A Review of Art Therapy Among Military Service Members and Veterans with Post-Traumatic Stress Disorder

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Introduction

Every day in the United States approximately 22 veterans, and one active duty service member, reservist, or national guardsman commits suicide and the rate is climbing.[1-2] In 2008, there were 197 reported suicides; 2009, 238; 2010, 301; 2011, 283; 2012, 325.[3] In addition to fighting the Global War on Terror, current service members and veterans are left to battle postwar symptoms related to post-traumatic stress disorder, otherwise known as PTSD. As the wars in Iraq and Afghanistan have come to a close, there is growing concern over the efficacy of postwar treatment, which will be needed for the increasing number of veterans returning home. Veterans Affairs (VA) healthcare is the largest healthcare delivery system in the United States and according to a U.S. Congressional Research Service report for Congress, the prevalence of PTSD among Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans receiving VA healthcare in FY2002-2012 was 29%.[4] It is important to note that although combat exposure is a leading cause of PTSD among males, military sexual trauma (MST) is the leading cause of PTSD among females.[5] Although treatment for PTSD is widely researched among past and present military service members, little is known about the potential therapeutic benefits art therapy could offer this population. Existing research indicates that art therapy shows promising treatment results among service members.[6] This project aims to provide a review of why art therapy programs should be implemented among current military service members and veterans diagnosed with PTSD.

Background

According to the American Art Therapy Association, art therapy is the use of artwork to "explore feelings, reconcile emotional conflicts, foster self-awareness, manage behavior and addictions, develop social skills, improve reality orientation, reduce anxiety, and increase self-esteem."[7] The preferred method of treatment for patients with PTSD receiving care in the VA healthcare system is Cognitive-Behavioural Therapy (CBT), however this form of therapy is effective in treating only two of the three hallmark symptom clusters associated with PTSD, i.e., re-experiencing and hyper-vigilance, but not as effective in treating avoidance/ emotional numbing.[8-9] Traumatic events are often difficult to express in words alone, thus art therapy offers a different approach to allow for individual expression. Art therapy, particularly models of art therapy applied in a group setting that offer group feedback, have been shown to be effective in treating patients with PTSD, while specifically focussing on avoidance/ emotional numbing. Art therapy is designed to help participants bridge their memories of past traumatic events in order to understand and communicate their traumatic experience. This may be accomplished using various art activities, including: drawing, painting, and photography. Art therapy aims for participants to share their experience in a healing environment, which ultimately helps improve upon their behavioural and mental health. The following section will provide an overview of PTSD, art therapy sessions and activities, and end with notable mention of art therapy and PTSD outside of the US.

Combat related trauma

Service members in combat theatres of operation, and other potentially hostile military deployment missions (i.e., foreign diplomatic facilities, disaster relief, peace keeping missions, etc.) are vulnerable to many conceivable dangers (i.e., small arms fire, improvised explosive devices (IEDs), rocket propelled grenades (RPGs), mortars, and suicide bombings). These traumatic events are all examples of potential causes leading to the development of PTSD among military service members. Moreover, military service members endure excessive physical exertion, lack of food, sleep, and social support systems, which altogether, further reduce soldiers' health status and quality of life.

Military sexual trauma

In addition to the elements of combat exposure enumerated above, military sexual trauma (MST) is explained at length here due to its especially high prevalence among service members in all of the armed forces. MST is a term adopted by the Department of Veterans Affairs in the early 1990s and is defined as "sexual harassment that is threatening in character or physical assault of a sexual nature that occurred while the victim was in the military, regardless of geographic location of the trauma, gender of the victim, or the relationship to the perpetrator."[10] A number of studies suggest that victims of sexual trauma are just as likely, if not more likely to develop PTSD than service members who have experienced combat exposure.[11-12]

Although females are exceedingly more likely to experience MST than their male counterparts, it is important to note that there are far more males in the military. As of 2010, there were 209,222 females and 1,249,475 males serving on active duty in the military.[13] Consequently, it is no surprise that one study conducted by the VA found that out of nearly 1.7 million patients receiving care from the VA, 22% of females and 1% of males, reported military sexual trauma.[14] Within the VA health care system, females are 20 times more likely than men to have suffered MST, however there are about 20 times more males in the VA health care system. Although females are at greater risk for MST, 54% of patients who screened positive for MST are male.

According to the U.S. Department of Defense in an annual report to Congress, in the 2012 fiscal year there were over 3,300 reported sexual assault incidents among military service members.[15] This number is up from the 2,374 reported sexual assault incidents among military service members in 2005.[16] Sexual assault cases among service members remain far too frequent and warrant greater attention and support against this growing epidemic. Accordingly, the VA continues to uphold MST victim rehabilitation among its top priorities for its enrolled patient population.

PTSD by another name

PTSD has traditionally been classified as an anxiety disorder, however, this classification did not come about until the year 1980 when PTSD first appeared in the third edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-3). Although PTSD was a new phenomenon at the time, PTSD has been known for a long time as a war disorder with different names throughout history. In the Civil War era, PTSD was known as DaCosta's syndrome, by which it was described as a cardiac disorder.[17] In the South African War (1899-1902), British service members were diagnosed with "disordered action of the heart."[18] In the First World War, the prominent label was shell shock, and in the Second World War, battle exhaustion. In Vietnam, it came to be known as combat fatigue, and included symptoms of irritability, panic attacks, and disturbed sleep.[19]

Pathophysiology

PTSD is closely associated with the limbic system, a group of forebrain structures including the hippocampus and amygdala, which primary functions are to govern human emotions.[20] When a person is exposed to a traumatic event they experience a "fight or flight" response, which originates in the sympathetic nervous system. The amygdala in the limbic system activates the SNS in order to produce higher levels of neurotransmitters (i.e., epinephrine, norepinephrine and dopamine). These neurotransmitters are charged with facilitating certain physical reactions, such as: constricting blood vessels, increasing heart rate, and dilating pupils. In addition to signaling the activation of neurotransmitters, the amygdala will communicate this response to the hippocampus, which will then form long-term memories associated with the event.

Clinical symptoms of PTSD

The clinical symptoms of PTSD include a hallmark triad of symptom clusters, including: intrusive recollection (re-experiencing), avoidance/ numbing, and increased arousal (hyper-vigilance).[21] The first symptom cluster, "re-experiencing," includes symptoms of flashbacks, bad dreams, and/ or frightening thoughts.[22] The next symptom cluster, "avoidance/ emotional numbing," includes symptoms of social detachment (i.e., avoiding places, events, or objects that may trigger memories of the traumatic experience). Furthermore, this symptom cluster includes feeling emotionally numb, guilty, depressed, and/ or worried; losing interest in hobbies or activities that were enjoyable in the past; and, having difficulty remembering the traumatic event. The final symptom cluster, "hyper-vigilance," includes being easily startled, feeling anxious, having trouble sleeping, and/or experiencing angry outbursts. Altogether, these symptom clusters serve as a significant barrier to perform the most basic tasks, such as grocery shopping, reading, or sleeping. It is important to note that many of these symptoms are typical following a traumatic event and may last for a short amount of time, which would be acute stress disorder; however, when the symptoms become chronic the individual may then develop PTSD.

PTSD treatment

There are various therapies available for treating PTSD. As noted earlier, the preferred method of treatment for patients with PTSD receiving care in the VA healthcare system is Cognitive-Behavioural Therapy (CBT), which is a form of individualised counselling. The two most common forms of CBT offered at a VA medical centre include: 1) Cognitive Processing Therapy (CPT), and 2) Prolonged Exposure (PE) therapy.

Originally developed for victims of sexual assault, CPT has shown promising treatment results in persons diagnosed with PTSD. The goal in CPT is to help the patient change his/ her outlook regarding their traumatic experience. In CPT a therapist will counsel their patient in identifying and replacing thoughts which cause additional stress, with less distressing thoughts that reduce certain emotions such as guilt, anxiety, and anger. This form of counselling benefits patients by offering a healthier alternative way to think about their past trauma, gaining greater understanding while minimising their avoidance and frustration, which is typically associated with thoughts of which it was previously too difficult for patients to make sense. CPT is composed of four main stages that take place over 12 sessions and last 50-minutes each. The first stage is to educate the patient about PTSD symptoms and treatments. The second stage is to help the patient become more aware of the relationship their thoughts share with emotions. After identifying and isolating negative thoughts, patients learn new skills on how to counter these thoughts with questions. While using worksheets, patients outline how they would like to think and feel about their past trauma. The last stage in CPT is to understand changes in beliefs. For example, trauma victims typically experience changes in how they view trust, self-esteem, and safety. CPT helps patients reconnect with beliefs held prior to their traumatic experience.

The goal of Prolonged Exposure (PE) is to help patients lessen the impact of traumatic memories. Therapists accomplish this through assisting patients in repeatedly visiting their upsetting memories to decrease the fear they have associated with those memories. PE has four main stages and the counselling sessions run 90 minutes in length for 8 to 15 meetings. Similar to CPT, the first stage of PE is to educate the patient on PTSD symptoms and treatments. The second stage is to promote relaxation by training the patient to control their breathing while recalling memories that may cause fear. The third stage is real-world practice, which allows the patient to confront situations they may have been avoiding out of fear related to their traumatic experience. For example, a veteran who has witnessed a suicide bombing in a marketplace may try to visit a grocery store. Likewise, a victim of MST committed by a peer may practise meeting new people and forming relationships with them. The last stage of PE is to practice talking through the trauma. By conversing over the personally held traumatic experience, the patient is able to improve the management of his/ her thoughts and feelings, thus reducing their level of stress.

Mental health issues associated with PTSD

The triad symptom clusters of PTSD often foster a myriad of self-destructive mental health issues, which merit great concern. These mental health issues include the following: depression, aggression, memory loss, substance abuse, alcohol misuse, sleep impairment, sexual dysfunction, social detachment, unemployment, divorce, homelessness, incarceration, suicidal ideation, and possibly, suicide.[23-26] PTSD risk factors for suicide are discussed next.

PTSD Risk Factors for Suicide

In the United States, suicide is the leading cause of non-accidental injury related to death, and in 2009, has accounted for more than 30,000 deaths.[27-28] Suicide committed by veterans accounts for 20 percent of those suicides committed in the U.S.[29] Numerous studies have shown a correlation between PTSD and increased rates of suicide 30.

Homelessness is among the many PTSD risk factors for suicide.[31] Veterans make up one out of every four individuals in the homeless population, and those with PTSD are more likely to experience homelessness.[32] The majority of these veterans completed high school and received an honourable discharge, yet even more veterans struggle to make monthly rent payments which places them at greater risk for homelessness. Although female veteran homelessness is small in comparison to male veteran homelessness (3% vs. 97%), female veteran homelessness exists as a particular area of concern. According to the Substance Abuse and Mental Health Services Administration, when compared with females in the general population, female veterans are four times more likely to experience homelessness.[33]

In addition to homelessness, incarceration stands as another PTSD risk factor associated with suicide.[34] Veterans comprise nearly 10% of the inmate population, and one study has shown that incarcerated veterans are at greater risk for committing suicide when compared to being a veteran or incarcerated alone.[35] Recognising that

there is an association between poor veteran mental health and increased risk for committing criminal offences, special veterans courts have been formed. Although this may be a closer step toward improving the health outcomes for veterans, there remains a greater need for more effective treatment to be made available if the incarcerated veteran population is going to be rehabilitated.

Divorce is another PTSD risk factor for suicide. One study found divorced persons to be at higher risk for suicide than married persons (more than twice as likely).[36] While it is still unclear if military marriages face higher divorce rates than the general population, there is clear evidence of military service members with PTSD experiencing higher rates of divorce than those without PTSD.[37] Kudler found that veterans with PTSD were twice as likely as veterans without PTSD to not only experience divorce, but also experience multiple divorces.[38]

Unemployment is also a significant PTSD risk factor for suicide. In a 20-year prospective study of psychiatric outpatients, unemployment was found to be a significant risk factor for suicide.[39] Smith, Schnurr and Rosenheck found that Vietnam veterans with PTSD were more likely to work either part-time or not at all, and this occurrence became more prevalent as PTSD symptom severity rose.[40] These findings also suggest that even a slight improvement in PTSD symptoms could lead to healthier employment outcomes.

All of the aforementioned risk factors represent an alarming failure for veterans to successfully reintegrate into civilian life and experience a good quality of life. Of course having any one of these risk factors does not inherently mean a veteran will commit suicide, however, it is obvious that they would be placed at higher risk. Considering the range of negative consequences PTSD has on the veteran population, there is an overwhelming need for additional help. This additional help comes in the form of art therapy.

Art Therapy Sessions and Activities.

A typical session of art therapy includes three segments. In the beginning, time is allotted for participants to "check in," which establishes an emotional starting point for participants.[41] The middle segment generally includes an "artistic prompt" where participants are actively involved in producing artwork. The end segment is intended to "wrap up" by sharing meaningful dialogue regarding the artwork. There are various activities involved in the application of art therapy, several of which are described below. Although art therapy may derive from a variety of activities, it is important to keep in mind that the purpose of healing is not lost, it is simply approached from different avenues.

One of the most popular activities in art therapy is drawing. This activity may be conducted in different ways using different guidelines; however the premise is for participants to draw pictures expressing their inner thoughts and then share dialogue describing their artistic depictions. Another widespread activity found in the use of art therapy is photography. This activity may also be seen taking place in many different ways using different guidelines. Essentially, photo art therapy gives visual form to personal feelings by capturing meaningful precise moments in the activities of participants' daily lives. In addition to these activities used in art therapy there are numerous others available, including: painting, poetry, dance, instrumentals, vocals, songwriting, acting, quilting, crocheting, and sculpting, just to name a few.

Art therapy and PTSD outside of the US

It is important to note that art therapy and PTSD are not unique to the US or this generation of soldier. Art therapy and PTSD have existed for decades in research and practice, with a great deal of work having been pioneered in the UK. Consequently, researchers across the globe are achieving great inroads in examining and innovating the practice of art therapy among military veterans.

Adrian Hill, a British soldier, artist and author, first coined the term "art therapy" in 1942 following his service in World War I as an official war artist on the Western Front.[42] Hill's work emphasised art-making itself as healing, which has greatly influenced the development of various art therapy models, and stands in contrast to Margaret Naumberg's psychodynamic approach, where the central focus of understanding artwork is a result of the relationship between the client and therapist.[43] There are several noteworthy organisations in the UK that support wounded soldiers, two of which are mentioned next.

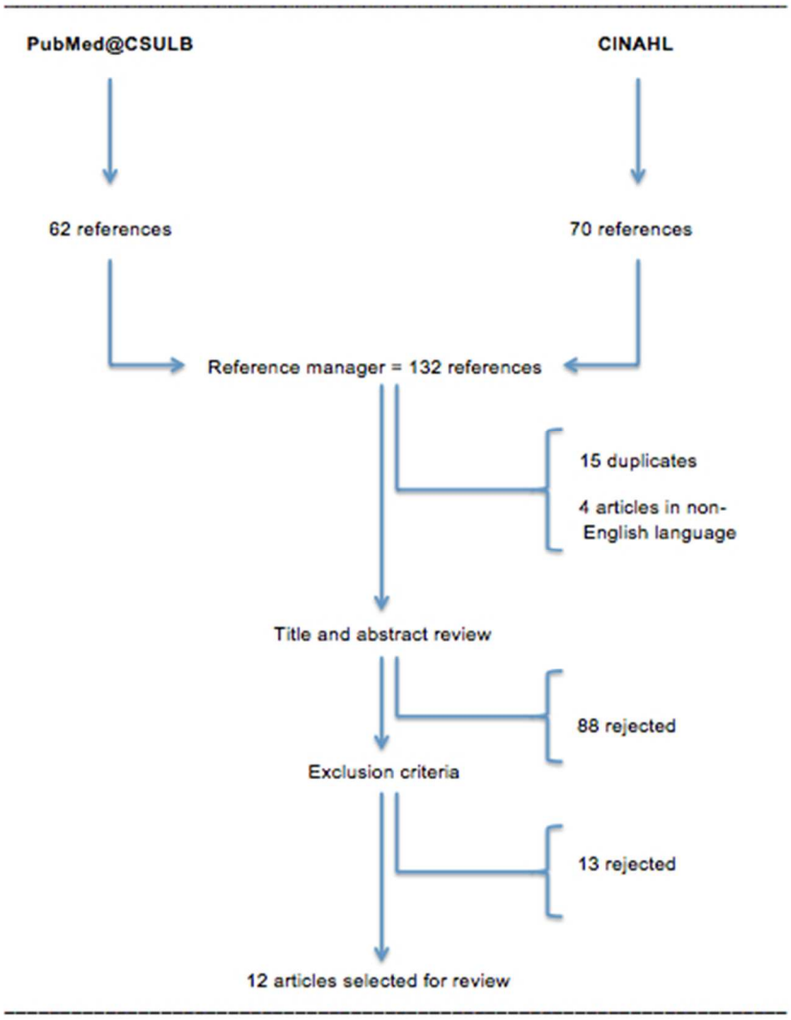
Founded in 1919, Combat Stress is a charitable organisation that works to provide timely, effective clinical treatment and welfare support to veterans who suffer from PTSD.[44] Help for Heroes (H4H), is a military charity founded in 2007.[45] H4H provides individual and family support for wounded soldiers with state-of-the-art recovery centres. Each of these organisations has received national acclaim for their efforts in supporting veterans with PTSD.

Methods

This comprehensive in-depth literature review was guided using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement. An electronic literature search of databases was conducted using CINAHL and an enhanced version of PubMed, named Pubmed@ CSULB. Relevant journal articles reflecting the use of art therapy among persons with PTSD were identified from each database. Papers containing the terms "art therapy" and "post traumatic stress disorder" as subject headings were identified and used as inclusion criteria for our review. This broad approach was necessary, given the dearth of existing research covering the use of art therapy among persons with PTSD, especially when applied to the veteran population. No preference was given to studies that emphasised qualitative or quantitative research methodology – both were selected. In addition, papers published in "English only" were selected, and there were no restrictions on publication date or status. The literature search identified 132 references (Figure 1).

There were 14 references found present in both of the database searches, as well as one duplicate reference found in the PubMed database search, which lead to 15 of the 132 references being excluded because of duplication. Also, four references were excluded for being in a non-English language. A total of 113 references then had their titles and abstracts reviewed for relevance, 88 of which were rejected as these studies were unrelated and primarily involved the use of antiretroviral therapy (ART), which is a combination of medications used to suppress the HIV virus and stop the progression of HIV disease. Afterwards, an additional 13 references were rejected which included case studies, reviews, and recommendations showing no data, as well as papers where art therapy was not the central treatment or focus. Only 12 articles met our criteria and were selected for review.

Figure 1. Selection of Articles in the Databases



Results

Although art therapy has been more widely researched among other populations (i.e., abuse and disaster survivor populations), there were several articles found which support art therapy's success in producing positive health outcomes for veterans of military service (Table 1). The majority of these articles suggest that through the practice of art therapy, patients with PTSD experienced at least three significant outcomes: 1) the ability to express thoughts which could not previously be verbalised, 2) improved social relationships which led to reduced social detachment, and 3) a general reduction in re-experiencing, hyper-vigilance and avoidance/ emotional numbing symptom clusters with notable improvements in experiencing less anxiety, being able to control intrusive thoughts, and feeling less emotionally numb. All relevant studies are summarised in Table 1 and listed in order by category, based on type of trauma, including: war veterans; serious medical condition; war/ conflict survivor or refugee; disaster survivor; sexual abuse; mixed types of trauma; and lastly, physical injury.

Table 1. Articles on Art Therapy and Post-Traumatic Stress Disorder

Author(s) & Title	Journal	Type of trauma	Main results
Kopytin, A., & Lebedev, A. (2013). Humor, Self-Attitude, Emotions, and Cognitions in Group Art Therapy With War Veterans.	Art Therapy, 30(1), 20-29.	War veterans	112 war veterans received treatment for PTSD and were randomly assigned between an experimental group (art therapy) and control group. Increased humor and creative problem solving, and self-esteem were found among the experimental group.
Rademaker, A. R., Vermetten, E., & Kleber, R. J. (2009). Multimodal exposure-based group treatment for peacekeepers with PTSD: A preliminary evaluation.	Military Psychology, 21(4), 482-496.	War veterans	A series of multimodal exposure-based group treatments was conducted on a sample of UN peacekeeping veterans diagnosed with PTSD. The exposure-based multimodal group treatment in this study revealed a reduction in PTSD and associated symptoms.
Forzoni, S., Perez, M., Martignetti, A., & Crispino, S. (2010). Art therapy with cancer patients during chemotherapy sessions: An analysis of the patients' perception of helpfulness.	Palliative and Supportive Care, 8(1), 41-48.	Serious medical condition	A study of 54 cancer patients receiving art therapy revealed 1) art therapy was perceived as generally helpful (37.3%), 2) art therapy was perceived as helpful because of the dyadic relationship (33.3%), 3) art therapy was perceived as helpful because of the triadic relationship, patient-image-art therapist (29.4%).
Goodsmith, L. (2007). Beyond where it started: a look at the "Healing Images" experience.	Torture: Quarterly Journal on Rehabilitation of Torture Victims and Prevention of Torture, 17(3), 222-232.	War/conflict survivors and refugees	A group of conflict refugees participated in an eight-week digital photography therapy program. All of the group participants strongly supported expansion of the treatment program.
Baker, B. A. (2006). Art speaks in healing survivors of war: The use of art therapy in treating trauma survivors.	Journal of Aggression, Maltreatment & Trauma, 12(1-2), 183-198.	War/conflict survivors and refugees	Bosnian refugees participated in an art therapy program for a period of five years. This study demonstrated an increase in participants' social interactions, thus reducing isolation.

Chilcote, R. L. (2007). Art therapy with child tsunami survivors in Sri Lanka.	Art Therapy, 24(4), 156-162.	Disaster survivors	A four-week art therapy treatment series was administered to a group of 113 children who had survived the December 2004 tsunami in Sri Lanka. This study found that the Sri Lanka tsunami survivors were able to work through their intrusive thoughts and express their trauma and pain (not previously verbalized) in artwork.
Pifalo, T. (2006). Art therapy with sexually abused children and adolescents: Extended research study.	Art Therapy, 23(4), 181-185.	Sexual abuse	A group of sexually abused children diagnosed with PTSD underwent an eight-week treatment series of art therapy and CBT. This study found a significant reduction in PTSD symptoms among the sexually abused children.
Allen, K. N., & Wozniak, D. F. (2010). The language of healing: Women's voices in healing and recovering from domestic violence.	Social Work in Mental Health, 9(1), 37-55.	Sexual abuse	A statistically significant reduction in PTSD symptoms was noted, including: intrusive/re-experiencing thoughts, avoidance/numbing, and hyper-vigilance.
McMackin, R. A., Leisen, M. B., Sattler, L., Krinsley, K., & Riggs, D. S. (2002). Preliminary development of trauma-focused treatment groups for incarcerated juvenile offenders.	Journal of Aggression, Maltreatment & Trauma, 6(1), 175-199.	Mixed types of trauma	Participants of this study reported increased understanding of their trauma experience and how it influenced their criminal behavior, particularly their use of violence and substance abuse.
Lyshak-Stelzer, F., Singer, P., St. John, P., & Chemtob, C. M. (2007). Art therapy for adolescents with posttraumatic stress disorder symptoms: A pilot study.	Journal of the American Art Therapy Association, 24(4), 163-169.	Mixed types of trauma	In a study conducted in the Greater New York metropolitan area, 29 adolescents were separated into two treatment groups: treatment-as-usual (TAU) group, and the trauma-focused art therapy (TF-ART) group. The TF-ART group experienced a significant reduction in PTSD symptoms.
Schreier, H., Ladakakos, C., Morabito, D., Chapman, L., & Knudson, M. M. (2005). Posttraumatic stress symptoms in children after mild to moderate pediatric trauma: A longitudinal examination of symptom prevalence, correlates, and parent-child symptom reporting.	The Journal of Trauma and Acute Care Surgery, 58(2), 353-363.	Physical injury	Children with PTSD as a result of physical injury underwent a single-session of art therapy. After a follow-up period of 1, 6, and 18 months, results showed no sustained effects on the reduction of PTSD symptoms.

Chapman, L., Morabito, D., Ladakakos, C., Schreier, H., & Knudson, M. M. (2001). The effectiveness of art therapy interventions in reducing post traumatic stress disorder (PTSD) symptoms in pediatric trauma preliminary evaluation.	Art Therapy, 18(2), 100-104.	Physical injury	A study of children with PTSD receiving the Chapman Art Therapy Treatment Intervention (CATTI) found no difference in reduction of PTSD symptoms between the experimental and control groups. However, a reduction in acute stress symptoms was noted.

Discussion

The overwhelming majority of studies included in this review suggest that patients receiving art therapy as treatment for PTSD experienced positive health outcomes. It is important to point out that the only studies with no significant differences were also the only studies of the review that were 1) physical injury trauma types, and 2) used a one-time only art therapy session, rather than multiple sessions, as the other studies had. Each study is discussed next.

War veterans. The first two studies listed in Table 1 specifically include war veterans as their sample population. Kopytin and Lebedev conducted a study on 112 male and female war veterans being treated for PTSD.[46] These veterans were randomly assigned between a control group and an experimental group, which lasted 12 – 14 sessions. Results showed that the experimental group experienced increased humour and creative problem solving as well as improved self-esteem.

Rademaker et al. conducted the next study on war veterans. Rademaker et al. retrospectively collected data from 22 male veterans with PTSD, who had served as UN peacekeepers from August 2003 to March 2006.[47] A series of multimodal exposure-based group treatments, which included creative arts therapy, was conducted. While using exposure-based multimodal group treatment this study revealed a reduction in PTSD symptoms among veterans.

Serious medical condition. Forzoni et al.[48] conducted a study of 54 patients diagnosed with PTSD and a serious medical condition (cancer) to find out if patients with PTSD perceived art therapy as helpful and in which way art therapy was perceived helpful. Their findings revealed: 1) art therapy was perceived as generally helpful, 2) art therapy was perceived as helpful because of the dyadic relationship, and 3) art therapy was perceived as helpful because of the triadic relationship, patient-image-art therapist.

War/ conflict survivors and refugees. Two of the studies addressed art therapy use among war/ conflict survivors and refugees with PTSD. Goodsmith published a paper on conflict refugees participating in an eight-week digital photography therapy program called "Healing Images."[49] These refugees had suffered different types of torture (i.e., burns, rape, and forced positions). After their participation in the digital photography program, all of the group participants strongly recommended expansion of the program. In addition, there was overwhelming agreement that their experience was caring and allowed for self-discovery.

Baker conducted a separate study on Bosnian refugees participating in an art therapy program, which lasted over a period of five years 50. All subjects were separated into male and female groups and were above the age of 55. While the male group completed artwork such as: drawing, painting, and sculpting, the female group used embroidery, needlepoint, crochet, knitting, needle-lace, and quilting. Each art project was followed up with discussion. The results of this study demonstrated an increase in participants' social interactions, thus reducing avoidance symptoms.

Disaster survivor. Chilcote conducted a four-week art therapy treatment series to a group of 113 female children, ages 5 to 13, who had survived the December 2004 tsunami in Sri Lanka 51. All subjects had experienced either the loss of a loved one, damage or loss of home, and/ or witnessed the tsunami. The art activities in the treatment series included using basic supplies of white copy paper, pencils, watercolor paint sets, and washable markers to produce drawings and paintings related to their traumatic experiences. This study found that the Sri Lanka tsunami survivors were able to work through their intrusive thoughts and express their trauma and pain, which they had not previously been able to verbalise.

Sexual abuse. Pifalo conducted a study on a group

of sexually abused children, ages 8 to 16, who were diagnosed with PTSD.[52] Subjects of this study underwent an eight-week treatment series consisting of art therapy and CBT. While analysing results from the pre- and post-test treatment Trauma Symptom Checklist for Children, this study found a significant reduction in PTSD symptoms, including: anxiety, depression, anger, posttraumatic stress, dissociation, dissociation-overt, sexual concerns, sexual preoccupation, and sexual distress.

Allen and Wozniak conducted a study on a group of 11 women recruited through domestic violence agencies.[53] Using the PTSD checklist, a statistically significant reduction in PTSD symptoms was noted in 8 of the 17 items, including: repeated, disturbing memories or thought; reliving stressful experience; avoid thoughts/ feelings related to stressful experience; feeling emotionally numb; feeling as if the future will be cut short; trouble sleeping; and, feeling easily startled.

Mixed traumas. Two studies focused on art therapy among patients with different traumas leading to PTSD. McMackin et al. examined incarcerated juvenile offenders with PTSD participating in a group therapy program.[54] The types of trauma varied among the sample population (i.e., physical and or sexual abuse, witnessing severe injury, etc.). The program lasted from 10-12 weeks and each session included either an art activity or discussion. Following the program, participants reported increased understanding of their trauma experience and how it influenced their criminal behavior, particularly their use of violence and substance abuse.

In the second study, Lyshak-Stelzer et al. examined the efficacy of trauma-focussed art therapy among adolescents with PTSD.[55] Twenty-nine adolescents in the Greater New York metropolitan area were separated into two treatment groups: treatment-as-usual (TAU) group, and the trauma-focused art therapy (TF-ART) group. The TF-ART group met for 16 sessions and each participant completed at least 13 drawings. The TAU group also met for 16 sessions, however discussion was the focus for 14 of the sessions and arts and crafts were included in two of the sessions. Although both treatment groups exhibited improvement, the TF-ART group experienced a significant reduction in PTSD symptoms.

Physical injury. Only two of the 12 studies reviewed showed no significant difference in reducing PTSD symptom severity. The first study conducted by Schreier et al. examined children with PTSD as a result of physical injury, all of whom underwent a single-session of art therapy.[56] After a follow-up period of 1, 6 and 18 months, results showed no sustained effects on the reduction of PTSD symptoms.

The second study was a prospective, randomised cohort design conducted by Chapman et al.[57] This study included 85 children, ages 7 to 17, who were admitted to a Level 1 Trauma centre for injuries. In addition to receiving medical care for sustained injuries, subjects were assigned to a control group and an experimental group. The experimental group participated in the Chapman Art Therapy Treatment Intervention (CATTI). This study found no difference in reduction of PTSD symptoms between the experimental and control groups, however it is important to note that a reduction in acute stress symptoms was found.

Limitations

Although the aims of this study had been reached, there were several limitations. First, this study was primarily limited by its small sample size. To more accurately generalise the results of this study, the sample size could have been expanded to include more than two electronic databases for searching articles. An earlier start in data collection would have increased the amount of time needed to search through additional electronic databases. Second, as further research on PTSD has been taking place, the classification and criteria used to diagnose PTSD have recently changed, which may influence the findings of this study and other similar studies. Since it was first introduced into the DSM-3 in 1980, PTSD has been classified as an anxiety disorder, however in the DSM-5 released in May of 2013, PTSD has been reclassified as a trauma and stressor-related disorder. Moreover, in what have traditionally been known as the triad symptom clusters: re-experiencing, avoidance/ emotional numbing, and hyper-vigilance, the DSM-5 splits the clusters, adding a fourth named negative cognitions and mood.[58] Also, it is important to note that sexual assault is newly included in the DSM-5 as diagnostic criteria for PTSD. Third, it is unavoidable that in this study, a certain degree of subjectivity can be found. An increased number of experienced researchers commissioned to independently and systematically review the studies would have offered more objectivity, and thus have benefited the results of this study.

Conclusion

Challenges of military service should be met with a supportive culture that is open to implementing art therapy as a treatment modality in addition to current evidence-based practices. This review suggests that if current service members and veterans were placed

into art therapy programs as early as possible after being diagnosed with PTSD, they would be at less risk for developing greater PTSD symptom severity. The preferred method of treatment for patients with PTSD receiving care in the VA healthcare system is CBT, however, since CBT is effective in treating only two of the three symptom clusters, it is an incomplete care package. Given the effectiveness art therapy has in treating the third symptom cluster, it is not meant to replace CBT, but rather it is meant to be offered in addition to CBT in order to produce a more comprehensive care package for past and present service members with PTSD.

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