

Running head: CREATING AMYGDALAS: 3D ART MAKING

Creating Amygdalas: 3D Art Making
with Art Therapy Graduate Students to Reduce Stress

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ABSTRACT

This descriptive quantitative study explored whether three-dimensional (3D) art making using textiles and fibers would serve to decrease perceived stress in a convenience sample of eight art therapy graduate students. More specifically, participants were first given psycho-education about the role and function of the amygdala, after which they were prompted to create a three-dimensional textile doll in the form of an amygdala using a variety of fabrics, textiles, and fibers. As part of the artmaking intervention, participants were encouraged to externalize any internal emotions and feelings into their amygdala doll. To determine effectiveness of the intervention, all participants were administered a pre and posttest self-inventory created by the researcher, which aimed to assess whether change occurred pertaining to physical feelings, emotional understanding, and overall mindset. Quantitative data were analyzed across all participants at the item level, revealing that the 3D art making directive helped lower stress in art therapy graduate students. Further research is recommended to explore the effects of doll making and stress levels with graduate art therapy students and expand to other graduate students dealing with stress.

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CHAPTER I

Introduction

At the foci of the present research study is the *amygdala*, an almond-shaped region of the brain that, in technical terms, is considered essential for the integration of emotional components and decision-making (Roaten, 2011). However, in art-making forms, the present researcher believes that the representation of the amygdala could serve as a symbolic art intervention for individuals to understand how the brain works, as well as how to cope with the stress and anxiety of everyday life. According to Lusebrink (2004), creating amygdala dolls with textiles and needlework has the potential to engage the brain in tasks involved with visual and sensory information processing, emotional states, and formation of memories. The amygdala is also involved in processing sensory information, including memory formation related to stressful experiences and understanding the processing responses that accompany fear (Russell, 2005).

The impetus for this study stemmed from this researcher's belief that symbolic representation of the amygdala might serve as an important therapeutic intervention. Moreover, the research in this area was grounded in the literature of therapeutic doll making, and it was believed that the outcome of the study would add invaluable information towards the field of art therapy. The researcher created this study because she was inspired by the book *Hey Warrior* by Young and Dovidonyte (2017), along with her work in inpatient treatment with children and their families. The researcher was able to create an art directive that involves sewing, constructing, and creating a transitional stuffed animal with a positive affirmation or intention inside. This directive has served many of her patients and families at a psychiatric hospital, with the researcher having witnessed numerous positive benefits related to its use in therapy, such as the therapeutic relief in sewing and crafting.

Unmanaged stress can result in common symptoms among mental health professionals and graduate students who were studying to be therapists, including low energy, tense muscles, and insomnia (James, 2016). Roach and Young (2007) reported that counselor education programs have strongly encouraged self-care as a response to stress and challenges. Self-care practices have been regarded as essential during internships as students began to experience psychological and emotional demands of the mental health profession (Testa & Sangganjanavanich, 2016). Although graduate students may recognize the importance of self-care, some may struggle to implement these practices regularly (Coaston, 2019). Thus, the present researcher believed that this study would serve as a step for others in their personal treatment and self-care. Because of the usefulness of this directive with children and their families, the researcher also wanted to explore the ways that this directive could benefit graduate students in their self-care and self-awareness.

Problem Statement

In a study by Brunner, Wallace, Reymann, Sellers, and McCabe (2014), they indicated that 27% of 47,600 graduate students in the United States experienced stress and high levels of anxiety due to schoolwork, burnout, compassion fatigue, vicarious trauma, and pressure from their everyday personal lives. The researcher found available treatments for art therapy graduate students and their mental health challenges, but there was limited literature on the effects of dollmaking and art therapy graduate students to reduce their stress levels (Feen-Calligan, McIntyre, & Sands-Goldstein, 2009). Therapeutic dollmaking was intended to help individuals with their self-esteem and psychological distress. This research was intended to gain insights into the effects of sewing, as well as to introduce creating amygdalas as a therapeutic coping skill

for graduate students. More research in therapeutic dollmaking may allow for further advancement in the field of art therapy.

Research Question

This research study was designed to explore the use of dollmaking with art therapy graduate students and was guided by the following question: *How does creating an amygdala doll impact stress levels in graduate art therapy students?*

Basic Assumptions

Art therapy graduate students have reported high levels of stress and may have an increased vulnerability to strain and impairment (Lindsey, Robertson, & Lindsey, 2018). Parker-Pope (2008) noted that poor coping strategies and prolonged exposure to stress may produce experiences that can have negative impacts on the graduate students mental, physical, and social well-being of graduate students. Therefore, self-care has been considered essential for graduate students in the mental health professional field to prevent them from distress, burnout, or compassion fatigue (Barnett, 2009). Practicing self-care and acknowledging coping skills may help to alleviate those stressors and anxiousness. Barnett (2009) felt that those who attend to their self-care provide a higher quality of service to themselves, their profession, and those that they serve. Based on this literature, the researcher assumed that creating amygdala dolls would serve to facilitate self-expression in the art therapy graduate students who comprised the research participants in this study. The researcher also assumed that there is inherent value in the art of creating amygdala dolls, as well as that needleworking and dollmaking could be used as a coping skill to reduce stress in art therapy graduate students.

Statement of Purpose

The purpose of this study was to explore the creation of amygdala dolls using textiles. There were limited scholarly publications specifically about textiles and fiber arts in relation to stress and art therapy graduate students. This data may provide support for the use of sewing, textiles, and fabrics as a form of stress relief. The results may be used to develop an art therapy group for stress reduction for graduate students.

Definition of Terms

Amygdala. Emotional processing first takes place in the amygdala, which is located in the subcortical limbic system of the brain. The amygdala has a key role in stressor processing, particularly for emotional stressors, and especially in organizing anxiety or fear-related behavior. The amygdala also has a central role in organizing memories associated with those stressors (Lusebrink, 2010).

“Amygdala” doll making media. The inspiration for the “amygdala” doll came from the book *Hey Warrior* by Young and Dovidonyte (2017). This book for kids explains what the amygdala is, why anxiety feels the way that it does, and the origins of physical symptoms (Young & Dovidonyte, 2017). For the purpose of this present study, creating an amygdala refers to act of creating a three-dimensional amygdala doll by using textiles and hand stitching. Doll making media included needlepointing, hand stitching and sewing with fiber materials or multi-media objects (Feen-Calligan et al., 2009). Stace (2014) believed that the doll was anticipated to help express, transform, practice self-care, and heal from any difficulties, as well as constitutes the practice of self-care.

Burnout. Burnout results from a range of stressors associated with clinical practice. It may occur from working with any group of clients, or in a climate or culture in which clinicians do not feel supported and may experience high levels of frustration (Knight, 2013).

Compassion fatigue. Practitioners working with any client can experience compassion fatigue, which is physical and mental exhaustion or emotional withdrawal experienced by those who care for sick or traumatized people over an extended period of time. In some instances, this may result in a loss of ability to empathize with clients (Knight, 2013).

Stress. Stress refers to the demands of an external situation were beyond one's perceived ability to cope, and may be exacerbated by poor physical health, emotional distress, and other factors (Myers et al., 2012).

Self-care. This involves the application of a range of activities with the goal being "well-functioning," which has been described as "the enduring quality in one's professional functioning over time and in the face of professional and personal stressors" (Barnett & Cooper, 2009, p. 17).

Textiles. These are fiber-related materials made from plants such as cotton or linen, animals (wool, alpaca, or silk), or synthetics (acrylic). Fibers can be felted or spun into yarn, dyed, knit, crocheted, or woven. Then the material can be joined by sewing, hand stitching, or tying, into a finished piece that may be embellished by various methods such as beading or surface design (Collier, 2011).

Justification of the Study

This researcher has facilitated creation of textile amygdala dolls with patients at a psychiatric hospital and clinic, overserving that they appear to help reduce patients' levels of stress and anxiety. They may also aid with other symptoms exhibited by individuals with various

mental health disorders. The researcher has seen a change over time with her patients at the psychiatric hospital with exhibiting decreased stress within her patients. For example, some patients have been observed to use the amygdala doll as a coping skill, such as holding or squeezing when frustrated or angered. Patients have also reported better sleep over the course of several days after creating their amygdala doll and by using the amygdala doll as a transitional object.

The researcher was hopeful that the results of this pilot study may increase the understanding of the relationship between crafting, sewing, and working with textiles as a way to reduce stress levels with art therapy graduate students. The data may be used to inform the development of this art therapy intervention of creating amygdala dolls with art therapy graduate students. The results of this study may advance the field of art therapy by raising awareness of this intervention in forms of self-care for therapists and providing an additional art therapy directive with future clients that interface with studies about the brain.

CHAPTER II

Literature Review

This literature review examined research about graduate students as a whole, as well as the specific challenges that art therapy graduate students face. There was also an exploration regarding stress and the brain, the amygdala, and current treatments. Finally, the benefits of art therapy were explored both generally and in direct relation to fiber arts and therapeutic dollmaking.

Graduate Students in the United States

Although stress is frequently a common experience within the college environment, these stressors may be more prominent for graduate students as they often are balance tasks and responsibilities exceeding those of an average undergraduate student (Abel, Abel, & Smith, 2012; Coaston, 2019). Fink (2014) found that students in higher education may experience depression, anxiety, and stress more frequently than the general population. Bork and Mondisa (2019) contended that this may be due to graduate students experiencing pressures surrounding research, teaching, finding employment, strained finances, family or personal relationships, and time management. Some other examples of stressors may include financial concerns, such as working while in school or repaying undergraduate student loans, personal struggles related to social relationships, managing academic challenges, rejection and setbacks, and discovering and establishing their sense of identity (Beaumont & Martin, 2016, Brunner et al., 2014; Coaston, 2019; Price et al., 2019).

Nordberg, Hayes, McAleavey, Castonguay, and Locke (2013) found that 32% of college students were surveyed reported symptoms suggestive of potential mental health diagnosis, such as depression, stress, and anxiety. Bork and Mondisa (2019) noted that the academic

experiences of graduate students often differ, and that stress academic experiences may contribute to poor mental health including social isolation, low self-efficacy, and a low sense of autonomy in one's work. The Center for Disease Control and Prevention (2015) found that suicide was the second leading cause of death among persons aged 15-34 years old. In another large-scale study ($N=15,852$) that focused on the experiences of graduate students, over 26% of participants met the criteria for at least one mental health problem, including depression, panic disorder, generalized anxiety, suicidal ideation, or non-suicidal self-injury (Eisenberg, Hunt, & Speer, 2013). However, only 40% of those students indicating that they were receiving treatment for those issues at the time of the survey. Based on these findings, it appears that the majority of graduate students may not be receiving mental health services or otherwise are not practicing self-care were sufficiently in order to treat their stress and anxieties (Blanco et al., 2008; Eisenberg et al, 2013).

Stress and The Brain

Stress may be defined as a subjective and physiological state of mind and physical body sensation characterized by a combination of displeasure and high arousal (Kristensen, Kornitzer & Alfredsson, 1998; Laethem et al., 2016). Laethem et al. (2016) studied stress as being characterized by high arousal with high negative effects. Siegel (2010) noted that the brainstem is a major part of a person's motivational system. This system controls and drives a person's basic needs, and the limbic system, known as the "mammalian brain" works with the brainstem that creates emotional regulation and development (Siegel, 2010). All of these parts of the brain are in synchronization with the amygdala which manages the fight-or-flight part of the brain (Harrawood et al, 2011; Siegel, 2010). The amygdala sits atop the brain stem, interpreting input and regulating an individual's emotions; readying the body for action when it perceives any

negative stressors (Roaten, 2011). Stress affects nearly every single part of the human body and may often times lead to development or aggravation of many physical and emotional disorders (APA, 2014; Lindsey, Robertson & Lindsey, 2018; Parker-Pope, 2008).

The amygdala. A popular layperson perspective about the brain views the left hemisphere as entirely analytical and sequential given the predominant function as the verbal processing center (Lusebrink, 2004). In contrast, the right hemisphere of the brain has been described as more intuitive, “processing visual-spatial information, visual imagery, and visual memory”, (Lusebrink, 2004, p. 126). The left side has also been found to be where color and hue are distinguished. However, the normal state of functioning in individuals incorporates and integrates both sides of the brain. The amygdala is located in the front part of the temporal lobe, and has been found to be essential in the ability to feel specific emotions and to perceive emotional states (Lusebrink, 2010). The direct connections between the parts of the brain and the amygdala work together to process emotions with patterns of autonomic activity (Czamanski-Cohen & Weihs, 2016; Lusebrink, 2004). Czamanski-Cohen and Weihs (2016) stated that the amygdala becomes activated through the pour of sensory information and then that becomes an emotional experience, even before meaning is made.

Lusebrink (2004) discussed the essential need for art therapists to become familiar with the basic brain structures and functions that support art therapy expressions and interventions. Young and Dovidonyte (2017) surmised that anxiety originates from the brain and it happened through the amygdala’s reaction to occurrences that spark and initiate an individual’s self-protectionary defenses. For example, the amygdala switches to protect when it becomes triggered by something that might be dangerous. Young and Dovidonyte personified the amygdala, likening it to a fierce warrior of protection. The amygdala in the brain works hard to protect

individuals, even in situations when they do not need protecting. The body reacts in a flight-or-fight way which responds in the form of anxiety (Harrawood et al, 2011; Siegel, 2010).

Young and Dovidonyte (2017) further explained the sequelae of reaction that occurs in the body when feeling stressed or anxious. She noted that the body powers up with oxygen, hormones, and adrenaline after the amygdala becomes stimulated by something potentially harmful. Then, even after all energy has been accessed and used to protect the body, the body continues to build energy, resulting in feelings of tension, distress, or anxiety. Reading Young and Dovidonyte's story to individuals to help them first understand what anxiety is, followed by creating an amygdala doll, may help enable a deeper, but also visual and tangible, understanding of one's experiences. Building off the client's enhanced understanding of their experiences, therapists and clients can then work together to find effective coping skills and strategies to meet their needs.

Challenges for Art Therapy Graduate Students

Tenbrink (2019) found that psychology graduate students were vulnerable to stress associated with the competing demands in their role, such as coursework, research, and internship responsibilities. The Council of Accreditation of Counseling and Related Educational Programs (CACREP, 2016) requires counseling graduate programs to discuss self-care as part of their curriculum and orientation into the profession. Boellinghaus (2012) found that 41% of 250 student therapists surveyed struggled with either low self-esteem, stress, depression, or work adjustment issues. Unmanaged stress has also been directly linked to burnout. Burnout has been defined as a state of physical, emotional, or intellectual exhaustion that results when there is a lack of particular achievement or when tasks exceed an individual's personal capacity (Gam, Kim, & Jeon, 2016). James (2016) contended that it is unreasonable for art therapists or any

health care professional to provide clients with good quality services while dealing with stress or burnout. Graduate art therapy students who become art therapists may suffer from psychological burnout if unable to sufficiently practice self-care, which may then impede them from effectively helping their clients (Boellinghaus, 2012). This may result in doing harm; therefore, it is critical for future therapists to regularly practice self-care. Thus, all students and professionals should develop effective and adaptive strategies for maintaining self-care, such as leaving their work at work (Knight, 2013). Knight (2013) concluded that it remains important for practitioners and mental health professionals to do everything they can in preventing indirect trauma from affecting their personal or professional lives.

Students in training to become therapists may sometimes experience feelings of instability, which may add to their anxiety and self-doubt, including questioning their fit to the profession upon entering their practicum and internship semesters (Bischoff & Barton, 2002; Coaston, 2019). Researchers Dziegielewski (2004) and Polson and Nida (1998) examined the stress levels of graduate students in mental health fields and found that they reported more stress than students pursuing graduate education in purely academic fields. Graduate programs have a responsibility to their students to help them become ethical, effective, and prepared in both their personal and professional lives (Coaston, 2019; Coll et al., 2013). Other researchers have suggested that rigorous and time-consuming academic pressures and demands of most graduate programs often do not allow time for stress-reduction activities (Nelson et al., 2017; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003). Graduate students need specific guidance and direction during their professional development, as they may face many barriers towards their actual practice of self-care (Nelson et al., 2017).

Self-care. It can be argued that a student's professional identity begins its formation during graduate school. During this time, it has been characterized as essential to pay close attention to self-care, acknowledge personal vulnerabilities, and to speak openly about any need for assistance towards these issues (Barnett & Cooper, 2009). Students may experience burnout through emotional exhaustion from graduate school programs and academic stress. Burnout has been described as a psychological condition wherein individuals notice changes in their mental and physical health that may lead to challenges in many areas of their life (Newel & MacNeil, 2010; Sanders, Vincenzes, & Forziat-Pytel, 2019). Graduate students in helping fields may be particularly susceptible to burnout because of they are still learning skills endemic to the nature of the profession, such as empathizing with clients (which initially may result in over-empathizing), the need for continued boundary setting, and being mindful about ethical responsibilities. As a result, they may be at high risk for vicarious traumatization (Baker, 2003; Christopher & Maris, 2010).

The terms vicarious trauma, compassion fatigue, and secondary traumatic stress have frequently been used interchangeably to describe what happens to therapists who care for their clients (Figley, 1995, 2002; Pearlman & Saakvitne, 1995; Sanders, Vincenzes, & Forziat-Pytel, 2019). Figley (2002) believed that feelings of exhaustion may be caused by oppressive feelings, such as when art therapy graduate students feel obliged to solve or assist with clients' problems in therapy. One way for students to appropriately care for themselves is by learning how to separate their work life and from their personal life in order to maintain well-being (Sanders et al., 2019). When therapists don't prioritize their well-being, this can lead to burnout, vicarious trauma, or compassion fatigue, all of which may then impact the welfare of clients if not managed in an appropriate and ethical manner (ACA, 2014; Sanders et al., 2019).

Training components that encourage self-growth and self-disclosure have been acknowledged by the American Counseling Association (ACA, 2014) as an essential part of the training process for therapists. Additionally, as increased self-efficacy raises an individual's ability to challenge difficult tasks or endeavors and achieve them in the long-term (Gam et al, 2016), a therapist's level of self-efficacy may be another important factor in improving feelings of personal accomplishment, thereby aiding in their well-being. By creating an environment of compassion in the classroom, instructors may help students learn to relate to themselves with consideration, making it more natural and routine for students to utilize self-care in response to stress (Coaston, 2019).

Barnett and Cooper (2009) advocated establishing self-care practices that help therapists balance their personal and professional lives, while also promoting a healthy culture and psychological wellness. Further, self-care practices that are developed early in an individual's career may help in developing connections and relationships that can promote professional wellness all throughout their career. Coping has been defined as the integration of cognitive strategies and personal resources in order to develop resilience against external and internally perceived pressures (Van Lith, 2015). Bohecker et al. (2014) viewed the promotion of personal growth and self-development as a foundation in therapist training and supervision.

Art therapy graduate students may face a range of effects working with clients, such as indirect trauma, secondary traumatic stress, and vicarious trauma (Kanno, 2010; Knight, 2013). Knight (2013) also mentioned that any mental health professional working with any client may experience compassion fatigue. Countertransference may also be common, which if not recognized and dealt with in an effective manner, may impede one's ability to be helpful, such as when it results in avoidance or over-identification with one's clients (Knight, 2013). The APA

Ethics Code (APA, 2002) states that professionals and students need to be aware of the possible effects of their own personal physical and mental health with regards to their ability to help those with whom they work, mentioning that they should limit their scope of work and seek supervision. It also denotes both self-care and coping strategies as essential, and as such, should be viewed as the responsibility of professionals (APA, 2002).

Current Treatments

Compassion Focused Therapy (CFT) and Compassionate Mind Training (CMT) were developed by Professor Paul Gilbert (2009) to help individuals dealing with high levels of stress (Gilbert, 2009; Gilbert & Procter, 2006). Beaumont (2016) described both CFT and CMT as forms of self-care that may help increase quality of life for therapists by increasing their levels of self-compassion and compassion for others, as well as reducing overall risk of emotional fallout. Additionally, CFT and CMT may also help equip student therapists with the necessary interventions to cultivate compassion for distress (Beaumont & Martin, 2016).

Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, 2002) are two other forms of treatment that can also be used to increase self-compassion within healthcare professionals (Boellinghaus, 2012). Mindfulness has been defined as being fully present in the moment, and often starts with the simple awareness of one's body and their thoughts (Rockwell, 2009).

Cognitive Behavioral Therapy (CBT) is another form of treatment that has also been commonly used for stress-related disorders (Schneiderman, 2005). For example, Naff's (2014) qualitative research found that CBT, as a goal-oriented type of treatment, provided a practical approach to problem-solving that helped individuals improve their patterns of thinking, behaviors, and dealing with emotional issues. Further, CBT has also been found to provide

structure and support at times when overwhelming stress and anxiety may discourage trauma exploration, and thus, is considered a first-line treatment for individuals dealing with stress and trauma symptoms (Syros, 2017).

Dialectical Behavior Therapy (DBT) is a form of cognitive behavioral therapy that utilizes psychotherapy education (Hucvale & Learmonth, 2009). As a treatment modality, DBT consists of helping clients in areas of behavioral control, processing past emotions and events, problem solving current conflict, and experiencing joy, all of which may address emotional regulation capabilities (Huckvale & Learmonth, 2009; Lith, 2016). This could be beneficial for graduate students who may be dealing with relationships and managing conflicts, as well as aiding them in learning to reduce intense or uncontrollable emotions, especially when dealing with the stressors of graduate school.

One form of treatment that may be particularly useful for helping graduate students struggling with stressful and traumatic events for graduate students is Eye Movement Desensitization and Reprocessing (EMDR; Shapiro, 1989). EMDR has been frequently used as a treatment for those dealing with traumatic memories, and in addition to its particular effectiveness with populations struggling with Post-Traumatic Stress Disorder, it may also be used to treat depression or anxiety (Tripp, 2017). Based on case study analyses, Tripp found that EMDR helped her clients to gain a better sense of their underlying feelings, alter negative cognitions by making new connections between their thoughts and emotions, and increase both feelings of control and appropriate emotional responses to their feelings.

Art Therapy and Fiber Arts

Art Therapy. Barnett and Cooper (2009) contended that self-care is not an indulgence, rather conceptualized it as an essential professional activity that promotes ethical practice.

Malchiodi (2005) found that youth and adults are able to use creative therapies, including art therapy, to express themselves more authentically and effectively beyond the limits of words alone. Expressive arts incorporated into graduate art therapy programs may help all students become more aware of their feelings and experiences by exploring various arts media in order to gain sensory stimulation, increase creative self-expression, and relieve any potential stress in their lives (Erickson & Young, 2010; Malchiodi, 2005; Price et al., 2019). Malchiodi (2005) wrote that the basic level of art engagement is created through sensory stimulation, which can involve the discovery of cognitive and symbolic aspects of memories through the activation of art media sensory components. Lusebrink (2004) suggested that the results of art therapy interventions could rehabilitate physical impairments; stimulate mental, emotional, and physical healing; and enhance cognitive and emotional growth within individuals. Gutman and Schindler (2007) found that there was a direct connection between meaningful activities, such as artmaking and crafting, and reduced levels of stress. Craft-based expression has been found to have strong positive personal correlations to creativity, memories of sharing, and social connections in forms like fiber arts, pottery, and leatherwork (Kaimal, Gonzaga, & Schwachter, 2016). Art therapy is also believed to encompass mind and body interaction. Malchiodi (2003) explained that the brain functions utilized by art therapy work may involve formation of imagery, physiology of emotion, attachment theory, and the placebo effect.

Lusebrink (2004) believed that sensory modalities of touch and kinesthetic sensations in the client's body while working with the object have been seen to reassure emotions and movements in the individual. These active perceptions of movement happen through the amygdala as it receives information from the somatosensory primary cortex. Therapeutic doll making is a form of arts-based expression that originates from complex cognitive activity, and as

such, involves decisions and internal imagery that activates sensory channels and motor activity in the brain (Lusebrink, 2004). The use of expressive and creative arts within therapy, or as a form of self-care, allows congruent connections between cognitive and emotional development (Parker-Pope, 2008).

Commonly held goals of art therapy include increasing awareness, expression of energy and emotion, working through a problem, increased creativity and joy (Harrawood et al., 2011). According to Snyder (1997) and Coaston (2019), paint, music, dance, poetry, collage, sculpture, and other media may be used as a communication medium and form of self-expression. The use of these expressive arts offers an alternate outlet to elicit conscious and unconscious thoughts and feelings (Coaston, 2019; Snyder, 1997). Whitaker (2010) researched art therapy workshops and found that sensory stimulation in artmaking inspired harmony and balance. Materials used in these and other workshops included sand, flowers, leaves, animal and plant-processed materials (e.g., wool, felt, fleece, natural fabrics; Chang, 2019; Whitaker, 2010).

Fiber arts. The history of fabrics has been used and continues to be used for purposes of individual expression of identity and for telling stories. There are many cultures that master weaving, sewing, and fiber techniques and incorporate meaningful representations to tell stories of the maker and their origins (Garlock, 2016). The work of crafting often requires considerate care, such as selection of fabrics, colors, and other specific materials. These crafts include personal affirmations and emotions that can be used to externalize individual feelings by writing them down, and as with the present study, enclosing these within a handcrafted doll. Kapitan (2011) wrote that individuals who work with handmade crafts often create a direct link to the human heart. Crafting practices such as knitting, needlework, and sewing have been linked to human existence as part of everyday life over the course of history (Kaimal et al., 2016). The

actual process of therapeutic doll making was an excellent medium for this purpose because dolls have been seen as a reflection of the creator and may be conceptualized as a type of mirroring. Mirroring has been defined as a behavior in which a person unconsciously imitates the attitude or pattern of another (Feen-Calligan, McIntyre, & Sands-Goldstein, 2009).

According to literature, art therapists have found the use of textiles and fiber arts in their practices to be empowering for participants, as well as promote a sense of accomplishment and ability (Garlock, 2016). Using sewing as a medium can help individuals tell their stories visually through the use of fabrics and textiles. Cloth may hold strong emotions, as these feelings have surfaced within the imagery of sewing (Garlock, 2016). Sewing in particular may allow the brain and body to work in tandem in a way that is especially powerful. Garlock described the act of sewing as inherently critical to healing from trauma. While engaging in fiber arts, individuals use two hands simultaneously, thus integrating their dominant and non-dominant hands to create their art. Textile making has allowed individuals to immerse themselves, calm themselves, feel centered, and have control over this small, yet creative, process (Collier, 2011).

Crafting techniques have been a unique tool for art therapists to integrate into their practice as they encourage self-awareness, help patients develop self-expression, and reduce anxieties among patients about 'not being creative'. Craft making has been a tool for self-care, and a means to incorporate traditional and folk forms of expression into art therapy exercises (Kaimal et al., 2016). Kapitan (2011) found that crafting and needlework may also involve skill building, requiring the art therapist to be mindful and sensitive towards those effects of these endeavors. Riley, Corkhill and Morris (2013) discovered that individuals who knitted several times a week reported higher cognitive functioning, increased levels of calmness and happiness, and greater social contact and communication. Kaimal and colleagues (2016) found that

individuals also reported engaging with fiber arts for reasons of creativity, relaxation, and stress relief.

Amygdala dolls. Dolls have appeared in all cultures throughout the world and have been enjoyed by all ages and populations (Feen-Calligan et al., 2009). From a historical standpoint, dolls can serve to reflect the time period and cultural context in which they were created, as well as may serve to inspire others. Further, humans have imbued dolls with the power of companionship and, as such, they can provide a source of safety and security (Feen-Calligan et al., 2009). Reigniting that healing power and personal use for dolls, Feen-Calligan et al. believed that dolls may theoretically help art therapy graduate students in finding their professional identity.

Stace (2014) argued that, for adults, dolls may also carry transformative powers by stirring childhood memories, stimulating the imagination, and strengthening one's sense of identity (Stace, 2014). Thus, she contended that creation and engagement with dolls can serve a therapeutic purpose for adults that encompasses emotional, cognitive, and sensorimotor processing domains. The process of making within art therapy emphasized the process of creating and reflecting on meanings that were held within the doll (Stace, 2014). Garlock (2016) indicated that benefits of dollmaking can include self-acceptance, confidence, empowerment, and improving one's sense of self, safety, and stabilization. Additionally, taking the time to sew and visually create a final doll may also enable processing of difficult or deep emotions.

Summary

The concepts discussed in this literature review were essential in building the research of this study. Graduate students across the United States deal with stress and other mental health symptoms due to financial status, academic challenges, and challenges in their personal and

professional lives (Beaumont & Martin, 2016). For graduate students studying to be art therapists, they experience added burnout, compassion fatigue, and vicarious trauma because of the duties of the counseling profession (Fortziat-Pytel, 2019). There are many different approaches to therapy, however, the goals of art therapy have proven to be healing, physically and emotionally (Lusebrink, 2004). Working with art materials, specifically fiber arts have purposes of empowering individuals and allowing the brain to work with the body in an influential way (Garlock, 2016). Dollmaking within fiber arts reported to have increased levels of calmness within individuals (Kaimal et al., 2016). By the evidence examined in this literature review, there were provided substantial confirmation that there was a need for this study to help support the effects of therapeutic dollmaking and stress levels in art therapy graduate students.

CHAPTER III

Methodology

The descriptive quantitative research study was aimed to investigate whether creating an amygdala doll would impact stress levels in graduate art therapy students. The study was guided by the following question, *how does creating an amygdala doll impact stress levels in graduate art therapy students?* The data collected may provide support for the use of fiber arts as a stress-reduction tool and explored and the participant's responses working with textiles.

Participants

A convenience sample of eight participants were recruited through a flyer and an e-mail that was sent by the St. Mary of-the-Woods College Graduate Studies Program Administrative Assistant. All participants were over the age of 21 years old, with seven identifying as female and one participant identifying as male. Participants were current graduate students enrolled in the Master of Arts in Art Therapy program at Saint Mary of-the-Woods College. All participants were first asked to review and sign a Consent to Participate in Research form and a Consent to Photograph form before beginning the study. The Consent to Participate in Research provided an overview of the study, including a description of its purpose, main procedures, anticipated study length and duration, potential known risks and benefits, and other information pertaining to confidentiality, voluntary participation, and use of data for future study. The Consent to Photograph form requested that participants consent to having their artwork photographed. Participants were reminded that there would be no negative consequences for refusing to be photographed and that the results of the study would be made available for further research. Both consent forms reiterated that it was entirely voluntary for participants to participate in this research study; they could withdraw from the study at any time and it would

not in any way impact their status in the Master of Arts in Art Therapy graduate program. This study received approval from the SMWC Institutional Review Board (IRB), and a signed informed consent was obtained from each participant.

Research Design and Procedure

This descriptive quantitative research study utilized a pretest-posttest comparison design. Art therapy graduate students were recruited to take part in a two-hour amygdala doll workshop, which served as the artmaking intervention. The process of creating an amygdala doll entailed sewing, needlework, and crafting with fiber arts. A pre and posttest self-inventory measure was administered by the researcher before and after the artmaking intervention to determine effectiveness of the intervention in impacting participants' perceptions of their feelings, emotional states, and overall mindset.

After completing consent forms, participants filled out a Self-Inventory Pretest Questionnaire (see Appendix A). After filling out the pretest questionnaire, participants were next introduced to the book *Hey Warrior* (Young & Dovidonyte, 2017). The researcher read the book to the participants and discussed the representation of the amygdala and its relationship to doll making. This book presented visuals and connection with more information about coping skills and strategies in relation to stress and anxiety. The participants were then shown samples of amygdala dolls that were created by the researcher. This included different dolls and stuffed animals, such as narwhals, dragons, unicorns, dogs, and made-up unique creatures. Participants then were given instructions on how to create their amygdala.

Participants were provided with all the materials that were needed to create their textile doll, as well as had full control of what they wanted to use for their amygdala doll. The researcher was available to all of the participants if they needed assistance; the researcher was

able to demonstrate and show participants how to sew when they needed help. Participants were allotted 1 hour and 30 minutes to work on their amygdala doll, after which the researcher offered participants time to share and process their doll with the rest of the participants. Each participant was given time to share their amygdala dolls, the process that they went through, and any additional reflections or perspectives related to their work. The researcher emphasized that it was voluntary to share, thus participants were not obligated to discuss their work or what they created if they did not wish to do so. There was also access to on-call support from a Licensed Mental Health Professional if participants were triggered by the study. At the conclusion of the study, participants filled out the Self-Inventory Posttest Questionnaire and were thanked for their time.

Research Instruments

Self-Inventory. The self-inventory pre and posttest questionnaire (see Appendix A) was specifically designed by the researcher to ask participants about their physical feelings, current emotional state, and overall mindset. The self-inventory consists of ten 5-point Likert scale questions that are answered on a scale from 0 to 4, with 0 as strongly disagree and 4 as strongly agree. Using a 5-point Likert scale, ranging from 0 = “strongly disagree” to 4 “strongly agree” has been shown to have high reliability, stability, and construct validity (Rockwell & Surrey, 2009). The rating scale on the self-inventory was modeled after the Rating of Outcome Scale (ROS), Outcoming Rate Scale (ORS; Seidel et al., 2017), and the 5-point Likert scale. Rating scales present statements or an item with corresponding scale of categories where participants are asked to make judgments that most clearly approximate with their perceptions (Betts, 2006; Wiersma, 2000). Likert scales are structured vertically with a scale increasing reliability for simple use and also reflecting an interval scale of measurement (Betts, 2006; Hadley & Mitchell,

1995). Monitoring clients' progress with this type of scale shows promising levels of reliability and validity. Rating scales have been found to be practical to administer and using this instrument may appropriately demonstrate a responsiveness to clinical change without being overly reactive (Seidel et al., 2017). The self-inventory used in the present study was limited to 10 statements to help ensure brief and easy statements for the participants. The participants also had an opportunity to provide additional comments or feedback at the bottom of both the pretest and posttest questionnaire.

Amygdala doll. Collecting art as data provides visual data in contribution to research (Anandarajan & Hill, 2019). Art as data becomes art with intention, demonstrating the process of image making and the finished product, and may allow this imagery to become a guide for clinical practice for different interpersonal or theoretical perspectives (Fish, 2008). The participants were provided all materials for creating their amygdala doll. They were shown examples of previously made amygdala dolls as reference. They were given the choice of sock material, provided cotton stuffing, scissors, needle and thread, hot glue gun, felt, googly eyes or buttons, and paper to draw templates if needed. The researcher instructed participants to cut the top of the sock off, then stuff the sock with cotton stuffing. Participants were instructed that amygdala dolls could take the form of any shape they chose. For example, some amygdala dolls were round, long, or were in the shape of animals, such as dragons, dogs, cats, or bears.

Participants wrote a message to stuff in the inside of their doll, along with a heart for a symbolism of loving. These messages often represented what the participants would like to work on, or consisted of a secret, wish, or affirmation. After stuffing the inside, participants used a needle and thread to sew the end together. The researcher was present to provide assistance and a hot glue gun was available for participants if they chose to close their doll with

glue instead of sewing. Participants were able to craft their own details, such as adding eyes, ears, nose, wings, feet, arms, or tail. Participants were also able to bring and use their own materials if they wished to do so.

Observation. The researcher observed participants as they created their amygdala dolls and noted interactions. Half of the participants were engaged in conversations about school and upcoming presentations. One participant did not interact with other participants until the end. Many participants asked the researcher for help and demonstration. The researcher also noted discussions about the messages that were placed in the doll however, many participants chose to keep their messages to themselves and chose not to share during the discussion.

Data Collection

Both questionnaires were administered on the day of the workshop. The consent forms, pre and posttest questionnaires, and images of the completed artwork of the participants were numerically coded to maintain confidentiality. The participants were labeled #1 through #8 to protect the confidentiality of each participant. Only the researcher had access to the completed documents on a password protected computer. The self-inventory pre and posttest questionnaire data for each participant was transferred to a Microsoft Excel sheet. The data for each statement (#1 through #10) were graphed in dot plots for both the pre and posttest questionnaire. Comments at the bottom of the questionnaires were also compiled into a Microsoft Word document, if the participant chose to complete this optional question on either their pre or posttest self-inventory questionnaire.

Data Analysis

To conduct analyses of the data, the researcher was able to input the data from the pretest and posttest questionnaires for each participant into a data table on a Microsoft Excel sheet. The

researcher then input the data into another Microsoft Excel sheet to graph the data in order to analyze the comparisons between the pre and posttest to see if there were any changes for the questions. The researcher counted how many participants answered from “strongly disagree” to the answers “strongly agree” for each question. Analyzing each question helped the researcher compare the pre and post results side by side in the graphs.

Validity and Reliability

Creswell (2000) wrote that triangulation is important to strengthen the validity of evaluation data and findings. In order to triangulate data, the researcher obtained information through self-inventory questionnaires, photographs of artwork, and observations. Creswell (2000) and Lincoln and Guba (1985) mentioned that quantitative research may be straightforward because the data is in numerical form. The participants were in control of what they wrote on their questionnaires, therefore were able to determine the credibility of the information that they filled out. Questionnaires may be one of the primary sources of obtaining data in any research (Richards & Schmidt, 2002). Gillham (2000) argued that open-ended questionnaires offered a greater level of discovery, however he did admit that there may be difficulty when analyzing the data.

Ethical Implications

As recommended by the *Ethical Principles for Art Therapists* (AATA, 2013), each participant was provided a Consent to Participate in Research form and a Consent to Photograph form for their artwork (AATA, 2013). The researcher obtained these written informed consent forms and photographs of the participants art created with the sole purpose of research. Participants were reassured of confidentiality and were reminded that they could drop out of the study at any time with no negative consequences. Participants were numerically labeled from #1

to #8 to protect their confidentiality and any identifying information was removed from responses after questionnaires were gathered. There was no identifying information on the photographs. The risks associated with this study were minimal but may have included individual participants experiencing overwhelming feelings after they created their amygdala doll and processed any stress. The researcher maintained high standards of scholarship, presented accurate information to the best of her knowledge, followed professional standards governing the conduct of her research, and informed the participants of all aspects, as well as respecting their freedom to decline participation or withdraw from the research study at any time (AATA, 2013).

Researcher Bias

Personal bias might have been an issue, since the researcher sewed and created amygdala dolls as a coping skill and was a doll-maker. The researcher was also an art therapy graduate study while this study was conducted. This may have affected the researcher's personal bias in regard to art therapy graduate students needing more self-care practices, such as this art intervention. The researcher may also know many of the participants in this study which may have affected the participants willingness to volunteer for the study and share their personal thoughts and emotions about their artwork with the researcher.

CHAPTER IV

Results

The data from the pre and posttest questionnaires from all participants were graphed into dot plots to make general comparisons of change in feelings and emotions that occurred as a result of the amygdala artmaking experience (Appendix C). These data were analyzed on an item-level in accordance with the three main constructs of participant experience assessed by the questionnaire: (a) physical feelings, (b) emotional understanding, and (c) overall mindset of each participant.

Physical Feelings

In comparing the pre and posttest self-inventory assessments, participants ranged from neutral to strongly agree in response to the statement “My body feels tense” (item 5) on the pretest. After completing the study, five out of the eight participants decreased their rating on this same item, either disagreeing or strongly disagreeing, indicating that their level of tension had decreased. Participant #2 said in their posttest questionnaire that “Sewing process was relaxing, became frustrating, then relaxing again. I was really proud of my piece. Putting in a worry was a great physical act of letting go” (see Figure 2). Participant #8 wrote in their posttest questionnaire that “I had a knot on my shoulder/back before we started; it’s now gone” (see Figure 3).

Figure 2. Amygdala of Participant #2



Figure 3. Amygdala of Participant #8



Emotional Understanding

The first statement that participants rated in the pretest questionnaire was the statement “I am feeling stressed.” Participant #3 said in their posttest questionnaire that “Attention to the work took my mind off my stress” (see Figure 4). Six participants felt that they strongly agreed with the statement, one indicated agree, and the remaining participant responded neutral. After the study, four answered disagree and four answered neutral, thus showing a decrease in stress level after creating their doll (see Figure 4). Participant #4 said at the end of their posttest

questionnaire, “I really enjoyed the book readings beforehand that discussed dealing with stress and anxiety” (refer to Figure 5). Overall, six participants answered for statement #1, “strongly agree” before the study and after the study, they either answered “disagree” or “neutral.”

Therefore, the majority of participants reported a change in their stress level after working with the fiber arts. Several participants expressed that they enjoyed the directive and one said that they were stressed prior to coming in but were now less stress after completing the intervention. The researcher believed that the participants became more aware of their emotional feelings, acknowledging that they were stressed prior to the session.

Figure 4. Amygdala of Participant #3



Figure 5. Amygdala of Participant #4



Participant #4 was the only participant who chose not to use sewing materials (i.e., needle and thread) for their doll. The researcher observed that this participant instead chose to use the hot glue gun to create their doll. The participant shared later in the discussion that they worked with clients who are unable to sew, therefore using a hot glue gun was a useful alternative for creating the amygdala doll. After the study, the participant shared with the group and in their posttest questionnaire, “I appreciated how [the researcher] gave different options and materials to meet the needs/wants/preferences of her clients. This really made the directive more accessible to different ages and populations.”

Half the participants answered that they agreed, and the other half specified that they strongly agreed with the statement “I am feeling anxious” (item #) before the study. After the study, the answers ranged from strongly disagree to agree, thus indicating a general decrease in anxiety levels. Five participants said that they strongly agreed with the statement “I am aware of my emotions.” After the study, one participant went from disagree to agree. The data did not change on the dot plot for the other number of participants.

Overall Mindset of Each Participant

The researcher found that the participants were more attentive towards their overall mindset while they were creating their amygdala doll. There was a change in answers for the statement “My thoughts are all over the place” (item #). Four participants stated that they strongly agreed prior to completing the intervention, and then after indicated that they disagreed with the statement. Participant #1 wrote in the additional comments on the pretest questionnaire “Last semester in grad school! Excited to make my first amygdala!” and after the study said “This really helped me. It allowed me to be present with my thoughts and how I am feeling” (refer to Figure 6).

Figure 6. Amygdala of Participant #1



Before the study, one participant noted that they were neutral in response to item X, which stated, “I am worrying about all the things I need to do,” and seven participants indicated that they strongly agreed. After the study, there was a slight change in variation of answers to disagree, neutral, and agree, with two participants indicating that they strongly agreed. Before the study, some participants went from strongly agree, disagree, and neutral, to neutral, agree, and strongly agree, after the study for the statement “My confidence level is high.”

For the statement “I am dwelling on negative thoughts.”, two participants answered neutral, two answered agree, and the rest said that they strongly agree. After the study, the answers changed to four strongly agree, one disagree, and three neutral. There was a change for Participant #7 who answered strongly agree before the study and neutral after the study was over, see Figure 7.

Figure 7. Amygdala of Participant #7



There was minimal change for the statement #7 “I feel self-aware.” The only change was in the pretest questionnaire, one participant said disagree. After the study, there was one change to the answer strongly agree. Participant #5 was an example of no change for this statement; they answered strongly agree for before and after the study (see Figure 8).

Figure 8. Amygdala of Participant #5



The last statement had a variation of answers on the pretest questionnaire, #10 “I feel good about what I am doing right now.” After the study, two of participants said agree and the rest of the participants said that they strongly agree with the statement. Participant #6 wrote in her post-questionnaire that “This was great!”

Figure 9. Amygdala of Participant #6



CHAPTER V

Discussion

Eight graduate art therapy students participated in the three-dimensional amygdala artmaking intervention and were given pre and posttest questionnaires to allow the researcher to make comparisons of change in the areas of physical feelings, emotional understanding, and overall mindset. Self-expression and verbal processing were both encouraged as important components of the amygdala doll creating workshop in accordance with researchers' contentions that these are means of facilitating self-growth and self-efficacy, as well as encourage therapists in the practice of self-care (Coaston, 2019; Gam, 2016). Further, participants were encouraged to be mindfully present during their art-making process in order to give their doll inner feelings with an artistic form, thus associating the brain and the body in a relaxing and stress-free directive (McNiff, 1998).

Physical Feelings

This present research found that many participants exhibited reduced stress levels within their questionnaire and during processing after the amygdala workshop. It was clear from the findings that the statements in the posttest differed in answers from the pretest for the majority of the participants. The researcher believed that the repeated motion of the sewing and hands-on sensory interaction with fiber arts were to comfort and relieve any somatic pressure in the physical feeling in participants when they created their amygdala doll. Hinz (2009) supported this by explaining that sensory experiences that incorporate sensuous materials such as rich fabrics are often used to develop personal meaning and evoke individual memories. These physical practices may promote sensory functions, increase sociability, social skills, and reinforce procedural memory and habitual skills (Hinz, 2009; Jensen, 1997; Riley, 2001).

(Lusebrink, 2004) encouraged the sensory modalities of touch as kinesthetic activities reassured emotions and movements together. The participants in this study reported that creating amygdala dolls was stress relieving, with one participant even described a knot in their back that went away after creating. Erickson and Young (2010)'s research corroborates the findings in this study, as they indicated that sensory stimulation can potentially relieve stress and allow individuals to become more aware of their feelings. The results of this study concluded that this creative process was applicable to reducing stress levels in art therapy graduate students and provided them with a therapeutic coping skill through sewing and working with fiber arts.

Emotional Understanding

This research found that creating amygdala dolls not only reduced stress levels, but the overall pattern discovered in this study was that participants felt more aware of themselves, less anxious, and less worried about the things that they needed to do. Stace (2014) supported this idea, writing that dolls can stimulate the imagination and strengthen identity. One participant discussed feeling less anxious and noted that they would use this directive in their practice with future clients. Gutman and Schindler (2007) also found a direct connection between crafting and reduced feelings of stress. Riley, Corkhill, and Morris (2013) agreed with this, stating that engagement with fiber arts can increase happiness and has reported higher understanding within individuals.

Overall Mindset of Each Participant

Many of the participants felt good about what they were doing and did not dwell on negative thoughts as they created their amygdala doll. In their book, Young and Dovidonyte (2017) discussed the belief that people can change their mindset by having positive thoughts. The participants valued creating their own personal affirmation to put inside their doll. This was

consistent with Collier's (2011) study that found that textile making was a way for individuals to feel centered and have control over the creative process. Parker-Pope (2008) wrote that art therapy was directly linked to cognitive and emotional development. Garlock (2016) said the use of fiber arts and crafting practiced empowerment, as well as promoted a sense of accomplishment and ability.

Limitations

This study had several limitations that future research should seek to address. First, given the quantitative description design, the small sample size (N=8) constituted a significant limitation, and as such, is a threat to the external validity of the research. Thus, one may not be able to generalize the results to a larger population of art therapy graduate students.

Additionally, although participant demographic data was not collected, the sample also suffered from lack of gender diversity, as participants predominately self-identified as female, with only one participant who self-identified as male.

Other limitations of this study pertain to additional participant factors and environmental factors that occurred during the workshop. In terms of participant factors, participants appeared to have had a range of prior experience having worked with fiber arts or textiles. Thus, some participants may have had better success or enjoyment within the study if they already possessed sewing skills or had previously worked with doll making media. This may be related to the fact that there were two participants who did not finish their amygdala dolls during the allotted time. In terms of environmental factors, the researcher noted that some participants were engaged in conversations during the doll workshop and some were not. This may have served to either increase or decrease participant stress levels, depending on the subjects that were being discussed. For example, some topics, such as school and work life, may have been perceived as

stressful, and could have impacted the quality of experience for some participants in the workshop. Finally, although there was a substantial amount of literature to support the use of creative expression and art therapy, there was limited research on the use of sewing and fiber arts as an effective art therapy intervention. Thus, it is uncertain whether participant outcomes can be attributed to the general experience of having created art, or more specifically to having worked with textile and fiber arts.

Recommendations and Future Studies

Future research into the validity of self-care and self-esteem as a coping tool for therapists is needed. The use of arts and creativity in counseling graduate programs, and the linking of sewing and crafting with stress reduction may be vital to the growth of students as they journey from graduate students to emotionally regulated professionals in the field of art therapy. More research is warranted to explore effective ways of using sewing, fabric, and textiles with self-esteem building and externalizing internal emotions. There was little literature available on the use of effective strategies that can assist graduate art therapy students in being successful in their graduate programs. Thus, more research and resources are clearly needed to help graduate students undergoing training in the psychotherapy professions to learn to better manage stress and practice more effective self-care. With the recent finding that more than a quarter of students meet the criteria for at least one mental health problem (Eisenberg, Hunt, & Speer, 2013), the need for increased support for this population is abundantly clear. This study advocated that sewing and working with fiber arts would be a beneficial means of reducing stress in art therapy graduate students, however this creative directive would likely be beneficial for any population of graduate students dealing with stress. The results have shown promise to be

effective and should be expanded to a larger sample size to confirm and further validate the preliminary findings.

Conclusion

The results of this study indicated that dollmaking may be an effective means of reducing stress levels within art therapy graduate students. Creating amygdala dolls effectually constituted a therapeutic intervention that allowed participants to explore the use of different art materials, at the same time that it enabled externalization of internal feelings. Participants were assessed in the areas of physical feelings, emotionally awareness, and overall mindset. Results indicated overall that 3D art making directive helped lower stress in art therapy graduate students. Moreover, there also appeared to be increased understanding and self-awareness among the participants in relation to their stress levels throughout their sewing and crafting of their amygdala dolls. To conclude, the use of amygdala dolls as a therapeutic intervention may help advance the field of art therapy by contributing to improved client outcomes because it enables individuals to gain a deeper understanding of the amygdala, which may be an important part of one's healing process. By offering a unique and effective fiber arts approach, individuals and art therapists can explore stress reduction and gain profound understanding about this amazing part of the human brain.

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APPENDIX A

SELF-INVENTORY PRE AND POSTTEST QUESTIONNAIRE

The questions in this self-inventory will ask you about your feelings and thoughts during the present time. In each case, you will be asked to indicate by circle from a scale 0-4 whether you strongly disagree or strongly agree with the statement.

Name _____ Date _____

0 = Strongly Disagree 1 = Disagree 2 = Neutral 3 = Agree 4 = Strongly agree

- | | | | | | |
|---|---|---|---|---|---|
| 1. I am feeling stressed. | 0 | 1 | 2 | 3 | 4 |
| 2. My thoughts are all over the place. | 0 | 1 | 2 | 3 | 4 |
| 3. I am worrying about all the things I need to do. | 0 | 1 | 2 | 3 | 4 |
| 4. I am dwelling on negative thoughts. | 0 | 1 | 2 | 3 | 4 |
| 5. My body feels tense. | 0 | 1 | 2 | 3 | 4 |
| 6. I am feeling anxious. | 0 | 1 | 2 | 3 | 4 |
| 7. I feel self-aware. | 0 | 1 | 2 | 3 | 4 |
| 8. I am aware of my emotions. | 0 | 1 | 2 | 3 | 4 |
| 9. My confidence level is high. | 0 | 1 | 2 | 3 | 4 |
| 10. I feel good about what I am doing right now. | 0 | 1 | 2 | 3 | 4 |

Additional comments or feedback:

APPENDIX B

SELF-INVENTORY PRE AND POSTTEST QUESTIONNAIRE DATA TABLE

Self-Inventory Data	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8
#1	4	4	4	3	2	4	4	4
#2	4	4	3	2	2	4	4	3
#3	4	4	4	4	2	4	4	4
#4	4	2	4	2	3	4	4	3
#5	4	2	2	3	3	4	4	4
#6	4	4	3	3	3	4	4	3
#7	3	4	1	3	4	4	4	2
#8	4	4	1	3	4	4	4	2
#9	2	3	0	2	3	1	2	2
#10	3	3	0	4	4	2	2	3
Pretest Additional Comments	Last semester in grad school! Excited to make my first amygdala!	No comments.	No comments .	No comments.	No comments .	No comments.	No comments .	No comments.
#1	2	1	1	1	2	1	2	2
#2	2	1	1	1	1	3	2	2
#3	4	1	1	1	2	4	3	1
#4	2	0	1	0	2	0	2	0
#5	3	0	0	0	2	1	1	0
#6	3	1	1	0	2	2	1	2
#7	4	2	3	3	4	4	4	4
#8	4	4	3	3	4	4	4	2
#9	3	4	2	2	4	3	3	2
#10	3	4	3	4	4	4	4	4
Posttest Additional Comments	This really helped me. It allowed me to be present with my thoughts and how I am feeling.	Sewing process was relaxing, became frustrating , then relaxing again. I was really proud of my piece. Putting in a worry was a great physical act of letting go.	Attention to the work took my mind off my stress.	I appreciated how [the researcher] gave different options and materials to meet the needs/wants/preferences of her clients. This really made the directive more accessible to different ages and populations. I also really enjoyed the book readings beforehand that discussed dealing with stress and anxiety.	No comments .	This was great! Thanks, [the researcher] !	No comments .	I had a knot on my shoulder/back before we started; it's now gone.

Key: 0 = Strongly disagree, 1 = Disagree, 2 = Neutral, 3 = Agree, 4 = Strongly agree

APPENDIX C

SELF-INVENTORY PRE AND POSTTEST QUESTIONNAIRE DATA GRAPHS

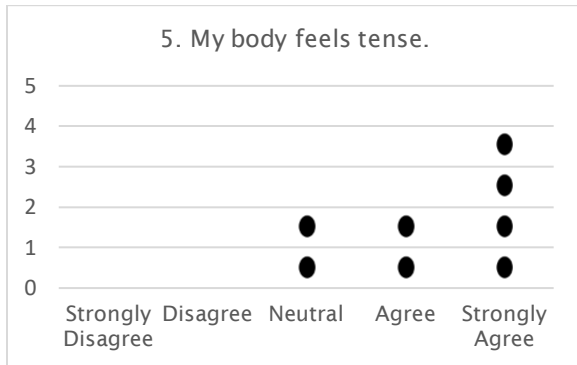


Figure 1. Pretest Questionnaire #5

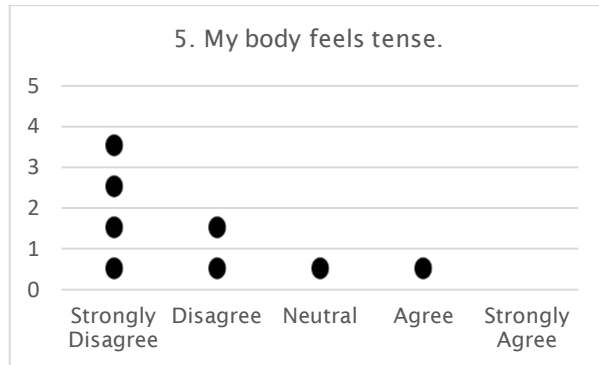


Figure 2. Posttest Questionnaire #5



Figure 3. Pretest Questionnaire #1

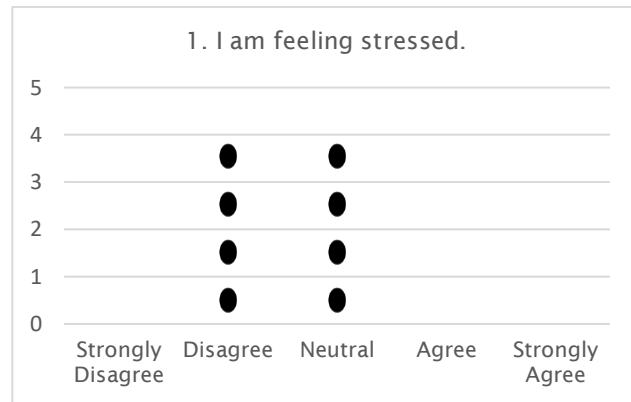


Figure 4. Posttest Questionnaire #1

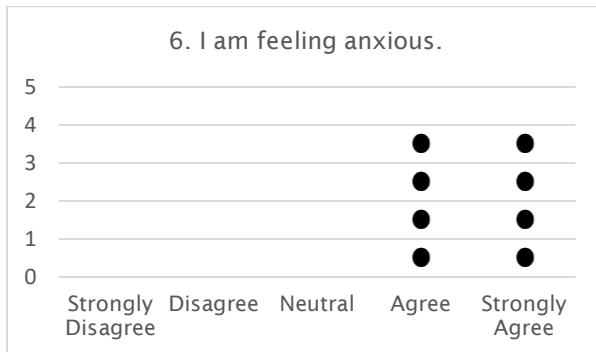


Figure 5. Pretest Questionnaire #6

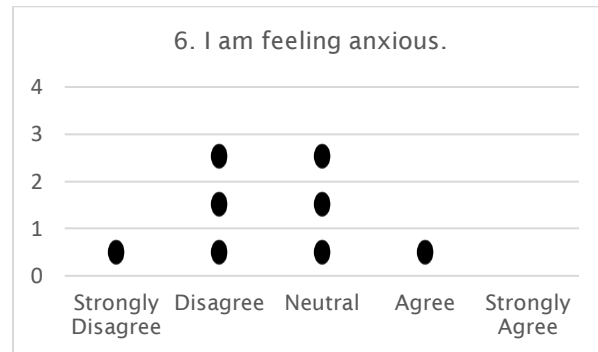


Figure 6. Posttest Questionnaire #6



Figure 7. Pretest Questionnaire #8

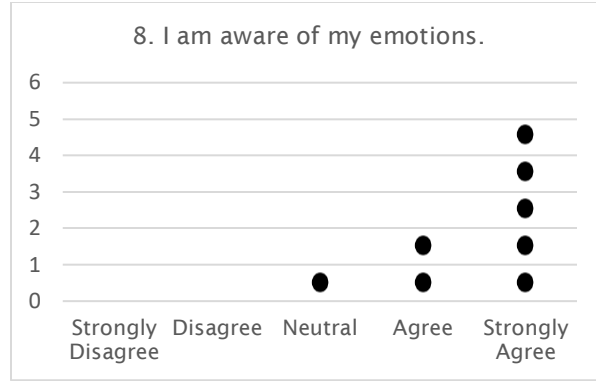


Figure 8. Posttest Questionnaire #8

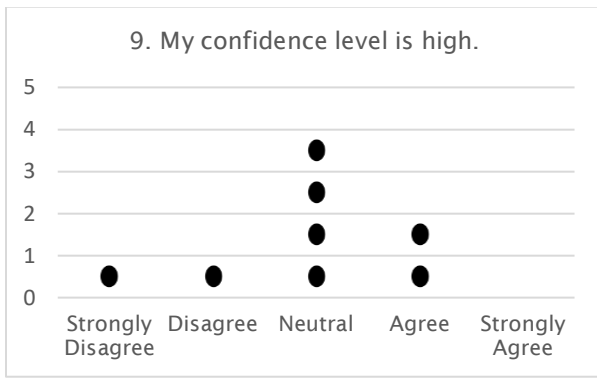


Figure 9. Pretest Questionnaire #9

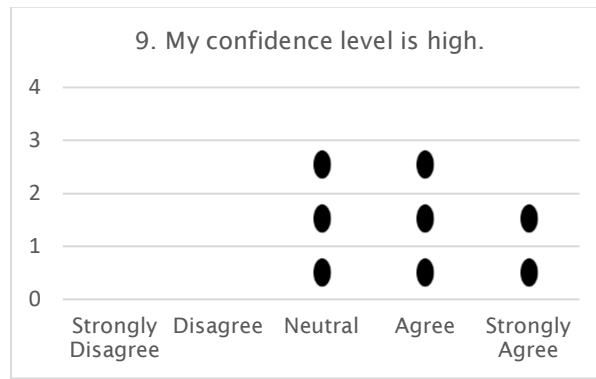


Figure 10. Posttest Questionnaire #9

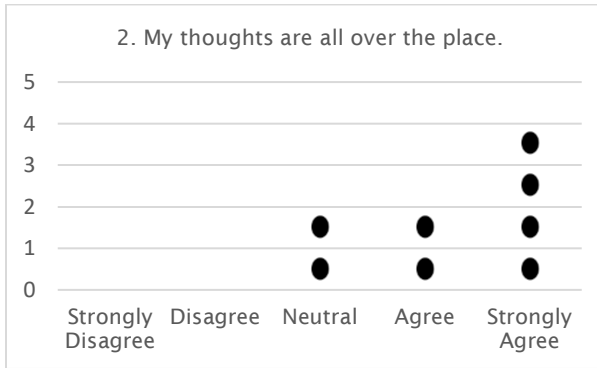


Figure 11. Pretest Questionnaire #2

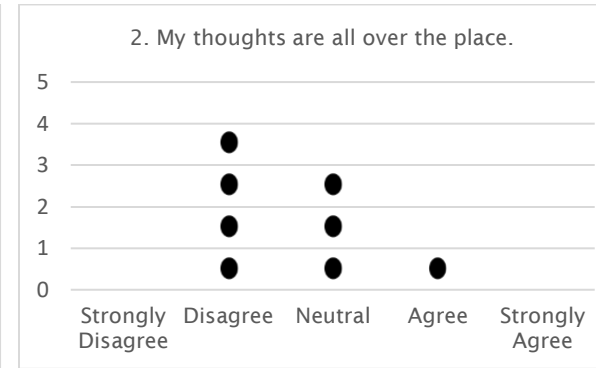


Figure 12. Posttest Questionnaire #2

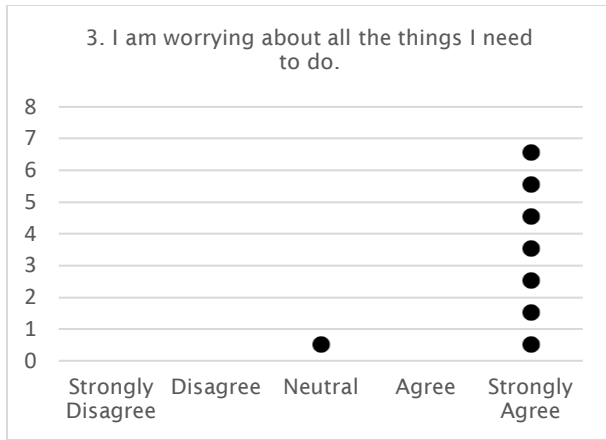


Figure 13. Pretest Questionnaire #3

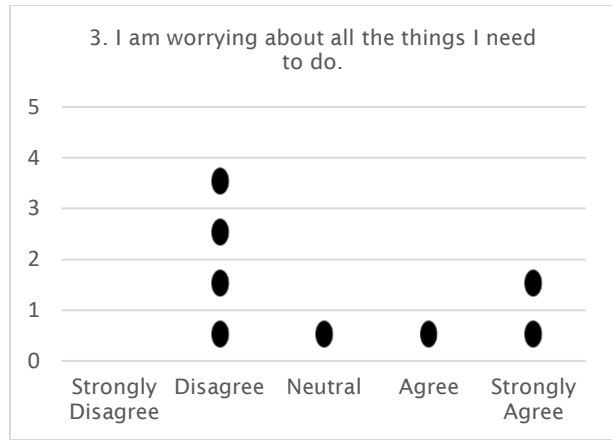


Figure 14. Posttest Questionnaire #3

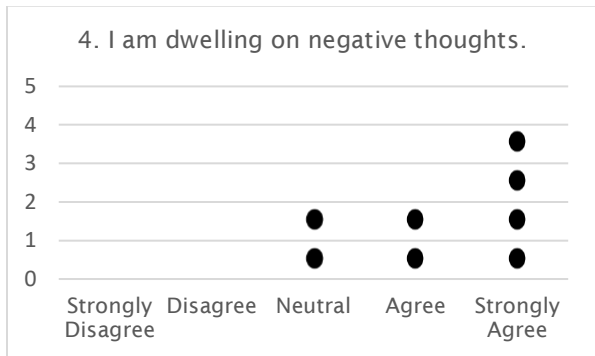


Figure 15. Pretest Questionnaire #4

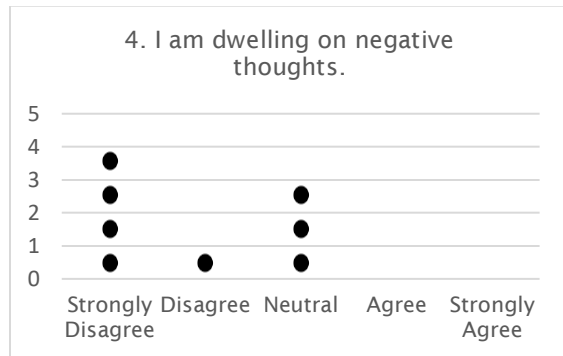


Figure 16. Posttest Questionnaire #4



Figure 17. Pretest Questionnaire #7



Figure 18. Posttest Questionnaire #7

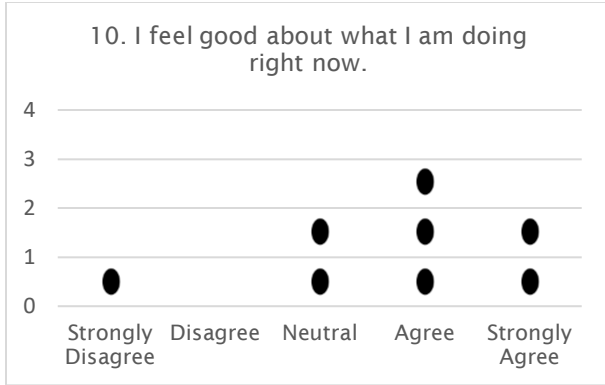


Figure 19. Pretest Questionnaire #10



Figure 20. Posttest Questionnaire #10