

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Saida Byrami & Jordan A. Meeks

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A SYSTEMATIC REVIEW OF COMPLIMENTARY THERAPIES TO TREAT SYMPTOMS OF POST TRAUMATIC
STRESS DISORDER IN THE AFTERMATH OF DOMESTIC ABUSE

Accepted by the faculty of the Department of Nursing, James Madison University

FACULTY COMMITTEE:

Faculty Project Advisor: Christian A. Argenbright Ph.D, RN
CNL/NA Program Coordinator, Assistant Professor of Nursing

Reader: Erika Metzler Sawin Ph.D, RN
Associate Professor of Nursing

Reader: Sandra Lee Annan Ph.D, RN
Associate Professor of Nursing

HONORS PROGRAM APPROVAL:

Dr. Bradley Newcomer Ph.D
Dean of JMU Honors College, Associate Professor of Physics

Abstract

Objectives: Explore the impact of intimate partner violence (IPV) on the health of female survivors. Identify complementary therapies that alleviate symptoms of psychological health impacts of IPV on women's health.

Method: An exhaustive search of published, peer reviewed literature on complementary therapies and IPV was conducted. Databases included PubMed and CINAHL. Each article reviewed was published between the years of 2002 and 2016. The initial search produced 112 articles, abstracts of all studies were reviewed and studies were included if they addressed; a) complementary and alternative therapies, b) post-traumatic stress disorder, anxiety, and depression and, c) the impact of IPV on female survivors.

Results: Of the 112 citations obtained, 42 relevant studies met the inclusion criteria. Excluded articles did not meet the criteria specified in the method. The major psychological effects of IPV discovered were Post-Traumatic Stress disorder (PTSD), Anxiety, and Depression. Essential Oils, Yoga, Meditation, Mantram, Animal Assisted Therapy, and Music Therapy were all found to be effective complementary interventions in aiding to treat the psychological aftermath of intimate partner violence in women.

Conclusion: While these complementary therapies have been deemed effective for treating some of the psychological effects of IPV (PTSD, anxiety, and depression), further research needs to be completed to test these modalities in order to develop best practice treatment plans and to compare the different therapies.

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Introduction

According to a survey conducted by the CDC in 2015, 22.3% women in the United States experience severe physical violence at some point in their lifetime from an intimate partner. This systematic literature review focuses on the long-term psychological impacts of intimate partner violence (IPV) on women's health. After the impacts are established, different complementary therapies that can be useful to alleviate the psychological symptoms of IPV are explored. An intimate partner can be defined in a variety of way including, but not limited to, partners who are a present or former spouses, a boyfriend or girlfriend, or constant casual contact. According to CDC (2015), intimate partner violence is defined as the projection of violence and a controlling attitude in different spheres of the relationship including physical, emotional, sexual or verbal abuse towards present or former partner. Treatment for this population is vital as in an interview study by Thompson, women who grew up experiencing IPV during their childhood had a higher chance of re-experiencing IPV as adults. (Bair Merritt, et. al., 2014, Thompson R.S., et. al., 2006)

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Method

A computerized search of two nationally recognized electronic databases (PubMed and CINAHL) was conducted. The literature search included English language studies from beginning in January 2002 through October 2016. The review resulted in 42 articles. Of which, 19 were found through utilizing the mesh terms “IPV”, “long term health impacts of IPV on women”, “consequences of IPV on mental and physical health of women survivors”. As well as 23 articles were found by utilizing the MeSH terms, “complementary therapies and post-traumatic stress disorder”, “post-traumatic stress disorder and aromatherapy”, “post-traumatic stress disorder and yoga and meditation”, post-traumatic stress disorder and animal assisted therapy”, “post-traumatic stress disorder and canine therapy”, “post-traumatic stress disorder and equine therapy”, “post-traumatic stress disorder and music therapy”. Resulting in the total number of 42 articles, as seen on Table 1. A Systematic Review of Articles.

Table 1. A Systematic Review of Articles

Author, Yr.,	Sample	Method	Outcomes	Limitations
Taryn Lindhorst, et al., 2008	=/<17yrs old - unmarried pregnant adolescents, who planned to carry their babies to term. Recruited from public and private hospital prenatal clinics, public school alternative programs, and social service agencies in three urban counties in the northwest. Not recruited from mental health treatment, drug treatment, or juvenile justice agencies 240 adolescents completed an initial interview between June 1988 and January	Interview Long-term monitoring Brief Symptom Inventory (BSI) depression subscale Center for Epidemiological Study-Depression (CES-D) these scales were utilized once during the initial interview	Depressive symptoms Financial instability	Participants dropped out; 229 (95.4%) of the 240 original sample. 11 participants dropped out of the study in the first 5 years and had no outcome measures therefore their cases were e

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	1990.			
Stockman, J. K., et al., 2015	Minority women Ethnic minority women: Black/African American, Hispanic/Latina, American Indian/Alaska Native, Asian/Pacific Islander born in the U.S. or born elsewhere and immigrated to the U.S., included research only that were conducted in the U.S. included analyses (quantitative and/or qualitative) on the relationship between IPV victimization and any physical, mental, and sexual and reproductive health outcomes	Sys. Lit. review	Barrier to healthcare/support Physical: disordered eating patterns, physical in-juries (e.g., broken bones, facial injuries, head injuries), and poor perceived and overall general health Mental: depression, suicidality, PTSD, poor mental health functioning and mood disorder Sexual/reproductive: colored vaginal discharge, burning during urination, unwanted pregnancies, menstrual irregularity, as well as sexual risk taking (e.g., multiple sex partners, inconsistent condom use), consequentially higher likelihood of HIV infection	Small sample sizes
Rokach, A. 2007	One-hundred-sixty-four women volunteered to answer the loneliness questionnaire. Eighty women were identified by shelters as abused, and 84 were from the general population without any incidence of abuse in their past or present relationships.	30-item loneliness questionnaire	loneliness, alienation, and marginality of abuse victims be addressed. Social support has been demonstrated to be a good healing agent for both	Small sample size Results only r/t to victims who utilized the shelters Limited data collection

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<p>Rothman, E. F., et. al., 2007</p>	<p>41 participants Sample Characteristics All participants were female, and their ages ranged from 22 to 56 years</p>	<p>Interview- 32 close-ended and 35 open-ended questions</p>	<p>improving their finances promoting physical safety increasing self-esteem improving social connectedness providing mental respite providing motivation or a “purpose in life.”</p>	<p>Small sample size Focused location where participants were recruited Bias recruitment-strict eligibility guidelines Interview recorded by handwriting</p>
<p>Lang, A. J., et. al., 2002</p>	<p>42 female victims of IPV and 30 women with no history of severe trauma</p>	<p>Structured Clinical Interview for the DSM-I 1. Anxiety Sensitivity Index 2. Los Angeles Symptom Check list 3. Center for Epidemiologic Studies-Depression Scale</p>	<p>An individual who is high in AS (anxiety sensitivity) may find exposure more difficult because both the memory of the trauma and the related fear response are fear provoking. Thus, techniques to reduce AS (e.g., education, cognitive restructuring, and intero ceptive exposure) may be a useful to help individuals tolerate exposure. ASI scores are elevated among individuals with PTSD</p>	<p>Did not have an appropriate measure of trait anxiety to use an as additional control, which is a limitation to this analysis.</p>

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<p>Pico-Alfonso, M. A., et. al., 2006</p>	<p>Physically/psychologically (n 75) and psychologically abused women (n 55) were compared with non-abused control women (n 52).</p>	<p>Information about sociodemographic characteristics, lifetime victimization, and mental health status (depressive and state anxiety symptoms, PTSD, and suicide) was obtained through face-to-face structured interviews.</p>	<p>higher incidence and severity of depressive and anxiety symptoms, PTSD, and thoughts of suicide than control women, with no differences between the two abused groups These findings indicate that psychological IPV is as detrimental as physical IPV, with the exception of effects on suicidality, which emphasizes that psychological IPV should be considered a major type of violence by all professionals involved. This study indicates that the concomitance of sexual violence with both physical/psychological and psychological IPV increases the severity of depressive symptoms, although it increases the incidence of suicide attempts only when it is concomitant with physical/psychological IPV</p>	<p>well-developed study</p>
<p>Campbell, J. C. 2002</p>	<p>Effects of violence of women</p>	<p>Research literature review</p>	<p>poor health status, poor quality of life, and high use of health services. injured in the head, face, neck, thorax, breasts, and abdomen chronic pain (eg, headaches, back pain) or recurring central nervous system symptoms including fainting and seizures. neurological sequelae injury, chronic pain, gastrointestinal, and gynaecological signs including sexually-transmitted diseases, depression, and post-traumatic stress disorder</p>	<p>well developed study</p>

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Bonomi, A., et. al., 2007	Randomly sampled insured women (2876) telephone interview	telephone interview	depressive and severe depressive symptoms report fair/poor health	Focused sample: insured, educated and employed women
Thompson R.S., et al., 2006	English-speaking women (n =3568) 18-64 years enrolled in a U.S. health maintenance organization for 3 or more years.	telephone survey Response rate was 56.4%	Intimate partner violence risk was higher for women with lower income any form of abuse as a child or witnessing IPV as a child was uniformly associated with increased IPV risk as an adult	Limited information access, low response rate,
Cha, S., et. Al., 2014	195,687 respondents	analyzed the 2004–2008 National Pregnancy Risk Assessment Monitoring System (PRAMS)	Health care providers need to increase utilization and improve quality/accuracy of IPV screening tools during prenatal visits Medicaid or WIC recipients were twice as likely to have IPV discussions compared to women with private insurance or non WIC recipients. Behavioral risk assessment, health education and screening occur at a lower rate during the visits Unavailable resources due to limited Medicaid coverage non-Hispanic black and Hispanic women had higher prevalence of partner violence before or during pregnancy	RAMS data does not gather information on severity or frequency of IPV nor does it include sexual and psychological dimensions of partner violence.

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<p>Gerber, M. R., et al., 2014</p>	<p>Women veterans</p>	<p>Study reviews and data collection</p>	<p>High rates of IPV among WV Women go into military to avoid abusive personal relationships PTSD; TBI; homelessness Develop cognitive-behavioral therapies, cognitive processing therapies, appropriate screenings and referrals These women have great coping skills and over IPV stressors with the help of HCP</p>	<p>Limited data available</p>
<p>Dutton, M. A., et. al., 2013</p>	<p>Participants in this study were from a low-income, predominantly African American background</p>	<p>MBSR curriculum intervention</p>	<p>Increased participants' Awareness- they lived at the present moment Acceptance of self and others which increased patience and tolerance Self-Empowerment resulted in confidence and increased participation in programs and opportunities to help improve the living situation Non reactivity improved communication skills and decreased triggered IPV emotional response Self-care: increased good self-nourishing habits including yoga, breathing techniques that improved MH and physical health status Feeling calmer and relaxed as the result of the study's interventions Compassion, openness to others' situation and desire to help and acceptance of the current situation Group support Simple routines were stuck as the participants daily routine which continued to benefit them after the study was conducted</p>	<p>did not note the number of participants</p>

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Decker, M. R., et al., 2012	literature review	Symposium drawing on multidisciplinary expertise	Screening tools are helpful but further quality improvement is necessary Gap in evidence	Limited research available
Rose, L., et. al., 2010	27 women	Qualitative Interviews	depressed and/or experienced PTSD Blaming self-negative self-image Coping responses- isolation Dealing with IPV made some women grow "stronger" Protecting children and worrying about the impact of the abuse Rural areas-hard to get support or maintain confidentiality Lack of programs/protocol that support the mothers to get out of the abusive relationships	small sample size and the single data collection point at baseline
Gillum, T., et. Al., 2009	41 women	pilot study Intervention/control group	Study analysis recommends to screen clients for IPV even though (USPSTF) doesn't report evidence to support this Screenings and support programs result in better and safer patient outcomes	Small sample size Limited information about the experience of the abuse
Bair Merritt, et. al., 2014	7 heterosexual English-speaking couples	Qualitative interview	Factors which triggered IPV: Domestic responsibilities, parenting, aggression used by women due to frustration about partner's lack of support, division of labor Substance abuse Wanting to be heard Lack of knowledge about IPV effects on children: emotional distress Solutions: programs which address family coping with stress/different roles when family grows and	Small sample size

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			education about IPV effects on children	
Helfrich C.A., et. al., 2008	Interview of 84 women in safety shelter	Qualitative open-ended interview study	The study found higher percentage of anxiety, depression, fear, and PTSD reported by the victims of IPV at the shelter compared to the national statistics of mental health impacts of IPV.	Timing of the study was during the acute phase where victims recently left the abusive relationship and moved into the shelter. Thus, some of the mental health symptoms manifestations might have been misrepresented or over emphasized do to the emergent nature of the situation.
MacLean, B. 2011	6 Veterans with PTSD	12 week equine program focusing on ground skills and forming veteran horse relationships	Veterans reported an increase in confidence, greater feeling of control, and a better connection with loved ones	Sample size, no randomized control group
Schroeder, K., et. al., 2015	4 women between the age of 25 to 62, who experienced PTSD due to IPV	9 weekly sessions of 2-hour equine group sessions followed by a debriefing session. Focus on relationship development with horses with ground work (grooming, leading etc.).	reported being more aware of themselves in relation to others, and being more capable and confident in themselves	Sample size, no randomized control group

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Earles, J. L., et. al., 2015	16 volunteers clinically diagnosed with PTSD	6 weeks of two hour sessions, of equine ground work and care	Reduction in anxiety and depression, and an increase in mindfulness strategies	Sample size, no control group or randomized trial
Krause-Parello, et al., 2016	literature review	Literature Review on articles regarding canine therapy	Effective in treating symptoms, but found to be very expensive due to cost of dogs, handlers, and their training. Also it mentioned the lack of protocols regarding canine therapy	not a randomized control trial
Carr, C., et al., 2012	17 patients diagnosed with PTSD	Randomized control trial where nine randomly selected patients completed 10 weeks of group music therapy in addition to their routine therapy, and eight simply continued with their routine therapy	Entry and exit interview was preformed and it was found that the patients who received the music therapy reported a significant reduction in anxiety and depression symptoms	sample size
Choi, A., et. al., 2008	26 psychiatric patients diagnoses with PTSD,	60 min interventions, 15 sessions (1 or 2 times weekly. Scored before and after intervention with the Beck's Depression Inventory, State and Trait Anxiety Inventory, and the relationship Change Scale	Scored as effective on each scale	sample size, not a randomized control trial
Silverman, M. J., 2013	105 psychiatric inpatients being treated for depression and experiencing a low quality of life	Patients randomly assigned to groups of songwriting (33), psychoeducation (32), and recreational music therapy (40). Scored by Beck's Depression Inventory and a Quality of Life Questionnaire before and after group therapies were initiated.	Depression and quality of life scores increased for both the groups of music therapy, whereas the group of psychoeducation remained the same.	well-developed study
Pedersen, I., et. al., 2011	14 adults with clinically diagnosed depression	Twice a week for 12 weeks working on a dairy farm. Participants were interviewed each week via video.	Levels of anxiety and depression decreased, whereas self-efficacy increased during intervention.	sample size, not a randomized control trial

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Taylor, J. Y., et. al., 2014	41 incarcerated women who were diagnosed with PTSD due to past experiences of IPV	Music Account-Making for Behavioral-Related Adaptation. Inmates evaluated by Epidemiologic Studies Depression Scale, Speilberger State-Trait Anxiety Inventory, Rosenberg Self-Esteem Scale, and UCLA Loneliness Scale before and after intervention	Effective in improving all scorings	Larger population needed for more refined results
Amsterdam, J., et. al., 2012	Depression Research Institute, University of Penn. 57 participants with anxiety (19 with comorbid depression, 16 with past history of depression, 22 without depression)	Double blind placebo control trial with oral chamomile extract. Half received 220 mg capsule chamomile extract, half received identical looking capsule of placebo. Each participant was scored by the Hamilton Depression Scale.	Significantly greater reduction in depression scoring for the participants who received the chamomile	sample size
Moore, J. 2013	Three studies focusing on aromatherapy and anxiety	Systematic literature review	Lavender is effective in decreasing anxiety for a short period time for a low cost	small study sample size
Janmejai K Srivastava, et. al., 2010	literature review	Systematic literature review	Chamomile is found to be very effective for a variety of ailments including anxiety and depression. This study also points out the negative effects of chamomile and how it should not be combined with certain medications or overused	not a randomized control trial
Peir Hossein Koulivand, et. al., 2013	literature review	Systematic literature review	Lavender has been found to be effective for treatment of PTSD, though MOA is unknown. Too much lavender can cause constipation, headache, and can interact with blood thinning medications	not a randomized control trial
Barnes, et. al., 2016	74 participants clinically diagnosed with PTSD	Transcendental Meditation (TM).	Participants who practiced TM had a	no control group

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		Basis 24, OQ-45, PCL-S. Reliability/validity established	significant reduction in symptoms than those who did not practice TM. TM helps decrease medication use and psychological symptoms	
Bormann, et al., (2012).	65 veterans clinically diagnosed with PTSD	Mantram Repetition Program (MRP). Content analysis of interviews.	12 discrete categories found which indicate that MRP was useful in decreasing emotional reactions. MRP was helpful in managing a wide range of emotional reactions in Veterans with PTSD.	interviews not always reliable
Bormann, et al., 2012	66 participants clinically diagnosed with PTSD	Mantram intervention. PTSD Checklist (PCL) and Functional Assessment of Chronic Illness Therapy-Spiritual Well Being.	Statistically significant indirect effect of the mantram intervention on PCL. Increases in ESWB may explain how mantram reduces PTSD symptoms	well-developed study
Fiore, et. al., 2014	6 studies	Literature review on the effect of Yoga, mindfulness therapy, meditation, and mantram on symptoms of PTSD in Veterans	Statistically significant reduction of stress and anxiety, depression, and dysfunction, with improvement in sleep quality and family relationships. Participation in yoga, meditation, mantram, and mindfulness therapies had reduced symptoms of PTSD.	small study sample size
Libretto, et. al., 2014	764 active duty soldiers experiencing anxiety, depression, or PTSD symptoms	PTSD Checklist, military; Beck Anxiety Inventory; Beck depression Inventory before and after CAM, Acupuncture, Reiki, Reflexology, and Yoga group interventions in individuals clinically diagnosed with PTSD	The study interventions reduced PTSD symptoms in active duty soldiers.	nicely completed study with a large sample size, could have benefited from a placebo control group
King, et. al.,2013	37 veterans diagnosed with PTSD	Mindfulness-based stress reduction, Mindfulness-based cognitive therapy,	Patients enrolled in MBCT showed a significant reduction in CAPS score. MBCT	small study sample size

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		Meditation. Examined the acceptability and effectiveness of a brief mindfulness-based group intervention (MBCT) adapted for treatment of combat-related PTSD. (CAPS) PTSD diagnostic scale Posttraumatic Cognitions Inventory	group therapy targeted for combat related PTSD is an effective and therapeutic approach to treating PTSD symptoms and trauma-related negative conditions	
Mitchell, et. al., 2014	38 participants clinically diagnosed with PTSD	Yoga on patients clinically diagnosed with PTSD. Scored by the PC-PTSD scale before and after the intervention	There was a significant decrease in study group's re-experiencing and hyperarousal symptoms	small study sample size
O'Mahony, et. al., (2016)	21 health care professionals	To determine PTSD in health care professionals who work in palliative care setting. Mindfulness-based communication training. Acceptance and Action Questionnaire, Cognitive Fusion Questionnaire, and the Posttraumatic Stress Disorder Checklist–Civilian Version	42% indicated positive screens for significant posttraumatic stress disorder symptoms, and 33% indicated probable posttraumatic stress disorder diagnosis	small study sample size
Plumb, et. al., 2014	45 veterans diagnosed with PTSD	Evaluate efficacy of Mantram Repetition Program (MRP) vs PCT. Evaluated by the CAPS scale before and after each intervention.	MRP decreased PTSD symptoms greater than PCT. MRP significantly reduces and improves PTSD signs and symptoms in veterans who participated	small study sample size
Reddy, et. al., 2014	26 women with a history of drug and/or alcohol abuse	The effect of a yoga on alcohol and drug abuse in women with PTSD. The Alcohol Use Disorder Identification Test (AUDIT), and Drug Use Disorder Identification Test (DUDIT), before and after intervention	AUDIT and DUDIT scores decreased in the yoga group; AUDIT increased in the control group, and DUDIT score was stable. Yoga intervention may improve the effects of PTSD and decrease alcohol and drug use.	small study sample size

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Steinberg et al., 2015	47 veterans clinically diagnosed with PTSD	Mindfulness-based stress reduction (MBSR) sessions. Interviews, assessment of quality of life (QOL), and participant statements before and after intervention	Improvement in mental health-related QOL and improved mindfulness skills (MBSR) in study group. MBSR improves PTSD symptoms compared to usual care provided for veterans with PTSD	small study sample size
Taylor, et. al., 2014	12 participants clinically diagnosed with PTSD	Pre and post EKG monitoring throughout each yoga intervention session	Significant decrease in heart rate as the practice continued. Supports that yoga and guided breathing is an effective in patients with PTSD, and insomnia.	small study sample size

IPV Impacts on Health

Physical Health Impacts

Much research demonstrates a significant impact of IPV on physical, mental and sexual health of the female victims. Physical health impacts include acute injuries (broken bones, facial injuries, head injuries), as well as long-term complications such as chronic pain, anorexia, and overall poor health. (Campbell, J. C. 2002, Bonomi, A., et. al., 2007).

Sexual Health Impacts

Significant literature findings indicated adverse impact of IPV on sexual health of female victims. Such sexual health complications included vaginal discharge, burning during urination, unwanted pregnancies, menstrual irregularity, risky sexual behavior, and higher risk of sexually transmitted infection. (Stockman, J. K., et. al, 2015).

Psychological and Emotional Impacts

For the purpose of this research, the primary focus of the literature review will be focused on IPV health impacts on mental and emotional health of female IPV survivors. Research indicates that multi-dimensional IPV experience affects the victim in many different ways, for example, an individual experiencing IPV in a form of psychological violence experiences severe emotional and mental health impacts as the result. Reported mental health impacts include disordered eating patterns, depression, suicidal ideations, PTSD, mood disorder, and poor mental health functioning. (Rose, L., et. al., 2010)

Helfrich C.A., et. al., (2008) studied 84 women were living at the shelter after fleeing an abusive relationship. This study showed that anxiety, depression, and PTSD were the most common psychological health impacts experienced by these women. Based on the review of the study the researchers concluded that due to the timing of the interviews effected by the recent acute experience of IPV these female survivors developed the short-term symptoms of anxiety and depression. These acute symptoms masked some long-term symptoms and manifestations of PTSD, resulting in a misdiagnosis.

According to Lang (2002), who studied 72 women in a structured interview, sensitivity to anxiety directly correlates with the victim's' ability to cope with the aftermath of IPV. Thus, women with elevated Anxiety Sensitivity Index (ASI) find it more difficult to resolve past experience of IPV due to fear provoking memory of the trauma, which increases the risk of PTSD. Rokach (2007) utilized the 30-item loneliness questionnaire to intensively study a group of 164 women; this study found isolation, loneliness, and alienation were a significant impact on female victims of IPV. The loneliness and isolation evident in many IPV victims also affects the

victims by compromising their ability to seek support or health care services, leaving them at higher risk for adverse health complications.

IPV Current Treatments

Psychological Treatments

There are numerous treatments utilized to address psychological impacts of IPV and alleviate signs and symptoms of conditions such as anxiety, depression, isolation, and PTSD. In the study done by Rokach, (2007) the emphasize was placed on social support as a treatment for over-coming IPV symptoms of isolation, loneliness, fear and helplessness. Social support groups positively affect female survivors by empowering them through sharing similar experiences between other female survivors. Social support groups also include organizations, which help the survivors to search for resources, information, and a safe shelter once they flee an abusive relationship (Dutton, et. al., 2013).

Cognitive Trauma Therapy for Battered Women (CTT-BW,) is specifically tailored treatment for women who are survivors of intimate partner violence. The CTT-BW is a multiple component program where different aspects of IPV consequences including depression, anxiety, and PTSD are addressed. CTT-BW involves educating the survivors about psychological consequences of IPV such as depression, PTSD, anxiety, and demonstrates various coping methods to assist the survivors in overcoming past trauma. In addition this program involves various activities to engage the participants including group discussions, educational videos, and researching various resources to assure future safety of the participants. Also this program encourages exploration and expression of feelings related to IPV such as guilt, fear, and stress.

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HOPE: Helping to Overcome PTSD through Empowerment is a program specifically targeting the development of self-care and self-realization habits in women survivors of IPV. HOPE operates in three distinct phases as a recovery model beginning by self-actualization, followed by allowing self to experience the grieving process, and completing the session by focusing on present time (Warshaw et. al., 2013).

Review of Complementary Treatments

The purpose of the following section of this study is to explore the different complementary treatment options for women who have experienced IPV, and are experiencing the psychological consequences of Post-Traumatic Stress Disorder (PTSD), depression and anxiety. Complementary therapies are therapies that can be used alongside prescribed treatment regimens, such as the ones discussed previously in the section “psychological treatments”. Throughout this literature review, results for any adults experiencing PTSD were included, as well as though with anxiety and depression were included. Studies pertaining solely to women who have experienced IPV were very limited, so the literature review was extended to all adults with symptoms of PTSD as well as anxiety and depression. This decision was made as PTSD symptoms are similar despite the traumatic events in which they began, and therefore the same complementary therapies can be utilized for women who have experience IPV as well as any adult population. The complimentary therapies evaluated were essential oils, yoga, mantram, meditation, animal-assisted therapy, and music therapy.

Essential Oils

Essential oils have been used for over 6,000 years in ancient cultures to treat a wide variety of medical conditions as well as filling a wide diversity of other hygienic and spiritual

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needs. Each oil is carefully extracted from the body of plants and often their seeds. The extracts can be utilized in aromatherapy, as topical ointments, in bath water, and can sometimes be ingested in very small quantities. Oils such as Chamomile and Lavender are most often suggested for those who experience varying levels of anxiety and depression, both of which are major symptoms of post-traumatic stress disorder (Erlich et. al, 2011).

Chamomile

Typically, Chamomile is used in a tea form or aromatherapy. A literature review conducted by Jameljai (et. al) in 2010 explains how the mechanism of action of chamomile to treat PTSD is not fully understood, but some suggest that the flavonoid apigenin found in chamomile acts as a mild sedative helping to calm patients and ease them to sleep. Others hypothesize that an unknown substance in chamomile binds to GABA receptors also creating a sedative effect. Chamomile lowers stress induced adrenocorticotrophic hormone (ACTH) levels in the blood, decreasing the stress response, which can aid in PTSD "attacks." It is important to note that patients should consult their doctor before taking chamomile in conjunction with prescribed blood thinners such as Coumadin as it could greatly increase their effect. The patient must be aware that potential allergic reactions could occur.

Another study, conducted by the Depression Institute at the University of Pennsylvania in 2012, tested the use of Chamomile on 57 clinically depressed patients through a double-blinded placebo control trial. Half of the patients randomly received an oral dose of chamomile extract, while the other half of the patients received an identical appearing placebo capsule. Each patient was scored on the Hamilton Depression Scale, and the patients who received Chamomile scored significantly lower than those who received the placebo. While this study seemed to have very

favorable results for the use of chamomile, the number of participants was not large enough to come to a definite conclusion.

Lavender

Lavender has also been often recommended to reduce anxiety and aid sleep, though its mechanism of action is completely unknown. Lavender may be ingested through oral capsules or drops, diffused by aromatherapy, drunk in tea, be mixed with coconut oil to create a massage lotion. An intensive literature review completed by Koulivand (et. al) in 2013 published in the *Evidence Based Complementary and Alternative Medicine* journal, explored how lavender decreased PTSD side effects such as restlessness, agitation, sleep and somatic complaints. It was also mentioned in studies in which lavender had been tested on rats, where it stimulated the GABA receptors (leading to relaxations), and increased the rat's appetite and body weight. It is important to note that lavender may induce constipation and headaches when ingested in too high of a quantity. It is also important to decrease lavender use at least two weeks before any surgery because it could increase the sedative effects of anesthesia (Koulivand, 2013).

Other Essential Oils

Other oils such as lemon, rose, sandalwood, bergamot, and jasmine are all recommended in for treatment with anxiety-related disorders, yet sufficient research is yet to be performed to test their effect, determine their mechanism of action, and reveal possible side effects. Essential oils are easily accessible as a complementary treatment because prescription quality extractions tend to be inexpensive. It is important to use high quality oils due to ensure that the product can be safely ingested and inhaled. Also, more research needs to be conducted before the full therapeutic effect of different oils can be confirmed (Abundant Health, 2014).

Meditation, Yoga and Mantram

Meditation is the process of using different techniques to clear the mind and come into the present moment, the process of meditation is also often referred to as practicing mindfulness. Traditional meditation focuses on the breath and imagery as a tool to clear the mind. Yoga is another form of meditation, where one shifts their attention to the purposeful movement of the body allowing them to create a focused mind and turn their attention towards the present moment. Mantram, the third most popular form of meditation, is the repetition of meaningful phrases, poems, prayers or songs in any language. It is also a beneficial practice to settle racing mind. Mantras are usually taught through repeating after an instructor or a spiritual leader. The practice of meditation has been found to be an effective complementary intervention to treat patients experiencing PTSD symptoms such as anxiety and depression (Scott, 2016).

Meditation

A research study done by Barnes (et. al) in 2016 was completed to determine whether or not transcendental meditation (a combination of mantram and movement) decreased the need for psychotropic medication in people with PTSD. The sample included 74 military members with documented PTSD or anxiety disorder not otherwise specified. Participants were diagnosed with PTSD through formal testing done by a behavioral health provider. There was a notable difference in the findings between the control group and the group practicing transcendental meditation. The majority of the group practicing meditation had either stabilized, decreased, or stopped their medication all together. These findings show the benefits of transcendental meditation as a complementary and even in some cases an alternative treatment modality for people suffering from PTSD.

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King (et al) in 2013 examined the effectiveness of Mindfulness-Based Group Intervention (MBCT), for the treatment of PTSD due to military combat. Thirty-seven veterans diagnosed with PTSD were included in the study, where they went through mindfulness based stress reduction, mindfulness based cognitive therapy and meditation. Each participant was evaluated by the PTSD diagnostic scale Posttraumatic Cognitions Inventory (CAPS) before and after the intervention. The patients enrolled in the MBCT program exhibited a significant reduction in CAPS scored, showing that MBCT is effective in treating PTSD for veterans struggling with symptoms.

Steinberg (et al.) explored the effect of mindfulness-based-interventions (MBIS) on the reduction of symptoms of PTSD in veterans. They interviewed the veterans before and after the intervention to determine their quality of life. The interview process showed an increase in the participants perceived quality of life, stress management, and response skills. This increase in quality of life in conjunction with traditional PTSD treatment was shown to be more significant than PTSD therapy without mindfulness-based techniques and interventions.

Yoga

Fiore, Nelson, and Tosti (2014) completed a literature review to explore the effect of yoga, cognitive therapy, meditation, and mantras in decreasing symptoms of PTSD. Participants from 5 of the studies were veterans, and the other study used active duty military personnel. The participants were considered for these studies if they had symptoms of PTSD, specifically depression, anxiety, anger, sleep disturbances, flashbacks, or chronic pain. Results from these studies indicated a significant reduction in stress, depression, anxiety, and dysfunction.

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In the study completed by Liberto (et. al) in 2014, the focus was on the hypothesis that different CAM therapies (Acupuncture, Reiki, Reflexology, and Yoga) helped in reducing PTSD symptoms. Seven hundred and sixty-four active military duty participants who displayed symptoms of PTSD were randomly selected to participate in the therapies. They were evaluated through a PTSD checklist, Beck Anxiety Inventory, and Beck Depression Inventory, all of which have established reliability and validity. The study found that the interventions significantly reduced PTSD symptoms for the majority of the participants.

A study done by Reddy (et. al) in 2014, was completed with the knowledge that those diagnosed with posttraumatic stress disorder (PTSD) often participate in high risk behaviors. It focused on the effect of yoga intervention, and how it was seen to impact some of these high-risk behaviors, such as drug and alcohol abuse in women diagnosed with PTSD. The data was taken from a pilot randomized control trial of women ages 18-65 clinically diagnosed with PTSD. A control group was compared to a group who participated in a twelve-week yoga class. The women were measured by The Alcohol Use Disorder Identification Test and The Drug Use Disorder Identification test before the intervention, immediately after the invention, and one month following the intervention. Both test scores decreased significantly in the yoga group, especially in comparison to the control group. It seems that yoga helps to play a role in decreasing some PTSD symptoms, reducing drug and alcohol use risk, and increased interest in seeking further treatment.

In the pilot study completed by Mitchell (et. al) in 2014, the purpose was to explore yoga as a beneficial intervention for women who experience PTSD. Advertisements such as fliers, databases, and craigslist were used to recruit women with PTSD, resulting in 78 participants. 38 were randomly selected to participate in a weekly yoga therapy, while 38 were randomly

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selected as a control group. After a month of completing the study, they used a PC-PTSD screening to evaluate symptoms of the participants before and after the study was completed. Finding suggested that a consistent yoga practice caused a small decrease in “re-experiencing and hyperarousal symptoms”, but the researchers noted that the sample size would need to be increased in the next study to get stronger results.

In the research study, *Measuring Complexity of Heart Rate Variability in Naive Yoga Practitioners with Insomnia and PTSD* (Valenza et. al, 2014). Randomly selected participants who exhibited symptoms of insomnia and PTSD to engage in hourly yoga and guided breathing sessions for eight weeks. They were monitored by an EKG throughout each session, and it was found that the yoga practice was able to significantly decrease the participant's heart rate as the practiced continued. This correlates with decreasing PTSD symptoms and allowing the participants to fall asleep. Unfortunately, the number of participants were not mentioned in the study, which greatly decreased the study's credibility.

In the pilot study completed by Taylor (et al.) in 2014 the purpose was to explore the feasibility of yoga as a treatment for insomnia in patients with PTSD. They utilized yoga as an intervention to observe the effect of this mindfulness based intervention on insomnia in twelve patients clinically diagnosed with PTSD. They performed an EKG before and after the yoga intervention to measure the heart rate and rhythm of each of the participants. A significant decrease in the ratios of pre-session to post session heart rate were found as the practice of yoga continued. The study concluded that yoga is an effective intervention for relaxing patients with PTSD who have insomnia.

Mantram

In a study completed by Borman (et al) in 2012, sixty five participants diagnosed with PTSD attended a Mantram Response Program (MRP), which was found to be highly beneficial. The data was analyzed through comprehensive interviews with each person in the MRP and it was found that MRP is very helpful in decreasing emotional reactions in PTSD. This is very beneficial as the sample size to more accurate results.

In veterans with military trauma, meditation has been thought to reduce the severity of PTSD symptoms. In a research study done by Bormann (et. al) in 2012, this theory was tested in order to see if meditation, leading to increased existential spiritual wellbeing, would decrease PTSD symptoms in those who participated in the mantram intervention. Sixty six veterans diagnosed with PTSD from war related trauma participated in 6 weeks of case management and group mantram intervention in a randomized trial. The data was measured by a PTSD checklist, and a Functional Assessment of Chronic Illness Therapy-Spiritual Wellbeing. There was a significant indirect effect found, suggesting that with increasing the levels of existential wellbeing in a person through mantram intervention, the severity of the veteran's PTSD symptoms decreased significantly.

In research done in 2014 by Bormann (et. al) a Mantram Repetition Program was studied to see if it was as effective as an evidence-based treatment for veterans diagnosed with PTSD. It occurred as a two-site clinical trial, and was a randomized controlled study. It compared the Mantram Repetition Program to a previously determined evidence based treatment, present centered therapy. Twenty five veterans participated in the Mantram Repetition Program, while 20 participated in present-centered therapy, both in 60 minute sessions for 8 weeks. The Clinician Administered PTSD scale was used as a baseline, and post treatment to measure

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effectiveness. The scores of those who participated in the Mantram Repetition Program experienced a significantly greater improvement than those who participated in present centered therapy. While the present-centered therapy did see some improvement, the veterans who participated in the Mantram Repetition Programs results were greater than two times more favorable.

A study done by Bormann (et. al) in 2013 delves into ways in which a Mantram Repetition Program was utilized to help treat the symptoms of Post-Traumatic Stress Disorder. Sixty Five Veterans participated in six weekly group sessions, totaling to 90 minutes per week. Critical Incident Research Technique Interviews were conducted three months later. The program taught many different skills related to helping to decrease overall PTSD symptoms, even when experiencing the presence of a trigger source, which are wide and variable. The research concluded that Mantram Repetition Programs were very powerful in emotional improvement for those veterans struggling with PTSD.

Overall, each study reported favorable results for the use of Meditation, Yoga, and Mantram as complementary therapies for PTSD, specifically in the symptoms of depression and anxiety. This is an exciting finding, as each of the interventions can be practiced with little to no cost as once the practice is taught patients can continue to practice without a leader, and the tools can be utilized throughout everyday life. Also, the variety of forms allows for it to be accessible to people from all physical and spiritual backgrounds. It would be highly beneficial in the future for more studies with a larger population of participants to be completed to find more clear and accurate results, and to run studies that test if certain models of meditation may be more beneficial than another for treating PTSD.

Music Therapy

Music therapy is a highly recommended therapy for patients diagnosed with PTSD, as the emotions it can evoke, and the passion it can release without using words can be incredibly powerful and healing.

In a study completed by Carr (et. al) in 2012, seventeen patients clinically diagnosed with PTSD, caused by any form of trauma, were assigned to a randomized music control trial. Nine randomly selected patients attended 10 weeks of group music therapy in addition to the therapy they routinely attended, whereas the randomly selected control group of eight did not receive additional therapy. An entry and exit interview was completed for each patient in the study, and it was found that the music therapy participants experienced a significant decrease in PTSD and depression symptoms. Though the patients reported the intervention as beneficial, a larger sample size would be needed for accurate results.

In a study conducted by Choi (et. al) in 2008, twenty six adult patients diagnosed with PTSD volunteered to participate 15 sessions of 60-minute interventions of music therapy. After the interview sessions were completed the scores on their Beck's Depression Inventory, the State and Trait Anxiety Inventory, and their Relationship Change Scale each significantly improved from the initial interview, and testing.

In a study published in the *Nordic Journal of Music Therapy*, Silverman (2013), also tested the impact of different music therapies on psychiatric inpatients who displayed symptoms of PTSD. Patients were randomly assigned to different intervention groups. Thirty-three attended group songwriting sessions, thirty-two attended psychoeducation sessions, and forty attended group music therapy sessions weekly on top of their everyday inpatient therapy. It was found that both songwriting and music therapy increased the patient's quality of life and slightly lowered

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their depression levels, while the psychoeducation had no altering effect. These were evaluated by the use of Beck's Depression Inventory, and a Quality of Life questionnaire both taken before and after the intervention.

Taylor (et. al) published a study in 2014 in the *Issues in Mental Health Nursing*, exploring the impact of MAMBRA (Music and Account-Making for Behavioral-Related Adaptation) on forty-one incarcerated women who were clinically diagnosed with PTSD due to IPV. MAMBRA is an intervention in which the patients are lead through a progression of songs on a CD, that are designed to help victims "explore their feelings of abuse [they experienced], and [their perception of] recovery". Participants were evaluated first by the Index of Spouse Abuse, to determine the degree of abuse the victim experienced. Depression was evaluated by the Center for Epidemiologic Studies Depression Scale. Anxiety was assessed by the Speilberger State-Trait Anxiety Inventory. Self-esteem was assessed by the Rosenberg Self-Esteem Scale and loneliness was assessed with the UCLA Loneliness Scale. The Mamba intervention was found effective in improving depression, anxiety, self-esteem and loneliness scorings, though the study mentions that a larger participation population is needed for results that are more concrete.

Overall music therapy was found also to be a highly beneficial intervention that can be practiced at a low cost, and therefore is accessible to anyone. Further research with larger sample sizes needs to be completed to determine a model of music therapy that would be most beneficial.

Animal-Assisted Therapy

Animal-assisted therapy is an emerging treatment that has also been recommended to aid in minimizing PTSD symptoms, such as anxiety and depression. Small amounts of studies have been completed, focusing on the use of horses, dogs and cattle.

Equine Therapy

In a study completed by MacLean (et.al) in 2011 and published in the *Journal of Rehabilitation Research and Development*, a 12-week equine trial program was run for six veterans clinically diagnosed with PTSD. The veterans were instructed to focus on ground skills (care and relationship forming without riding the horses). Horses are prey animals and therefore are hypervigilant and require a lot of time, and patience to establish trust in a person. Once the relationship is established, they crave guidance, as they are pack animals and desire someone to follow. This forces handlers to have to be very aware of their moment and the non-verbal communication they are expressing, as well as pushes them out of their comfort zone to take charge as a leader. After the 12-week program, veterans reported an increase in confidence, a greater feeling of control, and a better connection with their loved ones. Though this program seemed to be highly effective, there was not a large enough sample size to determine definite results.

In a study published by Earles (et. al) in 2015 in the *Journal of Traumatic Stress*, sixteen volunteers who scored a 31 and above on the PTSD Checklist-Specific and had experienced at least two traumatic life events scored by the Life Events Checklist, participated in six weekly two hour sessions of horse ground work and care. Patients were evaluated before and after the intervention by a 7-item Generalized Anxiety Disorder Scale, a 9-item Patient Health

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Questionnaire measuring level of depression, a 39-item Five Facet Mindfulness Questionnaire, and a 5-item Satisfaction with Life Scale. Results concluded that the intervention lead to a reduction in anxiety and depression, and an increase in mindfulness strategies and life satisfaction. The small sample size in this study and lack of a diverse patient population poses an issue as both factors are important for producing credible research.

Schroeder (et. al) performed a detailed equine intervention in 2015, on four women between the ages of 25 and 65 who experienced PTSD due to past experiences of IPV. The women participated in 9 weekly 2-hour group sessions, that focused on relationship development and groundwork (such as grooming and leading). Each session was followed by a debriefing session, where the women would talk about how the equine experience affected their PTSD symptoms. As the weeks progressed the women reported a reduction in their feelings of anxiety, and depression, and also described an increase in their mindfulness strategies. This study appears to prove equine intervention as highly beneficial, and provides a useful model for an equine intervention, but a larger sample size is needed for concrete results.

Canine Therapy

In an informative literature overview published in the *Home Health Nurse* journal in 2014, Winkle (et. al.) explores the three different uses of dogs in therapy and recovery. The first section describes the benefit of owning a dog, especially for people with depression. Caring for a dog motivates patients, first, to get out of bed to feed and care for the dog, and eventually to get out of the house for walks and appointments. For mild symptoms, this is highly beneficial as the extra push of responsibility can make a large difference in quality of life. Second, it discusses the use of visiting therapy dogs, and how petting a dog alone can lower a patient's heart rate, and increase overall mood. Frequent scheduled visits have been shown to decrease overall feelings of

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anxiety and depression throughout the week, and increase social interactions. The third section explores the usefulness of service dogs, and most relevant to PTSD due to IPV, psychiatric service dogs. Though very expensive to purchase and train, psychiatric service dogs are highly beneficial option for those experiencing the detrimental effects of PTSD. They are trained to minimize PTSD triggers so that patients feel safe and therefore are more likely to get out of the house and participate in everyday life. They are trained to do tasks such as, “standing between its handler and an approaching stranger”, and inspecting an unknown environment before the handlers enter, both which aid in keeping their handler’s anxiety levels low. Also, they can be useful in pulling their handler out of bouts of depression or instances high anxiety, by recognizing moments to lay their head on their handler's lap or in their hand. This study exemplifies the incredible benefit of all types of dogs in aiding to reduce PTSD symptoms, yet, this review notes the large cost of training and lack of definite research as a downfall to canines as an intervention.

In an extensive literature review compiled in 2016 by Krause-Parello (et. al) and published in *Nurse Education Today*, 563 original studies pertaining to canine assistance for veterans with PTSD were analyzed. Though the study was not specifically focused on females who experienced PTSD due to IPV, this review is still relatable as PTSD symptoms are similar in all cases despite the traumatic event which brought them on. Throughout the review it was found overall that canines were incredibly helpful in reducing depression, anxiety, and increasing ease in social interactions. While this is a favorable result, the author of this study also notes that the large cost of training and bringing in therapy dogs as a barrier to treatment, and that there is a lack in rules, regulations, such as a step-by-step process for canine therapy.

Other Pet Related Therapies

In 2011, a trial was completed by Pedersen (et. al) to determine the influence of dairy farm work on fourteen adults clinically diagnosed with depression. The participants worked on a farm with dairy cattle twice a week for a period of twelve weeks. Before the trial began and after the trial was completed, the participants were evaluated using the Generalized Self-Efficacy Scale, the State-Trait Anxiety Inventory, and Beck Depression Inventory. Also after each working session, the participants were interviewed and recorded via video. After the intervention, levels of anxiety, and depression significantly decreased, as the levels of self-efficacy increased. These same results were reported as the intervention progressed by each of the participants in the video interviews. This is also an effective intervention model, but once again not enough participants were used in to the study to determine clear results.

Favorable results were found for Canine, Equine, and farm animal therapies, but larger sample sizes are needed for clearer results; financially the expense of canine and equine therapy makes the therapies not easily accessible, and clear best practice programs need to be developed.

Conclusion of Results

Through this literature review, it was found that essential oils, the different forms of meditation, and music therapy are each viable options as complementary therapies for the treatment of PTSD symptoms such as anxiety and depression. They are accessible to every population, as buying prescription quality chamomile and lavender is fairly inexpensive. There are so many different forms of meditation, that one can find the perfect practice to match any physical and spiritual background Once the method is taught, one can practice them without any

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expense throughout everyday life. Music therapy is also easily accessible, due to the varying ways one can listen to music, and the grand diversity of music with which people from different backgrounds can connect.

Animal assisted therapy, while found to be highly effective for treating the psychological symptoms of PTSD (such as anxiety and depression), it is not accessible to all people due to the high cost of obtaining and training the animals. Studies also noted that established formats for the intervention of animal assisted is needed therapy to maintain safety and create the best results.

The overarching finding with each of the interventions is that not enough studies have been performed with an acceptable number of participants to come to clear conclusions. In the future, for these complimentary therapies to be established in practice for treatment of females experiencing the psychological symptoms of PTSD due to IPV, more specific studies focusing solely on this population are needed. Also larger population studies need to be completed to first, discover the definite effect of each therapy and second, compare and contrast which complementary therapy would be most beneficial in treatment.

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