

Research Article

Evaluation of long- and short-term art therapy interventions in an integrative care setting for military service members with post-traumatic stress and traumatic brain injury

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ABSTRACT

Background: Program evaluations can serve as a doorway to research in the creative arts therapies. This study provides findings from analyses of participant feedback on short- and long-term art therapy services for military service members with post-traumatic stress and traumatic brain injury (TBI).

Methods: Data for the study included feedback surveys from 204 service members who received art therapy services as part of treatment at an integrative care setting.

Results: The results indicate that long-term art therapy resulted in higher satisfaction with treatment. Art therapy helped most with developing a sense of self after injury, experiencing positive emotions, processing trauma, and reducing feelings of guilt, grief, and loss. There were no statistically significant differences in outcomes based on rank or severity of TBI, but art therapy services were found to be related to improved symptoms for service members with longer times in service.

Implications: The feedback from evaluation helps identify potential areas for further research on how art therapy addresses issues of identity, time in service and experiences of emotions as a result of post-traumatic stress and TBI. Evaluation provides directions for further clinical treatment, and yields data on improving quality of care.

Introduction

Of the 2.7 million American military service members deployed worldwide since 2001, around 20% have reportedly been affected by post-traumatic stress disorder (PTSD) and 12–22% have a diagnosis of mostly mild (82.3%) traumatic brain injury (TBI) (Defense & Veterans Brain Injury Center, 2017; Dolan et al., 2012; Summerall, 2017; U.S. Government Accountability Office, 2011). According to Tanielian et al. (2008), approximately one-third of veterans who report a TBI also experience PTSD symptoms. More precisely, TBIs sustained during deployment tend to precede the development of PTSD symptoms (Yurgil et al., 2014). When these debilitating and complex conditions co-occur, their effects, including anxiety, depression, cognitive deficits, irritability, sleep disruptions, and embodied memory experiences, are exacerbated (Bahraini et al., 2014; Kroch, 2009). In addition, demographic characteristics like time in the service, multiple deployments (Kline et al., 2010; Reger, Gahm, Swanson, & Duma, 2009), race/

ethnicity (Coleman, 2016), and rank and branch (for example, officer or enlisted military service member [SM]) (Baker et al., 2009; Ramchand et al., 2010) have been associated with severity of symptoms. Moreover, other long-term psychiatric consequences, such as substance abuse disorders and aggressive behaviors, often ensue and complicate the adjustment to life after combat (Walker, Kaimal, Koffman, & DeGraba, 2016).

The treatment of PTSD is challenging because trauma memories are not organized as coherent narratives, but rather through images, sounds, and physical sensations (Van der Kolk, 2014). When words are not available, trauma may be accessed through sensory processes, including movement, music, and art (Malchiodi, 2014). Art therapy is becoming an increasingly acknowledged type of psychotherapeutic care for SMs with PTSD (Collie, Backos, Malchiodi, & Spiegel, 2006; Nanda, Gaydos, Hathron, & Watkins, 2010) and/or TBI (Pachalska et al., 2013; Walker et al., 2016). This profession creatively and flexibly supports clients with TBI in their emotional expression, communication, and

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adjustment to mental and physical disabilities (Barker & Brunk, 1991; Dodd, 1975; Lazarus-Leff, 2013). In a safe environment and through the use of arts media, clients can externalize fragmented memories, channel and thus manage overwhelming feelings, and find ways to work through guilt and trauma (Collie et al., 2006; Malchiodi, 2012). More specifically, the trauma may be re-experienced and emotionally processed through visual art, which provides a way to symbolically represent trauma and injury before verbal processing and without the threat (Golub, 1985). The visible depiction of internal psychological states allows clients to distance themselves and develop coping strategies (Chambala, 2008). Furthermore, according to Collie et al. (2006), art therapy is particularly valuable for the treatment of challenging symptoms of combat-related PTSD, such as avoidance and emotional issues. The art medium offers a relaxing, enjoyable, and meditative process (Collie et al., 2006), which allows SMs to settle and to gradually and progressively express themselves. In a group setting, clients can share in front of others, which may improve self-esteem and assist in socialization, relational bonding, and communication (Collie et al., 2006; Jones, Walker, Drass, & Kaimal, 2017). In individual treatment sessions, they may explore their personal goals through tailored interventions (Jones et al., 2017; Walker, 2017).

One promising art therapy approach with SMs is mask making (Fiet, 2014; Jones et al., 2017; Kopytin & Lebedev, 2013; Sargent, Campbell, Richter, McLay, & Koffman, 2013; Walker, Kaimal, Gonzaga, Myers-Coffman, & DeGraba, 2017). “Trauma masks” can help communicate the consequences of combat-related trauma and thus build self-efficacy and a coherent sense of self (Sargent et al., 2013). They further provide an internal focus and a safe externalized representation (Jones et al., 2017; Walker, 2017). Service members’ challenges, struggles, and invisible wounds can thus be visualized through the masks (Jones et al., 2017; Lobban, 2014). Montage paintings are another beneficial art therapy intervention with this population. Through a layered and non-linear account that often includes depictions of the past, present, and future, clients can integrate their experiences and express their thoughts and feelings in one space (Jones et al., 2017; Walker, 2017).

Program evaluation in art therapy

Program evaluations influence the improvement of clinical and research practice as well as give insight about patient perspectives (Brady, Moss, & Kelly, 2017; Feen-Calligan & Nevedal, 2008; Kaimal & Blank, 2015). There are only a few evaluations of art therapy programs in the mental health arena, yet the need for such studies is critical because they can stimulate interest in research programs that connect theory and practice (Kaimal & Blank, 2015) and offer evidence-based outcomes for the field of art therapy (Feen-Calligan & Nevedal, 2008). In addition, consistent gathering of program evaluation data and sharing findings can help art therapists implement evidence-based practice and advocate for art therapy services to patients and clients they serve (Jones et al., 2017).

Art therapy has been evaluated for refugee youth (Rowe et al., 2017), people living with HIV and AIDS (Feldman, Betts, & Blausey, 2014), pediatric cancer patients (Cowell, Herron, & Hockenberry, 2011), undergraduate Ukrainian students (Van Lith, Bullock, Horbal, & Lvov, 2017), children in a Head Start program (Klorer & Robb, 2012), and adult psychiatric patients (Brady et al., 2017). Researchers found that art therapy had positive effects: Brady et al. (2017) noted an association between art therapy and improvement in quality of life and individual support. They also learned that it was indicated for those who had difficulty verbalizing (Brady et al., 2017). Klorer and Robb (2012) found that art therapy positively affected verbal communication, impulse control, interaction with peers, attention span, and self-esteem. Markedly missing in the literature is a long-term evaluation of the specific contributions of art therapy in an integrative outpatient care setting for service members with TBI and PTSD. The aim of this study was therefore to systematically evaluate an art therapy program

with veterans through both quantitative and qualitative measures.

Study context

The context for this study was a long-term art therapy program in an outpatient integrative medical care facility, the Intrepid Spirit One (ISO) at Fort Belvoir Community Hospital in Northern Virginia, a satellite center of the National Intrepid Center of Excellence at Walter Reed National Military Medical Center in Bethesda, Maryland. Both active and retired SMs living and working at the military base or in the surrounding community can enter this outpatient center, where they are evaluated by physicians and referred to art therapy based on their treatment goals. The second author was the lead art therapist at this site and all data were collected during her tenure there.

SMs are originally referred to the clinic by their primary care providers when they are suspected of having symptoms indicative of a TBI. The SMs then undergo a series of evaluations to determine whether they in fact have symptoms of TBI. Depending on the results, SMs may be referred to receive interdisciplinary outpatient treatment at the ISO clinic. Each SM’s treatment plan is designed by the clinical team on an individual basis to meet the unique needs of the patient. Once an SM is engaged in interdisciplinary treatment, he/she may be referred to art therapy as part of the treatment plan. SMs may be referred to art therapy specifically when providers and the SM feel certain goals need to be addressed including: improving connection between mind and body, improving emotional regulation, decreasing anger and irritability, gaining insight into what is specifically underlying one’s triggers for trauma-related hyperarousal or reactivity, trauma processing, grief and loss processing, improving sleep disturbed by nightmares, support through transitions, improving sense of self and issues related to identity.

Once referred to art therapy, the SM is enrolled in a level 1 group, a series that is designed as an introduction to the use of process-oriented art making for self-exploration and self-expression within a group setting to address feelings of isolation and to improve empathy for self and others. The level 1 series comprises three group sessions and is followed by a one-on-one session with the art therapist where the individual’s experience in level 1 is discussed, as are his or her goals for the overall treatment and the identification of goals that would best be addressed through art therapy. Most SMs continue on to a level 2 group to go further beneath the surface for a six-week series that presents them with more pointed project directives that enable them to explore the effects of their experiences on who they are, to identify who they would like to be, and how to achieve that. Most SMs dive deeper into grief and loss and soul searching. After the level 2 group, SMs meet again one on one with the art therapist. After completing level 2, they are able to identify clear goals for individual art therapy. Individual art therapy typically focuses on processing grief and loss, specific traumatic events, moral injury, and identity development. SMs who get to a place where they are seeking a creative outlet for the ongoing creation of longer-term self-directed projects may join the open studio group. Here they continue to connect with their community while utilizing art making as an ongoing tool for self-expression. SMs at all stages of clinical art therapy treatment are welcome to attend an open studio pottery workshop offered through a community-based arts organization where they are able to engage in art as therapy that supplements the clinical art therapy they receive in the clinic. Additional details on the levels of therapy, including specific directives used and descriptions of how the art therapy is delivered in structured groups, open groups, and in individual settings, are available in Jones et al. (2017).

Survey A was given on the SM’s first day of level 1. Survey B was given at the end of the last level 1 group session. Survey C was given during the one-on-one session following level 1. Survey D was given on the last day of art therapy treatment if the SM participated in art therapy beyond level 1.

Table 1
Number of surveys completed at each time point.

Survey	Completed number of surveys	Completion Rate (= n/204*100%)
A	152	75%
B	136	67%
C	70	34%
D ^a	66	32%

^a Note Survey D has fewer responses because SMs were still in active treatment and this survey is completed only at completion of treatment.

Methods

Sample

Feedback surveys were available from 204 service members at intake. Thereafter the number of responses varied based on participation on different levels as well as on the completeness of the surveys. The mean time interval between the completion date of questionnaires A and D was 223 days with a range of 46–941 days. The mean time interval between the completion date of questionnaires B and D was 237 days with a range of 25–665 days (Table 1).

Evaluation research questions

The evaluation research questions guiding the study were:

- 1 What are participants' experiences of art therapy sessions overall? What do participants say is most useful about art therapy?
- 2 What do participants perceive as the value of art therapy in an integrative model of care? Will they recommend these services to others? Why? Why not?
- 3 What symptoms are addressed most effectively by art therapy?
- 4 Are there any patterns of perception of art therapy based on demographic features like grade (enlisted person or officer), TBI type, time in service, or number of sessions attended?

Data collection

Data for the evaluation included four surveys. Survey A included demographic and qualitative information on participant perceptions of art therapy at intake. Survey B included feedback surveys from SMs after level 1 group art therapy sessions. Survey C was a qualitative survey focused on patient perspectives and goals. It gathered information in a one-on-one session immediately following the completion of level 1 group sessions. This information guided discussion with the SM to determine whether ongoing art therapy services were appropriate, and if so, what goals should be addressed, and what specific art therapy interventions could be used to address these goals. Survey D was completed at the end of art therapy treatment for SMs who continued beyond level 1. The appendix includes the four surveys and the types of questions asked. The questions were developed in order to learn about the impact of art therapy practice at the site and to improve the quality of care. The surveys include questions about the participants' feedback and perceptions of art therapy treatment. The surveys are customized for the site and do not use any standardized measures. The surveys were administered to the SMs by the art therapist on site.

Completing the art therapy evaluations was built into the standardized way that the art therapy was delivered. Every initial level 1 group began with the completion of Survey A before formal introductions were made and before the introduction to art therapy was provided. At the end of the last session of level 1, time to complete the survey was built into the session. All one-on-one sessions immediately following level 1 groups began with the completion of Survey C to guide the treatment planning discussion. Survey D was given at the end of the all art therapy treatment. On the occasion that there was not enough time

during the session to complete the evaluation, SMs would take the surveys with them to complete and then return to the provider. SMs who missed these specific sessions did not always complete the surveys. We are not aware of any adverse effect on SMs who did not complete the surveys. SMs were asked to complete the feedback forms at the times described, and there was the option to say no and not complete them. There was no negative consequence if an SM did not complete the survey or completely answer all sections. Sometimes SMs would ask how and why the surveys were used and the art therapist responded that the surveys helps her to understand the impact of specific directives for them as unique individuals, to inform program development, and to better understand the impact of art therapy in the interdisciplinary setting. As the surveys were completed, they were immediately reviewed by the art therapist. Surveys A and C were completed at the start of the sessions and reviewed by the provider immediately. Surveys B and D were handed to the art therapist at the end of the session, were reviewed immediately as the information was used to address specific SMs' needs as well as to inform the development of the art therapy program. If any information included on the feedback form was concerning from a clinical perspective, the SM was contacted immediately for clarification/follow up. Information received through the feedback forms was used clinically to formulate treatment plans that would best meet the needs of each SM; to fuel program development, (levels 2 and 3 of treatment were created in response to common responses on the surveys), and retroactively as data for program analysis. For the purposes of the study and data analysis SMs who completed the surveys were assigned a numeric identification number; personally identifiable information (PII) removed, so no names were included in any of the surveys. These de-identified surveys were aggregated for analysis.

Measurements/variables

The data points for demographics included grade (each participant's grade was categorized as enlisted or officer), time in service (TIS, participant's time in military service in years), TBI classification (mild, moderate, severe, or unknown), number of sessions (included five types/options of art therapy that were offered including level 1 group sessions, level 2 group sessions, open studio group sessions, pottery group sessions, and individual appointment sessions). See Table 2. In questionnaire D, participants were asked how many sessions of each type they had received. We also calculated the total number of received sessions as the sum of each type of session. We evaluated the association between the individual and the total number of received sessions with the participants' reports on their changes of symptoms. We calculated the time interval between the date when the initial questionnaire (questionnaire A) was completed and the date when questionnaire B was completed (which was at the end of the level 1 group art therapy session). We also calculated the time interval between the dates when questionnaire A and questionnaire D were completed (which was at the end of the final art therapy session). Feedback on perceptions of art therapy were captured on Likert scales (ranging from 1 to 10). Changes in symptoms were captured using a modified Likert scale. At the end of the entire program (in questionnaire D), participants were asked to rate their symptoms in terms of change due to receiving art therapy. These reported changes were coded on a Likert scale: "significant negative change" was coded as -2; "slight negative change" was coded as -1; "no change" was coded as 0; "slight positive change" was coded as 1; "significant positive change" was coded as 2. Note that survey D has fewer survey responses because many participants who completed surveys A–C were still in ongoing and active treatment and had not therefore completed survey D. The data in this paper are from surveys completed between September 2013 and September 2017.

Table 2
Demographics of participants.

Categories	Responses
<i>TBI Classification</i>	125
Severe	1
Moderate	20
Mild	47
Unknown	57
<i>TBI related to deployment</i>	146
Yes	123
No	23
<i>Branches</i>	158
Army	91
Navy	4
Air Force	8
Marines	52
Other	3
<i>Grade</i>	152
Enlisted	111
Officer	34
Other	7
<i>Time in military service</i>	Mean = 15.52 years (SD = 7.64); n = 132; range = 2–32
<i>Service status</i>	155
Active duty	141
Reserves or retired	11
LOD/ PEB/Reserve	3
<i>Gender</i>	
Female	12
Male	204

TBI: traumatic brain injury; LOD: line of duty; PEB: Physical Evaluation Board; SD: standard deviation.

Data analysis

All completed questionnaires were first de-identified of names and affiliations and digitally copied at Fort Belvoir Community Hospital or through a contracted agency. Participating soldiers who had completed more than one survey were given a numeric identifier and a suffix of a–c, or d, indicating the type of survey. The qualitative and quantitative data from the surveys were entered using EpiData (Version 4.2, EpiData Association, Odense, Denmark), a professional data entry software. For the quantitative data analysis, we described the distribution of participants' responses to each question: We calculated the mean, standard deviation (SD), and range of continuous variables, such as time in service and number of received sessions; we also tabulated the frequencies and proportions of categorical variables, such as grade and TBI classification. Thereafter we conducted associative analyses to evaluate the bivariate associations between the characteristics of the participants with their feedback on the benefit from art therapy and their change in symptoms due to art therapy. These characteristic variables included grade, TBI classification, time in service, number of received art therapy sessions, and time interval between completing questionnaire A and completing questionnaire B/D. We used the chi-square test to assess the association between two categorical variables. Because the distribution of the Likert scales of symptom changes (the coding method was described earlier) was skewed, we used *non-parametric tests* to evaluate which factors were associated with these Likert scales: When the factor was dichotomous (e.g., grade), we used the Wilcoxon test; when the factor was multicategorical (e.g., TBI classification), we used the Kruskal-Wallis test; when the factor was continuous (e.g., time in service), we used the Spearman correlation test. All the analyses were performed using SAS (Version 9.3, SAS Institute, Cary NC USA).

The qualitative data were compiled as they related to the research questions. They were summarized using thematic analysis (Braun & Clarke, 2006) by the lead author and third author. The findings were reviewed jointly and clustered first by survey responses and then by main content related to experiences of art therapy. The themes

indicated that the main contributions of art therapy were the enhanced opportunity it provided to verbalize and express internal states, manage emotions as well as develop interpersonal relationships. The qualitative feedback are included to help explain the quantitative findings as well as to offer insights into how participants perceived art therapy and its unique contributions to their treatment in an integrative care setting.

Results

The results are reported here based on the evaluation research questions. Each question includes quantitative and qualitative responses as appropriate.

What are participants experiences of art therapy sessions overall? What do participants say is most useful about art therapy?

The first survey administered at intake was used to gather SMs' understanding of art therapy. The responses indicate that prior to starting art therapy, SMs had little or no understanding of art therapy services and what goals they might have for art therapy. After completing level 1 group sessions (survey B) and all treatment including individual and open studio art therapy sessions (survey D), participants identified several symptoms addressed by art therapy. Fig. 1 summarizes these findings. As can be seen in Fig. 1, the main areas addressed by art therapy in the initial group sessions were identity and self-expression. However, symptoms like trauma processing, grief and loss, and personal insight were much more prevalent after longer-term art therapy.

After completing the level 1 group art therapy sessions (survey B), several SMs noted that art therapy helped them articulate and express experiences and emotions that had remained unsaid in all other contexts. Many referred to the sessions as being hard at first but then being helpful and revealing. They also referred to reduced feelings of isolation as a result of being in the group sessions with other SMs. Some representative quotes are included below:

“Enlightening, relaxing, positive, different, challenging, digging deep... Relate, others go through same thing, sharing, helped open up, support, different points of view...”

“Expressing not through words, externalizing what's inside, relaxing/calming, freeing, not feeling alone, connect/relate to others, self-discovery, create something, no judgment, outlet, focus, work through pain...”

“Internal insight, reconnect with creativity, think about triggers, cope with events, calms down, better perspective, outlet for stress, open up...”

“I became more expansive in my exploration of my struggles, difficulties, triumphs, improved headaches...”

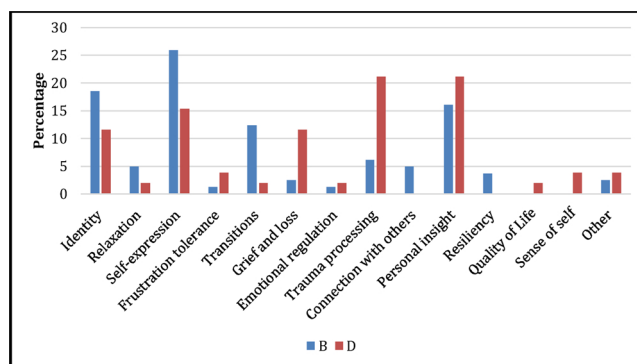


Fig. 1. Main areas addressed by art therapy.
Source: feedback surveys [N = 81 for B, N = 52 for D].

Participants were even more articulate at the end of treatment (survey D); they identified specific emotions, behaviors, and triggers that indicated a deeper understanding of themselves and how to manage their symptoms and interpersonal relationships. Referring to how art therapy helped them, SMs made the following observations:

“Provided a venue/outlet to communicate feelings and memories”

“Yes, it gave me a way to deal with my emotions and the memories of the things that happened to me in a different way... Creativity got the shit of war out.”

“Helped build confidence, identify root causes, cope... I learned to deal with most scenarios of life and learned that hope and will to move on are always there.”

“Slowed process down and gave control to individual, images/visuals are easier than words, no way to avoid, instead confront the uncomfortable. it exposed existing behavioral problems.”

“Distracted in a helpful way, open up more than usual, deep soul-searching experience, tangible shape to experience... It gave me a way to physically see and touch my thoughts.”

“Got things out... I poured all my feeling and emotions out.”

“Would not be in same place without it... Art therapy has drastically changed my life.”

“Power to heal... Should be required for everyone going through combat, improved mood, brings out deeper side.”

What do participants perceive as the value of art therapy in an integrative model of care? Will they recommend these services to others? Why? Why not?

Participants responded to questions about the perceived value of art therapy in an integrative care setting. Overall, the responses were positive. Of the responses, the connection of art therapy to the other healthcare providers was reported to be slightly lower (Fig. 2). As can be seen from Fig. 2, participants were more likely to report benefits from art therapy after the long-term treatment (including individual, group, and open studio sessions) than after the short-term sessions.

Participants were also asked about whether they would refer others to art therapy. Responses from survey B indicate that 95% of participants would refer peers to art therapy (5% said maybe). Responses from survey D indicate that 100% of SMs would refer peers to art therapy.

What symptoms are addressed most effectively by art therapy?

Participants who had completed the surveys at the last time point ($n = 67$) were asked to rate which symptoms were most changed through art therapy. As can be seen in Fig. 3, art therapy was found to have resulted in the most positive changes in sense of self, interest in activities, anger, feeling depressed, ability to experience positive emotions, and feelings of guilt. According to the art therapist on site, SMs reported that some of the symptoms, like sleeplessness, got worse while they were working on trauma processing but got better after the processing was done. They noted that sleeplessness got worse for a period, but many verbally stated that sleeplessness got worse during the work but got better when the work was finished.

Are there any patterns of perception of art therapy based on demographic features like grade (enlisted or officer), type of TBI, time in service, or number of sessions attended?

Perceptions of the usefulness of art therapy services

Associations between demographic variables like grade, time in service, and type of TBI were examined. Gender was not included because women constituted only 5% of the sample, and any differences would be significantly underpowered. There also was no significant difference in any outcome between TBI classifications.

The difference in outcomes by grade

Officers reported more positive feedback than the enlisted SMs when reflecting on short-term experiences in art therapy. In Questionnaire B, the participants were asked to rate the effect of art therapy on their overall treatment on a scale of 1 (=no effect) to 10 (=significant effect). The mean rating score was 8.3 (SD = 1.3) among officers and 7.4 (SD = 1.7) among the enlisted persons; the difference between these two groups was statistically significant (Wilcoxon statistic = 2053, $P = 0.0183$). The participants were also asked to rate their view of the role of art therapy within the interdisciplinary treatment offered on a scale of 1 (=not necessary) to 10 (=essential). The mean score on this scale was 9.2 (SD = 1.1) among officers and 8.1 (SD = 1.9) among the enlisted; the difference between these two groups was statistically significant (Wilcoxon statistic = 2127, $P = 0.0057$). These differences between officers and enlisted service members were not present at the time of survey D.

The association between number of received sessions and outcomes

There was a positive association between the total number of received art therapy sessions and the improvement in two symptoms—guilt and the ability to recall details of events. As the participants

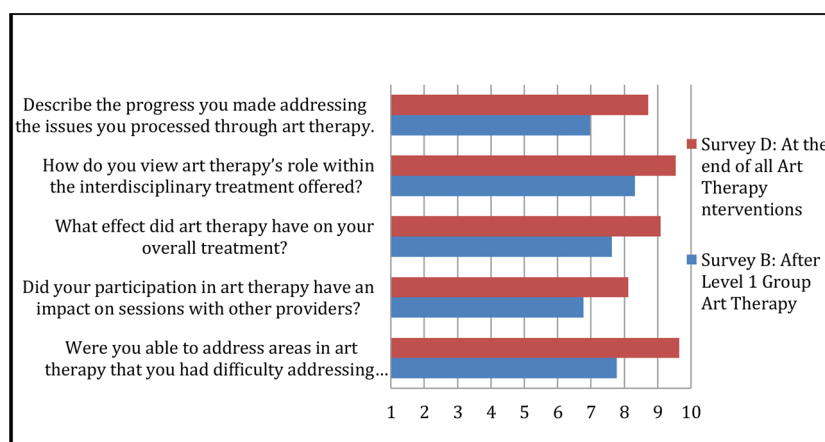


Fig. 2. Perception of art therapy within the integrative care setting. Source: surveys B [$n = 136$] and D [$n = 68$].

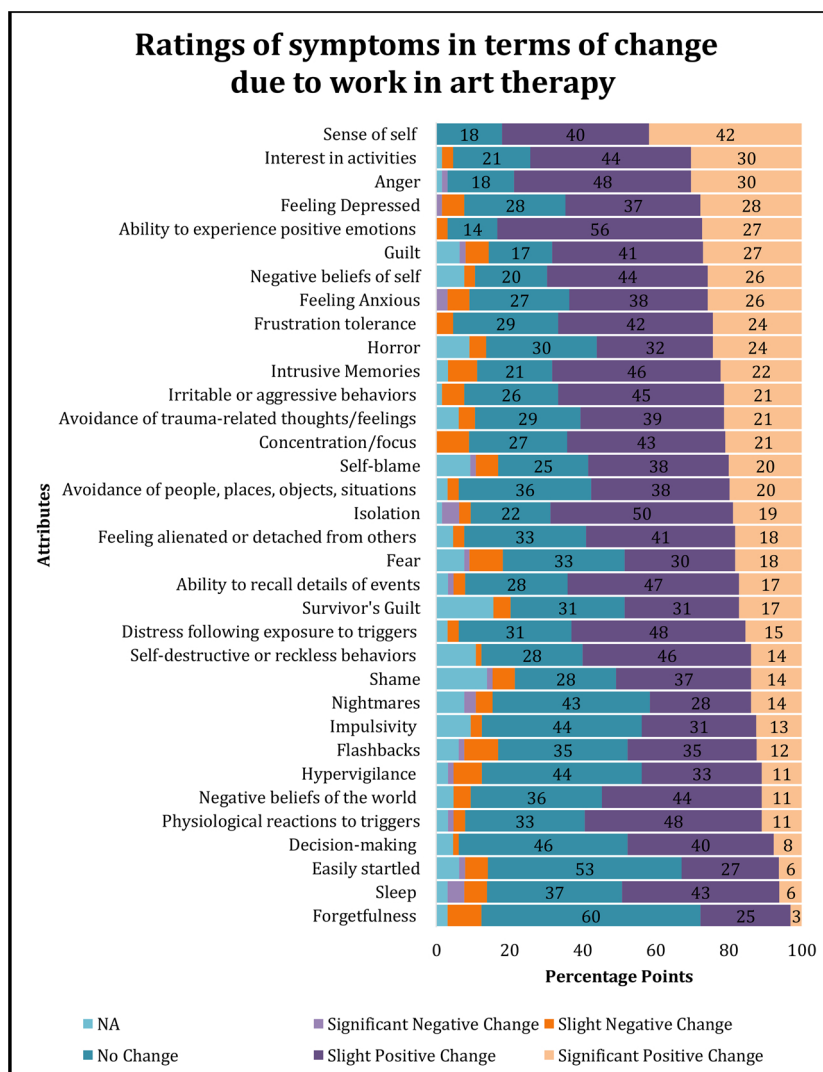


Fig. 3. Participants' responses to the impact of art therapy on symptoms of PTSD and TBI.

Source: feedback survey D, n = 67.

Table 3

Correlation between time in service and change in symptoms.

Change in symptom (from -2 = significant negative change to 2 = significant positive change):	Correlation with time in service (years) Spearman correlation coefficient	P-Value
Nightmares	0.28	0.0429*
Flashbacks	0.31	0.0230*
Isolation	0.26	0.0546
Horror	0.31	0.0311*
Avoidance of people, places, objects, situations	0.32	0.0167*
Negative beliefs of self	0.27	0.0499*
Ability to experience positive emotions	0.38	0.0039**
Feeling alienated or detached from others	0.30	0.0249*
Irritable or aggressive behaviors	0.39	0.0029**
Hypervigilance	0.46	0.0005**
Easily startled	0.29	0.0367*
Sleep disturbances	0.37	0.0054**
Sense of self	0.27	0.0432*
What effect did art therapy have on your overall treatment? (range from 1 = no effect to 10 = significant effect)	0.33	0.0144**

** P < .01.

* P < .05.

received more art therapy sessions, they reported a more positive change in the symptom of guilt (Spearman correlation = 0.26, P = 0.0442) and a more positive change in the ability to recall details of events (Spearman correlation = 0.26, P = 0.0438).

The difference in outcomes by participants' time in service

We found that the time in service had a positive association with the improvement of multiple symptoms. Participants with longer time in service were more likely to have improvement (i.e., a higher score in the Likert scale) on the following symptoms after receiving art therapy: nightmares, flashbacks, isolation, horror, avoidance of people/places/objects/situations, negative beliefs of self, ability to experience positive emotions, feeling alienated or detached from others, irritable or aggressive behaviors, hypervigilance, easily startled, sleep disturbances, and sense of self. In addition, participants with a longer time in service reported that art therapy was more beneficial on their overall treatment: The time in service and the rating of the benefit of art therapy (on a scale of 1 = no effect to 10 = significant effect) had a Spearman correlation of 0.33 (P = 0.0144). Table 3 summarizes the associations between time in service and change in symptoms.

Discussion

This paper includes findings from the analysis of evaluation data from art therapy interventions for military SMs with symptoms of PTSD and TBI. Most of the service members were on active duty, and some returned to service and some transitioned out of the military after their interdisciplinary treatment. The study highlights the value of program evaluation as a bridge from clinical practice to systematic research. Although the surveys used in the evaluation were not standardized measures or validated in any way, they were refined over time based on clinical observations. The data are thus valuable in providing a first level of information on how art therapy is perceived by SMs, what they think is its clinical value in an integrative care setting and what clinical symptoms of PTSD and TBI are best addressed through this approach. We believe this paper serves as an example of how evaluation data can be incorporated into clinical practice to gather data on patient experiences and perceptions. These data enable us to gather and aggregate perceived impacts and outcomes as well as areas for improvement and additional clinical directions. Evaluations can link clinical practice to more systematic research studies by identifying key outcomes and potential areas of impact on patient symptoms.

The findings from this study indicate that short-term treatments such as the level 1 group sessions improved aspects of identity and self-expression. The initial art therapy sessions of mask making and montage painting address the identity integration needs of patients. Many of the deeper issues of guilt, grief, loss, and trauma processing seem to be more effective with long-term sessions that include the initial group interventions, the open studio, and individual art therapy. Clinicians and researchers might consider these differences when conducting future studies as well as setting goals for treatment.

In terms of perception of art therapy in an integrative care setting, more sessions seemed to indicate significantly more satisfaction than the initial group sessions. It is possible that this relationship might be due to the fact that clients who were more satisfied with therapy chose to continue for more sessions (as opposed to the higher number of sessions leading to higher satisfaction). However, the satisfaction scores increased with the length of treatment, so those who were more satisfied initially possibly continued to increase in their satisfaction over time as well. Increased satisfaction with more sessions may also be a reflection of the rapport that develops with the therapist over time; feeling greater satisfaction/comfort with using art media over time; having more experience with transfer of impact from art therapy to different aspects of life; as well as potential enhanced awareness of positive changes that occurred that became more evident to the SM over time. The findings also indicate the need for ongoing communication and integration of art therapy services within the rest of the integrative care setting. In the surveys completed after the initial three sessions of group art therapy (Survey B given at the end of Level 1 groups), officers were found to report more positive outcomes than enlisted SMs. It is unclear why this difference may have occurred. One explanation might be that this difference was an artifact of the language used in the surveys. Another explanation is that officers generally entered art therapy more open minded and receptive to the benefits they were experiencing. Also, their role as leaders translated into the group setting by often times participating actively and discussing openly the benefits they were receiving to model that “it is okay” to be receiving help. The enlisted SMs did report more positive results in their D surveys, so perhaps this is explained by enlisted SMs needing the individualized sessions or longer term art therapy to report the same level of positive results as officers reported with short term groups sessions. There were also many missing data points in the surveys which further highlights the need for caution in interpreting these data, as well as the need for further research.

In addition to many of the symptoms clearly identified by the feedback surveys, there are also many symptoms that are not perceived as being effectively helped with art therapy. Our analysis found that

participation in a larger number of art therapy sessions was associated with greater recall of details of events. Although forgetfulness as a symptom was not alleviated by art therapy, it could be that recall of specific traumatizing events was helped by art therapy, rather than recall of general attributes of memory. Art therapy potentially helped integrate fragmented and disconnected elements of the traumatic memory that helped with specific trauma and TBI related symptoms like loss of identity, grief, loss etc. Further research is needed to better understand how art therapy affects memory and recall and whether that can be extended to overall cognitive functioning. Moreover, some symptoms such as sleep disturbances and forgetfulness that seem to be less impacted by art therapy and might require other targeted interventions or to be better defined in the surveys. Forgetfulness typically refers to SMs feeling forgetful during the day, forgetting what they read, not being able to recall a conversation, forgetting their ID card at home, or forgetting where they placed something last. Many SMs begin TBI treatment focusing on cognitive therapies to address symptoms such as forgetfulness. It is common for SMs participating in cognitive therapies who are unable to make progress with certain TBI symptoms because they have PTS symptoms that interfere. For example, it is common for a speech language pathologist to refer an SM to art therapy when they assess that the SM has trauma-related thoughts or physiological responses that are interfering with their ability to attend and concentrate, therefore leaving them unable to use the cognitive strategies they are learning to address issues of forgetfulness. It would be interesting to look more closely at the results of SMs who followed this pathway to care. Future research could examine if SMs referred to art therapy to address trauma, and were then able to make gains in speech therapy. Additionally, in regards to reported sleep disturbances, commonly SMs noted in the surveys that sleep disturbances got worse, and then provided verbal or written clarifications that their sleep disturbances were more frequent while in the middle of processing trauma but that these sleep disturbances were improved after the treatment.

Our results suggest that soldiers who have longer TIS are more likely to benefit from art therapy. It could be argued that SMs who have been in service longer and who are likely to have been on more deployments and to have potentially long-standing symptoms of PTSD and TBI could benefit more from the expressive and therapeutic options provided by art therapy. This information could shed light on selecting target participants in future programs as well as more closely examining what differentiates mechanisms of change in SMs with longer times in service versus those who with shorter times in service. Interestingly, we did not find any differences in SMs outcomes related to TBI status, indicating that the type of TBI might not be related to the healing potential of art therapy.

The evaluation data helped us identify the symptoms best addressed by art therapy and now enable us to generate hypotheses to assess mechanisms of change and related outcomes. For example, we might hypothesize that short-term group art therapy interventions help address issues of identity confusion and self-expression as a result of PTSD and TBI and encourage experiences of positive emotion. We can also hypothesize that long-term art therapy interventions that include individual, open studio, and group sessions can address issues of guilt, grief and loss, and trauma processing. Using more standardized and validated measures of identity, mood, self-regulation, guilt, shame, and grief can help capture these changes. We might also hypothesize that the type of TBI has no impact, that time in service has an impact, and that being an officer is associated with better outcomes as a result of short-term art therapy than enlisted SMs. It might be the case that SMs with long-standing symptoms might be served by art therapy with the possibility that the non-verbal and visual expressive opportunities enabled expression of previously unaddressed experiences.

There are advantages and disadvantages to the fact that SMs were aware that the art therapist would be receiving the feedback forms. Advantages to this are that they provided information that directly impacted the art therapy treatment they received, making them active

participants in the process of reflecting on the deeper level effects that each art directive and type of setting had on them emotionally and inviting them into the discussion for identifying their specific treatment goals and ways they would like to utilize art therapy to address their personalized goals. It was especially empowering for those who knew certain interventions were developed and offered in direct response to information provided through the feedback forms. SMs provided positive verbal feedback regarding completing the forms in this way. SMs commented that completing the surveys made them truly reflect on the impact of the different types of art directives and on the context of the group; better understand how their treatment goals were addressed through various disciplines offered throughout the clinic; and to reflect on progress made in improving specific TBI and psychological health (PH) related symptoms. Negative responses received were that surveys felt long, and many SMs expressed a desire that the feedback forms would be seen by clinic and hospital leadership (they wanted feedback to go beyond the therapist so that leadership would better understand the nuances that occurred in art therapy and so their positive feedback would be heard). A disadvantage to the feedback forms being administered by the clinician are that there is no way to know whether answers would have changed if surveys were originally anonymous and never given to the art therapist.

The study has many limitations, i.e., the surveys were not standardized or validated and are therefore limited in their validity. They are also self-reports of perceptions of SMs' experiences and not necessarily validated measures of clinical symptoms. There were also many missing data points where SMs did not complete or respond to the questions on the survey. The surveys were also modified over time, so some questions were missing from earlier versions of the survey. The surveys were administered by the art therapist and therefore there might have been some bias in the reporting. In future studies, these issues might be addressed by having another staff member administer the surveys, assigning identification numbers, and removing all names and identifiers prior to administering the survey. In addition, given that art therapy addresses symptoms of identity, positive emotions, self-expression, guilt, grief and loss, and trauma processing most effectively, researchers might consider using standardized tools to track these outcomes. The text used in the surveys was not transformed into plain language which might have affected quality and completion of the responses. In addition, many of the SMs were in active treatment and had not completed the last survey and as a result we must view the longer term outcomes with caution. Once data are available from all SMs who complete treatment (Survey D) we can more effectively determine the perceived long-term impact of art therapy.

These evaluations are directly linked to a specific program or clinical practice at the site and as such any generalization is not valid. Further systematic studies of the intervention at the site are needed to draw more definitive conclusions. Lastly the SMs who received art therapy typically had TBI and symptoms of post-traumatic stress. It is hard to separate out the two and to determine which aspects were served by art therapy.

The context and establishment of evaluation as part of clinical practice also deserves discussion. It was common practice for all SMs at the site to complete a battery of assessments upon intake, which also served to gather clinical data to better serve each SM, while also tracking and better understanding the efficacy of the clinic at large. The evaluation surveys created and administered as described in this paper were initially unique to the art therapy services at the clinic. The feedback forms provided information that guided the art therapist in developing a new and robust program with various levels and a variety of types of groups and individual sessions that addressed patient needs. Once a program had been developed with a structure that met patient flow dynamics of the clinic as well as SMs' requested treatment needs, there was less emphasis on program development but the clinical relevance of the surveys remained unchanged. It also remained important to gather a greater number of surveys to yield more valid data analysis

results to guide future research. A couple years after art therapy was provided at the site, music therapy was also offered. The music therapist at the site also utilized a set of surveys, with administration of the surveys built into the structure of the program, for the purposes of program development and to gain clinical insight to determine treatment paths for each unique SM. In addition, a variety of other disciplines at the integrative care clinic, especially those seeking to engage in research, developed assessments as needed in order to better understand and communicate the value of unique treatments on patient care.

Conclusions

This study examined the responses of SMs to art therapy in terms of the perceived value and impact of art therapy and the symptoms addressed most effectively through the sessions. The findings indicate that short-term art therapy helped most with issues of identity and self-expression whereas long-term sessions addressed issues of grief and loss, guilt, and trauma. In addition, the findings indicate that those SMs who had more years in service were more likely to benefit from longer term art therapy sessions. Art therapy was found to help address specific symptoms faced by SMs with TBI and related psychological health conditions. Further research is needed to understand how art therapy could help address symptoms of military related TBI compared with TBI and psychological health conditions sustained in other contexts. Future research might examine the specific outcomes identified through this evaluation using standardized measures and tools.

Disclaimer

The identification of specific products, scientific instrumentation, or organization is considered an integral part of the scientific endeavor and does not constitute endorsement or implied endorsement on the part of the author, DoD, or any component agency. The views expressed in this study are those of the authors and do not reflect the official policy of the Department of Army/Navy/Air Force, Department of Defense, or U.S. Government.

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