Art for Stress Reduction in an Autistic Survivor of Trauma

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ABSTRACT

Inspired by personal experience, this study explored the benefits of art making, including the positive impact of stress reduction, in an adult immigrant female diagnosed with autism spectrum disorder. The study was conducted over a period of 10 days, and utilized the Perceived Stress Survey (PSS; Cohen, Kamarck, & Mermelstein, 1983) as a pretest-posttest measure to assess change in stress levels. The study included one hour of art making with no specified directive for five days, followed by five more days where the participant engaged in five art therapy interventions. Each session of art making was followed by 15 minutes of reflective writing. In addition to analysis of the quantitative data, content analyses were utilized to analyze the qualitative data. The results indicated four overarching conceptual patterns, including (a) increase in self-esteem, (b) stress reduction/relief, (c) emotional responses, (d) responses to art materials. Future studies were recommended.
ACKNOWLEDGEMENTS

For my son Adam J. Cardella.

Thank you for lighting up my darkest days.

May your beautiful smile shine light to the world as it has lit up mine.
# ART FOR STRESS REDUCTION

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Introduction

This study investigated the effectiveness of art therapy in decreasing the stress levels of an adult with ASD who had experienced a traumatic event. According to Berg, Acharya, Schie, and Msall (2018), children with a diagnosis of Autism Spectrum Disorder (ASD) had a significantly higher risk of exposure to adverse childhood experiences in comparison to their neurotypical peers. The authors also found that children who had ASD were exposed more frequently to specific stressors, such as substance use, domestic violence, parental mental health issues, and divorce.

The participant/researcher was a 29-year-old Egyptian female immigrant to the United States, who received delayed diagnoses of Asperger’s Syndrome (ASD) and Complex Trauma (CPTSD). This research was inspired by her experience of having being held in the ICE detention facility. While detained, one piece of paper and a pencil in the holding cell was used to create art. The artmaking helped to find a sense of freedom and a distraction from what was the current reality. Due to this particular experience, this researcher decided to conduct this self-study in order to examine and measure the effectiveness of art making for decreasing stress and serving as an outlet for emotions that could not be expressed in words. This study was also inspired by the existential writing of Viktor Frankl, whose renowned autobiography detailed his own experience in Auschwitz concentration camps. In this consequential work, he questioned the meaning and purpose of his life, as well as delineated the stages of human suffering. Moreover, he argued that human beings cannot avoid suffering, but instead must learn how to cope through the suffering and create meaning and a new life purpose from it.
Problem Statement

A review of current literature on ASD revealed a lack of studies with adults on the autism spectrum with comorbid disorders. There was also a lack of research using female subjects. No studies were found regarding treatment for adults who had both ASD and PTSD. Researchers examined PTSD and ASD separately, even though Muggleton and Bailey (2017) found gender differences in the way ASD presented in males and females. The authors noted that researchers who studied this population tended to utilize a predominantly male sample when examining ASD and avoided gender comparisons within research findings.

The use of predominantly male samples in research examining ASD has resulted in gender disparities in the diagnosis of ASD in the female population, including delays in diagnosis and misdiagnosis. This may lead to increased vulnerabilities for the ASD female population, including risk of exposure to adverse experiences such as neglect and abuse (Landman, Golan, & Horesh, 2018). Current research has rarely addressed difficulties of marginalization, bullying, or negative outcomes from social interactions in adult females on the autism spectrum (Booth, 2016; Mademtzi, Singh, Shic, & Koenig, 2017). Mademtzi et al. (2018) believed that this could have a traumatic impact on emotional well-being and may lead to a negative impact on capacity to function.

Research Question

This study was guided by the following question, *What is the impact of art making on the stress levels of an adult female with PTSD and Autism Spectrum Disorder?*

Basic Assumption

It was assumed that art making would decrease levels of stress and reduce symptoms of PTSD. It was also assumed that the art making process would offer a tool for self-expression and
help decrease stress reactions to daily triggers. Art therapy has been found to provide individuals with ASD an opportunity for nonverbal expression, help with relaxation, and decrease severity of symptoms of ASD (Schweizer, Spreen, & Knorth, 2017). Research has also demonstrated that art therapy can help individuals with PTSD feel more relaxed, reduced intrusive thoughts, and obtain a more positive outlook toward the future (Baker, Metcalf, Varker, & O’Donnell, 2018). Therefore, therapeutic art making may have positive results to help improve individual lives, with or without diagnosis and/or treatment. Schouten, Hooren, Knipscheer, Kleber, and Hutschemaekers (2019) examined the effectiveness of trauma-focused art therapy with individuals with PTSD and found that art therapy was effective in helping individuals with PTSD. Participants felt more relaxed and more able to externalize experiences and feelings through art. Participants also reported fewer intrusive thoughts, and appeared to have a more confident outlook on the future.

**Statement of Purpose**

The purpose of this heuristic study was to examine the effects of art therapy on reducing stress in an individual with ASD and PTSD. It was expected that the findings of this study would reveal a measurable decrease in the participant’s stress levels after engagement in the art making activities. It was anticipated that positive findings from this heuristic study would serve to support development of art therapy programming for other individuals who have similarly experienced adverse/traumatic events in conjunction with comorbid ASD.

**Definition of Terms**

**Autism spectrum disorder (ASD).** ASD is a neurological disorder with a range of conditions that affect social skills, speech, and nonverbal communication, and causes repetitive behaviors (American Psychological Association, 2013).
Posttraumatic stress disorder (PTSD). This refers to a psychiatric disorder that occurs in individuals who have experienced or witnessed a traumatic event, such as war, rape, violent assault (Parekh, 2017).

Complex posttraumatic stress disorder (CPTSD). CPTSD has been defined as a psychiatric disorder and disability that may manifest in individuals who have experienced prolonged exposure to adverse experiences and repeated traumatic events (Cloitre, Garvert, Brewin, Bryant & Maercker, 2013).

Art therapy. Art therapy is a holistic type of therapy that includes art making, facilitated by an art therapist, to enhance an individual’s emotional and cognitive well-being. Art therapy can be used for the improvement of sensorimotor functions, increase self-esteem and insight, resolve conflicts, and reduce stress (American Art Therapy Association [AATA], 2017).

Justification of the Study

The lack of research regarding gender differences in ASD diagnostics may leave females subject to misdiagnosis by professionals (Smith, 2018). Gender differences may also leave undiagnosed or misdiagnosed females vulnerable to exposure to adverse events (Weldon, 2016). Hooper (2016) examined gender differences in ASD and found differences in neurobiological abnormalities, sensory sensitivities, ways repetitive behaviors were presented, and comorbidity. This research was intended to raise awareness about female autism, explore possible links between autism and trauma, and ways therapeutic art making could help heal females with comorbid disorders of anxiety disorders, such as PTSD and ASD. This researcher’s late diagnosis had been implicated in multiple traumatic life events. This research may advance the field of art therapy by providing support for the effectiveness of therapeutic art making as a self-care method for an under researched population.
CHAPTER II

Literature Review

This literature review investigated the challenges of ASD, the challenges of PTSD, current treatments, developmental theories, and potential impact of art therapy on ASD and PTSD, including the benefits of reflective journaling. The review of literature also found that Eye Movement Desensitization Reprocessing (EMDR) and Cognitive Behavioral Therapy (CBT) were effective treatments for both ASD and PTSD (Carrigan & Allez, 2016; Van Burren, Sizoo, & Mevissen, 2019). It also revealed that art therapy had a positive impact on treating ASD and PTSD populations (Attwood, 2006; Gant & Tinnin, 2007; Hosseini, 2012; Malchiodi, 2003; Schouten et al., 2019), and a positive impact of reflective journaling in trauma work (Fish, 2012; Gibson, 2018; Howie, Burch, Conrad, Shambaugh, 2002).

According to Kaimal and Ray (2017), art making was found to be reliable and valid in multiple studies as a method to collect quantitative and qualitative data. The researchers examined the effects of free art making in a sample of 39 healthy adults who participated in an art therapy open studio. After testing the effects of the art making process by examining participant cortisol levels, the researchers concluded that free art making had significantly lowered negative affect, while also improving positive affect and self-efficacy. Another study by Kaimal and Ray (2016) also showed that art making resulted in significant reduction of participant cortisol levels. McCullough (2009) confirmed the positive effects of art making on a case study of a 12-year-old boy who was undergoing parental divorce, relaying that the participant’s creation of a transitional object had provided him a sense of comfort and self-soothing to help him better cope with this experience.
Curl (2008) conducted a study to examine stress reduction through artistic creation and cognitive focus. Results indicated that individuals who created positive focused artwork showed a decrease in stress. Pennebaker and Francis (1996) found that creating art provides an opportunity for catharsis and encourages problem solving. They contended that the process of organizing thoughts and feelings into narratives, such as journaling and reflective writing, have been particularly useful for individuals who have experienced trauma.

The Challenges of Autism Spectrum Disorder (ASD)

Alvarez (1992) wrote that individuals with ASD and PTSD may have certain underlying similarities in symptoms and development. According to the Center for Disease Control statistics in 2018, 1 out of 59 children had a diagnosis of ASD. Additionally, ASD is four times more likely to be diagnosed in males than females. Adults and children who are diagnosed with ASD frequently suffer from speech, sensory, emotional, and behavioral challenges (APA, 2013). According to Booth (2016), adults diagnosed with autism took more time to adjust themselves into new routines and/or unfamiliar situations, places, and people.

Frith and Hill (2006) suggested that adults diagnosed with autism may not understand social cues and communicate directly. For example, adults and children with autism frequently find it difficult to maintain eye contact and often experience social interactions to be overwhelming (Frith & Hill, 2006). Booth (2016) also found hypersensitivity to sound, light, smell, screens, visual distractions, touch, clothing, and temperature to be disabling for individuals diagnosed with ASD. These challenges may have a severe effect on an individual’s daily functioning, including ability to hold a job, pursue education, and engage in other important activities due to personal challenges and facing discrimination (Booth, 2016). In the
United States, 53.4% of young adults with autism (ages 21 to 25 years old) had never had a paid job outside of their homes since graduating high school (Pacelli, 2014).

**Autism and comorbidity.** According to Haruvi-Lamdan, Horesh, and Golan (2018) having an ASD was found to be a vulnerability factor for the development of PTSD. Individuals with a diagnosis of ASD may be at an increased risk for exposure to traumatic events. Moreover, PTSD has been found to exaggerate the symptoms of autism, resulting in maladaptive coping and decrease tendency towards help-seeking behaviors. PTSD and ASD share underlying mechanisms, such as rumination, cognitive rigidity, avoidance/isolation, anger, aggression, and irritability (Haruvi-Lamdan et al., 2018). A study by Moseley, Hitchiner, and Kirkby (2018) found that individuals with ASD who had psychiatric comorbidities were more likely to engage in self harm behaviors when compared to autistic individuals who did not have psychiatric comorbidity.

Researchers have also pointed to a link between autism and PTSD in both cognitive and emotional domains, including similarities in the ways both trauma survivors and individuals with ASD verbalize thoughts and feelings, often demonstrating cognitive rigidity, rumination, avoidance, anger, and aggression (Elbrecht, 2013; Haruvi-Lamdan et al., 2018). However, ASD is believed to be a vulnerability factor for the development of PTSD due to the increased risk of exposure to adverse experiences that a person with ASD may experience (Haruvi-Lamdan et al., 2018), whereas the reverse is not true. Sreckovic, Brunsting, and Able (2014) stated that students with ASD were often targeted for bullying by their peers at work and school because of challenges with socialization, communication, and engagement in repetitive behaviors. Tehrani (2012) also mentioned similar incidents of bullying towards ASD individuals at the workplace, which may have predisposed these individuals towards the development of PSTD symptoms.
PTSD was also found to increase the intensity of ASD symptoms, such as maladaptive coping, and a decrease in asking for help (Haruvi-Lamdan et al., 2018).

Lai et al.’s (2011) research in the area of high functioning autism found that participants frequently presented with a wide range of comorbidities. The most common comorbidities linked with ASD were anxiety, depression, obsessive compulsive disorder, personality disorders, and psychosis. King (2010) stated that high functioning patients on the autism spectrum were more likely to be exposed to frequent stressors from daily interactions and changes in routines, which could then lead to complex trauma (C-PTSD).

After analyzing data and conducting case studies on autism in her published book, Herbert (2010) reviewed multiple statistical studies and found that severe ASD symptomatology was linked to higher Adverse Childhood Experiences (ACE) scores. Berg et al. (2018) found a positive correlation between having a delay in ASD diagnosis and exposure to ACEs, which often resulted in delayed treatment. However, 82% of the ASD participants in this study were males. Additionally, trauma and PTSD may remain undiagnosed in patients with ASD who have low levels of insight regarding traumatic events or are challenged in knowing how to report these negative experiences (Carmassi et al., 2019).

**Gender differences.** McKibbin (2016) suggested that investigation of high functioning females with autism was a neglected topic in autism research, leading these individuals to be diagnosed with autism much later in life. Lehnhardt et al. (2016) felt that there was a need for more research that focused on autistic female adults, in order to increase awareness about the female autistic phenotype. Mckibbin (2016) concluded that it was important to improve diagnosis for females with autism to prevent them from being misdiagnosed or having their diagnosis delayed.
Hooper (2016) found that females with autism were able to mask social skills and/or autistic behaviors, and that women experienced more negative social experiences than positive ones that have the potential to induce PTSD (e.g., bullying, rape, abuse). Carmassi et al. (2019) conducted a case study on the role of undetected ASD with childhood trauma in a female with a diagnosis of bipolar disorder, self-injuring behaviors, and multiple comorbidities. The authors surmised that the adult patient had experienced a delay in diagnosis of ASD because she presented with normal intelligence quotient and did not demonstrate any verbal deficits. Based on their findings, they argued that ASD may remain undiagnosed for long periods of time, or until severe psychiatric illnesses develop in patients, such as depression, anxiety, suicidal behaviors.

Other researchers have indicated that females may also be less likely to receive early diagnoses of ASD when compared to males due to gender-specific skills that may allow females to hide deficits in social skills (Bargiela, Robyn & William, 2016). Haruvi-Lamdan et al. (2018) found that individuals diagnosed with ASD may be at risk of developing PTSD. Researchers have also demonstrated that ASD patients with high ACE scores and exposure to stressful life events experienced decreased access to appropriate health care and challenges overall in utilizing health care services (Auslander, Dreitzer, Santiago, & Thompson, 1997; Dubay, Fairbrother, Kenney, Hanson & Dubay, 2005; Duchon, Shinn, & Weirzman, 1999; Janicke, Finney, & Riley, 2001; Jelleyman & Spencer, 2008).

**Age Differences.** Hitchiner et al. (2018) believed that the current literature on autism was highly focused on the presentation of autism in childhood. Consequently, gaps in the literature particular to ASD and the adult population problematizes the assessment and diagnosis of autism in adults. Therefore, adults who were not diagnosed during childhood may continue to face
challenges because of remaining undiagnosed, and therefore eluding treatment, which may lead them to develop more complex psychiatric comorbidities later on in their life.

**The Challenges of Trauma (PTSD)**

Individuals diagnosed with PTSD may have been directly or indirectly exposed to a traumatic event (APA, 2013). To meet the criterion for PTSD, traumatic events must include physical or witness an exposure to threat of death, serious injury, sexual and relational violence, war, or natural disasters (APA, 2013). PTSD has been classified as an anxiety disorder that encompasses symptoms of intrusive thoughts, flashbacks, nightmares, substance abuse, difficulty in regulating and expressing emotions, upsetting memories, emotional distress and physical reactivity caused by a reminder of the traumatic event (APA, 2013). Other PTSD symptoms in adults include feeling isolated, having a negative perception of oneself and the world, hypervigilance, exaggerated startle response, difficulty maintaining focus and sleep, anger/irritability/aggression, and self-destructive behaviors and thoughts (APA, 2013).

**Childhood PTSD.** According to the results of multiple case studies published in a book by Levine and Kline (2007), traumatic experiences have been found to have an overwhelming and stunting effect on brain development in children. It was also found to make children feel physically and psychologically altered and disconnected from their bodies and mind, as well as diminished coping mechanisms in response to the traumatic events. They described the brain, when it became affected by a traumatic event, it automatically exhausted an extraordinary amount of energy for survival. The depletion of the traumatized child’s energy wore out the child and put them at risk for developing physical illnesses later in their lives (Levine & Kline, 2007). According to Tyrka, Burgers, Phillip, Price and Carpenter (2013), trauma was found to have the capacity to disrupt the development of the brain’s right hemisphere, which can affect the
individual’s ability to regulate emotions, process pain and language, or maintain focus.

According to Levers (2012), after the occurrence of or witnessing a traumatic event, the central nervous system (CNS) begins to develop changes in the neurochemical pathways of the brain. The amygdala and hippocampus, the parts of the brain responsible for memory processing, have been shown to respond to traumatic events with increased reactivity (Yehuda, 2002). Additionally, changes in the hippocampus and memory processing have been shown to occur due to trauma, which in turn, may cause symptoms of reexperiencing or reliving the trauma (Levers, 2012).

**PTSD in veterans.** Blow, Curtis, Wittenborn, and Gorman (2015) examined relationship problems and military related PTSD and found that deployments caused increased stress in families of veterans. The long-term separation of families during deployment caused family members to change and made it difficult for the families to reconnect after deployment (Pincus, House, Christenson, & Adler, 2001).

**PTSD and relationships.** Researchers addressed a strong association between PTSD and interpersonal relationship challenges, showing that the challenges may negatively impact each other causing individuals to get into cycles of deterioration in their mental health and relationships (Allen, Markman, Rhoades, & Stanley, 2010; Gewirtz, Polusny, DeGarmo, Khaylis, & Erbes, 2010). According to Elbrecht (2013), the symptoms of PTSD can have debilitating effects on an individual’s daily functioning. PTSD symptoms can have a challenging impact, which can then affect the individual’s ability to maintain relationships and jobs. Elbrecht (2013) also stated that adults diagnosed with PTSD may experience challenges in verbal self-expression, which can have a large impact on communication and maintaining friendships or relationships.
Current Treatments for Autism and Trauma

Multiple treatments have been found to be useful for treating ASD and PTSD.

**Eye movement desensitization reprocessing therapy.** EMDR was developed by the psychologist Francine Shapiro in the 1980s. EMDR has been found to help gradually desensitize patients from the distressful reactions to traumatic memories (Oren & Solomon, 2012). EMDR requires a trained therapist over multiple counseling sessions to help clients overcome PTSD symptoms by using bilateral stimulation of their eyes (Oren & Solomon, 2012). Other forms of bilateral stimulation have been shown to be similarly successful by assisting patients in becoming desensitized to the traumatic memories. The EMDR counselor assisted patients in processing these memories in order to help them adapt to the distress associated with the traumatic memories (Logie, 2014; Oren & Solomon, 2012).

EMDR is typically conducted in eight stages (Solomon, Solomon, & Heide, 2009). According to Solomon et al. (2009), the first stage is to gather information and identify traumatic memories in the patient’s life. The second stage is the preparation stage, which involves explanation of the process and establishment of the therapeutic relationship with the client. The third stage is the assessment stage in which a memory is targeted and accessed. The fourth stage is the practice of desensitization through bilateral stimulation. The fifth stage is the “installation” stage, in which a new positive perspective is created in the patient’s cognition. The sixth phase occurs by examining the patient’s bodily reactions to the process. The seventh phase is focused on closure with the patient. The eighth phase is the reevaluation phase (Blankenship, 2017). EMDR was found to have significant effects on people with ASD and PTSD, with the researchers demonstrating a decrease in both ASD features and psychological distress among participants who had both ASD and PTSD (Van Burren et al., 2019).
Cognitive behavioral therapy (CBT). Developed by Aaron T. Beck in the 1960s, Cognitive Behavioral Therapy (CBT) focuses on altering the cognition and perception of events in order to change behavioral responses to them (Macedo et al., 2018). Psychological alteration is believed to occur through counseling sessions, which allow clients to discuss their traumatic experiences with a trained therapist, who in response begins to challenge the client’s perception of the event by questioning and guiding the client into finding alternative responses (Barbosa et al., 2018). CBT showed positive outcome results in a randomized controlled trial in the short-term treatment of PTSD (Barbosa et al., 2018). Another study by Maddox, Miyazaki, and White (2017) was conducted to examine the effectiveness of CBT anxiety interventions that involved social skills in reducing social impairment in adolescents diagnosed with ASD. The researchers showed that social impairment had decreased during the randomized control trial, with three month and one year follow-ups with participants indicating that social impairments continued to decrease after conclusion of the study. Carrigan and Allez (2016) conducted a study to examine the effects of CBT in a young man diagnosed with both PTSD and autism. The researchers found that CBT helped decrease symptoms and elevated the participant’s overall mood.

Prolonged exposure therapy (PE). Prolonged Exposure Therapy (PE) was developed by Edna B. Foa in 1998, and was meant to assist individuals in processing traumatic memories by revisiting and exposing them to those memories gradually (McLean & Foa, 2013). This was a subtype of CBT designed to assist clients with PTSD to process their traumas by recurrent exposure through imagination. In this type of therapy, clients are directed to revisit traumatic memories and combat fears, then begin to process traumas without the sense of fear associated with it (McLean & Foa, 2013). PE therapy was described as having two phases. The first phase is the education phase and the second phase is the breathing retaining process. Following this,
clients are then assisted in developing a hierarchy of fearful situations that can be practiced outside of therapy sessions (Resick, Nishith, & Griffin, 2003). According to Van Minnen, Harned, Zoellner, Mills, and Zoellner (2012), PE was one of the most empirically supported treatments for trauma. PE therapy reduced PTSD symptoms with lasting effects for one year (McLean & Foa, 2013). Clinicians who worked at the Veterans Health Administration began training in PE therapy as a national initiative in 2006 (Jeffreys et al., 2014).

**Cognitive processing therapy (CPT).** Cognitive Processing Therapy (CPT), a subtype of CBT, was developed for reduction of PTSD symptoms related to combat, natural disasters, sexual assault, and childhood sexual abuse (APA, 2017). According to Resick, Nishith, Weaver, Astin, and Feuer (2002), CPT should be conducted over the course of 12 therapy sessions by having the client write their traumatic events in detail in a journal, then analyze the event in order to find significant meaning this event brought to the client, and finally, assist the client in challenging negative beliefs associated with the traumatic event, their self, and their worldview through a worksheet.

**Stress inoculation training (SIT).** Stress Inoculation Training (SIT) is another subtype of CBT, developed by Donald Meichenbaum in the 1980s to help individuals develop coping skills to combat their stress (Meichenbaum & Deffenbacher, 1988). This approach focuses on coping skills, and was developed for reducing anxiety, coping with stress, learning coping skills (Meichenbaum & Deffenbacher, 1988). SIT teaches coping skills for managing distress associated with assaults to facilitate adaptive responses by teaching coping skills such as deep breathing, muscle relaxation, termination of thoughts, modeling, self-dialogue, and role play (Calhoun & Resick, 1993). SIT was found to reduce symptoms of PTSD and increased implicit memory (Saunders, Driskell, Johnston, & Salas, 1996).
Applied behavioral analysis (ABA). ABA was developed by Ivar Lovaas and Robert Koegel in the 1970s and focuses on improvement of behaviors. Based on learning theory, ABA is frequently used as a form of behavioral modification for a number of different learning disorders, including ASD (APA, 2017). This behavioral treatment approach has been found to increase desirable and pro-social behaviors and decrease undesirable/socially unacceptable behaviors in children with ASD (Sandberg & Spritz, 2012). ABA programs are commonly applied in both structured environments (e.g., schools) and unstructured environments (e.g., home). The ABA approach utilizes positive reinforcement as a way to reward pro-social behaviors, while ignoring undesirable behaviors so that they are not reinforced. According to Sandberg and Spritz (2012), ABA has been documented as a primary treatment for ASD by the US Surgeon General and the American Academy of Pediatrics. ABA was also recognized as an established treatment by the National Autism Center’s National Standards project in 2009 (Sandberg & Spritz 2012).

Art Therapy with Various Populations

Koestler (1964) described the importance of the creative process in the advancement of the human consciousness and worldview as one that transcends meaning, generates insight, and produces a feeling of satisfaction through the ability to be part of a universal experience. Sandmire, Gorham, Rankin and Grimm (2012) found that art making was beneficial in stress reduction in a group of college students. Elkis-Abuhoff (2008) and Schwizer, Spreen, and Knorth (2017) examined the healing power of art therapy, find that it enabled individuals on the autism spectrum and survivors of trauma a tool for self-expression when putting feelings into words becomes difficult. Schweizer et al. (2017) found that art therapy had helped children on the
autism spectrum to feel more relaxed, flexible, and expressive. It also made them more likely to verbally communicate problems both inside and outside the therapeutic setting.

Elkis-Abuhoff (2008) conducted a case study in which she administered the Kinetic House-Tree-Person (KHTP), House-Tree-Person (HTP), and Kinetic Family Drawing (KFD) assessments. She found that the participant’s completion of these assessments using various art media, such as collage and crayons, had provided valuable indicators of the patient’s presenting problems, as well as had helped to reduce the patient’s stress and increase verbal communication skills over the course of the six month period of person-centered art therapy sessions. Overall, Elkis-Abuhoff concluded that art therapy was an unconventional, nonverbal, comprehensive, and expressive way for individuals with ASD to receive information through the rich sensory experience that engagement in art therapy through experimentation of art materials had provided. Koestler (1964) also argued that art making processes allow individuals to become more in touch with themselves, as well as provides a sense of pleasure through observation of one’s final creation, including the realization that it may be a reflection of oneself. Although both these studies demonstrated successful use of art therapy with individuals diagnosed with PTSD and ASD, participants in each were primarily children, and therefore results may not necessarily be generalizable to other populations. To the best of the presenter researcher’s knowledge, there have been no studies examining the benefits of art therapy specific to female adults with both ASD and PTSD.

**Art Therapy and ASD.** Malchiodi (2003) suggested that art therapy may be used for autistic individuals to engage their mind, brain, and senses, as well as to support and provide alternative means of communication. Tantam (2013) explained that some adults and children with autism who were found to be non-verbal preferred to communicate through art making
using specific mediums. Art therapy can also help autistic individuals reduce stress through painting, and may be tailored to fit autistic people’s interests and strengths to address their specific challenges (Attwood, 2018). Art therapy can also assist in teaching autistic individuals how to work with their strengths and use unique perspective worldview to create art with the simple act of manipulating materials and creating (Hosseini, 2012). Herbert (2010) found that use of art making with autistic people had resulted in increased coping, communication, and emotional regulation skills, and concluded that even when autistic people are faced with adversity and confusion, they are still capable of creativity and insight.

**Art Therapy and Trauma.** Art therapy literature showed promising results with individuals with PTSD. Schouten et al. (2019) conducted a pilot study examining the effectiveness of trauma-focused art therapy for individuals with PTSD. Among the findings were that participants had experienced reductions in stress and intrusive thoughts, as well as a number of positive benefits as a result of the artmaking. Positive benefits reported included feeling more relaxed after making art, ability to externalize memories and emotions into the artwork, and increased confidence for the future. Ultimately, Schouten and colleagues concluded that art therapy had served as an important mechanism for change by allowing participants a place to express and contain difficult emotions.

According to the American Art Therapy Association (AATA; 2012), art therapy can reduce anxiety and mood disorders, and behaviors that hinder emotional and cognitive functioning. Baker et al. (2018) reported that art therapy can help to externalize memories, thoughts, and emotions; assist in verbalizing and resolution of traumatic memory; support reactive positive emotions; increase self-esteem; and improve self-worth. Gantt and Tinnin (2007) found that narrative processing in art therapy had the capacity to reduce negative
symptoms related to trauma, such as depression and the occurrence of emotional numbing, as well as increase emotional expression in order to facilitate creation of a coherent trauma narrative that promotes healing in trauma survivors.

Howie (2002) examined the effectiveness of art making versus writing to express nightmares in individuals with PTSD. The study showed that individuals who participated in art making reported experiencing fewer and less intense nightmares, showed an improved ability to return to sleep, and reduced startle response to nightmares. Howie concluded that the art making process was a useful tool for helping individuals to express emotional states of trauma that were difficult to express in words, as the art making process enabled communication through visual symbolism through which meaning making of experiences could occur.

The Role of Art Materials, Art Making, and The Final Artistic Product

Psychoanalysts utilized art materials as early as the mid-20th century in their work with clients to help them access unconscious material (Kris, 1952; Rambert, 1949; Winnicott, 1971). Art materials were found to have the ability to tap into the clients’ unconscious during the art making process through processes of transference (Hilbuch, Snir, Regev, & Orkibi, 2016). Hilsbuch et al. indicated that transference in art psychotherapy referred to the unconscious content that emerged in client’s artwork, such as the client’s displacement of their feelings and thoughts related to significant childhood events and figures. Some art materials were found to have a stronger capacity to tap into a client’s unconscious and, thus, were capable of eliciting strong emotional reactions. For example, Haiblum-Itskovitch, Czamanski-Cohen, and Galili (2010) investigated the history of oil pastels as a medium and found that the medium was first created in Japan in 1924 as way to increase self-expression. They reported that creating art using oil pastels produced strong emotional responses in comparison to other types of media,
confirming that preliminary analyses of artwork created with this media did appear to be
evidence in support of the purpose for which pastels were created.

Hilbich et al. (2016) described the role of art materials in art therapy as serving to
encourage the emergence of the transitional space by connecting the individual both to their
inner subjective experiences and their external objective reality. Art materials have also been
described as having distinct characteristics, such as fluidity, rigidity, brightness, potential for
messiness, and colorfulness, all of which may influence the client’s energy levels and motor
skills, as well as evoke, attract, or repel various emotional states (Lusebrink & Kagin, 1978).

**Art Therapy Interventions**

Several art therapy interventions have shown promise with helping those with ASD
and/or trauma. These included: (a) mask making, (b) mandalas, (c) box making, (d) creating
transitional objects, (e) clay, and (f) body mapping.

**Mask making.** Mask making has been commonly used in art therapy with individuals
with PTSD because it allows for psychological distance at the same time as safe expression and
externalization of feelings, as well as alleviation of intrusive thoughts, hallucinations, and
flashbacks associated with trauma (Walker, Kaimal, Gonzaga, Myers-Coffman, & Degraba,
mask making was a successful intervention for military service members, it assisted them in the
visualization and communication of the impact of combat-related PTSD, and also helped them
build a sense of self-efficacy and promoted normalization of their experience. According to
Frenz (2007), masks were found to symbolize duality of personas in association with the duality
of military service members’ personas living between their military-related trauma and their
present civilian life. Masks were found to be beneficial for addressing communication and social
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skills, and for those who had difficulties revealing various aspects of their self. It has also shown to help those who have difficulties with communication to adapt new attitudes and behaviors (Fiet, 2014).

**Mandalas.** Research indicated that the circular shape of the mandala served to be an key tool in the enhancement of mood and reduction of negative mood states (Babouchkina & Robbins, 2015). Slayton, D’Archer, and Kaplan (2010) stated that the act of drawing mandalas that were circular shaped were shown to be an agent of emotional positive change. Schrade, Tronsky, and Kaiser (2011) indicated that both freely drawing and coloring mandalas help with stress relief in adults with intellectual disabilities. Curry and Kasser (2005) explored the effects of coloring mandalas versus drawing freely on a blank paper, with results indicating that coloring mandalas had a greater effect on anxiety and stress reduction than drawing freely.

Van der Vennet and Serice (2012) replicated Curry and Kasser’s (2005) research testing the effectiveness of coloring mandalas on anxiety reduction. Van der Vennet and Serice assigned three groups to color mandala designs, plaid designs, and blank paper after the induction of an anxious mood using a writing prompt. The researchers found that the results supported Curry and Kasser’s findings that coloring the mandala designs reduced anxiety more than coloring plaid designs and on a blank paper.

**Box making.** Box making was examined as an art therapy intervention in a cross-cultural art therapy intervention with survivors of the Rwanda genocide (Chu, 2010). Three case examples indicated that the use of the metaphor of the box was found to be a catalyst for self-expression, healing and helped reconnection with the self after the impact of a traumatic event. The results in this study found that box making also had the capacity to contain valuable contents. Farrell-Kirk (2001) found that boxes had the function of concealment, which offered a
strong sense of safety and provided the client with a sense of control regarding sharing the contents of the box with others. Kaufman (1996) found that boxes had a memorializing and preserving function, which was helpful in the preservation of specific memories by placing objects that represented these memories inside the box.

**Transitional objects.** According to Winnicott's (1971) developmental theory on transitional objects, infants begin to attach themselves to a soft object between the ages of 4 to 12 months. Moreover, the object serves as a source of comfort to soothe the infant when the mother was away from them. Winnicott explained that the object reduces stress and anxiety in the infant during separation from their mother and eases the process of individuation. Transitional objects were also found to assist coping through adolescent years, where children mourn the loss of their childhood and prepare for adulthood (McCullough, 2009). Transitional objects were also used as coping tools for adults to reduce their anxiety through challenging times in their lives, provide comfort, and assisted adults in regaining their confidence (Tabin, 1992).

Art therapy has also been found to alleviate stress during challenging times for clients (McCullough, 2009). A case study of a 12-year-old boy addressed the therapeutic impact of transitional objects in order to cope with his parents’ divorce. Results showed that creating a transitional object was found to provide an element of comfort, and self-soothing for the boy during a time when the mother was not always available. The transitional object became the boy’s coping tool during the divorce and provided him with the capacity to endure and develop a sense of autonomy after the trauma.

**Clay.** Morais, Roecker, Salvagioni, and Eler (2014) found that use of clay in art therapy promoted a release of emotions and helped clients feel pleasure in the process itself. The researchers reported that it offered a sense of control over feelings through the hands and helped
release tension, increase pleasure, and establish a sense of relaxation. Morais et al.’s study conducted on chronic mentally ill patients in a psychosocial care center, noted that clay was effective for channeling emotions in a positive manner, and helped address personal and familial conflicts in session. The sensation of touching clay (pounding, holding, squeezing) was found to be soothing, relaxing, and released negative energy which helped in stress reduction (Morais et al., 2014).

**Body mapping.** Body mapping originated in 2002 by Jane Solomon at the University of Cape Town, South Africa, as a therapy for women with HIV/AIDS. Body mapping has evolved into workshops for many other diseases, traumas, and living conditions (MacGregor, 2009). Body mapping is also believed to hold the potential for promising results in research with refugee and immigrant populations, where language, literacy, and cultural background may inhibit other approaches, such as interviews (Gastaldo, Rivas-Quaranti, & Magalhaes, 2012).

**Summary**

Overall, the present literature review revealed only a few studies that focused specifically on adult females diagnosed with ASD and comorbid mental disorders (e.g., Hooper, 2016; Mademtzi et al., 2018; McKibbin, 2016). The lack of research on this specific population may be a contributing factor to the delay in diagnosis in females, which may further contribute to the development of PTSD as a consequence (Mademtzi et al., 2018). Therefore, there was a need for research regarding the presentation of the female autistic phenotype. This researcher also concluded that there was a need for an alternative method for decreasing stress for females who have an undiagnosed autism spectrum disorder. Since EMDR was found to have a positive outcome in the treatment of PTSD and autism, other treatments such as art therapy may be
beneficial for this population. Therefore, utilizing therapeutic art making may have successful outcomes for adult females who have a diagnosis of PTSD and autism.
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CHAPTER III

Methodology

This heuristic study investigated the effectiveness of art making on stress reduction. This researcher conducted the study over a period of 10 sessions, creating one art piece in each session. The creation of artwork in each session was followed by writing a short paragraph that discussed and reflected on the imagery. The Perceived Stress Survey (PSS) was utilized as a pretest-posttest measure to assess variations in the researcher’s anxiety levels during the 10 day research period. The researcher’s counselor also utilized the Depression, Anxiety, Stress Scale (DASS-21) as an instrument to measure her emotional state in three debriefing sessions.

Participants

The participant was a 28-year-old female who was diagnosed recently with high functioning ASD (Asperger’s Syndrome) and PTSD. She was an immigrant from Cairo, Egypt who resided in the United States. She was undergoing severe adjustment difficulties due to her alien status in the United States, which has caused a traumatic impact on both life and emotions. The participant reported that being away from family, while having an undiagnosed developmental disability has caused her to face multiple traumatic incidents. The incidents included: bullying at her workplace, school, cyber bullying, a rape incident, and experiencing the trauma of being held in solitary confinement for over 24 hours in Immigration and Customs Enforcement (ICE) detention facility on the east coast in the United States.

Arts-based Heuristic Study

According to Moustakas (1990), there are six phases of a heuristic study: initial engagement, immersion, incubation, illumination, explication, and creative synthesis.
**Initial engagement.** The first goal of the researcher was to discover what types of self-care practice would be helpful for reducing stress caused by daily stressors induced by symptoms of ASD and PTSD. The researcher actively engaged in reflective art making for purposes of self-care. Reflective art making allowed the researcher to investigate the potential benefits of art making as a basis for the development of future studies that would focus on an art therapy program for adult females with autism and PTSD.

**Immersion.** According to Kapitan (2017), the process of immersion in art occurs through directing focus on depictions of space, the feelings that may be evoked, the mood, tone of the image, the balance, and the general composition of the image. The researcher immersed herself in art therapy literature. Various articles and books on the topics of autism and trauma were read in order to examine the experience of having the two disorders. Literature on how art therapy was beneficial in decreasing stress in these populations was also explored. The researcher also recollected some previous artwork created throughout the years. Each piece was remembered as a representation of expression regarding a specific event in life. The artworks represented externalization of thoughts and emotions through symbolism and themes.

**Incubation.** Kapitan (2017) described the incubation phase as a place where original conclusions begin to develop, patterns emerge, and ideas may change or be questioned. The incubation phase of this study occurred in two days, which occurred after session two and after session seven. During this time, the researcher was analyzing the images created by tagging symbols in the artwork in order to find common themes. The researcher also reviewed her pre and posttest results, as well as the materials used for each piece. The researcher also took the time to debrief with a counselor to process thoughts and feelings as a self-care method.
**Illumination.** Illumination occurs when intuition and understanding begin to emerge naturally Kapitan (2017). As part of this process, thoughts regarding the research questions, ideas, and themes begin to arise in awareness. With respect to the present study, illumination occurred when unexpected discoveries emerged throughout the process of the study. Through reflection, the researcher developed insight and an intuitive understanding of the art making process and the images being created. The illumination phase occurred during engagement in the art making process for each of the 10 sessions. In each session, one art piece was created along with a written reflection. The written reflection was intended to examine the effectiveness of the art making process in decreasing anxiety/stress levels and to discover emerging themes and ideas from the imagery. The art making process brought up feelings of catharsis, satisfaction, and relaxation.

**Explication.** Explication is when the researcher begins to delve deeper into the research Kapitan (2017). It is a time to articulate and examine important ideas that occur and emerge from the research. Moustakas (1990) explained that researchers were expected to form a general comprehension of primary themes in the artwork, gather and organize an overall summary and depiction of the experience. During the explication phase for the present study, the researcher engaged in writing reflections that answered specific qualitative questions examining how the experience made her feel, inquired whether it was relaxing or reduced her stress, and also inquired about the meaning behind the pieces.

**Creative synthesis.** Creative synthesis represents the final phase of a heuristic study during which the researcher transforms all collected data into a creative synthesis. Thus, the researcher works to convey a comprehensive understanding of the data, the symbols and meanings, scoring results, and the researcher’s unique experience. The creative synthesis phase
is typically represented through a narrative, artwork or any other creative means (Moustakas, 1990). For the present study, this phase involved the researcher’s integration of insights, artwork, themes, symbols, PSS scores, written reflections, and debriefing with the counselor to complete the thesis for this study.

**Research Design**

Prior to the study, the researcher had a debriefing session with her personal counselor, who assessed her levels of depression, anxiety, and stress using the DASS-21. Then, the researcher spent 10 sessions creating one art piece for one hour, followed by a written journal entry that reflected on the imagery and answered specific research questions regarding the art making process, the effect of art making in reducing her anxiety, and the meaning behind the imagery. She completed a pre and post PSS test during each session to measure her levels of stress and determine whether changes in anxiety level occurred.

The first five sessions consisted of making art without a specific directive. The researcher was free to choose the topic and media. The materials available included oil pastels, watercolors, acrylic paints, markers, colored pencils, and various sized paper. Two drawings were created using graphite pencils and ink, one collage piece, one drawing using oil pastels, and one watercolor painting. After completing the first five sessions of free-directive art making, another debriefing session with the counselor was accessed to assess the use of the DASS-21, which showed an evident decrease in anxiety and specifically stress levels.

The study continued through the completion of specific art therapy interventions for five sessions, which focused on stress reduction and emotion regulation (mask making, drawing a mandala, inside/outside box, transitional object, and body mapping). There was evidence of reduction in stress levels, but it was not as significant as the free-directive sessions. The final
debriefing session occurred at the end of the study. The counselor conducted the DASS-21 to assess for depression, anxiety, and stress, which showed anxiety and stress levels to have decreased to a normal range, without a significant decrease in depression.

**Research Instruments**

**Art Making.** The art making process had no specific directive in the first five days and consisted of five more sessions of specific art therapy interventions (Appendix A). The materials provided were acrylic paint, oil pastels, pencils, ink, various sizes of paper, and craft materials.

**Depression, Anxiety, And Stress Scale.** The DASS-21 (Lovibond, 1995) is a short form 21-item version of the Depression, Stress, and Anxiety Scale, which was designed to assess negative emotional states along three clinical subscales. Each subscale contains seven items. Examples of items from each of the three subscales are as follows: “I felt down-hearted and blue” (depression); “I felt I was close to panic” (anxiety); “I found it difficult to relax” (stress). Responses are evaluated based on a Likert-type scale that ranges from zero (does not apply at all) to three (applies most/all the time). Coker, Coker, and Sanni (2008) reported Cronbach’s alpha to be .81 and .89 for each of the two subscales, indicating strong internal reliability. The researchers also found excellent internal consistency, convergent validity, and discriminative validity.

**Perceived Stress Scale.** A modified version of the Perceived Stress Scale (PSS; (Cohen, Kamarck, & Mermelstein, 1983) was used in the present study to measure the researcher’s perceptions of stress. The PSS consists of 14-items that ask participants to assess levels of stress experienced within the last month in relation to a variety of factors, including unexpected circumstances, significant life events, and other challenges. It also assesses frequency of these experiences, as well as ability to cope and manage emotions. Items are rated on a 5-point Likert-
type scale, from 0 (“Never”) to 4 (“Very Often”). An example of an item from the PSS is “In the past month, how often have you felt that you were on top of things?” For the present study, the wording of the questions was modified to assess stress levels experienced specific to the timeframe of this study.

Maroufizadeh et al. (2018) conducted a study to examine the PSS-10 assessment for reliability and validity on Iranian women who were experiencing infertility. The results of this study showed that Cronbach’s alpha was 0.842, which indicated good internal consistency. They also found that the PSS-10 and its subscales were highly correlated with depression and anxiety and demonstrated reliability and validity using convergent validity. The PSS was also utilized and found to be consistent in an arts-based study on college students to examine the impact of clay as an art media on stress reduction (Davis, 2016).

**Reflective journaling.** According to Leavy (2015), in order for the researcher to accurately capture and examine the effects of the art making experience, the research should be conducted using qualitative methods for inquiring data. Leavy also indicated that studies examining visual data in arts-based research could be translated into a different medium, such as text. According to Riley and Hawe (2005), narrative inquiry (e.g., reflective journaling) was found to be effective in understanding and promoting evidence-based practices. O’Connell and Dyment (2013) credited this method in a study for understanding what had influenced service providers’ thoughts and decision-making process. Reflective journaling was found to increase critical thinking, as well as promoted learning in nursing and other educational settings (Nafei, Motearafi, & Sakaei, 2015). Leavy (2015) reported that the methodology of reflective journaling allowed for engagement in meaning making.
According to Leavy (2015) using narrative inquiry methods may help researchers in accessing and examining their individual experiences. Therefore, this researcher utilized a written journal to document the impact of the art making experience, and to examine the meaning behind the finished products. The researcher formulated six questions to assist in the writing process. These included *How did this process make you feel? Do you feel more relaxed? Can you indicate where in your body you feel relaxed? What are the major aspects of this artwork that seem most significant to you? What is the meaning behind this image? What is the title for this image?*

**Data Collection**

Research data was collected and stored in a locked safe in the researcher’s private residence. Data included artwork, written reflections, debriefing sheets, as well as the PSS pre and posttest results. The data was evaluated utilizing quantitative and qualitative methods, such as coding and theme generation for the qualitative data, and pre and post testing. The researcher calculated the quantitative data that was derived from the PSS and the DASS-21 scores to assess for differences in stress levels. The narrative inquiry helped the researcher add context to the pattern of stress reduction during each session. Then, the researcher also examined the overall scores of the PSS and the DASS-21 to look for changes from the beginning to the end of the study.

**Data Analysis**

Data was collected and prepared for analysis using qualitative content analysis. First, the participant completed a PSS survey by herself and a DASS-21 assessment was conducted by her counselor. These tests were used throughout the study to measure the levels of stress at the beginning, during, and at the end of the study. The PSS was filled before and after each art
making session, while the DASS-21 was conducted only at the beginning, and the end of the study. This enabled the researcher to monitor the stress levels in order to track changes accurately.

After completing the PSS and the art making, the participant also answered a qualitative questionnaire in each session that helped document the experience in order to accurately analyze the data. Conventional content analysis was utilized during the study, in order to examine the phenomenon if the art making process was going to reduce stress. This method was used to gather direct data from the participant without imposing any theoretical ideas, by asking open ended questions using the qualitative questionnaire, which was used after the art making process. It contained questions such as “how did the process make you feel?” and “are there major aspects of this artwork which seems most significant to you?.”

Then, the researched carefully read the answers word by word and highlighted important keywords that were relevant to anxiety, relaxation, and stress reduction. The researcher wrote her first impressions regarding these key thoughts and words to form an initial analysis. There were three major concepts derived from this study. First, oil pastels were found to produce strong emotional reactions. Second, collage was most effective in reducing stress, Third, free directive art making was found to reduce more stress when compared to specific interventions.

Directed content analysis was used to extend the theories derived from previous research regarding stress reduction through art making in autistic children and individuals with PTSD. It was used to examine if the art making process will reduce stress in an adult with a diagnosis of PTSD who is on the autism spectrum. The researcher used targeted questions after the art making process, such as “do you feel more relaxed?” and “can you indicate where in your body do you feel more relaxed?.” There were predetermined codes such as “satisfaction”, “stress reduction”,
and “relaxation” that the researcher was expecting to find in the data. These codes were highlighted in the answers of those qualitative questions which were then turned into major themes. These themes were created by categorizing words that related to the context of the predetermined codes and offered descriptive evidence that supported the research hypothesis.

Summative content analysis was also utilized in this process of data analysis to count the number of specific words that were used to answer the qualitative questionnaire. “relaxed” was used eleven times, “confident” was used 3 times, “playful” was used six times, “relief” and “stress reduction” were used six times, “satisfaction” was used three times. According to Morgan (1993), counting is a method utilized for identifying patterns in the raw data and to give context to the use of these words or phrases. The word count for “relaxed” was the highest in all the raw data and the study was meant to examine if art making reduced stress. When observing the content where the word “relaxed” was used, it interpreted that the art making process provided a relaxing effect that answers the research question. The art making did reduce stress. The words “playful” and “enjoyable” described the effectiveness of each art material in making the participant feel more relaxed, and therefore reducing her stress.

Finally, summative analysis was also used to show the internal consistency of the raw data derived from the answers for the qualitative questionnaire. It also provided credibility that showed that the textual evidence is in fact consistent with the PSS scores and the DASS-21 scores to provide an accurate overall interpretation.

**Validity and Reliability**

This research utilized quantitative and qualitative methodology to collect and analyze data. Quantitative methodology aimed at measuring numeric variables, meaning that it measured values in numbers to examine questions such as “how many” and “how much” in research. The
PSS and DASS-21 were utilized as quantitative measurement tools to assess how much stress was reduced by the art making process, or if there was no reduction at all. The PSS was used as a self-report measure and the DASS-21 was utilized by the researcher’s counselor during debriefing sessions in order to establish convergent validity for this study. The reason why the researched chose these two specific instruments was because they were shown to be consistent for test-retest reliability, as they had been utilized in multiple studies and resulted in similar outcomes (Shaughnessy, Zechmeister, & Zechmeister, 2012).

As two different measures of stress, the PSS and DASS-21 were also utilized in conjunction with each other to show evidence of convergent validity. The researcher found a consistent reduction in each post PSS score, which also correlated with the reduction in the stress levels score of the DASS-21. Both instruments had a high score of stress (PSS showed severe levels, and DASS-21 showed moderate levels) at the beginning of the study, then both instruments measured a significant drop in stress levels in the researcher to the normal levels. Even though the researcher used different instruments for measuring stress, both instruments converged on a normal level of stress in the end, which suggests that the results were convergently valid.

This researcher used qualitative methodology for this heuristic study to explore and capture the impact of the art making process on her emotional state, and to identify content patterns that emerged from the artmaking process as well as the artwork itself. The researcher used a qualitative questionnaire, which assisted in probing a written reflection after completing each artwork. This method helped the researcher gain insight into both experience and artwork, as well as assisted in finding content patterns that appeared consistent with the study’s quantitative results.
According to Djuraskovic and Arthur (2010), the purpose of heuristic studies is to explore and discover the nature and meaning of a specific phenomenon through internal exploration. Therefore, this researcher utilized this methodology in attempt to explore internal self through use of reflective artwork, written reflections, and processing the emotions that surfaced during this study with the counselor. Discussions during counseling sessions provided more insight on potential bias, and therefore assisted the researcher in maintaining an objective distance while analyzing the study.

**Ethical Implications**

According to the AATA (2011), researchers are required to have research reviewed by an institutional review board (IRB) and earn an approval prior to conducting research that involves humans as participants. This process was completed by submission and approval of the College Institutional Review Board. This heuristic study posed minimal risk to the researcher. Appropriate safety measurements were taken to minimize the potential of risks. The researcher utilized a licensed mental health professional who specialized in trauma in order to process through emotional states elicited throughout the study.

**Researcher Bias**

This researcher’s assumption regarding the effectiveness of art making in reducing stress may be biased due to personal experience of utilizing the art making process to reduce personal stress. The researcher has received appropriate artistic training, and training as an art therapist. She was able to acknowledge progress in reducing stress levels to cope with daily triggers inflicted by PTSD and hypersensitivities caused by ASD symptoms.
CHAPTER IV

Results

An analysis of the data indicated four overarching conceptual patterns. These included (a) emotional responses, (b) increase in self-esteem, (c) stress reduction/relief, and (d) responses to art materials (see Figure 1).

Figure 1. Content analysis map.

The following words were tagged to be most common in all of the participant’s entries: “confident, relaxed, playful, relief, empowerment, satisfaction.” After coding the written
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Reflections, common themes were drawn out to emphasize the impact of the art making process. The art making process was found to reduce stress by releasing tension, offering a distraction from intrusive thoughts through being focused on the art making process, providing a sense of relief that was satisfying and produced a sense of relaxation. This was evident in the codes that emerged from the written reflections “distraction from intrusive thoughts, grounding, release of tension, satisfying, playfulness, relaxed, focused.” It was also evident in the PSS and DASS pre and post scores. However, there was a mistake that occurred while using the PSS as a measurement instrument. The researcher used only one PSS sheet to record the scores; she did not keep a documented record the answers for each PSS test taken during the study.

Through the use of content analysis as a methodology to analyze the written reflections and the artwork, the researcher concluded several key points from analyses of the data. First, the art making process was found to have stress reliving effects. Second, the art making process was found to increase self-esteem. Through the analysis of the written reflections, the words “confident”, “empowerment”, “sense of control”, “growth” were all found to be common across multiple sessions. These codes were categorized and labeled under “increase in self-esteem” because they all appeared related to the participant’s perceptions of increases in her self-confidence/esteem.

In the non-directive art making sessions, the first image “Medusa” had the following codes in the participant’s written reflections (self-confident, in control, satisfied, confident in my skills, relaxed, empowered), the second image “The Scorned Woman and her Wolf” (not satisfied, triggering, confrontational, intimidating, intrusive thoughts, the third image “Lotus” (enjoyable, relaxed, growth, murky water, empowered, murkiness), the fourth image “Werewolf” (focused, grounded, sense of control, enjoyable, relaxing, distraction from intrusive thoughts).
and the fifth image “A Landscape of Trauma” (playfulness, playing, playful, relaxed). In the specific directive art making sessions, the sixth piece was the “Anonymous” mask, which had the following codes (playful, enjoyed, relieving, satisfying, relaxed, growth, growing hopeful), and in the seventh piece “The Nightscape Mandala” (focused, grounded, relaxed, sense of safety).

The eighth piece “Box of Grief” had the following codes (closure, felt heavy, relaxed, less intrusive memories), the ninth piece “The Anxious Monster” (enjoyable, playful, a sense of relief, less stressed, relaxed, squeezed negative energy out of my body), and the tenth piece “Embracing the Pain” (outlet for expression, relaxed, elevated self-esteem, release in tension, honoring my pain). These codes were collected and listed in groups according to relevance. These groups were titled as categories that relate to each code under which it is listed (Figure 2).

![The Impact of the Art Making Process](image)

**Figure 2.** Content analysis chart.

Then, the codes were hand-written and grouped in lists and categorized into categories that represented common ideas. The codes listed in each group were arranged into a conceptual map, which brainstormed a flow of ideas constructed from the categories.

Furthermore, the art making process produced various emotional responses from the participant. Some of these emotional responses seemed difficult, and as such, were noted by the
participant in the written reflections to be “triggering, confrontational, intimidating.” However, these difficult emotional responses offered a sense of catharsis to the participant.

**Emotional Responses**

The art making process, and the end result images that were created during this study produced various emotional responses, which were noted in the participant’s written reflections. Even though some of these emotional responses seemed to be negative, the participant’s stress and anxiety levels were still significantly reduced by the end of the study, according to the DASS-21 and the PSS results. According to the written reflections, the images were significant also because of related symbolic meaning to the participant, which provided feelings of empowerment. For example, the image entitled “Medusa” (Figure 3) is a powerful visual depiction of the researcher’s experience of no longer being a victim of traumas. In relation to this image, the researcher reflected that “I am powerful, I am smart, I am calm and collected and predatory men should fear my gaze like the Medusa.” This title was chosen because of its relationship to the original Medusa story, as expressed in the researcher’s own words: “she was exiled by her rapist’s wife and she was cursed to live alone in isolation and never find love because she will turn every man she gazed upon into stone, but she does not care.”
The second session’s imagery and art making process brought some heavy emotional responses. The participant reported that the process did not reduce feelings of stress. The process instead triggered an emotional response. The following statements were reported in the participant’s written reflections: “I felt this image was too confrontational to my feelings and that felt intimidating to me” and “Throughout the art making process I was constantly thinking about a specific traumatic experience the whole time.” There was no evidence of feeling relaxed anywhere in the participant’s body. There were some major aspects of this image reported by the participant that showed personal relevance such as the symbolism of the wolf, the female with deer antlers, and the way the eyes of both creatures were abnormally glowing. The meaning behind this image depicted a “scorned female monstrosity who was exiled in the deep dark woods, where she made a companion (the wolf).” It was reported that the image is “frightening” and “it almost appears that the scorned female who has deer antlers is very angered and will let
her would attack anyone who enters her dark woods. She made a fortress out of her exile and she is protecting it.” The image was titled as “The Scorned Woman and her Wolf” (Figure 4).

![Image](image_url)

*Figure 4. Image created during study, The Scorned Woman and Her Wolf.*

Figure 5 shows a decorated box, entitled “The Box of Grief.” Specific parts of this artwork were noted, such as the use of different colors inside the box and outside, and the choice of words used to decorate the box. The outside of the box had the color deep red and had two word choices that decorated it: “hopeful” and “draw away.” The written journals indicated that the outside of the box showed a positive outlook on a difficult experience, while the inside showed feelings that were hidden and referred to as negative feelings by the participant. The box was utilized by the participant as a transitional object, which provided comfort and ease into a transition from being married to divorce. The box was used to contain a wedding ring, which provided a sense of closure and relief, according to the participant’s written reflections.
Increase in Self-Esteem

A prevalent theme that emerged in this study was an increase in self-esteem that was reported in written reflections and emerged from the participant’s sense of mastery during the art making process. Written reflections of feeling “in control,” “confident in my own skills,” and feeling “empowered” were reported multiple times. Also reported were relationships to some of the characters drawn within the images which induced feeling less like a victim.

Pre and post PSS test results revealed an increase in the participant’s self-esteem. This was evident also in written reflections. In session one, the participant created the image of the “Medusa” illustrated in Figure 1. The pretest scored 36 out of 40, indicating severe stress levels. However, the posttest scored 33 out of 40, showing a three-point decrease in stress levels. The
participant’s written reflections showed there was an increase in self-esteem, which may have contributed to the decrease in stress. During the first session, the written journal report included, “I felt extremely self-confident. I felt like I was in control of everything I wanted to create in this piece. I felt very satisfied with the end result and confident in my skills.”

In session three, the participant created an image entitled “The Red Lotus” (see figure 6), which also indicated an increase in self-esteem. The PSS pretest scored 30 out of 40, which indicated severe stress levels, whereas the posttest scored 25 out of 40, showing a 5-point reduction in levels of stress after creating this piece. The written reflection supported the evidence of an increase in self-esteem, which may have contributed to the stress reduction through the content and symbolism in the image. The participant reported “the blooming lotus makes me feel empowered, that I can overcome and grow out of the murkiness around me.”

![Image](Image.png)

*Figure 6.* Image created during study, *The Red Lotus.*

The participant completed a body mapping portrait (Figure 7). It was documented that the process provided an outlet to express body aches and body locations of anxiety. It was reported that the process generated a reduction in feelings of stress, indicated by a release in tension in
shoulders, back, chest, and smiling. The significance of this piece (Figure 7) was reported by the researcher to be the flowers that “honor the pain.” It was titled, “Embracing the Pain.” The pretest scored 30 out of 40, indicating severe stress levels, and the posttest scored 27 out of 40, showing a 3-point reduction in stress.

*Figure 7. Body Mapping artwork created during study, Honor the Pain.*

**Stress Reduction/Relief**

The results of this study indicated that the art making process had a noticeable impact on stress reduction. Non-directive art making showed more promising results in stress reduction in comparison to specific directives and/or interventions. This was evident in the DASS-21 pre and post scores. The first debriefing session showed a score of 22 on depression (severe), 17 on anxiety (severe), and 24 on stress (moderate). The posts score showed an increase in levels of depression (26). However, there was a decrease in anxiety and stress, which had dropped down to the normal range (anxiety was 7 and stress was 14). Free directive art making sessions seemed to have a stronger impact on reduction of stress in comparison to the specific directive sessions. This was evident in the pre and post PSS scores. The use of specific art materials were found to have significantly higher impact on stress reduction, compared to the anticipated specific
directive session. Collage and clay were found to have the highest impact on stress reduction according to the pre and post PSS testing, in comparison to other art media.

The PSS and the DASS-21 pre- and post-assessment scores showed a significant reduction in stress and anxiety levels for the participant. Anxiety and stress levels of this participant scored severely high at the beginning of this study and was reduced to normal at the end. The first PSS posttest scored 33 out of 40, while the final posttest scored 27 out of 40. The DASS-21 scored 17 on anxiety (severe), and 24 (moderate) on stress. The second debriefing session showed a 7-point reduction in anxiety scores to 10 (moderate) and a 12-point reduction in stress levels to 12 (normal). The final debriefing session showed the scores of 7 on anxiety (normal) and 14 (normal).

Reflective Journals offered an in-depth analysis of the art making process and captured how the experience affected the participant in reducing stress. This was evident in the participant’s written reflections, which documented statements including “I feel a lot more relaxed” and “I feel less tension in my shoulders, chest, and feet.” Written reflections indicated that being “playful” with the art materials contributed to significant stress reduction. Figure 8 shows the image of a collage, titled as “A Landscape of Trauma.”

The participant reported that the art making process produced feelings of “playful and curious” while looking at the pictures to pick for the collage. The participant reported feeling the playfulness when she was arranging and gluing the pieces together. It was reflective of playing with a puzzle. It was documented that this process produced feelings of relaxation. This was evident in reports of feeling less tension in shoulders, feet, and arms. When asked about the major aspects of this collage, it was reported that “the words carry so much relevance to me.”
Figure 8. Collage image created during study, *A Landscape of Trauma.*

Figure 9 depicted an image of a mask. The participant documented that the mask making process was “fun”, she felt “playful” and “enjoyed putting together the piece for this mask. Especially the process of poking holes in the mask with thumbtacks, which felt relieving and satisfying.”
Nondirective art making was found to reduce stress more than specific directives. The participant noted in the written reflections that the specific directive sessions “felt like a chore.” This could be considered a reason why nondirective art making contributed to more reduction in stress, compared to specific directives. Some art materials were found to reduce stress more than others during this study, such as collage and clay.

In session four, she created an image entitled “beastie” (Figure 10), which looks like a portrait of a female werewolf. The participant documented that the process made her feel focused and grounded. Further the researcher documented that “Using graphite pencils gave me a sense of control that I enjoyed. I enjoyed creating the lines, the shading, and focusing on the attention to details was very relaxing to me. It offered me a sense of distraction from intrusive thoughts.” Additionally, the researchers also noted increased feelings of relaxation, which were evident in reduced tension in shoulders, arms, legs, and back.
Figure 10. Image created during study. *Beastie.*

Figure 11 depicted an image of a mandala. The participant documented the process creating a mandala as “relaxing and grounding.” She indicated feeling less tension in the chest, shoulders, and arms. The participant reported that she did not intend to draw a landscape at nighttime when she began this piece. However, she drew multiple lines and the end result was that this image emerged. Being in nature at night was reported as a safe place, and a repeated image previously made. The participant documented a belief that the circular shape of the mandala, together with the process of drawing multiple lines, subconsciously brought forth an image of the safe place that provided a sense of calm and safety. The piece was titled “Nightscape Mandala.”
Figure 11. Mandala created during study, *Nightscape Mandala.*

Figure 12 represented a clay piece created to represent a transitional object. The participant reported that the process of making a transitional object out of clay was “fun,” “playful,” and produced a sense of physical and emotional relief by squeezing the clay and sensing multiple materials put inside the clay (glitter, markers, and acrylic paint). A reduction in feelings of stress and tension in shoulders and hands was also reported. The process “squeezed all the negative energy out of her hands onto the clay.” The participant reported enjoyment in the process more than the outcome and indicated the significant parts of the piece to be a bright pink color and that the face had no facial features other than eyes. The clay piece was titled, “The Little Anxious Monster.”
Responses to Art Materials. Collage was used in session five and was found to have the most impact on reducing stress in one session. “A Landscape of Trauma” (Figure 8) scored the highest in stress reduction, in comparison to all the materials utilized and sessions in this study. The post PSS score showed a decrease by eight points during this session. Clay was also found to impact stress reduction, as evidenced by a six-point reduction in the post PSS test score. The lowest levels of stress reduction was zero, which occurred in session two. During this session, the participant used oil pastels in a non-directive manner. Drawing mandalas and the inside/outside box making (sessions seven and two) scored the lowest in stress reduction, during which the participant used materials such as ink, acrylic paints/markers, graphite/pencil, and paper cut outs. The PSS post test scores for the two interventions showed only a two-point reduction in stress levels.
CHAPTER V

Discussion

The research study was guided by the question *what is the impact of art making on an adult female with PTSD and Autism Spectrum Disorder on stress reduction?* The purpose of this study was to examine the effects of art making on stress reduction in an adult female on the autism spectrum who has a comorbid diagnosis of PTSD. The literature review, which supported the use of specific art therapy interventions as highly successful in reduction of stress (e.g., mandalas, transitional objects, mask making) did not seem to have the same impact on this participant in comparison to the free directive sessions. Four overarching conceptual patterns were identified, including (a) increase in self-esteem, (b) stress reduction/relief, (c) emotional responses, and (d) responses to art materials.

**Increase in Self esteem**

According to the findings from the present study, art therapy may be an important way of helping individuals with autism to increase self-esteem. This was evident in the researcher’s written reflection in the image produced in the first session “Medusa,” in accordance to the relationship to the story and the participant, which helped encourage feelings of empowerment. The current literature on art therapy confirmed a correlation between art making and self-esteem in orphans in Mangalore (Devidas & Mendonca, 2017). The study showed improvement in the orphans’ level of self-esteem after participating in art therapy. Malchiodi (2003) discussed that individuals with an autism spectrum diagnosis can find alternative ways to communicate through art making. In this research, the autistic participant found a way to communicate her feelings by using the Medusa, a character in Greek mythology with whom she felt she could, in order to communicate her feelings.
The participant’s feelings of empowerment through art making was evident in previous literature. Hartz and Thick (2005) examined the effectiveness of art psychotherapy versus art as therapy on the improvement of self-esteem on female juvenile offenders. Moon (2009) also confirmed and explained how the art making process assisted in the development of personal power through the act of creating. He described the art making process and creativity transformed victims to heroes/survivors. This process of transformation was evident in this study according to the participant’s written responses, which discussed the feelings that were evoked through the art making process.

Findings of the present study served to corroborate earlier research regarding various beneficial aspects of the art making process. Landgarten (1981) reported that the act of creating art was inherently empowering and increased the artist’s self-esteem. Therefore, it seems that the art making process can provide the creator with a sense of mastery, empowerment, self-assertion, and has the power to transform the perception of trauma victims to heroes and survivors (Elkis-Abuhoff, 2008; Schwizer et al., 2017).

**Stress Reduction/Relief**

This study showed that art making was efficient in reducing stress, mood improvement, provided a coping tool for distracting the participant from difficult feelings and thoughts, produced a sense of relaxation, and offered an alternative outlet for expression and communication. There were multiple studies in art therapy literature that produced similar results, such as Abbott, Shanahan and Neufeld’s research (2013) findings indicating that the art making process was an efficient means of stress reduction and overall mood improvement. Other researchers studied the benefits of art making for college students by the simulation of an open art studio. Foster (1992) and Czamanski and Cohen (2012) reported that using the art making
process and writing offered a sense of distraction instead of venting. Drake and Winner (2012) also believed that the process promoted positive mood. These researchers found that free directive art making gave an opportunity for mastery and choosing one’s own materials and what to create supported the improvement of problem-solving skills and decision making.

Results found that art making reduced stress for the students (Sandmire et al., 2012). Drake and Winner (2012) also proposed that the art making process worked as a distraction. Schweizer, Spren and Knorth (2017) found that art therapy with children diagnosed with ASD contributed to increased relaxation, flexibility, and expression. Therefore, this study showed a potential for art therapy to produce the same positive results for adults with autism. Pioch (2010) also confirmed the benefits of art therapy to the contribution to positive changes in mood and relaxation.

In this study, the participant’s DASS-21 and PSS scores indicated that there was a decrease in levels of stress and anxiety. Even though the participant continued to score severe in her depression score for the DASS-21, she was still able to utilize the art making process to decrease her stress and anxiety and had the capacity to remain creative and insightful. The participant was able to find symbolic meaning in all the created artwork and reflected on these images in written reflections, this provided evidence of her improved ability to communicate and be insightful. Herbert (2010) suggested that individuals who had ASD still possessed the capacity to remain creative and insightful, and that the art making process helped them cope, regulate emotions, and communicate.

According to Abbott et al. (2013), and Sandmire et al. (2012), art therapy was found to reduce stress for college students and provided an overall improvement in mood. Schweizer et al.
(2017), and Pioch (2010) also found that art therapy with children on the autism spectrum provided them with a sense of relaxation.

This study showed that positive focused artwork did not necessarily have a significant impact on stress reduction. In fact, it was the free directive art making that had more significant impact on stress reduction. Giving the opportunity for the participant to choose her own directive was relaxing and helped decrease stress and anxiety levels more than specific positive focused interventions, because it provided a sense of control, which was noted in written reflections.

Therefore, the results of this study serves as a counterpoint to the research of Curl (2008), who found that participants who created positive focused artwork showed a decrease in stress. However, this research showed similar results to Kaimal and Ray’s (2017) study, which confirmed the effectiveness of free art making in lowering negative affect, improving positive affect, and improving self-efficacy. The findings of this study also supports the results of Pennebaker and Francis (1996), who found that art making was useful in trauma work to organize thoughts and feelings into narratives through journaling and reflective writing, because it provided an opportunity for catharsis and encouraged problem solving.

**Emotional Responses**

There was evidence of strong emotional responses that emerged from the art making process during this study. The most emotional response were noted occurred while using oil pastels during creating “The Scorned Woman and Her Wolf” (Figure 4). The participant reported feeling “triggered” and noted that the image seemed to be “confrontational,” “intimidating,” and “frightening.” The participant also withdrew from the study for two days before continuing the study to regain an emotional equilibrium after creating this piece. This has led the researcher to investigate similar responses to oil pastels in other studies. Surprisingly, the study by Haiblum-
Itskovitch et al. (2010) showed a similar increase in emotional reactivity to oil pastels which was not anticipated by the researchers. Hinz (2009) also noted that oil pastels as a medium could easily be smeared, enabling the user to engage the senses in tactile processes, and therefore could be the reason why it encouraged emotional arousal. Making art with oil pastels showed a unique pattern of sympathetic responses when compared to drawing with pencil or painting with gouache (Haiblum-Itskovitch et al., 2010).

**Responses to art materials**

The findings of this study showed a correlation between art materials and stress reduction. Collage was found to be most effective in reducing stress, followed by clay. Oil pastels were found to trigger and evoke strong emotions (positive and negative), which may potentially increase or decrease the levels of stress. This study confirms the research findings of Davis (2016) regarding the effectiveness of clay in stress reduction. It also confirms the findings of Haiblum-Itskovitch et al.’s (2010) research, which claimed oil pastels can evoke strong emotions. The present findings pertaining to the effectiveness of collage in reducing stress when compared to other mediums appears to be novel, as prior research could not be found comparing collage to other media for purposes of stress reduction.

**Limitations**

Even though this study showed results that align with many previous studies regarding the effects of art making on stress reduction, this study is not without limitations. In terms of quantitative analyses, the small sample size limits the generalizability of the findings beyond the current study. Additionally, external variables were not examined (e.g., environmental factors, conditions in the space) that may have impacted pre-post results. Finally, the researcher did not conduct item analyses of the measures used, limiting a more nuanced perspective of the
participant’s experiences concerning her stress levels. In terms of qualitative data, trustworthiness and credibility of the finding may have been impacted by researcher bias.

**Recommendations and Future Studies**

This study may be used as a basis for developing an art therapy group for adults with ASD who have a high numbers of ACEs. More art therapy research can be conducted on children and adult females with autism to examine the benefits of art therapy and the art making process to increase their communication skills, decrease emotional responses to hypersensitivities and triggers, and increase their overall wellness and daily functioning.

As there was a lack of detailed answers for each PSS score, other assessments may be used for pre and posttest measurement that may provide more information when gathering data. Conducting multiple interviews with research subjects, as well as analysis of the symbolism of the artwork created could help provide a closer analysis of the subjects’ experience throughout the study, as well as generate conceptual and descriptive themes with explanatory power in terms how art making contributes to overall wellness.

**Conclusion**

The results of this heuristic study indicated that art making has the potential to decrease levels of stress and intrusive memories related to PTSD in an adult female on the autism spectrum. Thus, art therapy may serve as an effective coping and self-care tool for other adult females who struggle with undiagnosed or diagnosed ASD and PTSD. Qualitative analyses of the visual and written data of this study indicated that the art making process produced a sense of pleasure, increased self-esteem, and provided an outlet for difficult feelings that felt cathartic and relaxing.
These findings corroborate the work of numerous researchers MacGregor (2009), Malchiodi (2003), McCullough (2009), Nishida and Strobino (2005), all of whom have found positive benefits from engaging in the art making process in areas of mood, stress, reduction, and relaxation with various populations.

The results of this heuristic study can be utilized for the development of a studio art therapy program that may assist various individuals who suffer from anxiety and stress to utilize the art making process as a self-care tool for coping with their stress. The researcher also recommended the program to be developed for future studies for individuals with developmental disabilities who were trauma survivors to serve as a tool for coping through adverse life events. This study can advance the field of art therapy by providing a starting point for research specific to a population long neglected in the literature: females with ASD who may have developed PTSD due to the absence of appropriate tools for diagnosis and treatment.
References


of Autism.


27794


doi:10.1016/j.erap.2012.08.005.


ART FOR STRESS REDUCTION


ART FOR STRESS REDUCTION


APPENDIX A

Intervention Protocol

Intervention Protocol for Session One to Session Five (Free Directive Art Making)

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose one or more of the following media: (markers, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to create an art piece for one hour.

4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
   d. What are the major aspects of this artwork which seems most significant to you?
   c. What is the meaning behind this image?
   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Intervention Protocol for Session Five: Mask Making

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose one or more of the following media: (markers, crafts media, plain mask, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to create a mask.
4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
   d. What are the major aspects of this artwork which seems most significant to you?
   c. What is the meaning behind this image?
   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Intervention Protocol for Session Six: Mandala

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose one or more of the following media: (markers, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to create a mandala.

4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
   d. What are the major aspects of this artwork which seems most significant to you?
   c. What is the meaning behind this image?
   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Instructions for Session Seven: Transitional Object with Clay
1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose clay, markers, craft materials, and paint for this intervention to create a transitional object.

4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
   d. What are the major aspects of this artwork which seems most significant to you?
   c. What is the meaning behind this image?
   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Instructions for Session Eight: Inside/Outside Box

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose one or more of the following media: (markers, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to decorate a wooden box which describes your inner and outer self.

4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
d. What are the major aspects of this artwork which seems most significant to you?

c. What is the meaning behind this image?

d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Instructions for Session Nine: Body Mapping

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.

3. Choose one or more of the following media: (markers, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to create a map of your body.

4. Complete a written reflection for fifteen minutes that answers the following questions:

   a. How did this process make you feel?

   b. Do you feel more relaxed?

   c. Can you indicate where in your body do you feel relaxed?

   d. What are the major aspects of this artwork which seems most significant to you?

   c. What is the meaning behind this image?

   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.

Instructions for Session Ten: Road Drawing

1. Set up materials for this activity.

2. Complete the modified Perceived Stress Scale for five minutes.
3. Choose one or more of the following media: (markers, colored pencils, pencils, oil pastels, colored tissue paper, Xerox paper, acrylic paint, ink, glue) to Draw a Road.

4. Complete a written reflection for fifteen minutes that answers the following questions:
   a. How did this process make you feel?
   b. Do you feel more relaxed?
   c. Can you indicate where in your body do you feel relaxed?
   d. What are the major aspects of this artwork which seems most significant to you?
   c. What is the meaning behind this image?
   d. What is the title for this image?

5. Complete the modified Perceived Stress Scale for five minutes.
APPENDIX B

The DASS-21 Results

Summary for Session One

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<table>
<thead>
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<td>Depression</td>
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<tr>
<td>Anxiety</td>
<td>17</td>
</tr>
<tr>
<td>Stress</td>
<td>24</td>
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</tbody>
</table>

Your Score

Considered Normal

<table>
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<th>Your Score</th>
<th>Severity Level</th>
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<tbody>
<tr>
<td>Depression</td>
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<td>Severe</td>
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<tr>
<td>Anxiety</td>
<td>17</td>
<td>Severe</td>
</tr>
<tr>
<td>Stress</td>
<td>24</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Depression

22
Your Score
9
Considered Normal

Your results show that you may be currently experiencing a **Severe** level of depression. You received a score of 22 for depression. A score of 9 is considered normal for depression.

This indicates that you may have been recently experiencing many of the characteristics displayed by high scorers on the depression scale including feeling:

- self-disparaging
- dispirited, gloomy, blue
- convinced that life has no meaning or value
- pessimistic about the future
- unable to experience enjoyment or satisfaction
- unable to become interested or involved
- slow, lacking in initiative
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Your results indicate that your depression levels are currently at a Severe level. It is suggested that your levels of depression indicate that you are experiencing these emotions frequently and strongly and you should seek the advice of a medical professional immediately. You should also continue to monitor your depression levels and identify ways to reduce this negative emotional state.
Read more about depression.

**Anxiety**

17
Your Score
7
Considered Normal

Your results show that you may be experiencing a **Severe** level of anxiety. You received a score of 17 for anxiety. A score of 7 is considered normal for anxiety.

This indicates that you may have been recently experiencing many of the characteristics displayed by high scorers on the anxiety scale including feeling:
- apprehensive, panicky
- trembly, shaky
- aware of dryness of the mouth, breathing difficulties, pounding of the heart, sweatiness of the palms
- worried about performance and possible loss of control

Your results indicate that your anxiety levels are currently at a Severe level. It is suggested that your levels of anxiety indicate that you are experiencing these emotions frequently and strongly and you should seek the advice of a medical professional immediately. You should also continue to monitor your anxiety levels and identify ways to reduce this negative emotional state.
Read more about anxiety.

**Stress**

24
Your Score
14
Considered Normal

Your results show that you may be experiencing a **Moderate** level of stress. You received a score of 24 for stress. A score of 14 is considered normal for stress.

This indicates that you may have been recently experiencing some of the characteristics displayed by high scorers on the stress scale including feeling:
- over-aroused, tense
- unable to relax
- touchy, easily upset
- irritable
- easily startled
- nervy, jumpy, fidgety
• intolerant of interruption or delay

Your results indicate that your stress levels are currently at a Moderate level. It is suggested that your levels of stress indicate that you are experiencing these emotions frequently and strongly and you should seek the advice of a medical professional immediately. You should also continue to monitor your stress levels and identify ways to reduce this negative emotional state.

Summary for Session Two

<table>
<thead>
<tr>
<th></th>
<th>Your Score</th>
<th>Severity Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>21</td>
<td>Severe</td>
</tr>
<tr>
<td>Anxiety</td>
<td>10</td>
<td>Moderate</td>
</tr>
<tr>
<td>Stress</td>
<td>12</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Depression

21
Your Score
9
Considered Normal

Your results show that you may be currently experiencing a **Severe** level of depression. You received a score of 21 for depression. A score of 9 is considered normal for depression.

This indicates that you may have been recently experiencing many of the characteristics displayed by high scorers on the depression scale including feeling:

• self-disparaging
• dispirited, gloomy, blue
• convinced that life has no meaning or value
• pessimistic about the future
• unable to experience enjoyment or satisfaction
• unable to become interested or involved
• slow, lacking in initiative

Your results indicate that your depression levels are currently at a Severe level. It is suggested that your levels of depression indicate that you are experiencing these emotions frequently and strongly and you
should seek the advice of a medical professional immediately. You should also continue to monitor your depression levels and identify ways to reduce this negative emotional state. Read more about depression.

Anxiety

10
Your Score
7
Considered Normal

Your results show that you may be experiencing a Moderate level of anxiety. You received a score of 10 for anxiety. A score of 7 is considered normal for anxiety.

This indicates that you may have been recently experiencing some of the characteristics displayed by high scorers on the anxiety scale including feeling:

- apprehensive, panicky
- trembly, shaky
- aware of dryness of the mouth, breathing difficulties, pounding of the heart, sweatiness of the palms
- worried about performance and possible loss of control

Your results indicate that your anxiety levels are currently at a Moderate level. It is suggested that you continue to monitor your anxiety levels and identify ways to reduce this negative emotional state. If you begin experiencing these emotions frequently and strongly or if you feel that you need help then you should always seek the advice of a medical professional. Read more about anxiety.

Stress

12
Your Score
14
Considered Normal

Summary for Session Three

<table>
<thead>
<tr>
<th></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>26</td>
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<tr>
<td>Anxiety</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Stress</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

Your Score
Considered Normal
Depression

| Depression | 26 | Severe |

Anxiety

| Anxiety | 7 | Normal |

Stress

| Stress | 14 | Normal |

**Depression**

26

Your

Score

9

Considered Normal

Your results show that you may be currently experiencing a **Severe** level of depression. You received a score of 26 for depression. A score of 9 is considered normal for depression.

This indicates that you may have been recently experiencing many of the characteristics displayed by high scorers on the depression scale including feeling:

- self-disparaging
- dispirited, gloomy, blue
- convinced that life has no meaning or value
- pessimistic about the future
- unable to experience enjoyment or satisfaction
- unable to become interested or involved
- slow, lacking in initiative

Your results indicate that your depression levels are currently at a Severe level. It is suggested that your levels of depression indicate that you are experiencing these emotions frequently and strongly and you should seek the advice of a medical professional immediately. You should also continue to monitor your depression levels and identify ways to reduce this negative emotional state.

Read more [about depression].

**Anxiety**

7

Your

Score

7

Considered Normal

Your results show that you may be experiencing a **Normal** level of anxiety. You received a score of 7 for anxiety. A score of 7 is considered normal for anxiety.

Your results indicate that your anxiety levels are currently at a Normal level. It is suggested that you continue to monitor and be aware of the symptoms of anxiety and if you begin experiencing these emotions frequently and strongly you should consider seeking the advice of a medical professional.
Read more about anxiety.

**Stress**

14
Your
Score
14

Considered Normal

Your results show that you may be experiencing a **Normal** level of stress. You received a score of 14 for stress. A score of 14 is considered normal for stress.

Your results indicate that your stress levels are currently at a Normal level. It is suggested that you continue to monitor and be aware of the symptoms of stress and if you begin experiencing these emotions frequently and strongly you should consider seeking the advice of a medical professional.