Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Irene Kovacs-Donaghy

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Lisa Scharff, Committee Chairperson, Psychology Faculty
Dr. Stephen Hampe, Committee Member, Psychology Faculty
Dr. Stephen Rice, University Reviewer, Psychology Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2013

Abstract

The Mandala Offers Relaxation to Hospital Staff:

A Convergent Triangulation Mixed Methods Study

by

Irene Kovacs-Donaghy

MA, Drexel University, 2003

BS, Pennsylvania State University, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

November 2013

Abstract

Hospitals are associated with high levels of stress. This research addressed the problem of inconsistent support for the use of the mandala and to provide insight into if and how the mandala may benefit hospital staff. The mandala is a type of art: a circular image that can be filled to the creator's desire. The research questions addressed what emotional descriptors are associated with completion of the mandala in a hospital setting and also what feelings and thoughts the participants used to describe the mandala process. Biopsychosocial and Jungian theories guided the current study. A convergent triangulation mixed methods design was used to develop a theory of the mandala experience. Twenty four hospital staff completed a mandala and completed questions about the experience in an open-ended questionnaire as well as the Scale of Positive and Negative Experiences. Grounded theory was the primary methodology, and the quantitative questionnaire was examined with descriptive statistics. Questionnaire responses were organized into categories and themes to describe the mandala's effects. Themes and mood levels demonstrated relaxation as the core benefit of the mandala, followed by enjoyment, thought resolution, and pain relief. The overwhelming majority of participants described the mandala as a positive experience that was enjoyable and relaxing. Questionnaire scores were consistently high in terms of rating positive feelings: the median was 18.6 and the mode was 24 out of a potential score of 28. Positive social change implications include the potential use of the mandala as a cost-effective behavior that may promote health, decrease healthcare costs, and improve productivity in hospital staff as well as those in patient roles or other professions.

The Mandala Offers Relaxation to Hospital Staff:

A Convergent Triangulation Mixed Methods Study

by

Irene Kovacs-Donaghy

MA, Drexel University, 2003

BS, Pennsylvania State University, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

November 2013

Dedication

I would like to dedicate this dissertation to all those working towards balance and health in their lives. The mandala is an ordinary implement whose consistant use facilitates wellness.

"I had to abandon the idea of the superordinate position of the ego. ... I saw that everything, all paths I had been following, all steps I had taken, were leading back to a single point -- namely, to the mid-point. It became increasingly plain to me that the mandala is the centre. It is the exponent of all paths. It is the path to the centre, to individuation. ... I knew that in finding the mandala as an expression of the self I had attained what was for me the ultimate." C. G. Jung.

Acknowledgments

Thank you to all the Walden Faculty who have taught me a spectrum of health psychology knowledge and contributed towards my scholar-practitioner goals. Thank you to the dissertation chair and committee, Dr. Lisa Scharff and Dr. Stephen Hampe. Thank you to family and friends for your support; namely my husband Kieran and daughter Shevaun. Your understanding, laughs, and love motivated me on this journey.

.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Background

The hospital can be a stressful experience for visitors and patients as well as a stressful place to work. Mercer, Warson, and Zhao (2010) identified medical interns as having a high suicide rate due to the combined stress of school and internships. Patients can experience trauma and stress while hospitalized (Staricoff, 2004). Visitors experience apprehension about the care and state of health of their loved ones. Hospital staff reported distress due to the demands of colleagues' and patients' needs (Mroczek, Mikitarian, Vieiera, & Rotarius, 2004). Workplace stress costs the United States $300 billion annually due to sick days, turnover, poor productivity, and medical and legal costs (American Psychological Association Practice Organization, 2010). This study explored how staff in a hospital environment experienced the process of completing a mandala as a potential stress reducer. The mandala can be a cost-effective practice contributing to a biopsychosocial intervention within a hospital setting.

The mandala, Sanskrit for "circle," is a circular form of art (Bloos & O'Connor, 2002; Henderson, Rosen, & Opp, 2007). It can be empty and filled in any way the creator wants (unstructured). It can also contain a design ready for the creator to fill in any way he or she desires (structured). Mandala figures were discovered in early prehistoric art (Fincher, n.d. b). Fincher noted how the mandala pattern was typically used in tribal and religious ceremonies as the stage. The mandala is also found naturally such as in the walkway around a mountain, the sun, architecture patterns, and so on (Fincher, n.d. c). Jung reported that he found both himself and his patients spontaneously creating

mandalas during times of distress (Sleglis, 1987). The mandala seems to be a phenomenon offering self-awareness, calm, or stability of some kind.

More data are needed on how the process of completing a mandala is perceived in terms of stress relief and possibly creating a sense of calm, and given the lack of previous research in this field, a qualitative form of inquiry was most appropriate. There has been inconsistency in the research in terms of methods: Some of these studies have evaluated the structured mandala, others the unstructured mandala, and some evaluated both. One study was conducted within a hospital environment, another during a nurses' retreat, and the majority were with university students. Quantitative research has reported largely insignificant findings in regard to the mandala's impact on mood or stress relief, and the qualitative research indicated a positive, calming response to completing the mandala. These findings indicate that this particular research area may be in a developing stage where the quantitative measures are not appropriate or focused enough to measure the effects or impact of the mandala. Qualitative study is needed to determine what the specific impact of the mandala is. Future quantitative studies may continue research via more precise measures.

The format of the mandala has also varied in the studies that have been reported in the literature. This intent of this convergent mixed methods study was to obtain descriptions of completing the mandala process primarily through a qualitative, grounded theory approach. Each participant first completed a mandala. Then, open-ended questionnaires were provided to explore the participants' experiences of the mandala process as well as the Scale of Positive and Negative Experience (SPANE; Diener &

Biswas-Diener, 2009). The SPANE measured feeling levels associated with completing the mandala.

The study was conducted within a hospital environment with participants who were primarily employees or students; some participants were visitors. The reason for combining both quantitative and qualitative data was to maximize understanding of the mandala's effects by using both types of data to offset each type's weaknesses and to draw on each type's strengths as well as enhance credibility and integrity of the results. Grounded theory was the predominant methods so as to focus on creating a mandala theory while also establishing a better and consistent understanding of the mandala, specifically in the hospital setting.

Problem Statement

The hospital environment can be hectic and stressful. Hospital staff, volunteers, and patients may find the cost-effective practice of the mandala helpful in this setting. The mandala is a little studied process. Some research has identified the mandala as having healing potential. However, research support is minimal and inconsistent. There is no published research on the mandala within the health psychology literature. One article was found identifying the arts as a healing tool within health psychology interventions (Camic, 2008). The research problem of interest addressed the gap of inconsistent support for the mandala while also contributing to the research investigating stress management within a hospital environment. Because little is known about perceptions of completing a mandala and because the research findings have been inconsistent, a convergent triangulation mixed-methods study was called for in order to bring together qualitative

detail with quantitative data. The qualitative, grounded theory approach was the dominant methodology. It elicited a better understanding of the mandala as well as assisted in the creation of a theory of the mandala.

Purpose of the Study

The purpose of this convergent triangulation mixed-methods study was to explore the mandala and its creation process by staff, patients, and visitors within a hospital environment. The SPANE was used to measure the relationship between the mandala and emotional descriptors and provide numeric descriptions of positive and negative mood levels after completing the mandala. Simultaneously, the mandala was explored using an open-ended questionnaire with the participants. The descriptive quantitative data of the emotional descriptors were used in conjunction with the qualitative data of the mandala process to enhance understanding that may be overlooked if only one method was used, thus eliminating inconsistent research data on the mandala. The qualitative grounded theory approach was the dominant approach so as to focus on gathering rich data and understanding for creating a theory about the mandala.

Nature of the Study

A mixed-methods design was selected in order to bring together qualitative and quantitative data. Together, the quantitative and qualitative data corroborated results that offset weaknesses as well as drew on their individual strengths. Johnson et al. (as cited in Tashakkori & Teddlie, 2010) defined mixed-methods research as combining both qualitative and quantitative approaches for "breadth and depth of understanding and corroboration" (p. 51). The qualitative, grounded theory aspect was selected to obtain a

foundation for the understanding of the mandala. Creswell (2007) described qualitative studies as best suited for topics having little to no research support. Therefore, this approach was dominant in the mixed-method design. Grounded theory was used to assist in investigating how the mandala affects people in a hospital setting. Glaser (2010) described grounded theory as "what is, not what should, could or ought to be" (p. 5). This study assisted in understanding the mandala process itself and assisted in developing a theory describing the impact and impression of mandala making in the hospital environment. Descriptive questionnaires were used to gather data. The emergent nature of grounded theory provided codes, concepts, and categories leading to theory development. The most saturated category became the central phenomenon and was used to create a theory of the use of the mandala in the hospital setting.

A quantitative survey design offered descriptive statistics that support the use of the mandala. A quantitative scale, the SPANE, was used to rate participants' mood levels after the completion of the mandala (Diener & Biswas-Diener, 2009). Together, the qualitative and quantitative data complemented each other to offer a description and understanding of the mandala process. Chapter 3 will describe the process in more detail.

Research Questions

The initial research questions were: What emotional descriptors are associated with completion of the mandala in a hospital setting?; and What words and feelings do the participants utilize to describe the mandala process? The following are the subquestions explored: (a) What feelings are associated with the mandala?; (b) What thoughts are associated with the mandala?; (c) What physical sensations are associated

with the mandala?; (d) How does the participant experience the mandala?; and (e) What levels of positive and negative emotions are present after the mandala process?

Theoretical Base

Jung was the first mental health professional to describe his observations of patients spontaneously creating a mandala during times of chaos (Henderson, Rosen, & Mascaro, 2007; Slegelis, 1987). He surmised that this process provided stability and self-awareness. Jung also found himself creating the mandala during times of distress. Health psychology experts would view the use of the mandala the way Jung did: as a behavior or process to promote health and reflect a biopsychosocial approach to wellness. Specifically, the interplay among psychological, biological, and social processes is examined. The mandala process may be a behavior practiced regularly to improve functioning via cognition stimulation through the act of making a mandala. Health psychology research has reported benefits of art but not specifically on the mandala. The research questions explored the participants' various descriptions of the mandala process, and the data were organized with Jungian theory while cognizant of the biopsychosocial model. Chapter 2 will elaborate on the application of theoretical concepts to the research questions.

Definition of Terms

Art: Universal language (Learmonth, 2009; Provencal & Gabora, 2007). The term *art* shares its root with the words artisan and artifact (Learmonth, 2009). These three words share the meaning of making. In Western thought, art is identified as superior

because one must have the talent to do art. Art making is something that makes humans distinguishable from other species (Harrod, 1992; Learmonth, 2009).

Art therapy: The use of art within therapeutic treatment (Levick, 1983,Wadeson, 1980; Wadeson, Durkin, & Perach, 1989)

Health psychology: Studies the relation among behavior, psychological processes, and health (Brannon & Feist, 2007).

Mandala: The mandala is Sanskrit for "circle" (Bloos and O'Connor, 2002; Henderson, Rosen, & Mascaro, 2007). The mandala can be an empty circle filled with design according to the creator's choice (unstructured) or it can have a predawn design to be colored or filled in as one chooses. (structured).

Medical art therapy: Medical art therapy is specifically defined as the use of art with people with physical illnesses, physical trauma, and who have received or are receiving medical care and surgery (Malchiodi, 1993)

Neuroesthetics: The experience of art on the level of brain functions and states (Salah & Salah,2008, p. 147).

Psychoneuroimmuniology: Evaluates a behavior's impact on one's immune and nervous systems (Brannon & Feist, 2007).

Assumptions

Completing the mandala is a practice that offers an experience that may reflect health psychology's biopsychosocial ideals. I assumed that the participants followed the instructions and were honest in their responses. I also assumed they were in touch with their thoughts and feelings about completing the mandala and able to write those thoughts

and feelings down with clarity. I did not work directly with every participant, so the assumption was that as they were informed to ask any questions as they come arose. Respect for each other's privacy was assumed as the study was conducted in a room where individuals were able to recognize each other as fellow study participants. I was the only researcher present; privacy dividers were set up to section off individual working areas.

Limitations

Specifically, drawing the mandala may not have the same benefits as others have reported for viewing or engaging in other art such as drawing, painting, or sculpture. People may believe they need artistic talent to obtain the benefits of doing the mandala, and one limitation of this study was that individuals may self-select in terms of believing that they have artistic ability. Those people whoe believe that they need to have artistic talent to complete a mandala and believe that they do not have this talent may have been more likely to decide not to participate. I explained to participants that they did not need talent to complete this task; there was no wrong or right way to complete it.

In addition, there was a time restriction for data collection. More data may have been gathered if the use of the mandala was practiced and observed over several months or longer. The use of varied methods and sample participants may also have been a limitation because the data may have been inconsistent. The participants were divided into three categories: staff, patient, or visitor. The grouping offered diverse data rather than confining research to one participant group. However, I was able to obtain primarily employees and students with some visitors. I, the principal investigator, am an art

therapist and had to put aside bias on the effectiveness of the mandala as an art tool so as not to influence participants in any manner.

Delimitations

This study was delimited to the use of the mandala in a hospital setting by participants aged 18 and over. Participants were selected from a hospital setting because of its inherently stressful environment. The results, therefore, had limited generalizability outside of the context of a hospital environment. The convergent nature of this mixed-methods study focused on the goal of developing a theoretical foundation and understanding of the mandala and mandala process.

Significance of the Study

This study provided support for use of the mandala within the hospital setting. Findings were generalizable to the use of art making in general in order to promote well-being and manage stress. Camic (2008) identified how applied psychology ignores the arts as a valid, therapeutic intervention. The mandala is a type of art not found in the health psychology literature. The mandala was explored as a possible practice that can cultivate a therapeutic, healing environment within a biopsychosocial framework. Support for the positive effects of the art may promote social change by encouraging its use in hospital settings. It is a cost-effective behavior that can promote health, self-awareness, and socialization. This, in turn, may benefit patients, visitors, and staff if they find the use of art in this setting relieves stress and promotes health.

Summary and Transition

This chapter provided an overview of the mandala study and how the research questions explored the mandala's effects on people within a hospital setting. Chapter 2 explores the literature relevant to the mandala study, including art in a healing context, art therapy, healthy psychology and art, neuroesthetics, Jung's recognition of the mandala, mandala studies, and mandalas used by professionals. Chapter 3 explains the mixed methods triangulation methodology, convergent type, and the rationale of its use. Participants within a hospital setting were asked to complete a mandala followed by an open-ended questionnaire and an emotions scale, the SPANE.Chapter 4 presents the results via tag clouds and tables. Chapter 5 interprets the results, discusses limitations, recommendations, theory, and implications of the mandala.

Chapter 2: Literature Review

Introduction

Hospitals can be a place of high stress. Patients exhibit and report stress while in the waiting room (Brooks, Bradt, Eyre, Hunt, & DiLeo, 2010; Camic, 2008; Homicki & Joyce, 2004). Nursing staff often report burnout (Duffy-Randall, 2006). The purpose of this mixed-methods study was to develop a theory and gather understanding of the process of the mandala in a hospital setting. The mandala has the potential to be a therapeutic tool in promoting health via a health psychology lens. The combination of writing and making art may reduce stress by integrating thoughts and feelings (Breedlove, Watson, & Rosenzweig, 2010; Ganim & Fox, 1999). The art expression of the mandala coupled with a written questionnaire and emotion scale (SPANE) may elicit a bilateral use of the brain.

This chapter reviews the literature on the mandala and convergent triangulation mixed methods, which addressed this study's research questions. Research on the mandala is minimal and inconsistent. There is a lack of both quantitative and qualitative studies of the mandala as a therapeutic tool. The mixed-method study design provided theoretical support and understanding of the use of the mandala in a hospital environment.

The mandala is a form of art. Since the mandala is a type of art, this chapter will explore a brief history of art. Literature regarding mandalas, Jung's influence, art's healing potential, art therapy, health psychology, neuroesthetics, mandala studies, and the use of mandalas in hospital settings and for healing professionals will also be reviewed.

The literature search used the following databases: PsychINFO, SocINDEX, PsychARTICLES, PsychBOOKS, Psychology: A SAGE Full-Text Collection, and PsychiatryOnline. An initial search included the following terms: *mandala*, *art therapy*, *health psychology*. This search yielded 33 results. I found few articles found that specifically addressed art in the health psychology literature. No study was found on the mandala in the health psychology literature. Due to minimal health psychology literature on art combined with the lack literature on the mandala, I used more specific terms in a second search: *healing environment*, *art*, *art history*, *healing arts*, and *Jung*. This search yielded 28 results. A third search included: *art and healing and history*, *art therapy and mandala*, *art therapy and history*, *art and brain*, and *art making and brain*. This search yielded 43 results.

Defining Art

During the Upper Paleolithic period, cave drawings and tools were examples of art (Harrod, 1992). This observation means that art dates back about 40,000 to 60,000 years. In addition to the attribute of art being a universal language, a second attribute is its integral quality: It is built into many aspects of life (Learmonth, 2009). The third attribute of art is its tendency to be pleasurable. These diverse aspects of art allow for a variety of research possibilities and indicate how researchers are at the beginning of grasping and defining art, especially within the context of a hospital setting.

Mandalas

Mandalas can be a type of art that requires participation that engages one of Wadeson's (1980) six advantages of art (reviewed later in this chapter): creative and

physical energy. The completion of the mandala can reflect all three aspects of the biopsychosocial model of health: It can elicit a calming response in one's brain, support mental being, and be a behavior to practice in a social context. The mandala is Sanskrit for "circle" (Bloos & O'Connor, 2002; Henderson, Rosen, & Mascaro, 2007). It also promotes psychic integration or internal calm (Johnston, 2007; Jung, 1965). The mandala can be an empty circle filled with a design according to the creator's choice (unstructured), or it can have a predrawn design to be colored or filled in as one desires (structured; see Figure 1). Mandalas are said to have originated in India between the fourth and seventh century (Huh, 2010). The mandala has been found in most Eastern Asian countries.

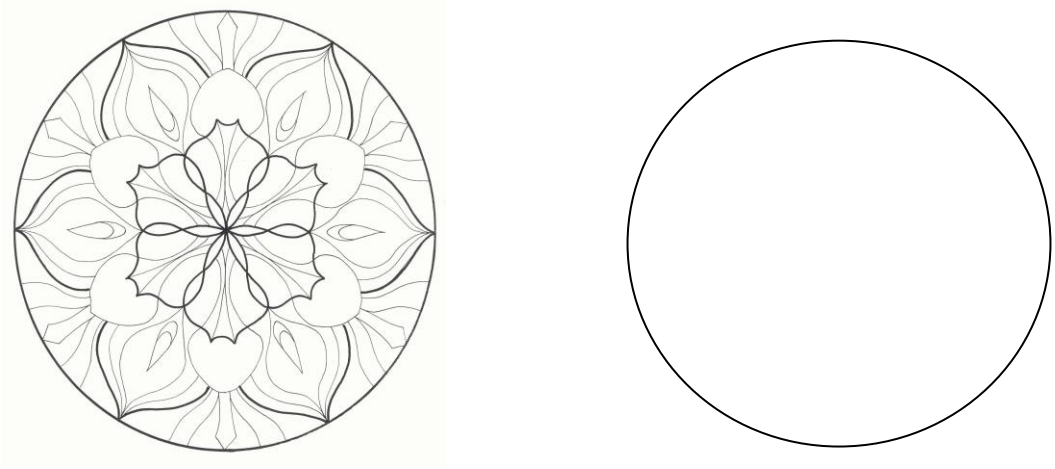


Figure 1. The first mandala on the left is an example of a structured, predrawn mandala; it already has a design or image inside. Mandala extracted from ColoringCastle.com

(2011). Reprinted with permission. The second mandala is an example of an unstructured mandala; it is empty and can be filled to the creator's liking.

Mandalas' Circular Influence

The circle shape of the mandala reflects how things begin (Fincher, n.d.a). The making of a circle is innate from childhood (Levick, 1983). It is often the first shape children attempt to master or draw (Fincher, n.d.b; Jackson, Muro, Lee, & DeOrnellas, 2008; Snyder, 1999). The mandala has been used in religious, philosophy, spiritual, meditative, and literature contexts. The circular influence of the mandala is said to have influenced the creation of various structures such as monasteries, castles, pyramids, towns, and cathedrals (Fincher, n.d.a). The circular shape is also found in nature: In caves, the sun, volcanoes, and the spiraling pathway to the top of Mount Fujiyama.

Circular movement is used to induce or channel the sacred. Voodoo priestesses trace circles on the ground to invite gods (Fincher, n.d.a). The Eskimo culture utilizes circular movements within their ceremonies by creating repeated circular movements in stone to induce a trance. The Navaho people use circular movements within healing rituals (Fincher, n.d.a). The healer restores balance via the creation of a circle on the ground with colored sand. The healer selects the color based on the needs of the individual, and the individual is placed in the middle, which is said to invite peaceful deities. Others have found the circular shapes among ancient rock carvings (Fincher, n.d.a). Since the mandala's circular shape is found in diverse cultural contexts, it can be applicable to various settings including the hospital.

Jung and the Mandala

The worldwide and diverse applications of the mandala or circle discussed above attracted Jung's interest. Jung was the first psychotherapist to report use of the mandala for therapeutic effect (Henderson, Rosen, & Mascaro, 2007; Slegelis, 1987). Jungian psychology and the history of the importance of symbols are common in the art therapy curriculum. Symbols can manifest within the artwork, which art therapy pioneer Wadeson (1980) identified as indicative of one's unconscious.

Jung is known for his theory of analytical psychology (Mattoon, 1981). The goal of therapy in this perspective is for the person to achieve a healthy identity through various explorations and resolution of unconscious conflicts. Unconscious conflicts can take the form of symbols, many of which Jung believed to be universal or archetypal. Jung identified the mandala as such a symbol. Zeki's (1998, 2011) perspective of art being an extension of the brain can contribute to the understanding of the mandala as a reflection of the brain and well-being.

Calming and healing effects were evident from Jung's observation and personal experiences with the mandala (Henderson, Rosen, & Mascaro, 2007). It is believed that the mandala represents emotional conflicts while simultaneously providing order and integration of such conflicts, thus reflecting the goal of Jung's analytical psychology. Mattoon (1981) reported that Jung identified the mandala as an ancient (religious) symbol representing wholeness. The mandala was said to represent one's inner, unconscious process of working towards self-awareness and wholeness. Jung also believed that the mandala combines one's unconscious and present-day struggles (Slegelis, 1987). In

Jung's world travels as a psychiatrist, he found that the patients he worked with often showed mandalas in their artwork as well as dreams, no matter what culture they came from (Slegelis, 1987).

Jung (1965) documented how he was compelled to draw mandalas as cathartic outlet. During times of distress or contemplation, he drew mandalas. He drew his first mandala after his break from Freud when he experienced depression and hallucinations. Over time, he created a journal of mandalas and often wrote about them. Jung felt the writing helped him to interpret and gain insight into his unconscious and conflicts. He encouraged his patients to do the same writing and interpreting. The combined practice of art making and writing may offer some type of homeostasis. This study's research questions explored the various experiences, outcomes, and levels of positive and negative emotions in people within a hospital environment who completed the mandala.

The Origin of Art

Art has been a topic of exploration for art therapists and other health professionals nationwide. Art is acknowledged as possibly having a role in facilitating healing (McCaffrey, 2009). The identification of art as healing is evident in Dissanayke's research (Learmonth, 2009). Dissanayake's research focused on the origins of and motivation behind art making. The study of various cultures demonstrates that art and music are normal, natural, and necessary aspects of human nature (Dissanayake, 2009). The mandala is a type of art making that is a missing "normal" practice or aspect of a hospital setting. Offering the mandala to staff or patients can become as routine as

offering TV, books, or other comforts or distractions. Further, Dissanayake claimed that as a culture's level of stress increases, art making increases.

This current research has important implications as stress is common in a hospital setting, and providing art-making opportunities will assist in alleviating stress. Historically, art has been theorized to serve the purpose of reflecting one's hopes and fears about survival of stressful events such as illness, poverty, and lack of safety (Dissanayake, 2009). Art has been used in ritual or spiritual ceremonies to invite resolution of such fears, and it has seemed to be the initial step or foundation to a plan to resolve the distress at hand. Even if the distress was not resolved, it is proposed that the art making provided relief and control during a time of a lack of control (Dissanayake, 2009). When intruders invaded or severe climate changes endangered those of Paleolithic times, an increase in cave art and art on shelters in Europe and Australia was evident (Dissanayake, 2009). The hospital setting is a place where a lack of control can exist. Creating mandalas could serve to restore control or comfort in this environment.

In more recent times during World War II, concentration camp victims used the making of art to help transform their feelings and to alleviate suffering (Ornstein, 2006; Provencal & Gabora, 2007). Prisoners in concentration camps often spoke of the cathartic value of art while also describing the images as reminders of the suffering. During imprisonment in the camps and ghettos (Ornstein, 2006), making art served a four-fold function. First, art provided emotional survival and an increased likelihood of emotional stability. Secondly, it provided witness to historians and other viewers. It offered an outlet of resistance to the humiliation and torture they experienced. Finally, the art

constituted memorials to the dead. The mandala may similarly assist in transforming stressful feelings.

The art that was developed in concentration camps seemed to be a powerful outlet but came at a high price and also impacted the Nazi regime (Ornstein, 2006). The artists had to hide their art. If it was found, the artists were tortured and gassed. The images involved poking fun at the soldiers who tortured them or depicted the hunger and suffering of peers and families, and the Nazi regime feared that such pictures undermined their power (Ornstein, 2006). The mandala can offer similar self-expression.

A more recent account of art making during times of distress was September 11th (Dissanayake, 2009). Dissanayake (2009) collected reports that many, for the first time in their lives, were compelled to create art. This phenomenon supported Dissanayake's theory that art is a natural and normal human inclination. It appears that art created under such circumstances is what inspired the development of art therapy (Provencal & Gabora, 2007). Art therapy has recognized the potential of art as a healing tool. Research examining art in mandala form within the hospital setting contributes toward the field and provides much needed knowledge about how individuals experience the making of art in this environment.

Art Therapy

An art therapy curriculum addresses the use of art within therapeutic treatment (Levick, 1983; Wadeson, 1980; Wadeson, Durkin, & Perach, 1989). Art can be used with a variety of populations, including those with mental or physical illnesses. Medical art therapy is defined as the use of art by people with physical illnessesand trauma as well as

those who have received or are receiving medical care and surgery (Malchiodi, 1993). More emphasis has been placed on medical art therapy due to the growing popularity of the mind–body connection and published research in the field of psychoneuroimmunology (Malchiodi, 1993). Psychoneuroimmunology evaluates a behavior's impact on an individual's immune system (Brannon & Feist, 2007). This aspect of medical art therapy interlinks with health psychology as health psychology explores the connection between behavioral, psychosocial, psychological, and biological aspects of health (Brannon & Feist, 2007).

One of the earliest uses of art in a medical setting was in 1945 by the British artist Adrian Hill (Malchiodi, 1993). He was successful with using art in the recovery process of people with tuberculosis. Although the art assisted in the healing of the physical illness; Hill believed that in some way the art also healed mentally and spiritually but could not articulate how. He was the first to dub the term *art therapy*. As a tuberculosis patient himself, Hill described painting as a distraction from his recovery as well as an outlet for anxiety. He encouraged other patients to engage in art, and observed the same experience in those individuals that he had experienced himself. Subsequently, medical art therapy also showed promise for children with burns as well as adults with AIDS or arthritis (Malchiodi, 1993). The specific art of the mandala may be able to offer such a distraction for people within a hospital setting. This study explored how the art of the mandala affects people with a physical illness; the research questions explored this possibility.

In art therapy, persons with an illness such as cancer depict their cancer through art, often reporting better understanding and increased feelings of control. Rubin (1999) noted that taking charge via art materials may function to restore self-efficacy. Some researchers argued that mental and artistic imagery can help combat diseases such as cancer. The mandala experience may offer similar agency in people within a hospital setting. Rubin (1999) described a case of a woman in her late twenties who was battling ovarian cancer and lived twice as long as predicted. Rubin opined it may have been due to the fighting spirit the woman depicted in her chalk drawings. One of her pictures showed her imagining healing on the inside, another showed fighter T-cells, and her final picture was of a sturdy boat making its way through rough waters.

People with schizophrenia have described art making as a cathartic release (Provencal & Gabora, 2007). A 22-year-old male inpatient with schizophrenia described his drawings as a method to rid himself of harmful people as well as cure others (Wadeson, 1980). Ridding himself of harmful people meant alleviating the voices. The pictures depicted natural disasters and science fiction creatures fighting against evil while he remained protected. This represented his depiction of protecting himself from the voices. When he was less delusional, his pictures depicted calm landscapes that seemed to contrast the delusional system in his earlier art. The transition of the art reflected his inner being. The art provided a safe outlet for him to address and control his hallucinations. The mandala may have a role in providing similar feelings of control relief for people within a hospital setting.

Teenagers can use art to process identity issues. Rubin (1999) described the case of a teenage boy who was brought to treatment due to being sad and feeling rejected by peers. He often used clay to create figures to act out stresses of the external world. He devoted several sessions to addressing his internal accumulation of anger. During each session, he worked toward sculpting a large open mouth with sharp teeth. One day he took a bloody figure created by a peer and put it in the mouth he created. This led to his discussion of a fear of separating from his parents and becoming an autonomous young adult. This teenager used the art as a bridge to addressing his fears. The art provided objectivity—distance and perspective from his fears. The mandala may similarly provide such objectivity to people within a hospital setting.

Visual journaling was helpful in reducing anxiety and negative affect in a study on medical students (Mercer, Warson, & Zhao, 2010). Ten participants were recruited for two sessions of art journaling. The participants completed two inventories: the State-Trait Anxiety Inventory (STAI-Y; Spielberger, 1983) and an inventory of positive and negative affect (PANAS-X; Watson & Clark, 1994) before and after a visual journaling exercise, and they were encouraged to use their journals in the 2 weeks between sessions. The low number of participants provided low power to demonstrate a statistical effect for treatment; it did, however, show promise for the use of art in stress management (Mercer et al., 2010). Ninety percent of the participants documented that they found the visual journal exercise useful. Sixty percent said they would use the journal again. Many offered comments on how the art increased self-awareness and allowed them to confront issues or thoughts. The researchers identified a lack of studies of the use of art in the medical

environment. My mandala study addressed this gap by investigating the use of art making in a hospital environment.

Mercer et al. (2010) found literature supporting the benefits of both writing and visual journaling. The authors asserted that writing appeals to the cognitive brain while art making appeals to the visual brain. This combination may allow for an experience of both cognitive awareness and emotional satisfaction. Ganim and Fox (1999) postulated that visual journaling reduced stress via avoidance of conflict between thoughts and feelings. Biopsychology experts posited lateralization of the brain into left and right hemisphere (Breedlove, Watson, & Rosenzweig, 2010). The left brain is theorized to be more cognitive, logical, and appealing to writing while the right brain is more abstract and appeals to art tasks. Therefore, visual journaling is a full engagement of the brain rather than a purely cognitive experience. Completing the mandala, the questionnaire, and emotions scale (SPANE) about the experience of completing the mandala may engage both brain hemispheres, providing a holistic experience.

Visual journaling provides evidence of the therapeutic value to the user. Just as the definition of art is abstract, art's therapeutic effects can be intangible, difficult to assess, and diverse, which complicates studies attempting to assess the impact of art making. Focusing on one art form such as the mandala can help clarify the potential benefits this one form of art may have in the specific context of a hospital setting.

The Role of Talent in Art

Talent is a crucial issue to address in art therapy. Many people believe they must be artistic to participate in and benefit from art therapy (Rubin, 1987; Simmons 2006).

The art therapist is educated to reassure the client that talent is not needed to partake in or receive benefits from making art (Simmons, 2006; Wadeson, 1980). The use of the mandala can benefit people of any talent level. Even people who do not use or expect art to be of benefit may be able to utilize the mandala as a positive tool. Wadeson identified six advantages that facilitate art as a therapeutic tool; I have applied them to the mandala. My own comments are in the square brackets:

1. Imagery. Thinking in images is a large part of early personality development and a primary component of one's unconscious. [The mandala may offer a concrete reflection of one's inner reflections.]
2. Decreased defenses. Art is not a usual mode of communication, resulting in more pure and less defended self-expression that allows for reflection or self-awareness. [The mandala may contain a story one is not ready to tell or cannot find a way to articulate.]
3. Creative and physical energy. The art making process offers physical and mental stimulation. [The creation of the mandala can offer stress relief.]
4. Objectification. The tangible creation of art provided distance from one's inner thoughts and feelings. [The mandala can offer fresh, objective perspectives.]
5. Permanence. The creation of art provides a timeline of one's progress and patterns. [One can create a series of mandalas over time to track mood or insight.]

6. Spatial matrix. Verbal expression is linear; art allows for nonlinear expression. A variety of expression can occur in one piece of art. [The mandala can reflect a variety of feelings and thoughts in one image] (pp. 8–11)

Health Psychology, the Biopsychosocial Model, and the Role of Art

Health psychology studies the relationships among behavior, psychological processes, and health (Brannon & Feist, 2007). In the 21st century in the United States, unhealthy behaviors and lifestyles contribute to leading causes of death, such as heart disease or cancer (Brannon & Feist, 2007). Prior to this historical moment, the leading causes were primarily infectious diseases. The U.S. Surgeon General published a report in 1979 identifying unhealthy behavior and lifestyle as 50% of the factors leading to mortality in the United States, social and environmental factors contribute to 20% of deaths while biological and genetic factors contribute another 20%, and medical mistakes make up the final 10% (Department of Health, Education, & Welfare, 1979).

In 2007, Florida's Duval County Health Department surveyed its residents to determine if the U.S. Surgeon General's statistics on unhealthy behaviors were still accurate (Center for Health Statistics, 2008). The four leading behaviors leading to mortality are poor diet, inactivity/lack of exercise, excessive alcohol consumption, and tobacco use. A sample of the results is the following: 62% of adults are overweight; 66.3 % of adults are male while 58.4 are female. 23.9 % of adults consume at least five servings of fruits or vegetables daily. 26.3% are female and 21.2% are male. Food

choices are a behavior contributing to mortality. Completing a mandala can be a behavioral choice that may affect an individual's health.

Making a mandala may contribute to minimizing inactivity, one of the four unhealthy behaviors leading to mortality (Center for Health Statistics, 2008). Art therapists have defined art making as energizing and uplifting and therefore a possible deterrent to a sedentary lifestyle (McCaffrey, 2009; Wadeson, 1980). The rising cost of medical care demands better education regarding healthy behaviors. Health has been redefined as the presence of well being rather than the absence of disease (Brannon & Feist, 2007). The science of health psychology focuses on investigating behaviors that promote well being (Brannon & Feist, 2007). Art making such as the mandala can be one of these behaviors.

The American Psychological Association (2011) described health psychology as "the study of the relationships among psychological factors, behavior, physical health and illness" (para. 1). This definition parallels Malchiodi's (1993) description of medical art therapy addressing the mind–body connection and psychoneuroimmuniology. Similar to the above definition, the general scope is of health promotion and prevention. The Psychoneuroimmunology Research Society (PNIRS; 2011) described psychoneuroimmuniology as "the study of the relationship between the nervous and immune systems" (para 1). These two systems are related to health psychology interests as they influence a person's physical and mental health as well as behavior. The use of art is a behavior that can be studied within a hospital setting that may prove to be a cost effective way to promote well being.

The biopsychosocial model of health psychology is reflected in the use of the mandala. The biopsychosocial model is a holistic perspective of health. It emphasizes a person's health as well being rather than the absence of disease (Brannon & Feist, 2007). The concept of well being takes into consideration a person's psychological and social factors in addition to biological factors. The traditional medical model considers only biological factors. The combined action of completing the mandala as well a self-report emotional state questionnaire (SPANE) captured bilateral brain use and potentially offers well being via stress relief or pleasure.

Camic (2008) identified the importance of arts in healthcare in a literature review of studies applying arts to healthcare. Health psychology recognizes art's history, evolution, and impact on people (Camic, 2008). Art has the potential to challenge the brain through thinking differently, participating in different behaviors, and experiencing emotions in a different manner. Health psychologists have the potential to use art at an expanded level compared to an art therapist; they may be able to use a broader approach. Camic referred to this approach as "arts and health." There is no precise or exact manner to applying art in healthcare interventions. Art therapists are typically placed in mental health settings while health psychologists work in a variety of healthcare settings. The more research that is done on this phenomenon, the more scholars can implement the arts in healthcare to a diverse population. This study on the mandala can build on health psychology literature supporting the use of art as a potential health-promoting tool or process.

Staricroff (2008) led an art counsel review of 385 articles on art and health. This review was inspired by the observation of arts improving health, along with anecdotal evidence. Her hope was to have a literature search that would offer clinical evidence of art's benefits on healthcare. She reviewed randomized and nonrandomized trials in peer-reviewed articles that addressed art interventions. The art interventions were conducted in oncology, cardiovascular, intensive care, pre/postnatal, surgery, mental health, and pain units (Staricoff, 2004). The literature review also covered research of art in medical staff's well being. The art interventions included were music, creative writing/poetry, dance, drama, and the visual arts. The visual arts were further divided into active and passive, indicating the former as art the subjects participated in and the latter as art they observed.

Overall, the review supported the role of arts in improving health. Various investigations reported how it assisted in alleviating the need for medicines and reducing the length of hospital stays (Staricoff, 2004). Chemotherapy patients listening to music reported more relief and less nausea compared to a control group. The music was believed to have activated the immune system, which then reduced cortisol levels. In the case of 17 neonatal participants, oxygen saturation and behaviors showed improvement after a musical intervention ($p < .05$ for oxygen saturation, $p < .01$ for behavior; Collins & Kuck, 1991).

Staricoff (2004) identified research that indicated art perception invited nursing students to be active in problem solving skills. Creating or viewing art engages a person's ability to think in a visual manner. Such skills are helpful when deciding the appropriate

patient care to provide. Similarly, drawing and thinking three-dimensionally sharpened neurosurgeons' skills. Staricoff's (2004) review provided support for the use of art in improving both patient care and education/training of health professionals. The qualitative research supports the benefits of art. Overall, the literature review reflected health psychology's goals of health promoting behaviors while addressing the mind–body-connection. One limitation of this review was that the majority of research reviewed was with music as the intervention, indicating a gap in literature on visual and other arts in healthcare.

Neuroesthetics

Neuroesthetics reflects health psychology's biopsychosocial approach to health. It is a field that recognizes the potential of art to enhance cognitive skills. Although art can be an abstract concept that is difficult to define, science seems to recognize its value and impact on the brain (Salah & Salah, 2008). The term *neuroesthetics* is "the experience of art on the level of brain functions and states" (Salah & Salah, 2008, p. 147). Specifically, three areas are studied within the field of neuroesthetics: observations of those viewing art, links between brain areas and art activity, and aesthetic enjoyment of the viewer via brain imaging. This last item in particular provides support for art making as a behavior to promote health as viewed from a health psychology perspective.

Zeki (1998, 2001, 2011) studied the visual brain; specifically, he examined the neural basis for art (Zeki, 2001). He described art as an extension of the brain (Zeki, 1998, 2011). Art's subjective nature provides complexities in conducting research investigating

its appreciation and use. This variability gives art its defining feature as a human activity of the brain.

In the field of neuroesthetics, artists are described as neurologists or neuroscientists, unbeknownst to them, studying the potentials and techniques of the brain (Zeki, 2001, 2011). Zeki (2011) quoted Swiss painter Paul Klee, "Art does not represent the visual world, it makes things visible" (para. 6). The "things" Klee is referring to are aspects of the brain Zeki is devoted to researching in hopes of better understanding the value of art for people and society. Zeki created the Institute of Neuroesthetics in 2001 and has been devoted to this field of research since that time. According to the principles of neuroesthetics, art has the ability to express the brain's potential. Health psychology's evaluation of a person's behavior and psychological processes on health can be reflected in neuroesthetics. Art-making behavior influences the brain and health. This may be interpreted to mean that art such as the mandala could have the potential to offer benefits to the person's brain.

Use of Art in a Hospital Environment

Art may be of use within a hospital environment, including the mandala as a type of art. In one study, art was utilized in an internal medicine unit of a hospital in Bologna, Italy in order to offer a positive experience (Trevisani et al., 2010). This qualitative study gathered data from 216 patients, ages 19 to 89 years old. They were required not to be bed-bound and be in the hospital for at least 3 days from the cardiovascular, hematological, gastroenterological, pulmonary, nephrological, neurological, and alcohol-addicted hospital units. Twenty-five photographs were posted throughout the unit. The

photographs were a range of black and white images of Italian landmarks and people completing daily activities and leisure. The patients completed questionnaires related to physical and emotional well-being, the milieu, and the photograph exhibition. All of the patients reported that they appreciated the art exhibition, 85.8% visited the exhibition more than three times, 71.8% attributed a more pleasant hospital stay to the photographs, and a small percentage of 1.9% found the photographs disturbing. These statistics support the ambiguity of defining and experiencing art. The overall experience of the patients regarding the art was a positive one. Art experience or skills did not seem necessary ingredient for the participants to report benefits.

Trevisani et al. (2010) focused on art that demanded the viewer's interest. Mandalas may be used in this manner where they are posted for the viewers' enjoyment; however, my study demanded more of a participatory action. The participants created a mandala themselves. Such an approach might be successful in generating positive emotions and relieving stress as Dissanayake (2009) theorized the creation of art during a time of distress as essential for human nature.

Similar results were seen in art exhibitions displayed in cancer unit waiting rooms; this exhibit not only had a positive effect on the patients but their family and visitors. An art exhibit entitled *Illuminations* at the Massachusetts General Hospital Cancer Center is an example of the potential of art in a hospital setting (Homicki & Joyce, 2004). A patient and his wife discussed the distress of the waiting room. It was difficult to focus on reading materials to distract themselves. The couple got up and

viewed the art exhibit, which served as a distraction. They reported art's ability to offer relief and comfort.

The exhibit began as inviting local artists to showcase their work (Homicki & Joyce, 2004). After time, patients had the idea to showcase their own work, reflecting their journey through cancer and treatment. Again, this process is reminiscent of Wadeson's (1980) discussion of the advantages of art. It serves as a reflection and kinesthetic release of inner feelings, thoughts, and stress. The staff and patients expanded the exhibit to include patients' art depicting hope and life. The exhibit has gained popularity, and there are now multiple exhibits in various waiting rooms of the hospital. The exhibits rotate and change seasonally. This project showcased art, but the report was not clear if the patients created art on site.

Another aspect of my research was that the arts may enhance healthcare practitioners' moods. Healthcare staff reported the presence of visual art boosted their job satisfaction (Homicki & Joyce, 2004).

Mandala Studies

Empirical studies of the mandala use the theme of *healing*., as in the examples Henderson, Rosen, and Mascaro's (2007) "Empirical Study on the Healing Nature of Mandalas," Jackson, Muro, Lee, and DeOrnellas' (2008) "The Sacred Circle: Using Mandalas in Counselor Supervision," and Snyder's (1999) "Mandalas: Art as Healer." The studies all similarly define the mandala as a circular meditative or healing tool originating in the Hindu Sanskrit tradition.

Some of the authors identified paucity in the empirical research of the use of mandalas as a healing tool (Cox & Cohen, 2000; Henderson, Rosen, & Mascaro, 2007; Jackson, Muro, Lee, & DeOrnellas, 2008). As stated earlier, Jung (as cited in Slegelis, 1999) mentioned how his own and observed creation of mandalas in his patients were spontaneous and created without structure. My study strayed from the original mandala tradition and used structured mandalas.

Fincher (personal communication, October 28, 2012) is an art therapist known for her common use of the mandala with clientele and for offering workshops utilizing the mandala for wellness. She has also published articles on the history and psychology of the mandala (Fincher, n.d.b; n.d.c; 2000). According to Fincher (n.d.b, n.d.c; 2000; 2004), making mandalas leads to improved self-awareness, satisfaction, spirituality, and relaxation. She has published books providing empty mandalas and coaching the reader through its completion (Fincher, 2000, 2004). The main goal and outcome of making mandalas reflects a Jungian theme, meaning that completing the mandalas is believed to accomplish the goal of achieving more personal knowledge or psychic integration. Fincher's work is based on professional experience and lacks empirical support for the benefits of the mandala. This study contributes to the support of the mandala process. If clinical evidence is to be supported, research needs to determine how the mandala is experienced from the participants' point of view. This evidence will allow future research to focus on using the correct measures to assess the potential benefits of the mandala on a larger scale.

In regard to published case studies, one researcher has found the mandala successful in treatment of a child with PTSD (Snyder, 1999). Snyder is a school counselor who worked with a 9 year old female student due to her poor ability to get along with peers and acting out behaviors. After talking with the student's mother, Snyder discovered that her father, whom she was close to, had moved out of state for work. After a few unsuccessful sessions with the girl, who refused to talk, the counselor began to use mandalas in the sessions. Once a week, for 3 weeks, the young girl was asked to create a mandala of her feelings. Soft music was playing in the background as the girl worked on her mandalas. She had a choice of various art media and was given an empty circle to create within it.

After three sessions, the girl began to talk about the color choices and symbols she was creating. She was then encouraged to tell a story about the mandala pictures and created a fantasy of an imaginary friend. The story of the imaginary friend seemed to correlate with the girl's present real life. The story's plot was similar to the girl's situation of fighting with peers and being sad about missing her father. The girl came to a resolution, in her fantasy, via a wise old woman's advice that in reality came from the girl herself. The art seemed to provide the space she needed to communicate and process her inner feelings, similar to Jung's claim that mandala making provide chaos resolution (Slegelis, 1987). The art within the mandala provided a safe, objective expression for her. She was able to access the unconscious and process her anxieties.

Another published case study describes a 9-year-old boy from a residential treatment center who experienced trauma from abuse and who also had a form of fetal

alcohol spectrum disorder (FASD; Gerteisen, 2008). During a 9-week session of art therapy group and individual sessions, Gerteisen noticed a pattern of monsters in the boy's pictures. The boy seemed fearful when describing these pictures. Gerteisen introduced empty, unstructured mandalas to the boy who then drew the monster in the mandala as well as created other mandala forms in the same session. He was then encouraged to tell a story about the picture and seemed to feel in control of the monster. Similar to the 9 year old in Snyder's case study, this boy was able to use the mandala for safe and objective expression. He was able to verbalize fears that he could not before and to access the unconscious and psychically integrate his chaos. Monsters were not his focus during conversations. He appeared more calm and outgoing with peers. The above case studies depict multidimensional benefits for the children's well being. Although these case studies reflect improvement of mood and behavior associated with mandala making, the authors did not investigate the participants' feelings associated with the mandala and the making of the art.

Another study found structured mandalas helpful in facilitating calm (Kersten & Van der Vennet, 2010). The study's mixed methods design used a convenience sample of 64 undergraduate students assigned to one of three conditions: (a) calm; (b) neutral; or (c) anxious group. Each condition wrote for 4 minutes in order to induce an assigned mood. The calm group wrote about a time they were calm, the neutral group wrote about the room they were in for the experiment, and those in the anxious group wrote about a time they were anxious. Upon completion of the writing exercise, the subjects selected colors of their choice and colored a structured mandala.

The researchers hypothesized that subjects would use cool colors when calm and warm colors when anxious (Kersten & Van der Vennet, 2010). Quantitative results showed no differences in the area of the mandala colored or color choice among the three conditions. Anxiety levels were also evaluated in the three comparison groups before and after induced writing exercise. The only significant result was the difference between the calm and anxious group after completion of the writing task, with the anxious group scoring higher ($p < .01$) on the State Anxiety Inventory (Speilberger, 1983). In contrast to the quantitative findings, qualitative field observations from this study supported the use of the mandala as a therapeutic tool (Kersten & Van der Vennet, 2010). Participants in the calm condition group exhibited more freedom in altering the mandala structure. They colored more within the lines. Art therapists would identify such characteristics as calm and focused (Rubin, 1987). Participants in the neutral condition did not exhibit as much freedom in altering the mandala. The anxiety condition drew out of the lines, indicating haste and anxiety.

This study seemed to reflect the potential of the mandala to contain a person's inner expression in a way that was captured by the qualitative analysis but not by the quantitative component of the research. This discrepancy indicates that it might be helpful to gather data regarding the participants' feelings and thoughts after completing the mandala.

Curry and Kasser (2005) studied the mandala's potential to reduce anxiety. They utilized a structured mandala as a condition in the study. In the other two conditions, participants colored a square form with a plaid design inside it or a blank page. Eighty-

four undergraduate students were recruited and completed a series of six steps. First, participants completed the State Anxiety Inventory (Spielberger, 1983),and then were asked to think about a time they felt most fearful (anxiety induction). This was followed by writing about that experience for 4 minutes and administration of the anxiety inventory again. The participants were randomly assigned to one of the three coloring conditions: mandala outline, an irregular plaid form, or a blank piece of paper. Participants had 20 minutes to color with colored pencils, followed by the final step of completing the anxiety inventory for the third time.

There was a significant difference between the groups ($p < .001$). The mandala group had significantly lower anxiety scores than the free-form group during the final inventory ($p < .001$). The plaid group also significantly scored lower than the free-form group ($p < .001$). There was no difference between the plaid and mandala groups ($p = .32$). The authors concluded that both the mandala and square plaid form provided structure and direction that assisted in reducing anxiety. There seems to be some healing benefit from coloring within a structured form, be it mandala or another form. This study somewhat contradicted Jung's idea that unstructured mandalas are created spontaneously for chaos resolution (Sleglis, 1987).

One study compared the difference in drawing style between coloring within a mandala (circle) and a square form (Sleglis, 1987). Thirty-two undergraduate students were randomly assigned to color within an unstructured (blank) mandala or square. The participants were asked to draw or depict a design of choice within the middle and work their way out. Slegelis (1987) hypothesized that fewer angles would be drawn within the

mandala than the square form. Her belief was that drawing within a mandala is relaxing and calming. She based this on her opinion of negative affect being associated with the use and drawing of angles. The total angles within the squares and mandalas were tallied on a rater sheet. A Mann-Whitney U-Test revealed significantly fewer angles within the mandalas than the squares ($p < .05$).

The researcher observed two other differences within the participants' mandalas and squares via qualitative analysis. Those who drew in the mandala depicted a more positive affect. They reflected more recognizable, positive images, such as religion or nature while those in squares were abstract. The other difference was that faces were created more within the mandalas than squares. Sleglis (1987) identified that both the mandala and square conditions reflected Jung's beliefs about the mandala accessing the unconscious and cultivating self-awareness.

Another mandala study utilized an unstructured (empty and no design) mandala (Henderson, Rosen, & Mascaro, 2007). The purpose was to reveal the healing benefits of mandalas. Thirty-six undergraduate students participated and were randomly assigned to a control group ($n = 17$) or mandala group ($n = 19$). All participants had reported moderate anxiety with a score of 10 or higher on the Post Traumatic Stress Disorder Scale (PDS; Foa, 1995). This score was viewed as baseline (Time 1) and compared to results immediately after the mandala intervention (Time 2) and at 1-month follow up (Time 3).

For simplicity, the participants were given crayons and a pencil for their art making (Henderson, Rosen, & Mascaro, 2007). Those in the mandala group were asked

to draw a large circle on their paper and fill it with symbols, patterns, designs and colors (no words) representative of their trauma. The control group was asked to draw an object in the room over the 3-day period. At the 1-month follow up, the participants in the mandala condition was asked to write about their experience. Participants in both conditions were debriefed and given an explanation of the study's expectations. The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) was also used to evaluate mood changes at the three times. The STAI (Spielberger, 1983) assessed transitory feelings of anxiety and fear. Another scale used was the Spiritual Meaning Scale (SMS; Mascaro, Rosen, & Morey, 2004; Mascaro & Rosen, 2006) because it was believed that psychological health correlates with life meaning. The final scale used was the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982), which assesses physical symptoms.

An ANCOVA showed that the mandala group demonstrated a greater reduction in trauma symptoms compared to controls on the PDS ($p < .015$; Henderson, Rosen, & Mascaro, 2007). At the 1-month follow up, all the participants in the mandala group maintained this anxiety reduction. Their written explanation stated how they felt anxiety relief and comfort in being able to express their trauma. The researchers suggested that the mandala may be a useful a tool in accessing the unconscious and assisting individuals in integrating psychic chaos. Similar to previous studies, the qualitative results in this research support the mandala's benefits more than the quantitative results. Although the PDS supported a reduction in trauma symptoms, the other four scales did not provide statistical support for distress reduction in the use of mandalas.

The studies imply that the mandala is a useful tool in promoting relaxation and self-awareness, reflecting potential as a biopsychosocial intervention. Mandalas are identified as inherent in the world, naturally found in nature such as the walkway around a mountain or early prehistoric drawings (Fincher, n.d.b). The mandala can be a tool that becomes a healthy habit, an inexpensive skill that can be practiced to elicit calmness or self-awareness.

More research is necessary to assess reactions to the mandala. There has not been a consistent set of studies of the mandala in one context. For example, one study evaluated the mandala versus a plaid form and a free drawing (Curry & Kasser, 2005). Other studies looked at the unstructured mandala alone while others compared it with a structured mandala, and yet others evaluated only the structured mandala. Finally, most of the studies were conducted using college students as participants, but a couple case studies of children were conducted (Gerstein, 2008; Snyder, 1999).

This study was open to a broader range of participants, including hospital staff, visitors, patients, volunteers, and interns. Data are needed regarding how individuals perceive the experience of making mandalas. This mixed methods study examined the impressions of individuals as they use a structured mandala coupled with a written questionnaire and emotions scale (SPANE) about the experience.

Mandalas in Healing Professionals

The mandala has been studied to assist health professionals in promoting self-care and alleviating burnout. Jung's claim of the mandala's calming and chaos-integrating effects has been supported in studies conducted with healing professionals. One such case

study reported on a nursing retreat that utilized mandalas in a 1-day experience meant to alleviate burnout for nurses of the University Health Systems (Duffy-Randall, 2006). Upon completion of an outdoor walking meditation, 25 nurses sat around a large table covered with white, plain paper. It was meant to represent a large mandala for the group to color or design. The authors reported giving little instruction so as to not inhibit the nurses' creation. The participants were given an explanation of mandalas and instructed to use media of their choice and create what they felt was right.

The nurses were encouraged to draw freely within the blank mandala while soothing music played. They were also asked to write a 1-page essay regarding the experience. Thus, the combined acts of making art, listening to music, and writing were utilized. The authors provided two examples of participants' written experiences. Nurse A described the mandala making as free, releasing and opening. She felt the nonverbal communication allowed for increased self-awareness and connection with peers and reported that she found commonalities with others in making mandalas as a group. Nurse B admitted to initial hesitation as she felt inadequate to create something for public viewing. However, she found herself enjoying the process and not wanting to stop. She realized she had to balance her work with play in order to nurture herself and be an effective nurse. Both nurses seemed to increase awareness as Jung stated was indicative of the mandala process. Their descriptions of the experience reflected a biopsychosocial model intervention.

Another study recruited medical personnel at a general hospital for mixed-methods research (Brooks, Bradt, Eyre, Hunt, & Dileo, 2010). The mandala was used but

was not the main focus of the study, which regarded the use of a music-guided imagery exercise intervention. Sixty-five personnel were randomly assigned to an experimental music-guided exercise or a wait-list control group. The participants completed three assessments before and after the six weekly sessions. These assessments were the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996), Sense of Coherence Scale (Erikson, M., & Lindstrom, 2005), and the Job Satisfaction Scale (Van Saane, Sluiter, Verbeek, & Fringes-Dresen, 2003). Each session consisted of completing a body relaxation exercise and music guided imagery (nature theme). Also, the participants colored an empty mandala and completed a written as well as a verbal discussion of the experience. The control group completed the same assessment before and after the wait list period.

The experimental and control groups did not exhibit statistical differences in any of the assessment instruments, and there were no significant differences in change scores between the two groups after treatment on any of the measures. The participants were also asked to submit written explanations of the mandala experience. As in previously reported research, the qualitative data seemed to contrast with the quantitative data. In contrast to the controls, the participants in the mandala group subjectively reported positive, healing experiences. These participants documented feeling renewed and relaxed, and better able to return to completing their shifts. A total of five themes were revealed: enjoyable memory associations, soothing cognitive emotional responses/self-expression, development of coping responses (to job stress), health body responses/relaxation, and increased insight.

The mandala experience itself elicited four benefits for the participants: (a) the pleasure of a break from life's seriousness, (b) reminiscence of childhood memories, (c) stress reduction due to the mandala's kinesthetic experience, and (c) accessing one's imagination. It appears that when the participants were asked to write on the experience, the subjective benefits of the mandala emerge. The coupled action of art making and writing reportedly offered a sense of well-being. My study specifically focused on the mandala as a possible healing process or tool in a hospital environment.

A third research study evaluated the use of the mandala as a tool in providing effective supervision to two doctoral-level students of play therapy (Jackson, Muro, Lee, & DeOrnellas, 2008). With quiet music playing, the students were asked to imagine an issue they discussed in supervision. After a brief moment, the students were asked to draw a circle and to put color, shapes, and forms inside the circle. Thirty minutes were devoted to making mandalas. Then the students were asked to write a reflection on the exercise and list the colors, shapes, images, and numbers created in the mandala. Next they free-associated about what they had listed. Finally, they were asked to draw a horizontal line across the middle of the mandala. According to Jung (1965), anything depicted below the line reflects one's unconscious. The final step was to title the mandala. At that point, the student was asked to verbally process the work.

Participants reported that they found the mandala supervision helpful in improving their awareness of personal feelings related to issues at hand, as well as how to work with the clients in question. One female student created a mandala called "No Point." Prior to its creation, she discussed in group supervision her helplessness with

working with a family where there were reports of physical abuse. She and her peers identified the negative feelings associated with this while also identifying the hopeful symbols within her mandala. She was able to process the negative aspects of the case and come to a resolution.

The other case was of a male student. His group was asked to create a mandala of a troubling case (Jackson, Muro, Lee, & DeOrnellas, 2008). He created a mandala called, "Uncertainty." It reflected his feelings towards a client with suicidal thoughts and who did not show up for his last appointment. Later, it was discovered that he was in the hospital due to a suicide attempt. The mandala helped the student articulate his feelings of confusion and helplessness around his case. Peers were able to offer support and assist in his resolution of his feelings towards handling the case. In both students' cases, the art making and writing offered a venue of relief and resolution.

Summary

Jung found himself, as well as his patients, spontaneously creating mandalas during times of distress, and there is some evidence that art making is spontaneously used to relieve stress (Fincher 2000, 2004; Johnston, 2007; Jung, 1965). However, research studies have shown mixed data to support this premise. The qualitative literature supports positive effects of the mandala. In much of the research reviewed above, however, quantitative data did not support healing qualities of the mandala. When participants had the opportunity to write about their mandala experience, it seemed to provide a cognitive processing of the benefits. The written or interview methods were able to tap into something that the psychometric assessments could not.

In the limited studies that have been conducted on the effects and impressions regarding mandala making, quantitative assessments or scales have not been able to offer an accurate assessment. Quantitative scales used in the research demonstrated few positive findings, whereas qualitative studies frequently identify patterns of stress relief and well-being after mandala interventions. Research needs to further focus on this qualitative data to explore the subjective experience of mandala making in order to help develop theories that may then be fruitfully explored with quantitative research. In addition, quantitative research of the mandala will enable the collection of data that may be more generalizable to the population. Together, a fuller, valid grasp of the mandala will emerge. In addition, perhaps the combined effort of art making and writing elicits a bilateral brain response offering a biopsychosocial intervention and relief that can be explored with qualitative methodology.

This current mixed-methods study was meant to contribute to the foundation of data to explore the potential use of the mandala. The triangulation approach, convergent type, was selected for this study because of its convergent nature that provides complete, credible data offsetting weakness of both methods while drawing on each's strengths (Creswell, 2007). The mandala is a little studied phenomenon; researchers can benefit from an exploratory lens to gather as much data possible to understand the mandala process. Grounded theory involves multiple subjects in order to obtain a pattern and reliable data. The lack of data of the mandala in a healthcare setting supports the need for more research. This information offered a variety of data due to the diverse perceptions among staff and visitors. Data from the SPANE offered quantitative descriptions of the

mood levels of the participants. These diverse data offered a grasp on the applicability to the healthcare setting population. The goal was to use inductive data collection to aid in the development of theory as the primary method. . Chapter 3 will describe the mixed methods methodology.

Chapter 3: Research Method

The purpose of this mixed-method study was to understand the effects of the mandala process in a hospital setting. The mandala is a type of art found as early as ancient times, in Eastern traditional practices, and in Western therapeutic interventions (Bloos & O'Connor, 2002; Fincher, n.d.; Kim, Kang, & Kim, 2009). It has potential to be an intervention contributing to the biopsychosocial approach of wellness in an individual. There is qualitative evidence supporting the use of the mandala as a healing tool in posttraumatic stress disorder (Henderson, Rosen, & Mascaro, 2007). Quantitative literature supports art as a possible contributor to the healing environment of a hospital (Boykin & Raines, 2006; La Torre, 2006; Mahoney, Palyo, Napier, & Giordano, 2009; McCaffrey, 2009).

The mandala may be useful in a hospital setting to promote an environment of calm. It can be used interactively rather than in a passive viewing fashion. It has not previously been shown if the act of working on a mandala will be beneficial to individuals in the hospital setting. Researchers have agreed that the mandala is a little studied phenomenon, and the studies that have been conducted have used inconsistent research methodologies. Some studies have utilized structured (predrawn with designs) mandalas while others have utilized unstructured (empty) mandalas. Some control group studies used nonmandala conditions. Given the published work on this topic, it is necessary to conduct research in both qualitative and quantitative methods in order to build a foundation of understanding of the mandala at the level of the experience of the

participants. This study investigated participants' experiences in the use of a structured mandala in order to explore the possibilities of mandala use in a hospital environment.

Research Design and Approach

Creswell (2007) discussed how qualitative studies are best for little studied phenomena while quantitative studies can build on qualitative data. Quantitative studies on the mandala have shown inconsistencies while qualitative support is minimal. Further, Creswell (2009) identified a mixed-methods study as one with enhanced strength compared to the use of either the quantitative or qualitative method alone. The research method for this study was a convergent triangulation. It brought the data together in order to offer a theory and better understanding of the mandala in a hospital environment. The convergent triangulation involved simultaneously collecting qualitative and quantitative data.

Creswell conveyed that the qualitative and quantitative data can have equal weight or one can predominate. The predominant method in this study was the qualitative approach of grounded theory. It assisted in building theory for how the mandala affects people in a hospital setting. Glaser (2010) asserted, grounded theory is "what is, not what should, could or ought to be" (p. 5). The research used an open-ended questionnaire as the predominant method to obtain subjective data that naturally emerged from various questions on the participants' feelings and thoughts around the mandala process. It assisted in building theory and research consistency for how the mandala affects people in a hospital setting.

The quantitative portion of this study supported the qualitative data via descriptive statistics. The SPANE scale offered observations of how much the mandala affects emotional states (Diener & Biswas-Diener, 2009). Participants completed a 14 item scale, seven positive and seven negative feelings, after drawing the mandala. The participants rated the level of experiencing each feeling. This allowed observation of the influence of the mandala and contributed to building mandala research data.

The initial, central research questions to guide the questionnaire process were: "What emotional descriptors are associated with completion of the mandala in a hospital setting?" and "What words and feelings do the participants use to describe the mandala process?" The following were the secondary research questions: (a) What feelings are associated with the mandala?; (b) What thoughts are associated with the mandala?; (c) What physical sensations are associated with the mandala?; (d) How does the participant experience the mandala?; and (e) What levels of positive and negative emotions are present after the mandala process?

Grounded theory's emergent nature assisted in identifying concepts and themes regarding the mandala process while the quantitative scale described mood levels associated with completing the mandala in a hospital setting. Little research has been conducted on the mandala. This study can contribute to elaborating and creating a foundation of understanding of the mandala. Concurrent sampling was used to select participants within a hospital setting to fulfill the understanding of the mandala within a hospital setting. Together, the grounded theory and descriptive data offered an in-depth, practical understanding of the mandala's effects. Other research designs were considered

for the qualitative aspect of the proposed study. Although phenomenology can capture the essence of the mandala, it evaluates the shared experience of the participants rather than the process (Creswell, 2007). This approach does not offer the level of detail needed. Grounded theory combined with descriptive statistics allows for the collection of information from more participants, expanding the scope to include visitors, staff, and patients of the hospital. The level of detail needed is relatively low, and the findings are more generalizable. Case studies can present the mandala experience of individuals; however, the researcher focuses on the individual rather than the mandala process itself. The researcher would focus on one participant at a time and not on the mandala process. Grounded theory and descriptive statistics focus on the common process of all the participants, allowing for increased generalizability of the results. Another qualitative approach, ethnography, does not apply to the mandala as people of diverse, rather than one culture, will be participants. Therefore, grounded theory enhanced by descriptive statistics is the most appropriate way to address the research question.

I conducted the research as objectively as possible so as not to bias potential emerging theories. This objectivity entailed not influencing the participants and ensuring valid and reliable data collection. I did not discuss the arts as a healing tool. As an art therapist, I believe the mandala is a healing tool, and I am predisposed with the belief that mandalas will be an effective tool in reducing stress and influencing a positive change in the participants. I made every attempt not to communicate my bias. When participants asked about what the mandala can do, I used the script, "I cannot answer at this time as I seek your nonbiased participation."

The objective was to explore the process of making mandalas and how individuals experience this process in a hospital setting. As an employee in the institution that was the setting for the research, some participants were familiar with me. Employees who work directly with me were excluded from participation so as to eliminate interference from a dual relationship. A research assistant cross-checked data to improve the validity of the results. The initial debriefing explained my role and commitment to ethics and confidentiality. I was the only researcher on site completing the study. Some of the questions that I asked in the questionnaire and scale after the mandala making process were: What was it like to make a mandala? What were you feeling and thinking before making the mandala? After? Please think about what you have been doing and experiencing during the mandala process and report how much you experienced the following feelings: that is, unpleasant or joyful. These and other questions from the open-ended questionnaire and the SPANE ensured trustworthiness via consistent questioning (Appendixes A and B). The multiple questions addressed various perceptions and feelings possibly related to the mandala experience that offer possible support for it as a stress management tool through a health psychology perspective.

Ethical protections will be described in detail later in this chapter. I obtained Human Research Protections training from the National Institutes of Health (NIH). Both Walden University's and the hospital's IRB process were completed so as to ensure minimal risk and maximize the benefits for the participants. A letter of cooperation was secured from the hospital. Flyers and posters were distributed and posted to recruit potential participants (Appendix C). At the outset of the study, participants were given an

informed consent describing the parameters of the study emphasizing how they can withdraw at any time of study without penalty of any kind.

Setting and Sample

The study took place at a general hospital in a Philadelphia suburb. I obtained a letter of cooperation from the hospital administrators. A hospital setting was used to address the gap in research on mandalas in the hospital setting. Participants included patients, visitors, and staff (regular staff, volunteers, interns, and students). Nurse managers and other heads of departments were asked to announce the study, provide contact information at staff meetings, and also ask nurses and other staff to provide information about the study to patients and visitors. A poster was posted outside the location of the mandala-making site with available times and contact information so people passing by could sign up directly at the site.

Potential participants were able to contact the me, the principal investigator, via telephone or e-mail to ask questions about the study. They were also able to walk in during the open study times. Men and women of all ethnicities and educational backgrounds were recruited for the study. As participants received the consent form, I stated inclusion criteria. If the participant was interested, I ensured they met the inclusion criteria, which were as follows (a) 18 years of age or older; (b) able to speak and read English; (c) an employee, volunteer, visitor, patient, or student at the hospital; (d) able to ambulate to study site; (e) able to use the art materials. Exclusion criteria were: (a) 17 and younger; (b) staff/students/patients/volunteers from the inpatient psychiatric floor as that

is where I am employed; (c) bedbound patients; (d) lack of ability to sit for an hour; and (e) inability to hold and use art materials.

Upon each participant's arrival to the study site, I began the informed consent process with a written explanation. I was available for any questions and verbal explanations and was able to ask all participants if they have any questions as they completed the consent form. The protection of participants section below provides more detail on this process. I made it clear that participants could quit the study at any time without penalty. A private room was used to conduct the study. This room had cubicles to provide the participants privacy. The goal was to obtain 15 participants for each of the three participant categories (staff, visitors, and patients). A total of 45 participants were recruited in order to achieve the saturated, reliable, and valid data that Creswell (2007) recommends. Recruitment for each of the three categories stopped once I had15 participants for each category.

Data Collection

Table 1 illustrates the data collection. I provided participants a semiprivate area to complete a mandala (Appendix D). I pushed together two 8' x10' tables to create a 16'x 20' table. Two-feet tall dividers that were 4' x 2' in size offered some privacy. There were a total of 20 cubicles, 10 on each side of the table. Each area had a chair to sit on, a set of written mandala instructions (Appendix E), and the following art materials: colored pencils, crayons, and markers. Upon completion of the mandala, participants were instructed to raise their hand and provided with a questionnaire and SPANE scale with a unique number identifier to protect anonymity (Appendix A and B). Upon completion of

the questionnaire and the SPANE, the participant placed the mandala, questionnaire, and scale in the slotted lock box by the exit. These forms were kept anonymous. Participants were thanked and had the option to have refreshments at the end of the study. Each participant was given a list of local counselors if they feel a need to address any distress that may arise.

Table 1

Data Collection

	Participant Recruitment and Data Collection Steps	Duration	Exact Location	Communication Format
Step 1	Recruitment: Flyers and posters will be posted around the hospital to recruit staff. Potential participants call or e-mail the primary investigator for information including confidentiality and ethical precautions. Potential participants will be given a list of open window times to participate	2 weeks	Around staff lounges, distributed to supervisors in order to communicate to their staff	Flyers, e-mail, phone
Step 2	Obtain consent	3 minutes	Study site	Consent form
Step 3	Each participant will be shown to his/her own private cubicle to create a mandala.	1 minute	Study site	N/A
Step 4	Mandala instructions are prewritten for participants to read	3 minutes	Same as above	Literature/ predrawn mandala
Step 5	Participants can select from colored pencils, crayons, or markers to complete their mandala; a unique number	10-40 minutes	Same as above	N/A

	identifier is on the back of mandala to ensure anonymity			
Step 6	Participants then complete a questionnaire and SPANE scale with a unique number identifier for each participant; this ensures anonymity.	10-15 minutes	Same as above	Questionnaire and SPANE scale
Step 7	Participants are thanked and offered refreshments.	3 minutes	Same as above	Cold beverage, snacks

Data Analysis

The descriptive quantitative data were interpreted in conjunction with the qualitative data of the mandala process to determine convergence of results. First, the qualitative grounded theory tradition of creating themes via combining and comparing categories was used to identify a central phenomenon and to create theories of the mandala process (Creswell, 2007). The following were the three types of coding used for the qualitative data: open, axial, and theoretical (Charmaz, 2006; Creswell, 2007). I made notes in the columns of all questionnaires. I examined these data line by line in order to create open coding categories. I selected one category as the central phenomena based on the most saturated category. This category was built upon via axial coding. Subcategories explaining the central phenomena were created as connections were made between categories. I reevaluated the data in order to identify new insights.

Then, I conducted theoretical coding for each of the qualitative subquestions. These categorical data were organized into a coding paradigm that allowed me to create theories of the mandala process. I then formulated hypotheses and created a diagram to visualize the full picture of the data related to the central phenomena. I used NVivo

software to tabulate the frequencies of phrases and concepts, which I then presented in a visual collage of terms (tag clouds). Tag clouds are a method of presenting narrative data in a graphic form, where font size and bold text are used to represent the degree of saturation of the theme presented in the diagram. The most popular keywords or themes are presented larger and bolder font.

Second, I gathered the quantitative data as additional possible support of the mandala. The SPANE scores were used descriptively to assess emotional state levels immediately after completing the mandala. Descriptive statistics were used to report the SPANE data. Central tendency measure of means offered average scores of negative and positive feelings while reflecting any associations with the mandala.

Finally, patterns in the SPANE scores of emotional descriptors were compared and contrasted to the qualitative data of the central phenomena and its subcategorical codes. This data was displayed in a table for me to reflect and interpret. I discussed the similarities and differences between the merged qualitative and quantitative data in order to validate the mandala process.

Instrumentation and Materials

I offered the participants a mandala (Appendix D). I used an open-ended questionnaire to assess the participants' perceptions of the mandala process (Appendix A). The participants also completed the Scale of Positive and Negative Experience (SPANE) to quantify and describe levels of emotions after the mandala process (Diener et al., 2010; Appendix B). The SPANE is a psychometric measure offering a broad assessment of positive and negative emotions based on a 4-week time period. This 12-

item scale measures six general positive feelings (such as positive, pleasant, or joyful), as well as six general negative feelings (such as bad, unpleasant, or angry). Each individual feeling is scored on a scale of 1 to 5: 1 being *very rarely or never* and 5 being *very often or always*. The positive feelings are scored on one subscale (SPANE-P) and negative feelings on another (SPANE-N). The scores of the positive and negative feelings are combined to offer a balance score (SPANE-B). This can range from -24 (negative feelings) to 24 (positive feelings). Ideally, well being is seen with a score of 24 or close to 24. The data from the SPANE were used descriptively, and these quantitative data were compared to the qualitative data to enhance and compare descriptions of the process of completing the mandala. The participants' SPANE scores and mood frequencies were compared to the qualitative tag clouds of themes and concepts.

With Diener's permission, I was able to alter the time period wording to addressing only the time frame in which the participants complete the mandala (personal communication, August 26, 2012; Appendix F). Another approved change was the addition of one negative feeling, "stressed," and one positive feeling, "relaxed." There additions made a total of seven possible negative feelings and seven possible positive feelings, therefore changing the ideal well being score to 28 or close to 28. I added these two emotions in order to accurately assess the participants' experience within a stressful hospital environment. The addition of two feelings had little to no impact on the validity as I was sure to add one positive and one negative emotion so as not to have the choices sway towards more negative or positive.

Although the SPANE is a recently devised measure, it showed promise with various college students from five colleges across the United States and one college sample in Singapore; Diener et al. (2010) found it successful due to its broad assessment of emotions, claiming that other scales of emotion are too specific. Perhaps this specificity was a limitation in previous quantitative studies of the mandala. The lack of significant findings may have been due to the use of scales that were attempting to assess too specific traits or aspects of the mandala experience. Diener et al. also claimed the broad assessment of feelings as simplistic enough for people of various cultural and ethnic backgrounds. Using the SPANE in this study will offer a more accurate representation of a potentially diverse participant population.

Diener et al. (2010) assessed convergent validity in this measure by comparing the SPANE to other measures of emotions such as the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) and the Positive and Negative Affect Scale (Watson, Clarke, & Tellegen, 1988). The scales demonstrated similar results supporting the accuracy of SPANE's assessment of emotions.

Protection of Human Participants

I obtained informed consent from each participant in written form. I encouraged the participants to ask questions as they were reading this form. Also, I reminded them that they could quit the study at any time and informed them that the decision to participate or not would not affect their employment, stay, or experience at the hospital. Upon completion of the consent form, I assured that they had signed it and verbally asked if they understood the contents. There was also an opportunity to answer any questions

prior to proceeding with the study. The participants received their own copies of the consent with contact information to reach me, my dissertation chair, and Walden University's IRB if they have any questions or problems.

In order to protect participants' identities, each person received a unique number that identifies them. That number was placed on their mandala, scale, and questionnaire. I did not collect identifying information and kept data anonymous while still collecting a set of data for each individual participant. The consent form did not have participants' names. Upon completion of the mandala, I gave each participant an envelope to secure the SPANE and the open-ended questionnaire. The sealed envelopes were dropped into a locked drop box in order to protect privacy and anonymity. All documents will remain in a locked box at my home office for 5 years. Nobody, but the researcher will access this data. Five years after completion of the dissertation study, all documents will be shredded.

The convergent triangulation mixed-medthods design offered me the opportunity to obtain various data to support in developing a theory about the mandala. Chapter 4 presents the rich data.

Chapter 4: Results

Introduction

The purpose of this convergent triangulation mixed-methods study was to explore the mandala creation process by staff and visitors within a hospital environment. I used a qualitative questionnaire to identify themes and create theories explaining the mandala. The SPANE measured emotional descriptors of the mandala experience. The qualitative data received more weight so as to focus on theory development. I used the descriptive quantitative data of the emotional descriptors and mood levels in conjunction with the qualitative data about the mandala process to enhance understanding that may be overlooked if only one method was used, thus eliminating inconsistent research data on the mandala.

The following were the research questions: (a) What emotional descriptors are associated with completion of the mandala in a hospital setting? and (b)What words and feelings do the participants utilize to describe the mandala process? The following were the secondary research questions: (a) What feelings are associated with the mandala?, (b) What thoughts are associated with the mandala?, (c) What physical sensations are associated with the mandala?, (d) How does the participant experience the mandala, and (e) What levels of positive and negative emotions are present after the mandala process?

Chapter 4 will first present the results of the grounded theory process of identifying themes and categories in order to devise theories around the mandala process. Second, the SPANE will offer quantitative descriptors of the mandala experience. Third, triangulation of the data occurs with the themes and quantitative descriptors compared

and contrasted in hopes offering more robust data on the mandala experience. These analyses followed the two research and five subquestions as a guide.

Setting and Demographics

The study was conducted in a private conference room within a general hospital in the Philadelphia suburbs. Initially, the goal was to recruit patients and visitors along with the staff in order to obtain a full perspective. There was a lack of response from patients, little response from visitors, and the majority of the participants were staff and students. Ages of the participants ranged from 20 to 65 years. Two were visitors, six were students, and 16 were staff. The students were included in the category of "staff," as they have similar responsibilities of staff.

Data Collection

I recruited a total of 24 participants. The initial goal was a total of 45 participants: 15 patients, 15 visitors, and 15 staff. However, there was a lack of patient response. Due to both IRB and facility policies, patients could not be directly solicited. The facility limited the location and placement of the study's flyers and posters to limit coercion. Flyers were posted at all the hospital's five entrance ways, waiting room area, staff gym, emergency room area, and snack areas; they were also e-mailed to administrative assistants with directions to forward to any interested staff, students/interns, and residents (Appendix C). Nurse managers presented flyers to patients and staff. Flyers were posted 10 days prior to the initiation of the study.

The data collection took place over a 3-week period, including weekday evenings from 5 p.m. until 9 p.m. and weekends from 10 a.m. until 5 p.m. The collection took

place in a quiet conference room adjacent to the maternity floor. This conference room was assigned by hospital public relations department and based on availability. It was accessible by hospital staff, patients, and visitors. The participants had the option to email or call me for a time to complete the study if the data collection times were not convenient. Usually, only one participant was present at a time.

Data Analysis and Results

I as the principal researcher entered all of the participants' data into a Microsoft Excel spreadsheet and made notes of the themes of the participants' responses to the open-ended questionnaires while being mindful of each participant's SPANE score. This identification of themes offered the initial codes (see Table 2).

Table 2

Open Coding: Initial Impressions and Themes

	Participants' Reactions and Descriptions of Mandala Experience	SPANE Score
Participant 1	Smiling Concerned with staying in lines Relaxing and fun once I let go of control	18
Participant 2	Accomplished Relaxed Unsure	15
Participant 3	Relaxed Wanted to do Another Curious about mandala	21
Participant 4	Relaxing Concerned with staying in the lines	21
Participant 5	Happy Accomplished	24
Participant 6	Purposeful Calm	19
Participant 7	No change in mood/feelings Relaxing	18

Participant 8	Accomplished and pleased	
	Focused	27
Participant 9	Satisfied	
	Creative	26
	Curious of purpose	
	Offers order and structure	
Participant 10	Accomplished and proud	
	Unsure of purpose	22
	Satisfied	
Participant 11	Focusing	
	A break	23
	Distraction	
	Appreciated art supply choices	
Participant 12	Concerned with going outside of lines	
	Satisfied	24
	Pleased with final product	
Participant 13	I'm not artistic; More physical discomfort	
	Bored	4
	Doesn't recommend	
Participant 14	Wants to color with her 3 year old	
	Neutral	15
Participant 15	Childhood memories	
	Relaxed	22
	In the moment	
Participant 16	Fun	
	Relaxing	16
	Creative	
	Concerned with coloring outside of lines	
	Relief from head cold	
	Recommends music	
Participant 17	Sad	
	Chronic Pain	-7
	Some distraction from pain	
Participant 18	Less pain	
	Creative	21
Participant 19	Satisfaction	
	Slight stress and urgency	15
Participant 20	Less pain, a distraction	
	Calmed my concerns	24
	Offered control	
	Satisfied	
Participant 21	Satisfied	
	Slowed my pace	17
	Want to do more on my own	

Participant 22	Repetition and colors were soothing Want more time to do art Relaxing and Calming Refreshed Energized Satisfied Slowing Brief activity that offer various benefits Want to make more on my own	24
Participant 23	Calming Reenergizing Less pain	11
Participant 24	Appreciated color choices and ability to add my own creativity Loved Satisfied Relaxed	26

I compiled the highest three and lowest three SPANE scores to evaluate the relationship between the qualitative questionnaire data and quantitative data (see Table 3). The highest possible score is a 28; the lowest is a -28.

Table 3

Qualitative and Quantitative Comparison

Top Three Scores and frequency N=24	Themes and its frequency	Lowest Three Scores and frequency	Themes
27 (1)	Focused (1) Satisfied(1)	-7 (1)	Sad, chronic pain, Some distraction from pain

26 (2)	Creative (2) Purpose order/structure (2) accomplished (2) proud (1) loved (1) relaxed (1)	4 (1) 11 (1)	More physical discomfort Bored Doesn't recommend Calming Less pain relaxing
24 (4)	Accomplished (4) Purposeful (1) Pleased (1) Non artistic (1) Less pain (1) Distraction (1) Calmed my concerns (2) Control (1) Repetition of colors was soothing(1) Want more time to do art (2) Refreshed(1) Energized(1) Slowed(1)		

Participants' background data, SPANE score, and questionnaire responses were then imported from Microsoft Excel into the NVivo 10 statistical program. This step allowed data to be organized and compared while further evaluating the themes in respect to the two main research questions and four subquestions.

The NVivo process allowed the categorization and formulation of themes via nodes or containers and queries for each of the research questions. Tag clouds offered visual diagrams of the saturation of codes and themes.

Research Question 1

What emotional descriptors are associated with completion of the mandala in a hospital setting? I examined the tag cloud and table for Research Question 1 (see Figure 2 and Appendix G). The themes were the same for both. The top four saturated themes in respective order were: relaxed, happy, calm, and content. These themes were the most common emotional descriptors the participants associated with the mandala experience. The bottom four, least saturated themes were: smiling, urgency, unique, and looser.

Figure 2. Tag cloud reflecting saturated themes; the larger and bolder the text, the more saturated the theme.

Research Question 2

What words and feelings do the participants utilize to describe the mandala process? I examined the tag cloud and table for Research Question 2 (see Figure 3 and Appendix H). They differed slightly. The top four saturated themes in the tag cloud were:

color, activity, enjoyed, and design. These four themes represented the most used concepts of words/feelings of the participants' mandala experience. The bottom four, least saturated themes were: order, paper, control, and moment. The top four most common words/feelings were activity, relief, color, and work. Contrasting to the tag cloud concepts, color ranked third in this area. The least saturated words around the emotional descriptors are repetitive, rewarding, sore, and unique.

supplies takes task things think thought time took traits trying turn use wanted wondered work

Figure 3. Tag cloud reflecting saturated themes; the larger and bolder the text, the more saturated the theme.

Subquestion A

What feelings are associated with the mandala experience? I devised a tag cloud and table to find the most saturated feelings associated with the mandala experience (see Figure 4 and Appendix I). The top four saturated feeling themes concepts were: relaxed, happy, change, and content (see Figure 4). The least saturated feelings were: escape, space, relief, and love. The word count saturated themes were similar: Change, content, activity, and relaxed were listed as the top four words describing Participants' feelings (see Appendix I). The least saturated words were: normal, sleepy, sore, and urgency.

able accomplishment activity almost annoyed another anxious bad became calm change cheerful children choices coloring complete considered content control creative distractions emotions end enjoyment escape excited feelings filled fine finished free get go good hand help hopefulness interest interruptions job laid less liked lines little losing love

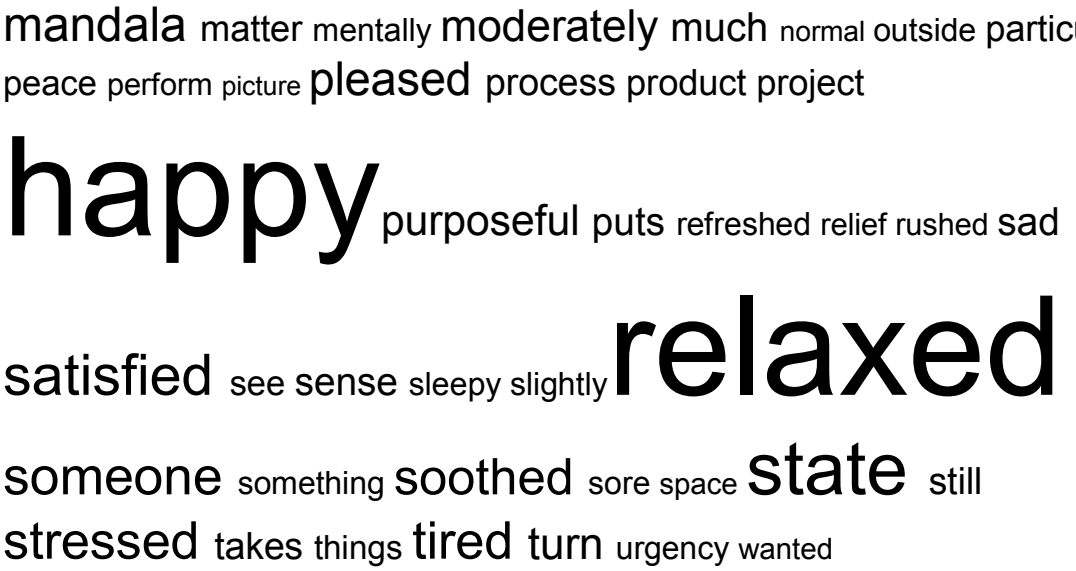


Figure 4. Tag cloud reflecting the most saturated feelings associated with the mandala experience; the larger and bolder the text, the more saturated the feeling.

Subquestion B

What thoughts are associated with the mandala experience? I created a tag cloud and table reflecting thought themes associated with the mandala experience (see Figure 5 and Appendix J). The top four saturated concept themes among the tag cloud were: changed, color, events, and patterns. The least saturated concept themes were: couple, peace, spaces, and spots. The top four words describing the themes were similar: change, color, events, and work. The least saturated were: sun, patients, surprised, and unsure.

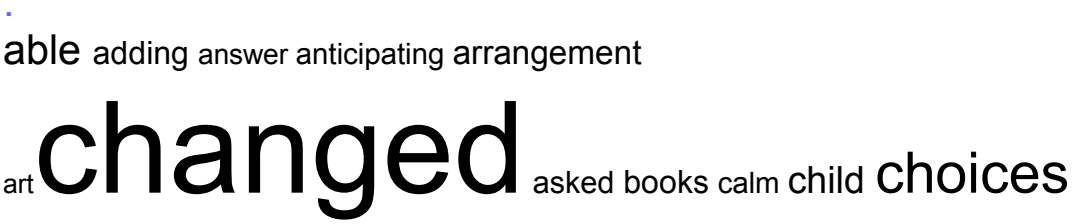


Figure 5. Tag cloud reflecting the most saturated thought themes associated with the mandala experience; the larger and thicker the print, the more saturated the thought.

Subquestion C

What physical sensations are associated with the mandala experience? I created a tag cloud and table reflecting the participants' physical experiences themes associated with the mandala (see Figure 6 and Appendix K). The most saturated concepts and themes

among the tag cloud were: relaxed, symptoms, pain, and comfortable. The least saturated concepts/themes were: sad, sleepy, lower, and sweaty. The most saturated word count/ideas in the table were: pain, relaxed, symptoms, and aches with the least saturated being sweaty, lower, sinus, and sleepy.

.

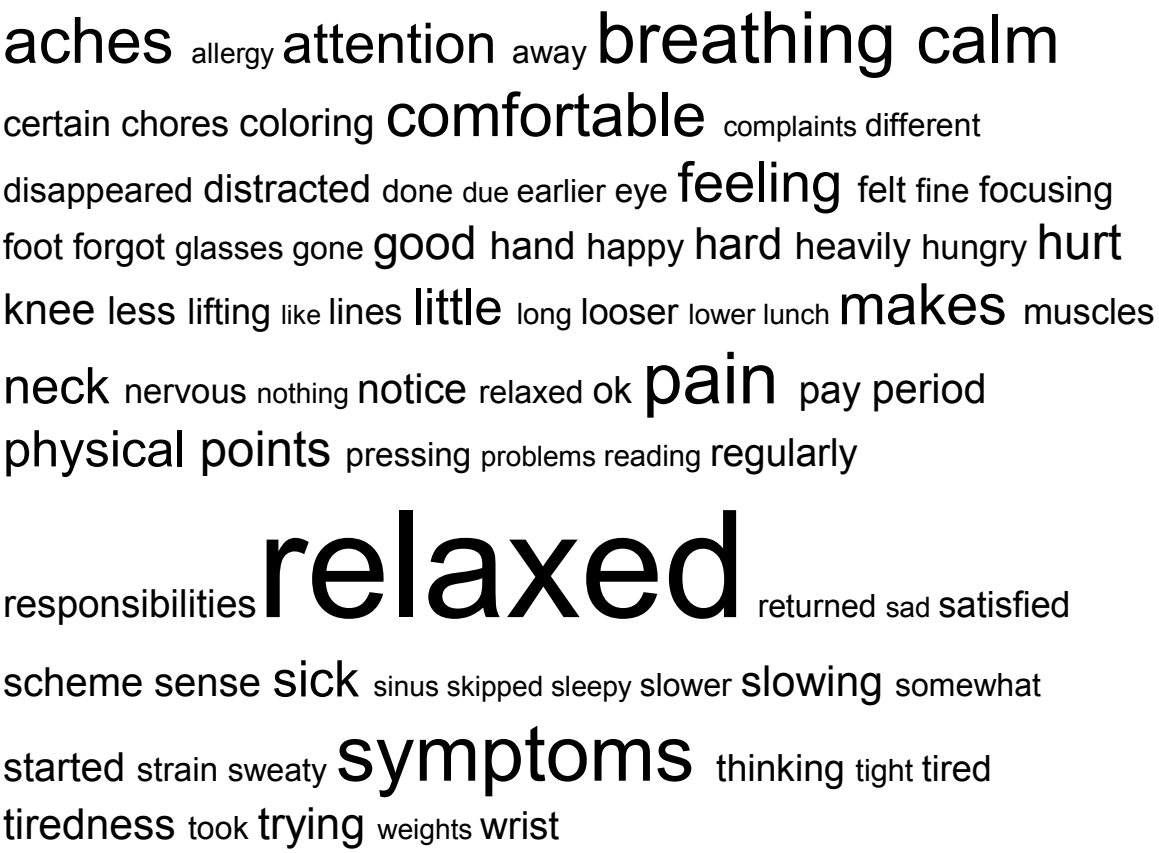


Figure 6. Tag cloud reflecting physical experiences themes associated with the mandala experience; the larger and bolder the text; the more saturated the theme.

Subquestion D

What was your mandala experience? The researcher created a tag cloud and table reflecting the themes of the participants overall experience of the mandala (see Figure 7 and Appendix L). The top four saturated concept themes among the tag cloud were:

relaxing, calm, enjoyed and happy. The least saturated themes were nope, opportunity, light, and intrigued. Among the Table, the most saturated themes were similar: relaxed, enjoyed, content, and calming. The least saturated themes differed in all but one: brief, intrigued, luck and sad.

Figure 7. Tag cloud reflecting participants' themes of their overall experience of the mandala. The larger and bolder the text; the more saturated the theme.

Subquestion E

What levels of positive and negative emotions were present after completing the mandala? The researcher used the SPANE to compile mood levels and the frequency of the seven negative and seven positive emotions present after completing the mandala (see Table 4). Each of the emotions was rated on a scale of 1 through 5; 1 being "very rarely or never" and 5 being "very often or always". The emotions that were given a 4 (often) or a 5 are listed in the table along with the frequency of those ratings. These high scores reflect an intense emotion in the moment.

Table 4

Frequency of Highly Endorsed Emotions After Completing the Mandala

Feeling	Frequency N = 24
Pleasant	21
Contented	21
Relaxed	19
Good	19
PositiveHappy	19
Joyful	17
Negative	9
Bad	1
Unpleasant	1
Sad	1
Angry	1
Stressed	1
Afraid	1
	0

Evidence of Trustworthiness

Credibility, dependability and confirmability of the data were ensured via triangulation of the data. The researcher used multiple tools to gather the participants'

experiences of creating a mandala. The qualitative, open-ended questionnaire used 13 questions to gather rich data. The questioning served as a form of member checking as its repetitive, standardized nature offered an opportunity for consistent responses. In addition to this data being continually evaluated and compared, it was compared to the quantitative SPANE score in order to offer further dimension to the mandala experience. The SPANE repeated inquiry of seven diverse positive and seven diverse negative emotions further offered depth to the understanding of the mandala experience.

The total of 24 participants offered saturated data as reflected in the repetitive themes that emerged. It appears no new data would emerge with further recruitment. Reflexivity evidence further supported credibility. The researcher's initial notes and reactions offered initial observations and impressions so as not to lose the initial participants' reactions and evidence. A research assistant cross-checked the SPANE scores as well as the excel spreadsheet of participants' open ended responses to the questionnaire. This offered accuracy in SPANE score and an objective review and verification of initial themes.

Transferability of the data was cultivated through the multiple questions and evaluation of various emotions. This offered the researcher rich data to interpret. The purposeful sampling of the hospital population parallels the researcher's identified problem of high stress within the hospital environment.

Summary

The key finding reflects a positive mandala experience. All the participants, but two, documented positive responses. The most saturated theme within the NVivo and

coding data is “relaxation”. The most saturated positive feelings from the SPANE were “pleasant” and “contented”. Chapter 5 analyzes and compares the themes of this research and subquestions along with the SPANE score. Together, the qualitative and quantitative data addresses research gaps and inconsistencies of the mandala. The final outcome will be a proposed theory of the mandala

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this convergent triangulation mixed methods study was to explore the mandala and its creation process by staff and visitors within a hospital environment. The primarily grounded theory based study created codes and themes to create a central theory of the mandala. The descriptive quantitative data supplemented the qualitative data, offering a holistic view of the mandala experience. The use of both qualitative and quantitative data complimented and compensated for the strengths and weaknesses of each approach.

The codes and themes guided the key findings. The most saturated concept theme among the qualitative data was relaxation (see Figure 1 and Table 4). The quantitative data also identified relaxation as the most saturated concept; in second place was happy, calm, and content. Nineteen of the 24 participants reported feeling relaxation after the mandala experience. Two mood descriptors scored the most popular: "pleasant" and "content". Both were identified by 21 of the 24 participants after the mandala experience. The mean SPANE score was an 18.6: the highest possible score is a 28 (most positive mood) and the lowest possible score is a -28 (most negative mood). The mode was a 24. Overall, the impression given by the data is that the mandala is an experience offering favorable benefits in a brief amount of time and with little to no cost.

Interpretation of the Findings

The mandala has been described as a "healing" tool (Henderson, Rosen, and Mascaro, 2007; Jackson, Muro, Lee, and DeOrnella, 2008; and Snyder, 1999). The present study supports and extends this research. Most of the participants described the

mandala as “relaxing” or a similar descriptive experience. Others found it to be “enjoyable” or” fun” while others reported “satisfaction” or” accomplishment” as well as ”less pain” and a “distraction”. The mandala is a multidimensional tool, and individuals in the hospital sample from the current study reported various benefits, including an implication of various positive benfits.

A Relaxation Response

The most popular concept reported was “relaxed”. It, or a related term, was identified 65 times in the participants’ responses. Participant one identified a shift to a more relaxed state, “Rather than worry about staying in the lines or color choices I decided to let go and go with it, then I relaxed”, indicating that the mandala process itself elicits relaxation. Participant two described the mandala as “relaxing to do” and reported feeling “relaxed and at peace” after completing the mandala. Participant 18 described using a “meditation phrase” while making the mandala, which in turn elicited relaxation. In addition, Participant 21 described the mandala process as “slowing”, which she described as eliciting a relaxation response. Participant 22 described the repetitive motions of the mandala experience as relaxing. Participant three reported a “relaxation” experience and “wished I could do another”. Participant 4 found the mandala “especially relaxing after a 12 hour work shift….now I can be relaxed before I get in my car and drive home”. Participant five described the mandala as a physically relaxing experience, “more relaxed breathing….felt my muscles relax”. The tag clouds seen in Figures 1, 3, 5, and 6 reflected back “relaxation” as the core concept. In Figure 5, it is especially strong

and reflects physical sensations. It indicates that the mandala's strongest physical effect was helping the participants relax.

All 24 participants utilized the term "relaxing" in describing their mandala experience. This seems to support the idea of art and symbols being a universal language as well as an universal outlet during times of distress (Learmonth, 2009, Mattoon, 1981, Provencal & Gabora, 2007; Salah & Salah, 2008; Dissanayke, 2009).

Two participants who scored lowest on the SPANE also reported little support for the mandala; however, in their responses both also reported some sense of relaxation during the exercise. Participant 13 (SPANE score of 4) described feeling initially relaxed, but lost interest soon as, "it became tedious". She did report feeling relaxed while making the mandala, "but indifferent to the process". Participant 17 (SPANE score of -7) seemed to be coping with chronic pain that was not relieved by the mandala. However, the participant did identify more relaxed breathing after making the mandala and continuance of pain but "with a sense of calm".

A Sense of Happiness and Enjoyment

"Happy" and "content" were the second popular themes, with each being cited 38 times within the responses. There is a collective response of "enjoyment" and "fun" from the mandala experience. Eighteen of the 24 participants mentioned happiness one or multiple times. Happiness may have been related to the aesthetics and structure of the mandala process. Participant one described being happy due to the colors she used. Participant four reported happiness due to color choices and the mandala being "pretty to look at". Participant 15 stated, "coloring the mandala put me in a happy place".

Participant 20 identified happiness and excitement with being in control of her color choices. Participants 22 and seven also reported "excitement" along with happiness in the mandala process. Other Participants identified pain relief as the source of their happiness during the mandala process, Participant four identified, "I'm happy my headache is gone". While Participant 23 identified less tension and therefore, felt "happy". Participant 18 also reported happiness and calm due to less pain after completing the mandala.

Contentment or Satisfaction

"Contentment", "satisfaction", or some variation of this theme often accompanied the happiness themes. Twelve of the 24 Participants (50% of the sample) documented on this theme. This theme was not found in the literature review search and seems to be a new facet explaining the mandala. The combined action of mastering the performance of the mandala and the final product offered participants a sense of accomplishment and self-efficacy. The ability to complete the mandala and gratification with its outcome offered participants benefit. Participant 12 reported, "Content to perform….I was pleased with the outcome", and "satisfied with the end result". Participant 20 reported feeling "satisfied" and "proud" of her final mandala while Participant 22 reported feeling "pleased" and "satisfied with the colors". Participants 19, 2, and five reported a sense of "accomplishment" in completing the mandala.

Stimulation or Energy

Creating the mandala elicited a stimulation response. Participant 23 documented feeling "less tired" and "more energy" after its completion. Further, she commented, "it

allowed time to gain energy". Participant 22 stated she was "refreshed by the colors…slightly to moderately energized".

Stress and Performance

There was a theme of stress during the mandala process. It seemed related to performance of the mandala: some participants evidenced a level of perfectionism. Participants one and 16 both reported stress due to coloring outside the lines. Participant one also reported "anxiety because I wanted to be the best" while Participant seven stated a goal of "wanting it done the way I wanted it". The mandala may be a task that can heighten one's perfectionistic traits while offering an opportunity to resolve them. Participant one stated, " I decided to let go and go with it (not be concerned with staying in lines), then I relaxed" Participant 16 reported a resolution to his stress as well, "I was able to relieve built up stress and tension".

Participant 19 reported feeling "slightly stressed" at the end of the mandala process. However, she documented the mandala process itself as "peaceful, no wrong or right way to do it". Her SPANE score was a 15, a moderate positive mood indicator. It was unclear if the mandala process itself caused the mild stress or if stress was present before she began the study. Participant 13 reported less interest and hand soreness as contributing to her stress: her SPANE score was a 4, indicating a low mood. Participant 18 stated anxiety with a feeling of "what to do with the mandala". In the end, she documented "ease" with completing the mandala and found herself utilizing "mediation phrases". Her SPANE score was a 21, a high positive mood score.

Theoretical Base

Jungian Perspective

One of the two premises of this study was Carl Jung's identification of the mandala offering stability and self-awareness, therefore, resolution to internal conflicts or a psychic integration (Jung, 1965, Mattoon, 1981, Slegelis, 1987). He was the first psychotherapist to declare this idea. He claimed that he and his patients spontaneously created mandalas during times of distress. This study demonstrated that mandalas do not need to be unstructured or spontaneously created in order to bring benefit: completing a structured or pre-drawn mandala offered the majority of the participants benefit.

Participant 18 discussed having anxiety and using a "meditation phrase" to relax. At completion, she reported feeling relaxed, optimistic, passionate, happy and creative. There was a resolution to her initial anxiety. Participant six identified having "freer thoughts and a nonjudgmental demeanor" after completing the mandala. Participant eight described the mandala process as "almost like a meditation; provided a period of immersion that took me away from what I have to face". Participant one identified initial feelings of distress with concern for staying in the lines; she made a decision to let go and then was able to "relax", "have fun", and "smiling". This would indicate that the mandala helped provide some resolution to the participant's recent distress. Participant 20 identified "many concerns on my mind prior to completing the mandala", and "the mandala helped me to calm down".

Stability is evident in the SPANE score. The highest possible score is a 28, reflecting a positive mood. The average SPANE score was an 18; the mode was a 26.

Bothof these scores reflected moderate to high positive mood levels. Self-awareness was evident in the participants' commentary of the mandala experience. Participant 24 discussed how the dark colors reminded her of the recent Boston Bombing events: at the study's end, she reported feeling "peaceful". Participant 23 discussed contemplating her patients at work and daughters at home. At the completion, she reported "peace and quiet about my work tasks…..it was relaxing and calming; allowed me to gain energy and thoughts". Participant 21 described self as "thoughtful" at the end of the mandala experience.

Similar to self-awareness was the idea of improved focus during the mandala process. Five of the 24 participants wrote "focus" or "focusing" as a result of the mandala process. Participant eight identified "focusing" while created her mandala. More specifically, Participant nine wrote, "focusing on the task" as she felt it "offered order and structure". Participant 16 reported focusing on the colors while Participant 20 described focusing on the colors rather than her pain. Related to focusing was the "distraction" aspect. It seemed to offer a break or relief from distress for many Participants. It offered a way to be present in the moment. Participant eight identified how the "immersion" in the task "took me away from my responsibilities". Participant 15 described being "in a happy place…in the moment". Participant 10 stated that the mandala process "helped take the focus away from tension and boredom". Participant 11 said she would do the mandala again because "it takes from the present moment and gives you a break" Participant 15 described feeling "stress free for the moment".

Participant 17 identified the mandala as "a distraction as I had to focus on the color scheme". Participant 20 claimed the mandala "calmed my concerns".

Biopsychosocial Model

Another framework for this study was based on the biopsychosocial model of health. This offered a health psychology perspective. The mandala is not discussed in the Health Psychology literature. This study offered the opportunity to build health psychology research on art, specifically the mandala as a tool for overall wellness. The mandala has the potential to offer psychological, biological, and social benefits for the user. The questionnaire inquired about the participants' feelings, thoughts, and physical sensations in order to grasp a holistic, biopsychosocial view of the participants' experience. The Biopsychosocial model was supported in this study by the demonstration of consistency in the participants' feelings, thoughts, and physical sensations. The majority of the participants reported positive emotions and thoughts, and also relaxing physical sensations.

Feelings. The word count shows the term "*change*" as the most frequent phenomena, indicating a shift of feelings during the mandala process (see Appendix I and Figure 3). Examining the tag cloud, one can see the shift or change in mood is toward positive emotions. The tag cloud indicated "relaxed" followed by" happiness" as the most popular feeling documented about the mandala experience. Of the total 42 feelings documented, 34 were positive and higher in frequency while the eight negative feelings were documented infrequently. Participant two documented feeling "anxious" to finish the mandala yet describing the mandala as "relaxing" to do. Participant four reported "

happiness" with completing the mandala and its colors while feeling "relaxed" from a "soothed" picture. Participant 11 transitioned from feeling "annoyed" before the mandala experience to "I became relaxed". Participant 12 documented feeling both "relaxed" and "content" to complete the mandala and "happy" with its final product.

Positive feelings were not unanimous in the experience of the sample. Given the data, it seems those participants that reported negative feelings during and after the mandala were feeling negative at the outset, rather than this mood state being caused by the mandala. Participant 17 reported sadness at the outset as well as after the mandala and made it known she was coping with chronic pain. Participant 16 also documented sadness, but in a positive context: "I was sad it (mandala) was over because it was fun". Participant two reported neck soreness after completing the mandala: he didn't seem distressed by it and provided no elaboration or focus on it. Participant 17 also had soreness in addition to sadness, and again this was at the outset as she reported chronic pain issues. Participant 13 who appeared to be the only participant who had a consistently negative experience overall reported increased soreness after completing the mandala. She documented a headache and hand soreness, in addition to her already present pain in her neck and back.

Thoughts. The typical thoughts before completing the mandala were around its *purpose* and *curiosity* of the process. Observing Figure 4 and Appendix J one can see the most saturated theme was the concept of *change*. Thoughts transitioned for the better for 23 of the 24 participants (95.8% of the sample). Unsure expectations were often present. Participant one stated, "This can't be hard, how hard can coloring be?" At the end, she

reported satisfaction with her final product and being able to complete it, even if it had some mistakes and she was unsure of color selection and arrangement. Participant two had "no idea of what to expect" and afterwards described his mandala experience as "cool, kind fun and it looks pretty good". Participant four reported thoughts of "I can't wait to get outta here and go home to relax" prior to completing the mandala, and she continued on to report thoughts of relaxation and a "pick me up" after completing the mandala before she left to go home.

Participant nine's thoughts prior to the mandala making were about the "purpose" of the mandala experience: while making the mandala she found herself focusing on how it provided structure, order, and variety. After completing the mandala, the participant reported thoughts of pride with the mandala process and final product. Participant 11 reported thoughts of calm and relaxation after completing the mandala. Before completing the mandala, the participant reported thoughts of concern for family and the hectic workday. Participant 16 described stressful thoughts of various responsibilities he has, and this seemed to calm, as his thoughts after making the mandala were "sad it's over, it was fun". Participant 17 transitioned from thoughts about her pain to "less thoughts of my pain" during her mandala experience. Participants 18 and 19 both reported thoughts of being "glad" they came and completed the mandala. Participant 21 stated thoughts of enjoyment and wanting to do more at home on her own time. Participant 22 also documented thoughts of "making more time for art in my life".

Thoughts during the mandala process focused on the *structure and/or color arrangement* of the mandala. It appears the structure of the mandala itself coupled with

the color use or arrangement is a key vehicle in the positive change of thoughts after completing the mandala. Participant three said his thoughts were focused on planning the mandala and deciding "what colors would go well together". Participant five was also concerned with what colors will "work best together". Participant 12 was also concerned with color choices as well as "what shape to start with" and creating a "flower pattern". Participant four's thoughts were, "pick pretty, fun colors and stay in the lines". Participant 16 identified thoughts of "what colors would make the mandala look nice". Participant 18 and a specific plan to start from the "outside and move in".

Another pattern of thoughts while making the mandala were about *childhood memories* or *children*. The coloring process elicited reminiscence of one's childhood or of times of coloring with children. Participant 22 spoke about thoughts of "how much I loved coloring as a child and how much I love to do it now". Participant 15 thought of her daughter and how she likes to color while participant 13 thoughts of how she wants to encourage her kids to color more. Participant eight spoke of thoughts/memories of coloring with her daughters when they were younger.

As described in the initial findings, there was a theme of *pride* or *satisfaction* in the participants' thoughts after completing the mandala. The outcome offered a sense of completion and boosted self-efficacy. Participant one stated, "I did it, it looks ok, some mistakes"; while participant seven reported, "I'm pleased with what I done". Participant 9 was "proud of the design I made". Participant 12 stated she too was "pleased with what I done" even though she went "outside the lines". Participant 20 commented on "how nice it (mandala) looked….it felt good to complete something". It seems the exploration of

one's thoughts is necessary in eliciting the self-efficacy or satisfaction related feelings. It was postulated that the combination of the mandala making and completion of the questionnaire and SPANE will elicit a bilateral use of the brain. The thoughts reflected some level of homeostasis via the combination of art and writing in one experience.

Physical sensation. The participants' physical experiences of the mandala was a majority of a *relaxed* state or similar. When viewing the tag cloud in Figure 5, you can see that "relaxed" clearly stands out as the only highly saturated concept theme, different from the other categories' tag clouds. There is strong evidence of the mandala as a physically relaxing tool/experience. Participant two reported a "calm and at peace" physical feeling during the mandala making. Afterward, he reported neck soreness and feeling "done". Participant two also reported relaxation during the mandala process only. Participant four reported headache and back pain prior to starting the mandala, and the headache disappeared during and after making the mandala; however, hand soreness set in for the participant. Participant five documented less tight muscles after completing the mandala due to having relaxed breathing during the mandala process. Participant seven reported shoulder pain at the outset of the study. This changed to a report of being "more relaxed than when I started" after completing the mandala. Participant eight stated tiredness and achiness at the beginning which then transitioned to feeling "somewhat better….I forgot about my tiredness and achiness".

Participant 11 reported sinus pain, headache, and a cold initially, and after completing the mandala claimed it allowed her to "not notice it" and felt a "distraction" from her symptoms. Participant 16 had a similar experience. He documented head, and

body aches as well as sleepiness before starting the mandala. During the mandala process, he reported less body aches and "more relaxed breathing". Participant 20 also stated distraction from her knee pain only to find it to return once she was done her mandala. Participant 18 had neck and foot pain and claimed it was gone after completing the mandala.

Pain reduction was also evident as a part of the mandala process. Participant 23 reported decreased back pain after completing her mandala. Participant 22 didn't have physical complaints before completing the mandala but did report feeling "looser" and "a slowing" afterwards. The mandala may have had a distracting effect, or it is possible that the relaxation reported by the majority of participants allowed for pain reduction. It's not clear why for some participants the pain reduction maintained or disappeared after completing the mandala. Perhaps it depends on the type and intensity of pain or how much the participant was able to let go and immerse him/herself in the mandala experience.

The feelings, thoughts, and physical experiences of the participants supported the mandala experience as a biopsychosocial tool of wellness. Mainly, the physical improvements/relaxation was notable, indicating that the mandala has the potential to be an adjunct tool in pain management. Examining the thoughts and feelings reported by the participant, various benefits in addition to the relaxation, can be noted. Happiness, satisfaction, and contentment were popular feelings among the participants. Common thoughts were changes, color/structure and events. This seems to indicate that the mandala's (thought) process were a vehicle in change and eliciting positive feelings.

Contrary to most of the mandala studies, this research also collected quantitative scores that support the qualitative data, as well as the use of the mandala. The mean score of an 18 as well as the mode of a 24, reflects its potential to elicit positive moods. Altogether, the feelings, thoughts, and physical experience offer a holistic, positive biopsychosocial mandala experience.

The health psychology literature describes art making as challenging the brain in a different manner (Camic, 2008). As art therapy pioneer Wadeson (1980) claimed, art making involves using the area of the brain we do not typically use when we speak or write, thus providing integration and/or stimulation of the brain in a healthy manner. This was reflected in the consistent changes in the participants' responses. One's thoughts, feelings, and physical states often changes for the positive while making art. Neuroesthetics developer, Semir Zeki (2011) identified art as a "brain experience". He claimed art is a human activity and thus requires engagement of the brain. Not only art making, but art appreciation requires the brain's abilities. This was evident in the participants' responses in creating their mandalas. There were not only comments about the process of making it but in appreciating the final product.

The literature review expressed the concern of inactivity among the population. The Center for Healthcare Statistics (2008) identified the four leading behaviors to mortality as poor diet, inactivity/lack of exercise, excessive alcohol consumption, and tobacco use. The mandala can make a contribution to wellness as a tool to promote activity. The mandala required participants to move physically and create a design. It also requires the participants to engage their mental and cognitive abilities in arranging and

designing the mandala. As the earlier comments stated, the participants documented improved energy, refreshed state and decreased sleepiness. The mandala may be a tool to facilitate healthy routines.

Hospital Setting

The hospital can be a stressful environment for many including staff, patients, students, interns, and visitors. Research has shown that the high demands hospital employees place on one another coupled with patients' demands increased workplace stress (Mroczek, Mikitarian, Vieiera, & Rotarius, 2004). Such events lead to high turnover, decreased productivity, and various legal/medical costs (American Psychological Association Practice Organization, 2010). The hospital is meant to be a place for wellness and recovery: a key facet of health psychology and the biopsychosocial model.

The mandala experience can offer a holistic experience that engages the whole individual, including that individual's entire brain. It doesn't require talent as anybody with any or no level of artistic talent can be successful. Some of the participants in this study commented about how talent is not needed to reap benefits. Participant 12 stated, "I don't consider myself artistic, but this was enjoyable". Participant 22 stated a desire to "make more time for art in my life". Given the stressful nature of the hospital environment and the benefits demonstrated in the present research, the mandala is valuable practice in this setting.

Limitations to the Study

The study was intended to examine the mandala experience among diverse hospital personnel including staff, patients, and visitors. However, only a participant sample of hospital staff was obtainable. This,combined with the small sample size of 24, decreases the generalizability of the data. The majority of responses in regard to completing the mandala were positive. However, one participant in particular seemed to have a negative reaction to completing the mandala. It is possible that, with a larger sample size, more individuals may have expressed negative reactions as well.

It is also unclear if the mandala would have the same positive impact on patients or visitors to the hospital as the sample was limited to hospital staff alone. Concern about needing talent was considered a possible limitation before conducting the study, but this appeared not to be an issue as participants did not comment on how they needed to be artistic. Participants 22 and 12 identified how one not need be artistic to benefit from the mandala experience. What did seem to be an issue was some mild pain after completing the study. Participants 1, 2, and 13 reported hand soreness and neck pain as a result of creating the mandala. Future instructions can remind the participant to be mindful of their posture and hand grasping so as to reduce this effect.

The triangulated data offered increased strengths in offering support for using the mandala to create positive feelings, thoughts, and physical sensations; however, the mandalas were completed one time. Completing the mandala in a series format and longitudinally would have offered insight into the mandala's ability to maintain relaxation and other positive effects.

Recommendations

Future research can focus on the mandala's effects over a period of time and/or completing the mandala with patients in a hospital environment, possibly with larger sample sizes that may compare and contrast groups of participants (staff, patients, and visitors). Examination of the unstructured mandala may also be of benefit. One may also obtain a more pure result by offering participants a blank page and asking them to draw spontaneously after reading about or remembering a stressful event. This will build upon Jung's (1965) premise of the mandala being created during the time of distress, and Dissanayake's (2009) claim that art being spontaneously created during distress. That data can offer further clarification and support of the mandala itself being a biopsychosocial tool for wellness. It implies that the mandala experience or structure has a unique benefit versus completing other forms or coloring pages.

This study was primarily qualitative. Future research can address more of a quantitative component to the mandala process that the SPANE's adjunctive role may have missed. Such data will build upon the descriptions, definitions, and concepts of the present research such as in this study; testing hypotheses and making more sound predictions of the mandala's potential.

Implications

The mandala demonstrated to be a positive experience within a brief period of time and with minimal resources. One use of the mandala offered relaxation, enjoyment, satisfaction, thought resolution, and pain relief. It doesn't require artistic talent or expensive tools. One can create a mandala with plain paper and coloring utensils such as

markers or colored pencils. In sum, it is an inexpensive and efficient way to reduce stress and improve well-being in an intense work environment such as a hospital.

The research literature previously published showed inconsistencies, with mainly the qualitative research only supporting the mandala. This mixed methods study offered qualitative and quantitative support for the mandala. The multimethod approach, with the qualitative method being primary, used in the current study boosts the trustworthiness of the data and demonstrates the ability of the quantitative data to support the mandala.

Hospitals are a stressful place to work, and work productivity can be affected by stress. Deadly errors can occur in these stressful, intense environments. Emergency room physician, Dr. Wen (2013), stated that more people die from medical errors than from car accidents, pneumonia, or diabetes. Such medical mistakes can include operating on the improper limb or removing the wrong kidney, medication errors, to improper communication among staff. The mandala is a cost effective and accessible tool that can be completed at various times during a work day. It can be completed on a break, before a shift, after a shift or after a stressful event. It can offer resolution, relief, and rejuvenation for better well being. Thus, eliciting improved work productivity.

Mandala Theory

In conclusion, the current research supports the use of the mandala as an effective experience to elicit a state of well-being emotionally, cognitively, and physically in a stressful working environment such as a hospital. It has the potential to offer a holistic, biopsychosocial benefits to the user. Implications for social change revolve around reducing workplace stress and therefore improving productivity and medical errors within

the hospital setting. The findings of the current research may be used to inspire future mandala and art-based short interventions in a hospital or other stressful environment. Participant 11 and 22 both identified the wealth of benefits from completing the mandala in a brief amount of time. The mandala may be one tool for wellbeing in an often fast-paced hospital environment. It can also be applicable for people in other contexts as well, as part of an individual's self-care. In the hospital context, implications for positive social change extend beyond the well-being of the individual to the well-being of those who they treat. Family members of patients also benefit from reducing stress in hospital staff.

References

American Psychological Association. (2010). *Psychologically healthy workplace program fact sheet: By the number*s. Retrieved from http://www.phwa.org/dl/2010phwp_fact_sheet.pdf

American Psychological Association. (2011). Health psychology. Retrieved July 5, 2011from http://www.health-psych.org/AboutWhatWeDo.cfm

Beck, A., Steer, R., & Brown, G. (1996). *BDI-II: Beck Depression Inventory—II*. San Antonio, TX: The Psychological Corporation.

Bloos, I., & O'Connor, T. (2002). Ancient and medieval labyrinth and contemporary narrative therapy: How do they fit? *Pastoral Psychology, 50*(4), 219–230. doi:10.1023/A:1014097211429

Brannon, L., & Feist, J. (2007). *Health psychology*. Belmont, CA: Thomas Wadsworth.

Brooks, D., Bradt, J., Eyre, L., Hunt, A, & DiLeo, C. (2010). Creative approaches for reducing burnout in medical personnel. *Arts in Psychotherapy, 37*, 255–263.

Boykin, A., & Raines, D. (2006). Design and structure as an expression of caring. *International Journal for Human Caring, 10*(4), 45–49.

Brannon, L., & Feist, J. (2007). *Health psychology: An introduction to behavior and health*. Belmont, CA: Thomson Wadsworth.

Breedlove, M.,Watson, N., & Rosenzweig, R. (2010). *Biological psychology: An introduction to behavioral, cognitive, and clinical neuroscience.* Sunderland, MA: Sinauer Associates.

Bush, C. A. (1988). Dreams, mandalas, and music imagery: Therapeutic uses in a case study. *Arts in Psychotherapy*, *15*(3), 219–225. doi:10.1016/0197-4556(88)90006-8

Camic, P. (2008). Playing in the mud: Health psychology, the arts and creative approaches to health care. *Journal of Health Psychology, 13*(2), 287–298. doi:10.1177/1359105307086698

Center for Health Statistics. (2008). *Behaviors: The actual leading causes of death*. Retrieved from http://www.cdc.gov/nchs/data/hus/hus10.pdf

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: SAGE.

Collins, S., & Kuck, K. (1991). Music therapy in the neonatal intensive care unit. *Neonatal Network, 9*(6), 23–26.

Coloring Castle. (2011). *Mandala coloring pages*. Retrieved January 6, 2012 from http://www.coloringcastle.com/mandala_coloring_pages.html

Cox, C., & Cohen, B. M. (2000). Mandala artwork by clients with DID: Clinical observations based on two theoretical models. *Art Therapy*, *17*(3), 195–201.

Creswell, J .W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: SAGE.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed approaches (2nd eds.).* Thousand Oaks, CA: SAGE.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions (2nd ed.)*. Thousand Oaks, CA: Sage.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed approaches (3rd eds.).* Thousand Oaks, CA: SAGE.

Department of Health, Education, & Welfare. (1979). *Healthy people: The surgeon general's report on health promotion and disease prevention.* Bethesda, MD: The United States Health Service.

Diener, E., & Biswas-Diener, R. (2009) *Scale of positive and negative experience*. Retrieved August 13, 2012 from http://internal.psychology.illinois.edu/~ediener/SPANE.html

Diener, E., Wirtz, D., Tov, W., Kim-Prieto,C., Choi, D., Oishi, S. & Biswas-Diener,R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*, 143–156.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–75. doi:10.1207/s15327752jpa4901_13

Dijkstra, K., Pieterse, M., & Pruyn, A. (2006). Physical environmental stimuli that turn healthcare facilities into healing environments through psychologically mediated effects: Systematic review. *Journal of Advanced Nursing, 56*(2), 166–181.

Dissanayake, E. (2009). The birth of the arts. *Greater Good: The Science of a Meaningful Life*. Retrieved July 30, 2011 from http://greatergood.berkeley.edu/article/item/the_birth_of_the_arts/

Elkis-Abuhoff, D., Gaydos, M., Goldblatt, R., Chen, M., & Rose, S. (2009). Mandala drawings as an assessment tool for women with breast cancer. *The Arts in Psychotherapy*, 36(4), 231238. doi:10.1016/j.aip.2009.04.004

Erikson, M., & Lindstrom, B. (2005). Validity of Antonovsky's sense of coherence scale: A systematic review. *Journal of Epidemiology & Community Health*, 59,460–466.

Fincher, S.F. (2000). *Coloring mandalas 1: For insight, healing, and self-expression*. Boston: Shambhala.

Fincher, S.F. (2004). *Coloring mandalas 2: For balance, harmony, and spiritual well-being*. Boston: Shambhala.

Fincher, S. F. (2007). Mandalas and the Gestalt of self. *International Gestalt Journal*, 30(2), 65-78. Retrieved from EBSCO*host*.

Fincher, S. (n.d. a). *Susanne F. Fincher*. Retrieved August 1, 2011 from http://www.creatingmandalas.com/bio.htmlFincher,

Fincher, S. (n.d. b). *History of mandalas*. Retrieved March 10, 2011 from http://creatingmandalas.com/history1.html

Fincher, S. (n.d. c). *Psychology of the Mandala*. Retrieved March 10, 2011 from http://creatingmandalas.com/psych1.html

Foa, E. B. (1995). PDS. *Posttraumatic Stress Diagnostic Scale: Manual*. Minneapolis, MN: National Computer Systems, Inc.

Frame, P. G. (2006). Assessing a Couple's Relationship and Compatibility Using the MARI® Card Test and Mandala Drawings. *Art Therapy*, 23(1), 23-29. Retrieved from EBSCO*host*.

Ganim, B., Fox, S. (1999). *Visual journaling: Going deeper than words*. Wheaton, IL: Quest Books.

Glaser, B. (2010). The future of grounded theory. *The Grounded Theory Review:An international journal, 9*(2), 1-14. ISSN 1556-1550

Goolkasian, P. (n.d.) *Spielberger's State Anxiety Inventory*. Retrieved October 2, 2003 from www.uncc.edu/pagookla/StateAnxiety-intro.html

Harrod, J. (1992). Two million years ago: The origins of art and symbol. *Continuum 2*(1), 4-29.

Henderson, P., Rosen, D., & Mascaro, N. (2007). Empirical study on the healing nature of mandalas. *Psychology of Aesthetics, Creativity, and the Arts*, 1(3), 148-154. doi:10.1037/1931-3896.1.3.148

Homicki, B., & Joyce, E. (2004). Art illuminates patients' experience at the Massachusetts General Hospital Cancer Center. *The Oncologist, 9*, 111-114.

Huh, J. (2010). Mandala as telematic design. *Technoetic Arts, 8*(1), 19-30.

Jackson,S., Muro, J., Lee, Y., & DeOrnellas, K. (2008). The Sacred circle: Using mandalas in counselor supervision. *Journal of Creativity in Mental Health, 3*(3), 201- 211.

Johnston, G. (2007). Archetypal patterns of behavior: A Jungian analysis of the mandala structure in the dialogues of Jean-Jacques Rousseau. *Jung Journal: Culture & Psyche*, 1(4), 43-68. doi:10.1525/jung.2007.1.4.43

Jung, C. (1965). *Memories, Dreams, Reflections*. New York: Vintage Books.

Kapitan, L. (2006). Opening and Closing: Transitional Times in Art Therapy. *Art Therapy*, 23(1), 2-3. Retrieved from EBSCO*host*

Katsilometes, B. (2010). My spiritual journey: Circling the spiral. *Psychological Perspectives*, 53(2), 189-205. doi:10.1080/00332921003780661

Kersten, A & van der Vennet, R. (2010). The impact of anxious and calm emotional states on color usage in pre-drawn mandalas. *Art Therapy, 27*(4), 184-189.

Kim, S., Kang, H., & Kim, Y. (2009). A computer system for art therapy assessment of elements in structured mandala. *The Arts in Psychotherapy*, 36(1), 19-28. doi:10.1016/j.aip.2008.09.002

La Torre, M. (2006). Creating a healing environment. *Perspectives in Psychiatric Care, 42*(4), 262-264.

Learmonth, M. (2009). The evolution of theory, the theory of evolution: Towards new rationales for art therapy. *International Journal of Art Therapy, 14*(1), 2-10.

Levick, M. (1983). *They Could Not Talk and so They Drew*. Springfield, Illinois: Charles C Thomas.

Mahoney, J., Palyo, N., Napier, G., & Giordano, J. (2009). The therapeutic milieu reconceptualized for the 21st century. *Archives of Psychiatric Nursing, 23*(6), 423-429.

Malchiodi, C. (1993). *Medical Art Therapy: Defining a Field.* Philadelphia: Jessica Kingsley Publishers Inc.

Mascaro, N., & Rosen, D. H. (2006). The role of existential meaning as a buffer against stress. *Journal of Humanistic Psychology, 46,* 168–190.

Mascaro, N., Rosen, D. H., & Morey, L. C. (2004). The development, construct validity, and clinical utility of the Spiritual Meaning Scale. *Personality and Individual Differences, 37,* 845–860.

Maslach, C., Jackson, S., & Leiter, M. P. (1996). Maslach burnout inventory. Palo Alto, CA: Counseling Psychologists Press.

Mattoon, M. (1981). *Jungian Psychology in Perspective*. New York: The Free Press.

McCaffrey, R. (2009). [Review of the book *Using the creative arts in therapy and healthcare: A practical introduction*, by B. Warren]. *Journal of Clinical Nursing, 18*, 2247.

Mercer, A., Warson, E., Zhao, J. (2010). Visual journaling: An intervention to influence stress, anxiety and affect levels in medical students. *The Arts In Psychotherapy*, *37*143-148. doi:10.1016/j.aip.2009.12.003

Miller, D. (2005). Mandala symbolism in psychotherapy: the potential utility of the Lowenfeld Mosaic Technique for enhancing the individuation process. *Journal of Transpersonal Psychology*, 37(2), 164-177. Retrieved from EBSCO*host*.

Mroczek, J., Mikitarian, G., Vieiera, E., & Rotarius, T. (2005). Hospital design and staff perceptions. *The Healthcare Manager, 24*(3), 233-244.

Ornstein, A. (2006). Artistic creativity and the healing process. *Psychoanalytic Inquiry, 26*(3), 386-406.

Pennebaker, J. W. (1982). *The Pennebaker Inventory of Limbic Languidness (the PILL): The psychology of physical symptoms.* New York: Springer-Verlag.

PsychoNeuroImmunology Research Society (PNIRS). (2011). *Mission statement*. Retrieved December 22, 2011 from https://www.pnirs.org/society/index.cfm.

Rubin, J. (1987). *Approaches to art Therapy: Theory and technique*. New York: Routledge.

Salah, A. Akdag & Salah, A. (2008). Technoscience Art: A Bridge between Neuroesthetics and Art History?, *Review of General Psychology*, *12*(2), 147-158.

Simmons, L. (2006). *Interactive art therapy: 'No talent required' projects*. Binghamton, NY: Haworth Press.

Slegelis, M. H. (1987). A study of Jung's mandala and its relationship to art psychotherapy. *The Arts in Psychotherapy*, 14(4), 301-311. doi:10.1016/0197-4556(87)90018-9

Snyder, B. (1999). Mandalas: Art as a healer. *Guidance & Counseling, 15*(1), 30-35.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Staricoff, R. (2004). *Arts in health: A review of the medical literature*. Arts Council England. Marston Book Services, London.

Tashakkori, A. & Teddlie, C. (Eds.)(2010*). SAGE Handbook of mixed methods in social & behavioral research (second edition)*. Thosand Oaks, CA: SAGE publications.

Trevisani, F.; Casadio, R.; Romagnoli, F.; Zamagni, M.; Francesconi, C.; Tromellini, A.; Di Micoli, A.; Frigerio, M.; Farinelli, G., & Bernardi, M. (2010). Art in the hospital: its impact on the feelings and emotional state of patients admitted to an internal medicine unit. *Journal of Alternative & Complementary Medicine, 16* (8): 853-9

Van Saane, N., Sluiter, J. K., Verbeek, A. M., &Fringes-Dresen, M. H.W.(2003). Reliability and validity of instruments measuring job satisfaction: A systematic review. *Occupational Medicine, 53*, 191–200.

Wadeson, H. (1980). *Art Psychotherapy*. Hoboken, NJ: John Wiley & SonsWatson, D., & Clark, L. A. (1994). The PANAS-X: Manual for the positive and negative affect schedule—expanded form. Iowa City, IA: The University of Iowa.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070. doi:10.1037/0022-3514.54.6.1063.

Wen, Leana. (2013). 10 Medical Errors That Can Kill You in the Hospital. Psychology Today, Retrieved July 15, 2013 from http://www.psychologytoday.com/blog/the-doctor-is-listening/201303/10-medical-errors-can-kill-you-in-the-hospital.

Zeki, S. (1998). Art and the brain. *Daedalus, 127* (2), 71- 103.

Zeki, S. (2001). Artistic creativity and the brain. *Science, 293*, 51-52.

Zeki, S. (2011). Statement on neuroaesthetics. Retrieved June 28, 2011 from http://neuroesthetics.org/statement-on-neuroesthetics.php

Appendix A: Mandala Questionnaire

Questionnaire _____

Mandala questionnaire
Do not put your name on this form. Your number identifier is in the upper right hand corner. Please fill out background info:

1. Age_____

2. Gender (circle): Male Female

3. Are you a (circle) : visitor patient staff other: _____

4. What was it like to complete the mandala?

5. What were you thinking before completing the mandala? Thinking refers to self-talk or thoughts in your mind.

6. What were you thinking while working on your mandala?

7. What were you thinking after completing the mandala?

8. What were you feeling before completing the mandala? Feelings differ from thoughts in that they are emotions such as sadness or excitement. What were you feeling while completing the mandala?

9. What were you feeling during the mandala process?

10. What were you feeling after completing the mandala?

11. Physically, what were you feeling before completing the mandala (i.e. neck pain, headache, relaxed breathing, etc.)?

12. Physically, what did you experience while completing the mandala?

13. Physically, how did you feel after completing the mandala?

14. Would you complete a mandala again? Would you recommend the mandala to others? Why or why not?

15. How would you describe your experience of the mandala? Circle all that apply and explain:

calm confused relaxed lethargic optimistic stressed

passionate nervous relieved agitated happy angry

neutral embarrassed bored excited,

other (describe):

16. Is there anything else you would like the investigator to know about your experience today?

Appendix B: Scale of Positive and Negative Experience (SPANE)

Please think about what you have been doing and experiencing during the mandala process. Then report how much you experienced each of the following feelings, using the scale below. For each item, select a number from 1 to 5, and indicate that number next to each feeling.

1. Very Rarely or Never
2. Rarely
3. Sometimes
4. Often
5. Very Often or Always

Positive
Negative
Good
Bad
Pleasant
Unpleasant
Happy
Sad
Afraid
Joyful
Angry
Contented
Stressed
Relaxed

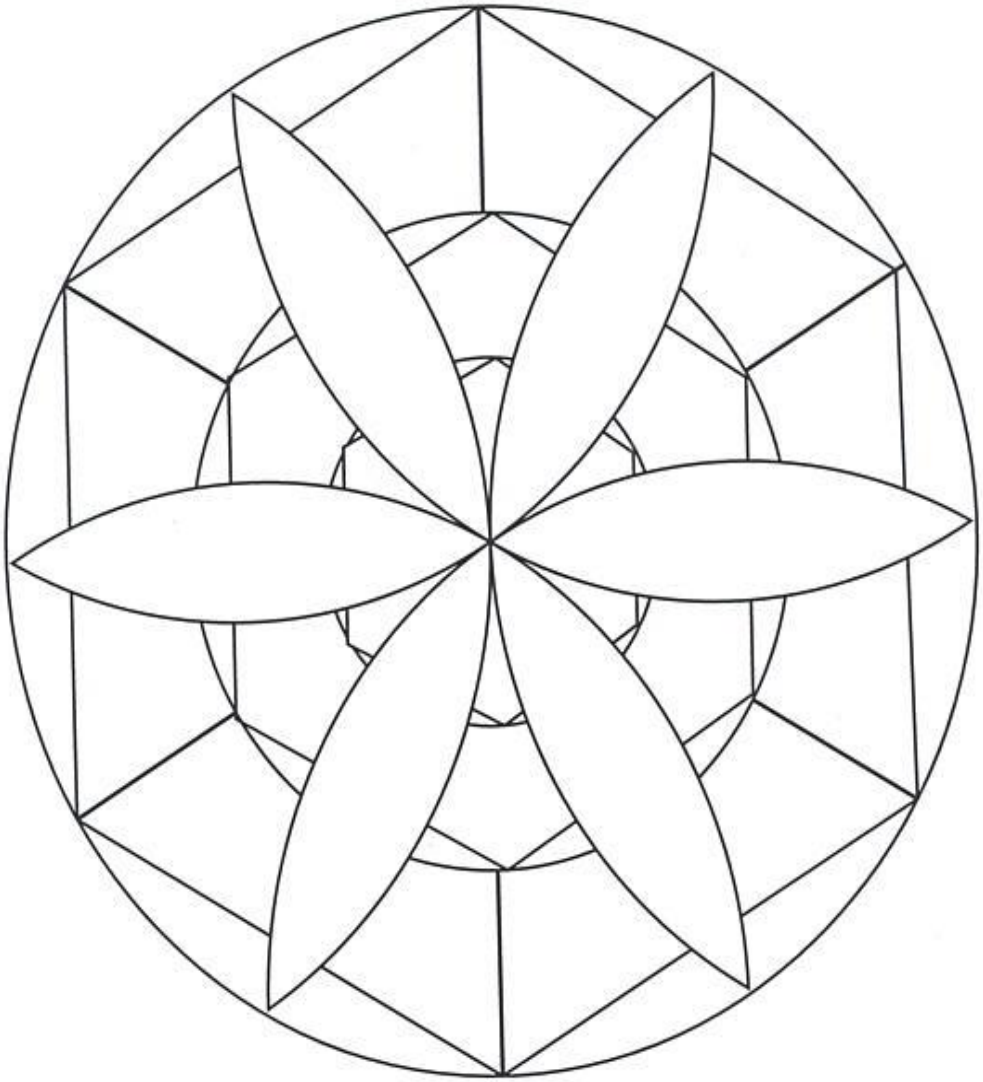
Appendix C: Flyer and Poster Text

Mandala Study

The mandala is an ancient art form that originates in the East. It means circle and can come in a variety of sizes and presentations. This study will focus on exploring the effects and experience of completing a mandala within a hospital setting. The purpose is to understand the mandala making process and create a theory and describe its possible benefits. You are invited to partake in this study which will take approximately 30 to 60 minutes of your time. If you participate in this study, you will be asked to select a mandala and work on coloring or decorating it however you choose to, complete a brief scale of your emotions, and complete a written questionnaire to describe your experience. This study is a doctoral dissertation research study to fulfill graduation requirements for the principal investigator. Refreshments will be served at upon completion of the mandala. Please contact Irene for further questions and/or to sign up. All participation and data will be kept confidential.

Irene Kovacs-Donaghy, MA, ATR-BC, LPC
21X-XXX-XXX
e mail

Appendix D: Mandala



Appendix E: Mandala Instructions

Please complete the mandala as you wish. When you are done with your mandala, raise your hand. You will then be given a questionnaire and an emotions scale to fill out. Do not put your name on the questionnaire or scale. You'll notice a number on the upper right hand corner of the questionnaire and scale. This is your unique number identifier; this same number is on the back of your mandala. Place your mandala, scale, and questionnaire in the envelope provided and then in the slot of the locked questionnaire box by the exit. Remember all data will be kept anonymous and you may exit the study at any time, no explanation needed.

Appendix F: Permission

Subject : **Re: permission/SPANE**

Date : Sun, Aug 26, 2012 08:56 PM CDT

From : **ediener@cyrus.psych.illinois.edu**

To : Irene Kovacs-Donaghy <irene.kovacs-donaghy@waldenu.edu>

Sure, that is no problem at all.
Ed

Quoting Irene Kovacs-Donaghy <irene.kovacs-donaghy@waldenu.edu>:

> Hello Professor Ed Diener,
>
> I am a PhD Health Psychology student at Walden University. I am working on my dissertation, "The Effects of the Mandala in a Hospital Setting: A Mixed Methods Study". I am conducting a concurrent triangulation in which I plan to use the SPANE along with an open-ended questionnaire after the particpants complete a mandala. A mandala is Sanskrit for circle; it's a type of art in which one designs/or fills a circle to their desire.
>
> I wanted to change some of the wording of the SPANE to suit the mandala experience; I was also interested in adding one positive and one negative emotion- relaxed and stressed. Attached is a copy of the SPANE with the changes highlighted. Do I have your permission to use the SPANE with the changes?
>
> Are there other articles describing the use of the SPANE other than the one below?
> Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi. D., Oishi, S., & Biswas-Diener, R. (2009). New measures of well-being: Flourishing and positive and negative feelings. Social Indicators Research, 39, 247-266.
> I have CCd my dissertation chair so as to make her aware of my seeking permission
>
>
> Thank you for your time
> Irene Kovacs-Donaghy, MA, LPC, ATR-BC

Appendix G: Emotional Descriptors Associated with Mandala Experience

Participants' Emotional Descriptors of the Mandala Experience N = 24	
Emotional Descriptor	Frequency
Relaxed	65
Happy	38
Calm	38
Content	33
Enjoyed	15
Pleased	14
Excited	11
Focusing	9
Peaceful	9
Creative	8
Interested	8
Nice	8
Neutral	7
Relieved	6
Accomplishment	5
Anxious	5
Easy	4
Loved	4
Optimistic	4
Slowing	3
Control	2
Purposeful	2
Child	1
Energy	1
Fine	1
Refreshed	1
Rewarding	1
Sleepy	1
Smiling	1
Urgency	1
Unique	1
Looser	1

Appendix H: Words and Feelings Associated with Mandala Experience

	Participants' Words and Feelings of the Mandala Experience
Words and Feelings	Frequency N= 24
Activity	95
Relief	80
Color	72
Work	72
Movement	72
Make	64
Design	64
Concept	61
Think	60
Thought	60
Enjoyed	55
Forms	48
Person/other	46
Complete	46
Turn	46
Gives	45
Present Moment	44
Lines	40
Process	37
Complete	37
Positive	32
Accomplished/Satisfied	31
Appreciate	30
Attention	29
Control	29
Like	28
Wanted	27
Good	27
Place	26
Arrangement	24
Choices	23
Experiences	23
Interesting	23
Pleased	23
Outcome	23
Shapes	23
Looks	23

Green	20
Help	20
Important	20
Relaxing	20
Loved	20
Order	19
Happy/Glad	19
Selection	19
Share	17
Structure	17
Life	17
Right	16
Attention	16
Beauty/Pretty	15
Free	14
Realized	14
Represented	14
Stress	14
Favorite	13
Hand	12
Mind	12
Bad	12
Creative	11
Expect	11
Great	11
Investigator	11
Opportunity	11
Busy	11
Escape	10
Art	10
Calming	9
Concentrate	9
Correctly	9
Focusing	9
Meditation	9
Pattern	9
Bright	9
Concerns	8
Perfect	8
Energy	7
Excitement	7
Scheme	7
Peaceful	6
Special	6

Able	5
Allows	5
Crafts	5
Quiet	5
Still	5
Wondered	5
Worry	5
Easy	4
Bored	3
Distraction	3
Intrigued	3
Long	3
Ok	3
Anxious	2
Options	2
Surprise	2
Anywhere	1
Nonartistic	1
Indifferent	1
Nonjudgemental	1
Repetitive	1
Rewarding	1
Sore	1
Unique	1

.
.

Appendix I: Feelings Associated with Mandala Experience

Participants' Feelings of the Mandala Experience	
	Frequency N= 24
Feelings	
Change	75
Content	67
Activity	52
Relaxed	43
Happy	41
Calm	23
Coloring	22
Satisfied	20
Still	20
Interested	18
Soothed	18
Complete	17
Excited	17
Accomplishment	15
Hopefulness	15
Control	14
Liked	14
Enjoyment	13
Free	12
Good	12
Pleased	11
Relief	11
Sad	11
Purposeful	10
Stressed	9
Bad	8
Choices	7
Escape	7
Anxious	6
Cheerful	5
Creative	5
Fine	5
Peace	5
Rushed	5
Refreshed	4
Annoyed	3
Love	3
Normal	3

Sleepy	2
Sore	2
Urgency	2

.
.

Appendix J: Thoughts Associated with Mandala Experience

Participants' Thoughts of the Mandala Experience	
	Frequency N= 24
Thoughts	
Changed	182
Color	111
Events	108
Work	108
Forms	89
Make	82
Thinking	70
Patterns	69
Go	68
Materials	53
Enjoyed	51
Lined	41
Continue	40
Structure	40
Design	38
Use	38
Looks	36
Plan	35
Shapes	35
Loved	34
Arrangement	33
Finish	32
Time	32
Choices	31
Like	30
Pleased	30
Order	29
Good	26
Selection	25
Helpful	24
Represented	20
Wondered	20
Encourage	19
Exercise	19
Idea	19
Experience	19
Life	16
Scheme	15

Correctly	12
Quiet	11
Kind	10
Pretty	10
Calm	9
Relax	9
Continue	9
Anticipating	8
Home	8
Able	7
Child	7
Creative	7
Daughters	7
Expect	7
Glad	7
Centered	6
Hurt	6
Peace	6
Pain	5
Art	4
Focusing	3
Friend	3
Happy	3
Mistake	3
Results	3
Sad	3
Sun	3
Patients	2
Surprised	2
Unsure	2

Appendix K: Physical Experiences Associated with Mandala Experience

Participants' Physical Experiences of the Mandala Experience	
Words and Feelings	Frequency N= 24
Pain	44
Relaxed	42
Symptoms	40
Aches	35
Hurt	33
Calm	25
Attention	18
Comfortable	17
Breathing	13
Notice	12
Ok	10
Strain	9
Foot	8
Hand	8
Good	7
Neck	7
Sick	7
Thinking	7
Focusing	6
Responsibilities	6
Slowing	6
Tight	6
Disappeared	6
Eye	6
Fine	6
Knee	5
Lifting	5
Returned	5
Tiredness	5
Distracted	4
Happy	4
Hungary	4
Less	4
Nervous	4
Satisfied	4
Wrist	4
Muscles	3

Pressing	3
Forgot	3
Looser	3
Different	2
Done	2
Like	2
Long	2
Sad	2
Slower	2
Relaxed	2
Sweaty	2
Lower	1
Sinus	1
Sleepy	1

Appendix L: Overall Mandala Experience

Participants' Overall Experiences of the Mandala Experience	
Words and Feelings	Frequency N= 24
Relaxing	47
Enjoyed	43
Content	30
Coloring	28
Positive	27
Calm	22
Happy	22
Pattern	15
Thoughtful	15
Accomplished	14
Experience	14
Liked	14
Time	14
Completed	13
Consider	12
Motion	11
Relieved	10
Choices	9
Good	9
Escape	9
Helped	8
Loved	8
Stressed	8
Attention	7
Creative	7
Music	7
Results	7
Satisfied	7
Share	7
Excited	6
Nervous	6
View	6
Concentrate	5
Long	5
Peaceful	5
Art	4
Bored	4

Light	4
Opportunity	4
Product	4
Artistic	3
Busy	3
Concerns	3
Repetitive	2
Varied	2
Angry	1
Brief	1
Intrigued	1
Luck	1
Sad	1

. .

Curriculum Vitae

Irene Kovacs-Donaghy

Licensed Professional Counselor/Allied Therapist Coordinator
Conference Presenter and Lecturer/Board Certified & Registered Art Therapist

Academically accomplished professional with 12 years of clinical experience counseling adult and geriatric patients of various medical and psychiatric diagnoses within an inpatient behavioral health facility. 6 years of experience managing therapy program and team of therapists and interns. Completed Ph.D. in Health Psychology with dissertation research on the mandala as stress relief tool in a hospital setting. Strong familiarity with program improvement and various evidence based skills/approaches: DBT, CBT, Mindfulness, Behavioral, Gestalt, Person-Centered, Humanistic, Psychoanalytic

- Coordinated and advised diverse allied therapy team on counseling protocol
- Administrative responsibilities: Unit and hospital councils; Organized and ensured JCAHO and State Standards; budgeting
- Ongoing program improvement: Researched, improved, and expanded upon patients' therapy program; employee performance and efficiency
- Planned and facilitated 3-6 group therapy and 1-2 individual sessions daily
- Supervised, taught, and mentored 4-6 undergraduate and graduate students annually
- Investigated and solved gaps in patient care: creating resources for patients' free time, falls prevention, and working with military clientele
- Lectured and presented on art therapy, relaxation skills, suicide prevention, and group process to medical, nursing, and psychology students as well as healthcare staff.

EDUCATION

Ph.D. Health Psychology 2013
Walden University, Minneapolis, MN
Dissertation: Mixed methods analysis of the mandala in the hospital setting

M.A. Art Psychotherapy 2003
Drexel University, Philadelphia, PA
Thesis: Pilot Study; qualitative analysis of the art therapist's relationship with multicultural clients

B.S. Art Education & Psychology 2001
Pennsylvania State University, University Park, PA

Study Abroad 1999
B.S. Budapest University of Economic Sciences, Hungary

Certificate- Massage Therapy 2005
National Academy of Massage Therapy and Healing Sciences
Kulpsville, PA

TEACHING EXPERIENCE

Clinical Intern Supervisor
Abington Health, Abington, PA 2003 – present

- Taught and mentored undergraduate and graduate psychology and occupational therapy students
- processed group and individual dynamics and facilitated case presentations

Group Instructor
Abington Health, Abington, PA 2001 – present

- Compiled and taught coping skills to adults: DBT, meditation/relaxation, goal setting, health promotion, and creative outlets
- Individual assignment adapted to each person's needs and strengths
- Follow up and guidance of homework assignments

Presenter/Lecturer
Abington Health, Abington, PA 2001 – present

- Developed and adapted art therapy in-services for various healthcare staff and medical students
- Guest lectured on art therapy and relaxation skills for cancer support group

Schwartz Center for Compassionate Healthcare at Abington Health 2011

- Facilitated discussion on a case presentation
- Set goals for enhancing patient - caregiver communication and selecting the best protocols for patient care

Massage Trainer
Body Serene, Skippack, PA 2005-present
- Presented and guided employees on various massage protocols and methods

English Instructor
Zrinyi Miklos National Defense University; Budapest, Hungary 1999
- Devised and taught English as a second language to Hungarian NATO

Roma Service; Budapest, Hungary 1999
- Created and taught English grammar lessons to Roma children

PUBLICATIONS and RESEARCH

Kovacs-Donaghy, I. (2013). *The mandala in the hospital setting* (Doctoral dissertation). Walden University, Minneapolis, MN. Manuscript in preparation.

Kovacs-Donaghy, I. (2003). *The art therapist's therapeutic relationship with multicultural clients: A pilot study* (Master's thesis). Drexel University, Philadelphia, PA.

Research Assistant
Dr. Andrea Edmundson; Walden University, Minneapolis, MN 2012
- Investigated and compiled literature and studies on cultural impact of American teaching for the Indian learner
- Conducted and transcribed interviews of American learning experience

HOSPITAL, COMMUNITY, and UNIVERSITY SERVICE

Integrative Council Co-Chair	2012 - present
Massage volunteer- women's shelter	2010 - present
Global Day of Service	2009 - present
Unit Council	2006 - present
Student Peer Mentor	2002 - 2003
Art Therapy Association –student representative	2001 - 2003

CERTIFICATIONS and LICENSURE

Nonviolent Crisis Intervention	2002 - present
Dialectical Behavioral Therapy (DBT)	2011
Licensed Professional Counselor	2008
Board Certified and Registered Art Therapist	2008
Reiki I & II	2005; 2009
Massage Therapy Certificate/Licensure	2005; 2011

PROFESSIONAL AFFILIATIONS

Member, Health Psychology, Chapter 38 2009-present
Member, Radical Psychology 2009-present
Member, Brain and Behavior Research Foundation 2003-present
Member, American Art Therapy Association 2001-present
Member, Psi Chi 1998-present

AWARDS

- Unit Excellence 2013
- Patient satisfaction promotion award- Abington Health 2004
- Clinical Performance Excellence at Internship 2003
- Valedictorian of undergraduate class 2001
- All-American and MVP for Women's Soccer Team 1998-1999

CLINICAL EXPERIENCE

Allied Therapist Coordinator 2001 – present

- Expanded and enhanced group therapy program for adult and geriatric patients on an inpatient behavioral health unit
- Created and implemented group therapy and individual sessions that suited the needs of the patient(s)
- Mentored and supervised a diverse treatment team of therapists
- Assessed and offered diagnostic impressions
- Documented clinical progress notes and behavior treatment plans

Massage Therapist
Body Serene, Skippack, PA 2005- present

- Planned and performed massages suited to each individual client's needs
- Collaborated with team on completing responsibilities
- Conceptualized and contributed to development of new massage protocols and specials.

Art Therapist
Horsham Clinic, Horsham, PA 2003 – 2004

- Created and adapted art therapy interventions for adults, adolescents, and children within an inpatient or outpatient behavioral health setting
- Documented clinical progress notes and treatment plans

References available upon request