EMPIRICAL STUDY OF THE HEALING NATURE OF ARTISTIC EXPRESSION:

USING MANDALAS WITH THE POSITIVE EMOTIONS OF LOVE AND JOY

A Dissertation

by

PATTI GAIL HENDERSON

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2012

Major Subject: Psychology

Empirical Study of the Healing Nature of Artistic Expression:

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Approved by:

Chair of Committee,   David H. Rosen
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ABSTRACT

Empirical Study of the Healing Nature of Artistic Expression:

Using Mandalas with the Positive Emotions of Love and Joy. (May 2012)

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Research in positive psychology continues to contribute to the understanding of the significance of human virtues as well as the value that experiencing positive emotions has on individual well-being, including building strengths, broadening resources, and increasing mental health. The benefits that the creative arts have on increasing psychological health and creating positive emotions are also an important but understudied area of research. The purpose of the current study was to examine, in a manner similar to the written disclosure paradigm, how the creation of mandalas while reflecting on the positive emotions of love and joy related to increased psychological well-being, and continued positive affect in a college sample. It was also hypothesized that the mere act of expressing personally felt emotions, regardless of positive or negative, while creating mandalas would reveal a significant increase in psychological and physical health relative to the control condition. Benefits to participants were measured in terms of changes in the variables of posttraumatic stress severity symptoms, depressive symptoms, anxiety, spiritual meaning, the frequency of physical symptoms

and illness, as well as positive and negative affect. A series of one-way analyses of covariance (ANCOVA) comparing the experimental and control groups were conducted for all outcome measures at Time 2 and at 1-month follow-up. Results revealed no significant differences between the groups on any of the health measures.

Next, a series of ANCOVA were also conducted comparing the experimental and control groups for general positive and negative affect and basic positive and negative emotion before and after each drawing session at Time 1, 2 and 3 as well as at the 1-month follow-up. Although sustained positive emotion was not supported between Time 3 and the 1-month follow-up, participants felt higher general positive affect and basic positive emotion after each drawing session focusing on love and joy. Implications of these results and further research will be discussed.

DEDICATION

"Love the Lord your God with all your heart and with all your soul and with all your strength. These commandments that I give you today are to be upon your hearts. Impress them on your children. Talk about them when you sit at home and when you walk along the road, when you lie down and when you get up." (Deuteronomy 6:4-7 * NIV)

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To Greg, Tom, and my family, for always believing in me,

to my mother, Emma Lois Plumlee Webster and

my father, Felix Edmond Webster

who would have both been so proud,

and always and forever to, and for, God,

all of whom have shaped me into the person I am.

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INTRODUCTION

Research on positive psychology is abundant and yet the use of the creative arts and the theories of Carl Jung are still gaining little experimental exposure. A large body of research (Pennebaker, 1997a, 1997b for a review) has supported the healing effects of the written disclosure paradigm when writing about both positive and negative life events (Burton & King, 2004; Segal, Tucker, & Coolidge, 2009, Sloan & Marx, 2004a, 2004b). Extension of this paradigm to other forms of creative arts expression has been limited but has included dance, art therapy, creating mandalas, ikebana, and poetry (Krantz & Pennebaker, 2007; Pizzaro, 2004; Henderson, Mascaro & Rosen, 2007; Sotirova-Kohli, 2009; Stephenson, 2009). Although clinical psychology is usually linked with psychopathology and the study of the negative aspects of the human psyche, which is no doubt important, positive psychology posits that psychology should focus as much on the strengths inherent in people as well as in interventions that can build those resources (Fitzpatrick & Stalikas, 2008a, 2008b; Russell & Fosha, 2008, Seligman & Csikszentmihalyi, 2000).

Studies have shown that it is helpful for those who have undergone traumatic events to express their memories of the experience as well as the emotions felt not only in writing but also using art (Gerteisen, 2008; Henderson et al., 2007; Lyshak-Stelzer, Singer, St. John, & Chemtob, 2007; Morgan & Johnson, 1995). However, in a study that involved creating art for those with posttraumatic symptoms, it was shown that those who made freeform art focusing on a neutral object, without focusing on trauma, had a

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This dissertation follows the style of *Psychology of Aesthetics, Creativity, and the Arts.*

significant treatment effect whereas those participants who focused on their traumatic events did not (Henderson, 2007). This led to a supposition that perhaps concentrating on more positive emotions would provide relief to those suffering from anxiety or unhappiness.

Positive emotional expression and creativity have been noted in the realm of positive psychology (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Seligman & Csikszentmihalyi, 2000). Positive emotions have been shown to have a generative affect on those who experience them (Frederickson, 1998; Russell and Fosha, 2008; Tugade, Fredrickson, & Barrett, 2004). Creating an artistic product that embodies the whole Self, such as creating a mandala, while focusing on positive emotions instead of focusing on traumatic events, ought to improve psychological and physical health by promoting positive affect thus creating the groundwork for the opening up of receptivity in the psyche for the development of strengths and resources vital for healthy living.

Expressive Writing Paradigm

The principle of therapeutic exposure posits that repeated contact to aversive conditioned stimuli leads to the extinction of negative emotions associated with such stimuli, resulting in beneficial outcomes (Foa & Rothbaum, 1998). Thus, the written disclosure, or expressive writing paradigm, was created based upon focusing on negative events. Later the theory set forth by James Pennebaker, was revised, asserting that writing about positive or negative personal events in an emotional way for as little as two minutes and up to twenty minutes for two to four consecutive days or weeks can bring about improvements in physical and mental health (Burton & King, 2008; Burton & King,

2004; Esterling, L'Abate, Murray, & Pennebaker, 1999; Mackenzie, Wiprzycka, Hasher, & Goldstein, 2008; Pennebaker & Seagal, 1999; Sloan & Marx, 2004a, 2004b; Smyth & Helm, 2003). Although practical for those with a good grasp of the written language, those who lack a strong enough command to engage in a writing task (e.g. children, adolescents, and adults who are illiterate or under-educated), or who simply prefer visual-spatial exercises and experiences to verbal ones, would benefit from a creative artistic task in which one can visually symbolically illustrate and focus on emotions, both positive and/or negative. Thus, a creative variation of the disclosure paradigm has been encouraged (King, 2004).

The vast majority of written disclosure studies involve only written expression; however, Judith Pizarro (2004) performed a study that examined whether art therapy was as effective as writing therapy in improving the outcomes of psychological and health measures. Pizarro sampled 41 participants using two experimental groups (expressive art therapy or writing therapy) and a control art condition. Consistent with Pennebaker's findings, a significant decrease was observed in social dysfunction within the writing group yet the participants in the art groups did not have similar health benefits. Although the art groups did show a greater enjoyment of the experience, the researcher surmised, "generating art…may not provide sufficient cognitive organization, and, therefore may not be able to provide the same positive health benefits" as writing therapy (Pizarro, 2004, p. 10). A combination of the two was suggested in which writing about the trauma could heal while art could make the process more enjoyable thus increasing therapy compliance.

Chan and Horneffer (2006) looked at writing versus drawing for those who expressed a ranged of psychological symptoms. They did not find a significant outcome for those in the art condition but theorized that the comfort level for using art to express emotions might not be as high as for those who felt comfortable with journaling. They also speculated that since their participants did not have artistic tools but rather used a pencil to draw, that the therapeutic value of art might have been compromised.

Art Therapy, Creativity and Mandalas

Even when not used in conjunction with expressive writing, art therapy interventions have been shown to contribute to the improvement of self-esteem (Reynolds, Nabors, & Quinian, 2000), decrease in posttraumatic trauma symptoms (Chapman, 2001; Henderson et al., 2007; Lyshak-Stelzer et al., 2007), bereavement (Stroebe, Stroebe, Schut, Zech, & van den Bout, J., 2002), and depression (Rosen, 2002). Military personnel who have undergone combat-related traumatic experiences have also benefited from being able to symbolically express their nightmares through art instead of putting them into words (Morgan & Johnson, 1995). Art has been used extensively with children who have undergone trauma (Chilcote, 2007; Gerteisen, 2008; Wood & Near, 2010) and has been used to create positive emotions in an effort to reduce stress in medical students (Mercer, Warson, & Zhao, 2010).

In an article investigating the therapeutic effectiveness of art therapy, Reynolds et al. (2000) did a meta-analysis on the research to date. Research into the effectiveness of art therapy has been limited to mostly case studies or to those without a sound investigational study design. They report that the few studies that were done with the

proper experimental design exposed a trend that art therapies were effective, but no more than other therapies. The authors recommended that more research be done with the proper design and scientific rigor. Since this review, numerous studies have been conducted to investigate the efficacy of art therapy but empirical research is still in the minority (Eitel, Szkura, Pokorny, & von Wietersheim, 2008; Mercer et al., 2010).

Active imagination is an act of symbolic expression and a way to understand and transform emotions (Chodorow, 1997; Rosen, 2002; Schaverien, 2005). Carl Jung was among the first to use active imagination in the form of a mandala (magic circle in Sanskrit) for self reflection and in therapy. A mandala, used as a meditative tool in various religions, but most well known in Tibetan Buddhism, is a circle (with inner symbolic patterns) that is thought to promote psychological healing, integration, and a peaceful state of mind when created by an individual. Jung (1973) found that the act of drawing mandalas had a calming and healing effect on its creator while at the same time facilitating psychic integration and is, as can be true of many artistic endeavors, connected with the innate capacity to know the divine (Allen, 2001; McNiff, 2004).

A number of psychotherapists use the mandala as a basic tool for self-awareness, self-expression, conflict resolution, assessment, and for therapeutic healing (Cornell, 1994; DeLue, 1999; Elkis-Abuhoff, Gaydos, Goldblatt, Chen & Rose, 2009; Fincher, 1991; Fincher, 2002; Kellogg, Mac Rae, Bonny, & di Leo, 1977; Slegelis, 1987). Within the realm of art therapy, the mandala refers to any art form that is executed within a circular context. Research into the healing aspects of mandala drawing is rare. To date, most research on the use of mandalas as a therapeutic tool generally involves case studies

and clinical observations (Bush, 1988; Couch, 1997; Cox & Cohen, 2000; Ireland, & Brekke, 1980; Kellogg et al., 1977; Smitherman-Brown & Church, 1996).

In one of the first attempts undertaken to examine scientifically Jung's theory that mandala creation promotes psychological health, Slegelis (1987) found that those who drew inside a circle experienced more positive affect than those who drew within a square. Although the results of the Slegelis study lend support to the argument that mandalas have calming and healing properties, the experimental design and data were limited, and inhibit the inferences that can be drawn from the results.

In 1999, DeLue studied the effectiveness of mandala drawing on inducing relaxation and reducing the stress response among school age children. Her research used an experimental pretest, posttest control group design and measured autonomic arousal by temperature and heart rate. The findings showed that children who drew within a circle experienced a statistically significant reduction in autonomic arousal and that mandalas had a calming effect on the children who created them.

Curry and Kasser (2005) evaluated the effectiveness of mandala drawing in the reduction of anxiety. Anxiety levels were measured before and after an anxiety induction exercise, and after one of three coloring conditions (free-form, mandala-form, or plaid-form). Decreases in anxiety were experienced for those only in the mandala and plaid-form conditions. While these results show potential, the design of the research used pre-drawn mandala forms and pre-drawn plaid patterns, so the results could be interpreted in various ways, such as the calming effects of coloring in general versus the effects of actually creating a mandala.

Other studies that extended the written disclosure model to the use of creativity have found that the act of drawing mandalas and creating art had positive effects for individuals with symptoms of posttraumatic stress disorder (PTSD; Henderson, Rosen & Mascaro, 2007). This study found participants in the mandala drawing condition who expressed their traumas had significantly lower levels of PTSD symptom severity at a 1-month follow up compared to the control group. A follow up replication showed an interesting and opposite effect: those in the control, art only condition (did not focus on trauma) showed a significant treatment effect on change in slope of posttraumatic symptoms from posttest to follow-up (Henderson, 2007).

Positive Emotion as Connection to the Inner Imago Dei

Carl Jung spoke of the mandala as the representation of the Self, the central archetype, which is associated with the *imago Dei*, image of God, within. It was thought that a spiritual type of love would be the ultimate positive emotion to express within the mandala for the current research since many times God is described as love. Unfortunately, love and joy are two positive emotions that have received inadequate attention. One reason is because of the difficult task of conceptualizing and operationally defining them. Most research on love is that of romantic love (see Sternberg & Weis, 2006, for a review). The wave of interest in positive psychology and in positive attributes and emotions has seen various types of love explored. Love, such as unconditional or compassionate love has been explored by Post (2003), Underwood (2005) and Specher and Fehr (2005) in which compassionate love is defined as an action toward helping others. *Agape* is one of the several words that the ancient Greeks used for love. *Eros* was

used for romantic love, *phileo* for friendship or brotherly love, and *agape,* considered a greater love, was a love for all humanity (Templeton, 1999). In the proposed study, the love of interest encompasses compassionate and *agape* love but goes beyond the personal and transcends it. This type of love is called unlimited, supreme, or divine (Post, 2008; Templeton, 2000). This archetypal Love includes complete acceptance, amazing grace, gratefulness, abiding joy, awe, humility, compassion, kindness, hope, and spiritual meaning. This Love helps to open the heart and mind so experiences can be seen as authentic and meaningful. In some studies this concept has been called transcendence or spiritual love (Ghafoori, Hierholzer, Howsepian, & Boardman, 2008; Levin, 2004, Valliant, 2008a, 2008b). Fredrickson Ashley Montagu (1963) speaks of spiritual love when he says,

> It is an agent of spiritual love that man grows beyond himself...man's love must extend beyond himself to embrace the world outside himself. Without such a projection of ones' love one cannot live a healthy life, because health implies a balanced satisfaction of needs, and one of the profoundest of these needs is the need to *transcend oneself and relate oneself creatively to the universe*, and as far as it is reasonably possible, to everything in it (p. 956).

Conceptualized in this way, this type of love would be expected to promote positive emotion and the broadening of personal resources.

Joy is another emotion closely linked with spirituality and love and it, too, is difficult to conceptualize and operationally define. Unlike a transient emotion like happiness or pleasure, joy is about connection with others, an action toward play and

frequently transcends the self. Joy often results from the experience of love, and both joy and love are linked to the spiritual. George Valliant (2008a) defines positive emotions as spiritual and includes love, hope, joy, trust, forgiveness, compassion, gratitude, and awe. In 1998, Fredrickson suggested that love consisted of several other emotions, such as joy, interest and contentment.

The Basic Positive Emotion scale (BPE) in the PANAS-X, consisting of the positive emotion scales of joviality, self-assurance, and attentiveness, was used as the current measure of positive emotion in the direction of love. The positive emotion scale of joviality is made up of the items: happy, joyful, delighted, cheerful, excited, enthusiastic, lively, and energetic; self-assurance is: proud, strong, confident, bold, daring, fearless; and attentiveness is: alert, attentive, concentrating, determined.

While it would be beneficial for the investigation of love and joy for them to be separated and tested using scientifically modeled scales that could ascertain the true correlation of these two emotions, it is beyond the scope of this study to do this worthwhile research. Instead, we will simply use positive emotions, per se, with the objective that the participants experience these emotions.

Positive Emotion and Positive Affect

Merriam-Webster's Online Dictionary (2010) defines both feeling and emotion as "a subjective response to a person, thing, or situation." Affect is defined, "to act upon (a person or a person's feelings) so as to cause a response; also: a set of observable manifestations of a subjectively experienced emotion." Emotion and feeling are subjective responses to people or situations, while affect is an observable response to the

emotion or feeling. For the purposes of this paper, emotion and feeling will be used interchangeably.

A wide spectrum of empirical evidence documents the adaptive value of positive affect (for a review, see Frederickson & Losada, 2005). Research has shown the health benefits of positive emotions (Arnau, Rosen, Finch, Rudy, & Fortunato, 2007; Burton & King, 2004; Burton & King, 2008; Isen, 2004; Mascaro & Rosen, 2005; Mascaro & Rosen, 2006; Mascaro, Rosen, & Morey, 2004) and that positive emotions may serve as a source of hope from the psychological gloom resulting from negative emotions such as anxiety, depression and stress-related health problems (Arnau et al., 2007; Mascaro & Rosen, 2005; Mascaro & Rosen, 2006; Mascaro et al., 2004; Tugade et al., 2004; Quiros, 2008). The emotions of joy, love, and contentment have been found to have an undoing effect on negative emotions and their negative physiological arousal (Falkenstern, Schiffrin, Nelson, Ford, & Keyser, 2009, Fredrickson, 2003; Fredrickson & Levenson, 1998; Fredrickson, Mancuso, Branigan, & Tugade, 2000). Furthermore, positive emotions can facilitate the expansion of emotional states and the resources needed to flourish (Fredrickson, 1998; Fredrickson, 2000; Fredrickson, 2001; Fredrickson, 2003; Fredrickson, 2008; Fredrickson & Losada, 2005; Russell & Fosha, 2008; Seligman, Rashid, & Parks, 2006). Positive affect has been shown to have a strengthening, uplifting effect on well-being and the ability to cope with stressors (Frederickson & Joiner, 2002), and interventions that increase people's experience of positive emotion can help to build their social, physical, and psychological resources (Fredrickson, 2008; Fredrickson et al., 2008; Lyubomirsky, King, & Diener, 2005; Russell & Fosha, 2008).

In the "broaden and build" model of positive emotions, Frederickson (1998, 2001) suggests that positive emotional experiences compound over time to build a variety of consequential personal resources that broaden attention and thought processes. Unlike negative emotions which are thought to be adaptive in situations that threaten survival and tend to narrow focus in order to prepare for action, positive emotions broaden thinking and focus. Feeling safe, secure, and satisfied, while experiencing positive emotional experiences can produce a broadening mindset that can create lasting benefits for the person experiencing them by building personal resources as well as increasing human qualities like spiritual meaning (Arnau et al., 2007; Frederickson, 1998, 2001; Fredrickson et al., 2007; Fredrickson & Joiner, 2002; Mascaro & Rosen, 2005; Mascaro & Rosen, 2006; Mascaro et al., 2004; Quiros, 2008).

Positive emotions can also be seen not only as indicators but also as facilitators of therapeutic change (Fitzpatrick & Stalikas, 2008b; Fosha, 2006; Lambert & Erekson, 2008). Positive emotions experienced after the catharsis of experiencing negative emotions can be cleansing and mind opening. The effects of positive emotion accumulate and compound over time, making patients feel their futures are brighter. Positivity can transform individuals for the better, making them healthier, more socially integrated, knowledgeable, effective, and resilient (Frederickson & Losada, 2005).

Interventions are being recommended and tested to evaluate their usefulness in clinical practice (see Duckworth, Steen, & Seligman, 2005), and sustaining positive emotion (Lyubomirsky, Sheldon, & Schkade, 2005; Seligman, Rahsid, & Parks, 2006). One such intervention is the loving kindness meditation (Frederickson et al.,2008).

Researchers used a daily loving kindness meditation to attempt to test the theory that experiencing positive emotion daily would build and thus create personal resources for the participants. The results were encouraging and researchers found that these increments in the experiencing of positive emotions did increase positive personal resources which predicted increased life satisfaction and reduced depressive symptoms.

Another study by Dalebroux, Goldstein, & Winner (2008) used an artistic task to express positive emotion to assess positive emotions effectiveness in mood regulation by repairing a negative mood. They had three groups participating in one of three activities: creating a drawing expressing their current mood (venting), creating a drawing depicting something happy (positive emotion), or scanning a sheet for specific symbols (distraction control). All three groups improved, but the positive emotion group was the most effective in improving the negative mood of the participants.

Emotion versus Affect

In the literature on positive emotion, emotion and affect appear to be used interchangeably. It is important to understand these concepts as used in the current research. Emotions are experienced every day in a subjective way by most people by specific and distinct affects. Distinct affects include joy, interest, surprise, fear, anger, sadness, contempt, and disgust. People experience a range of emotional experiences, and can express a variety of positive and negative broad affect states of the emotions. Affect is seen as a more general construct consisting of the specific affect states, either positive or negative, of the specific emotions (Watson and Clark, 1992). Affect is used to represent this range of emotional valence of feeling states and attitudes, with high positive affect

representing a state that is high energy, active and alert. High positive affect can refer to the level in which a person feels excited, energetic, and attentive, while low positive affect can represent sadness and tiredness. High negative affect can represent anger and guilt while low negative affect can represent calm and serenity. Both positive and negative affect can be experienced at the same time as they are not mutually exclusive. For example, one can enjoy the thrill and excitement (positive affect) of a sailboat ride while at the same time feel the nervousness (negative affect) of not being able to swim. These two factors represent "affective state dimensions" (Watson, Clark and Tellegen, 1988) while the positive and negative "emotion scales" represent the content or distinct qualities of the individual affects (Watson & Clark, 1994, p. 1).

PURPOSE

Using a model similar to the expressive writing paradigm along with active imagination to express love and joy through the creation of a mandala, the present research sought to discern whether the effects of utilizing the positive emotions of love and joy created in the structure of a mandala, would increase the positive affect and well-being of the participants immediately after each drawing session as well as at 1-month follow up. It was hypothesized in the present study that creating mandalas that express love and joy would lead to decreased anxiety, decreased depression, enhanced spiritual meaning, increased general positive affect, and increased basic positive emotion. In addition, qualitative evaluation of the mandalas ought to show a trend toward common themes and symbols used in expressing the positive emotions of love and joy as well as give insight to the healing qualities that may be intrinsic in the mandala intervention.

Specifically, the current research study proposed to test in a controlled manner, the psychological and physical health benefits of creating mandalas: freeform mandalas expressing current feelings (condition 1); mandalas expressing the positive emotions of love and joy (condition 2); empty mandalas (condition 3); with the control condition of drawing an empty triangle (condition 4). Additionally, the current study sought to extend previous research by Henderson et al. (2007) to further examine the healing aspects of the creation of mandalas. Creating mandalas being mindful of love and joy ought to promote a therapeutic way to initiate a lasting positive affect that could be used to broaden and build resourcefulness, well-being, and meaning.

Hypotheses

The first hypothesis was that individuals assigned to the mandala drawing condition expressing current emotions (condition 1) would reveal a significant increase in psychological and physical health relative to the control triangle (condition 4) drawing group participants both immediately following the intervention and at a 1-month follow up. These benefits were measured in terms of changes in the variables of self-reported trauma symptom severity, depression, anxiety, spiritual meaning, and decreases in the self-reported frequency of occurrence of physical health problems.

The second hypothesis was that individuals assigned to the mandala drawing condition expressing joy and love (condition 2) would reveal a significant increase in psychological and physical health relative to the control triangle (condition 4) group participants both immediately following the intervention and at a 1-month follow up. These benefits were measured in terms of changes in the variables of self-reported trauma symptom severity, depression, anxiety, spiritual meaning, positive and negative emotions, and decreases in the self-reported frequency of occurrence of physical health problems.

The third hypothesis was that individuals assigned to the empty mandala (condition 3) drawing condition would reveal a significant increase in psychological and physical health relative to the control triangle (condition 4) group participants both immediately following the intervention and at a 1-month follow up. These benefits were measured in terms of changes in the variables of self-reported trauma symptom severity, depression, anxiety, spiritual meaning, and decreases in the self-reported frequency of occurrence of physical health problems.

The fourth hypothesis was that individuals assigned to the mandala drawing condition expressing joy and love (condition 2) would reveal a significant increase in positive emotion and affect relative to the control triangle (condition 4) group participants both immediately following the intervention and at a 1-month follow up. These benefits were measured in terms of changes in the variable of self-reported positive and negative emotions.

An additional hypothesis was that participants who drew mandalas expressing love and joy would show positive, archetypal images using similar symbols and themes. Furthermore, these participants would experience higher levels of subjective positive emotion and have a more rewarding experience. These benefits were evaluated qualitatively by analyzing the mandalas using a rating sheet as well as the follow-up short narrative explanations provided by the participants.

METHODS

Participants

The participants consisted of 359 undergraduate students participating for course credit, recruited from Introduction to Psychology classes at a large southwestern university. Students participating in the class are required to participate in 10 credits worth of research. On an internet-based form where students volunteered for participation, the nature of the study was not disclosed but it was indicated that by completing the 4 day study, a student would receive 8 credits, but only after they had completed the 1-month follow-up session. The students signed up for their time periods but did not know which condition they would be in. The four conditions were randomly assigned before the study began. The testing sessions were held over a 7-week period with three consecutive weekly drawing sessions and a 1-month follow-up session.

Participants were asked to report being currently in psychotherapy or currently taking psychotropic medication. This questions criterion was included to ensure that changes in outcome measures were due to experimental manipulation and not the effects of therapy or psychotropic medication. One participant was excluded due to this criterion for taking Lithium. There were both male (n=121) and female (n=233) participants ranging in age from 17 to 27 (mean age =18.55, SD = 1.15). Four participants failed to indicate their gender. The ethnicities of the students were Caucasian (n=257), African American (n=16), Hispanic (n=51), Asian (n=21), and Indian (n=2). Eleven participants did not indicate their ethnicity. Religious affiliations represented were Christian (n=313), Muslim (n=4), Hindu (n=4), Atheist (n=5), Agnostic (n=12), Jewish (n=3) and Other

(n=3). Of the participants that marked Other, there were: Buddhist (n=1), Nihilist (n=1), and Pagan (n=1), and fourteen participants did not mark their religious preference.

Measures

Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995) is a 49-item self-report measure to aid in the detection and diagnosis of PTSD. The Items are rated with regard to presence (i.e., yes or no) and with regard to symptom severity. The symptom severity scores (questions 22 through 38) scores are rated from below 10 (mild), 10-20 (moderate), 21-35 (moderate-to-severe), to above 35 (severe; Foa, 1995). These scores were be used as the primary means of indicating changes in the severity of participants' traumatic symptoms, if any, from baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). The coefficient alpha for the PTSD symptom severity score was .87 in the current study.

The Personality Assessment Inventory (PAI; Morey, 1991) is a broad-ranging, clinical assessment device created for measuring ''constructs that are central in treatment planning, implementation, and evaluation'' (Morey, 1999, p. 1083). The 344-item, Likert format, self-report inventory contains 11 clinical scales.

The Depression Scale of the PAI (PAID) consists of 24 items scored on a 4-point Likert scale from "Totally False" to "Very True." The PAID is divided into three subscales that measure affective, cognitive, and physical components of depression. This measure was used as the primary means of indicating changes in the participants' depressive symptoms, if any from baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). Raw scores range from 0 to 72, with higher

scores indicating higher levels of symptomatology. The coefficient alpha for the PAID score was .91 in the current study.

The Anxiety Scale of the PAI (PAIA) consists of 24 items scored on a 4-point Likert scale from "Totally False" to "Very True." The PAIA is divided into three subscales that measure affective, cognitive, and physical components of anxiety. This measure was used as the primary means of indicating changes in the participants' anxiety symptoms, if any from baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). Raw scores range from 0 to 72, with higher scores indicating higher levels of symptomatology. The coefficient alpha for the PAIA score was .94 in the current study.

Positive and Negative Affect Schedule- Expanded Form (PANAS-X; Watson & Clark, 1994) is a 60-item scale that measures higher order dimensions of positive and negative emotional affect (valence) as well as eleven specific lower order mood descriptors or emotional affect states: fear, sadness, guilt, hostility, shyness, fatigue, surprise, joviality, self-assurance, attentiveness, and serenity.

The General Dimension Scales of the PANAS-X measures the valance of emotions (negative or positive states). *General Positive Affect (GPA)* is measured by combining 10 items: active, alert, attentive, determined, enthusiastic, excited, inspired, interested, proud, and strong. *General Negative Affect (GNA)* is measured by combining 10 items: afraid, scared, nervous, jittery, irritable, hostile, guilty, ashamed, upset, and distressed. *The Basic Positive Emotions Scale (BPE)* measures the specific content of the mood descriptors (distinctive qualities of the individual affects). Content consists of the

affective state scales for joviality (happy, joyful, delighted, cheerful, excited, enthusiastic, lively, and energetic), self-assurance (proud, strong, confident, bold, daring, and fearless) and attentiveness (alert, blue, downhearted, alone, and lonely). *The Basic Negative Emotion Scale (BNE)* consists of the affective state scales for fear (afraid, scared, frightened, nervous, jittery, and shaky), hostility (angry, hostile, irritable, scornful, disgusted, and loathing), guilt (guilty, ashamed, blameworthy, angry at self, disgusted with self, and dissatisfied with self), and sadness (sad, blue, downhearted, alone and lonely). This scale was the primary means of indicating affect baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). Coefficient alphas of .90, .87, .90, and .89 were found in the current study for GPA, GNA, BPE, and BNE, respectively.

Spiritual Meaning Scale (SMS; Mascaro, Rosen, & Morey, 2004; Mascaro & Rosen, 2006) is a single scale, 15-item self-report inventory that measures the extent to which a person believes that life, or some force of which life is a function, has a purpose, will, or way in which individuals participate, independent of religious orientation. The SMS was included in this study to measure "the experience of transcendent or spiritual presence from which one derives a unique sense of purpose" (Mascaro, 2007, p. iii). It is noteworthy that spiritual meaning correlates significantly with hope and humility (Mascaro, 2007; Quiros, 2008). The SMS was the primary means of indicating spiritual meaning at baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). The coefficient alpha for the SMS score was .93 in the current study.

Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982) is a 54-item scale that measures the frequency of a group of common physical symptoms and sensations. The PILL was the primary means of indicating physical symptoms at baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). The coefficient alpha for the PILL score was .94 in the current study.

Procedure

The conditions of each session were randomly assigned and the participants did not know which group they would be attending. Participants in the experimental (conditions 1, 2, and 3) and control (condition 4) conditions were tested separately in large groups of 25 to 100 individuals. The drawing sessions took place across three consecutive weeks, with all participants drawing for a total of 20 minutes each session. The follow-up session was conducted one month after the third drawing session.

At the beginning of the first session for each condition, all participants were given a large envelope that contained an informed consent, a demographic questionnaire, assessment measures (PDS, PAIA, PAID, SMS, PILL), a blank 8 1/2 x 11 piece of copy paper, drawing instructions specific to their condition, and two PANAS-Xs marked with "before" and "after". For simplicity and standardization, a box of crayons and/or colored pencils and a pencil were also provided. A trained research assistant instructed them to open their envelopes and follow along as the different items were explained. The purpose of the study was explained and written informed consent obtained.

All participants completed the Time 1 measures for PDS, PAIA, PAID, SMS, PILL and a demographic questionnaire immediately before drawing at the first session.

Then the research assistant instructed them to put the completed measures in the envelope and take out their piece of blank paper and PANAS-X marked "before" then asked to follow along as the specific instructions provided within their envelope were read aloud. The PANAS-X was administered immediately before and after each drawing session and at 1-month follow-up. With the exception of the demographic questionnaire, the same measures were completed immediately following the last drawing session (Time 2) and at a 1-month follow-up (Time 3). The questionnaires were counterbalanced to control for possible ordering effects.

Drawing instructions for the experimental condition are a modification of the protocol used by Pennebaker and colleagues (1997b) and utilized in the previous research by Henderson et al. (2007) (Appendix). The participants in the first experimental mandala condition were instructed to draw a circle on their paper (an example was provided for each condition), and then fill the circle with whatever they felt belonged there and best represented their thoughts and emotions concerning the feelings that came up then. They could fill it with any shapes, symbols, patterns, designs, or colors but no words. In the second experimental mandala condition, participants were asked to draw a circle on their paper and then to fill the circle with representations of positive feelings or emotions related to the drawing instructions of love and joy using symbols, patterns, designs and colors but no words. In the third experimental mandala condition, participants were asked to draw a circle on their paper, and then to leave it blank inside. In the control condition, participants were instructed to draw a triangle on their paper, without filling anything in so that it remained empty. Each condition had to draw (conditions 1 and 2) or

draw and sit (conditions 3 and 4) for twenty minutes. Each day they were given the same instructions, and their drawing and the instruction set were put in their envelopes and returned to the examiner before leaving. Participants were thanked for their participation and reminded to return the next week.

At the end of the third session, a trained research assistant debriefed the participants after they completed the second set of dependent variable measures (i.e., PDS, PAIA, PAID, SMS, PILL) and the drawing. However, this debriefing did not involve telling subjects the true nature of the study to prevent biasing the results at the follow-up session. Therefore, this was an abbreviated debriefing that focused more on how they were feeling and ascertaining if there were any problems they had experienced. A full debriefing as to the nature of the study and the expected results were provided to the participants following the completion of the third set of dependent variable measures (i.e., PDS, PAIA, PAID, SMS, PILL) at the 1-month follow-up.

At the 1-month follow up, participants were given a packet containing their 3 drawings, a questionnaire, assessment measures (i.e., PDS, PAIA, PAID, SMS, PILL), and a PANAS-Xs marked "follow-up." They were asked to complete the PANAS-X then fill out the self-report measures. After completion of the measures, participants were asked also to write a brief description about the emotions expressed, and the meanings of symbols, patterns, and colors used in their mandalas. In addition, participants were asked to write a brief description of any perceived benefit they received from their drawing sessions. This information was used for the examination of the qualitative features and

symbolic meanings of the mandalas. Participants were thanked and asked to return all measures including their drawings.

RESULTS

Quantitative Analysis

Data analysis was conducted by the use of the statistical package SPSS version 16.0 for Windows.

As denoted in Table A-1, variables were statistically significantly correlated with themselves over time. This promotes the use of ANCOVA in the analysis of the data which permits the researcher to detect mean differences between treatment groups at Times 2 and 3, while controlling for differences at baseline. There were no gender differences in outcomes.

To test the various hypotheses, the covariate for each ANCOVA was the value for the respective outcome variable at the beginning of the study or before the three mandala-drawing or control drawing manipulations. The alpha level of .05 was used for all statistical tests.

Table A-2 presents the mean scores and standard deviations of all of the health measures taken at pre-test, post-test, and 1-month follow-up for the five self-report measures. Contrary to hypotheses one, two, and three, that the three mandala groups would experience a significant increase in psychological and physical health when compared to the triangle group, analysis indicated that the groups did not differ significantly on any of the reported measures. SMS [F (3, 353) = .254, p = .858], PDS [F (3, 64 = .713, p = .548], PAID [F (3, 350) = 1.82, p = .144], PAIA [F (3, 350) = 1.11, p = .347], PILL [F (3, 347) = 1.32, p = .266].

Further analysis of the PAID and PAIA subscales for affective (A), cognitive (C), and physical (P) aspects of depression and anxiety indicated that the groups did not differ significantly (see Table A-3). PAID-A[F (3, 352) = .812, p = .488], PAID-C [F (3, 353 = 2.28, p = .079], PAID-P [F (3, 352) = .843, p = .471], PAIA-A[F (3,352) = .410, p = .746], PAIA-C[F (3, 352) = .139, p = .937], PAIA-P[F (3, 350) = 2.20, p = .088].

To test hypothesis four, basic positive emotion (BPE) and basic negative emotion (BNE) and general positive affect (GPA) and general negative affect (GNA) were analyzed after drawings at times 1, 2, and 3 as well as at the 1-month follow up (with before score as the covariate) in all four condition groups. Individuals assigned to the mandala drawing condition expressing joy and love (condition 2) ought to reveal a significant increase in positive emotion and affect relative to the control triangle (condition 4) group participants both immediately following the intervention and at a 1-month follow up. Table A-4 and Table A-5 report the mean scores and standard deviations for BPE, GPA, BNE and GNA.

Using the value for GPA or BPE, respectively, before the three mandala-drawing or control drawing manipulations as covariate for each ANCOVA, analysis partially supported hypothesis 4, and the groups did differ significantly on all of the reported measures of positive affect and positive emotion *except* for when measured before time 1 (BT1) and again at follow-up (FU). The analysis for FU was performed twice: Once with BT1 as covariate and once with after time 3 (AT3) as the covariate. There was a significant change between AT3 and FU for both general positive affect and basic positive emotion. The results for General Positive Affect are as follows:

General Positive Affect (GPA): GPA T1 [F (3, 350) = 19.42, $p < .001$], GPA T2 [F (3, 353) = 13.83, $p < .001$], GPA T3 [F (3, 353) = 17.36, $p < .001$]; GPA AT3FU [F(3, 353) =5.23, $p < .001$]; GPA BT1FU [F (3, 353) = 1.27, $p = .284$].

Follow-up tests were conducted to evaluate pairwise differences among the adjusted means for the drawing conditions. The Sidak procedure was used to control for Type I error across the four pairwise comparisons. The results for GPA T1 showed that participants who were in the mandala condition 2 (M = 28.66), had significantly higher levels of GPA, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 25.79), mandala condition 3 (M = 21.99) or in the triangle control condition 4 (M = 23.21).

The results for GPA T2 showed that participants who were in the mandala condition 1 (M = 24.74), and mandala condition 2 (M=25.33) had significantly higher levels of GPA, controlling for the effect of pre-test levels, than participants in the mandala condition 3 (M = 20.92) or in the triangle control condition 4 (M = 22.37).

The results for GPA T3 showed that participants who were in the mandala condition 2 (M = 25.09), had significantly higher levels of GPA, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 22.65), mandala condition 3 (M = 20.59) or in the triangle control condition 4 (M = 21.16).

The results for GPA FU (measured after Time 3 and at follow-up) showed that participants who were in the mandala condition 3 (M = 27.32), had significantly higher levels of GPA, controlling for the effect of pre-test levels, than participants in the mandala

condition 1 (M = 23.95), mandala condition 2 (M = 23.91) but not in the triangle control condition 4 (M = 25.81).

The results for GPA BT1FU (measured before Time 1 and at follow-up) showed that participants in all four groups did not differ significantly, controlling for the effect of pre-test levels: Mandala condition 1 (M= 24.13), mandala condition 2 (M=25.33), mandala condition 3 (M = 26.11), and triangle control condition 4 (M = 24.39).

The results for Basic Positive Emotions are as follows:

Basic Positive Emotion (BPE): BPE T1 [F (3, 353) = 18.41, $p < .001$], BPE T2 [F (3, 350) = 14.10, $p < .001$], BPE T3 [F (3, 352) = 18.73, $p < .001$]; BPE AT3FU [F (3, 355) = 6.27, $p < .001$]; BPE BT1FU [F (3, 336 = 1.62, $p = .184$].

Again, follow-up tests were conducted to evaluate pairwise differences among the adjusted means for the drawing conditions. The Sidak procedure was used to control for Type I error across the four pairwise comparisons.

The results for BPE T1 showed that participants who were in the mandala condition 2 (M = 17.04), had significantly higher levels of BPE, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 15.68), mandala condition 3 (M = 13.29) or in the triangle control condition 4 (M = 14.50). BPE went down for mandala control condition 3 and triangle control condition 4.

The results for BPE T2 showed that participants who were in the mandala condition 2 (M=15.43) had significantly higher levels of BPE, controlling for the effect of pre-test levels, than participants in the mandala condition 3 (M = 12.83) or in the triangle

control condition 4 (M = 13.56). Mandala condition 1 (M = 14.78) had significantly higher levels of BPE than those in condition 3.

The results for BPE T3 showed that participants who were in the mandala condition 2 (M = 15.12), had significantly higher levels of BPE, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 13.59), mandala condition 3 (M = 12.44) or in the triangle control condition 4 (M = 12.75).

The results for BPE FU (measured after Time 3 and at follow-up) showed that participants who were in the mandala condition 3 (M = 16.81), had significantly higher increase in BPE, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 14.44), mandala condition 2 (M = 14.50) but not in the triangle control condition 4 (M = 15.63). BPE increased back to baseline for 3 and 4, while the others remained constant.

The results for BPE T1FU (measured before Time 1 and at follow-up) showed that participants in all four groups did not differ significantly, controlling for the effect of pre-test levels: Mandala condition 1 (M= 14.57), mandala condition 2 (M=15.37), mandala condition 3 (M = 15.96), and triangle control condition 4 (M = 14.96).

Using the value for GNA or BNE respectively, at the beginning of the study or before the three mandala-drawing manipulations or control drawing manipulation, as covariate for each ANCOVA, analysis revealed that the groups did not differ significantly on any of the reported measures of negative affect or negative emotion (see Table A-5).

General Negative Affect (GNA): GNA T1 [$F (3, 344) = 1.53$, $p = .205$], GNA T2 [$F (3, 352) = 1.65$, $p = .178$], GNA T3 [$F (3, 353) = 1.54$, $p = .203$], GNA BT1FU [$F (3, 343) = .645$, $p = .587$], GNA AT3FU [$F (3, 352) = 2.32$, $p = .075$].

Basic Negative Emotion (BNE): BNE T1 [$F (3, 342) = .984$, $p = .401$], BNE T2 [$F (3, 349) = .012$, $p = .998$], BNE T3 [$F (3, 349) = .369$, $p = .775$], BNE BT1 FU [$F (3, 329) = 1.14$, $p = .332$], BNE AT3FU [$F (3, 335) = 1.52$, $p = .209$].

Post-hoc analyses were done to investigate if the emotional affect scales of joviality (happy, joyful, delighted, cheerful, excited, enthusiastic, lively, and energetic) and serenity (calm, relaxed, at ease) were significantly different from control before and after Times 1, 2, 3 and at 1-month follow-up. Joviality is found in the BPE scales, and serenity is not included in either BPE or NPE but listed as Other Affective States.

Using the value for joviality or serenity, respectively, at the beginning of the study or before the three mandala-drawing manipulations or control drawing manipulation as covariate for each ANCOVA, analysis revealed that the groups did differ significantly on the affect of joviality but did not differ significantly on the affect of serenity (see Table A-6).

Joviality (Joy): Joy T1 [$F (3, 352) = 14.53$, $p < .001$], Joy T2 [$F (3, 352) = 14.32$, $p < .001$], Joy T3 [$F (3, 352) = 20.69$, $p < .001$]; Joy AT3FU [$3, 331) = 5.40$, $p < .001$]; Joy BT1FU [$F (3, 331) = 1.26$, $p = .287$].

Follow-up tests were conducted to evaluate pairwise differences among the adjusted means for the drawing conditions. The Sidak procedure was used to control for Type I error across the four pairwise comparisons.

The results for Joy T1 showed that participants who were in the mandala condition 2 (M = 23.77), had significantly higher levels of Joy, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 21.39), mandala condition 3 (M = 18.13) or in the triangle control condition 4 (M = 20.41).

The results for Joy T2 showed that participants who were in the mandala condition 1 (M = 19.52), and mandala condition 2 (M=20.69) had significantly higher levels of Joy, controlling for the effect of pre-test levels, than participants in the mandala condition 3 (M = 16.55), but only the mandala condition 2 had significantly higher levels than those in the triangle control condition 4 (M = 18.48).

The results for Joy T3 showed that participants who were in the mandala condition 2 (M = 20.93), had significantly higher levels of Joy, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 17.95), mandala condition 3 (M = 16.86) or in the triangle control condition 4 (M = 16.45).

The results for Joy FU (measured after Time 3 and at follow-up) showed that participants who were in the mandala condition 3 (M = 22.24), had significantly higher levels of Joy, controlling for the effect of pre-test levels, than participants in the mandala condition 1 (M = 19.34), mandala condition 2 (M = 18.73) but not in the triangle control condition 4 (M = 20.76).

The results for Joy BT1FU (measured before Time 1 and at follow-up) showed that participants in all four groups did not differ significantly, controlling for the effect of pre-test levels: Mandala condition 1 (M= 19.46), mandala condition 2 (M=19.91), mandala condition 3 (M = 21.24), and triangle control condition 4 (M = 19.63).

Below are the results for the analysis of the Serenity Affect Scale (Serenity) where

no significant differences were found:

Serenity T1 [F (3, 352) = 1.76, p = .220], Serenity T2 [F (3, 352) = .790, p = .500],

Serenity T3 [F (3, 353) = 1.52, p = .208], Serenity BT1FU [F (3, 331) = .340, p = .796],

GNA AT3FU [F (3, 331) = .446, p = .721].

Qualitative Analysis

An exploratory analysis was performed on the subjective features of a

representative sample of the mandala drawings from conditions 1 and 2 of this study.

Fifty samples, 25 each of conditions 1 and 2, respectively, were randomly chosen for

evaluation. The mandalas were analyzed by three members of the Positive and Analytical

Psychology Research Team using an ad hoc rating sheet developed by the research team.

The rating sheet was conceived by first asking the members of the research team to

generate criteria for the analysis of the drawings. The categories were: 1. Theme; 2.

Composition/Centeredness; 3. Color, and; 4. Symbols. After reviewing the mandalas, the

categories were revised to: Emotional Theme: Positive, Negative or Both; Change in

Mandala: Positive, Negative or None; Benefit Perceived by the Participant: Yes or No;

and Symbols used. Table A-7 reveals the numbers for the categories of Themes, Change

and Benefits for condition 1, the mandalas expressing present feelings, and condition 2,

the mandalas expressing love and joy, for each of the three time periods. Table A-8 lists

the kinds of symbols used most frequently.

The mandalas were assessed for change over time on the basis of criteria

developed in a recent study of Ikebana which used mandalas as a symbolic expression of

state of mind (Sotirova-Kohli, 2009). The rating system consisted of three categories:

positive change, negative change, and no change. Mandalas were rated for Time 1 and

Time 3 for demonstrating positive change if there was the tendency towards being more

centered, more balanced, more symmetric, more dynamic, more settled, more integrated,

or brighter. If the respective mandala drawings demonstrated at least one of the above as a

major feature it was rated as a positive change. Negative change was rated by the

tendency for the restriction of freedom or transition from open space/landscape to

representation of enclosed space, became more scattered, or used darker colors. No

change was determined if no structural/compositional differences between drawings at

Time 1, Time 2 or Time 3 could be observed, and the general impressions of the drawings

(color and theme) were similar at all three times.

The descriptions and moods that the participants reported were employed along

with the other evaluative tools in this appraisal.

Comparisons of Mandalas in Condition 1 and Condition 2

A total of 25 cases (Times 1, 2, and 3) were reviewed for each condition 1 and 2

with a total number of 75 mandalas for each condition by three members of the research

team. The ratings were then averaged.   Five drawings for conditions 3 and 4 were

evaluated to demonstrate the emotional expression or calming effect just drawing had for

some of the participants.

Positive, Negative, or Both emotional themes were assessed by examining the

drawings, and evaluating the written descriptions given by the participants. It was noted

that themes in Condition 1, Time 1, were positive (n=10), negative (n=5) and both

positive and negative (n=10). Time 2, revealed themes of positive (n=13), negative (n=4) and both (n=8). At Time 3, there were positive (n=19), negative (n=4) and both (n=2). Themes in Condition 2, Time 1, were positive (n=22), no negative and both (n=3). Time 2 had positive (n=20), no negative, and both (n=5). Time 3 had positive (n=23), no negative and both (n=2).

Change over time showed Condition 1 had positive (n=10), negative (n=4), and none (n=11). Condition 2 had positive (n=6), none (n=19) and no negative changes.

Most participants in both groups felt they had gained some benefit from the time spent drawing. In the drawing Condition 1 (n=1) felt they did not get a benefit while (n=4) in the love and joy condition 2 reported not receiving any perceived benefit from their time.

Table A- 8 shows the results of the evaluation of the various symbols used in the drawings. The most commonly used symbol in condition 1 was of representations of people followed by the sun, hearts and music notes. Condition 2 used hearts and suns equally followed by people. The mandalas in both conditions appeared to use symbols less across drawing sessions.

DISCUSSION AND CONCLUSIONS

The current study sought to advance research on the use of creativity, specifically, mandalas, in the expression of emotions. The simple act of creating a mandala once every week for three weeks, while experiencing the emotions of love and joy, was thought to have been a viable intervention to sustain positive affect and to enhance psychological well-being. The results of the present study failed to support hypotheses one, two or three that individuals assigned to the mandala drawing condition expressing current feelings (condition 1), the mandala drawing condition expressing joy and love (condition 2), or the empty mandala (condition 3) would reveal a significant increase in psychological and physical health relative to the control triangle (condition 4) drawing group participants both immediately following the intervention and at a 1-month follow up. Although disappointing, there may be some explanations for the results.

Levels of anxiety and depression were within the range of the normal subset of the nonclinical population and results demonstrate that there were no significant variations from the mean in any of the four conditions. In other studies researchers actually induced anxiety or negative affect in order to measure how effective an intervention was in reducing the anxiety or distress down to pre-intervention levels (Curry & Kasser, 2005; Dalebroux et al., 2008; Falkenstern et al., 2009).

Since there is little research done on the value of mandala drawing, and art therapy research is in its early stages, differences in reported outcomes may be due to the fact that procedures still need to be modified and explored to find the ones that are most suitable to use with this line of research. Measures need to be re-evaluated, tested and used in

research with different populations to understand the best way to assess the apparent intricacies of the creative expression of emotion and work with active imagination as used in the mandala.

Perhaps the current research process stopped short. In the qualitative examination of the participant's mandalas and in self descriptions of the art process, most participants felt they had benefited from their time spent drawing. Adding another empirically validated measure of life satisfaction, engagement with others, or some such social measure might have made the results more quantifiable.

The fourth hypothesis that individuals assigned to the mandala drawing condition expressing joy and love (condition 2) would reveal a significant increase in positive emotion and affect relative to the control triangle (condition 4) group participants both immediately following the intervention and at a 1-month follow up had mixed support. While GPA and BPE did increase after each of the drawing sessions for condition 2, and after Time 2 for condition 1 utilizing the expression of emotion, there was no positive net gain and they went back to baseline, which is why there was no significance between Time 1 and follow-up.

Joviality and serenity measures showed a result parallel to positive and negative emotion, although in the PANAS-X serenity is not a part of the BNE scale, but a separate construct. Nevertheless, joviality did show a significant increase over the measured time period which is what we would have expected given that joy was one of the words we used to induce positive emotion. Serenity was assessed to evaluate if it would elucidate

any sense of peace that was experienced by the participants after the drawing sessions, but the measure did not show a significant difference.

A fascinating observation was that the GPA and BPE for participants in conditions 3 and 4 not only failed to increase but also actually decreased after the three drawing sessions. There was a significant increase from Time 3 to follow-up which showed a rebound effect back to baseline. The results seem to split the participants that were instructed to express emotion and the participants that were just asked to draw an object. The conditions expressing emotions tend to activate one's senses while the activity of not doing anything might seem dull or boring. This result is consistent with the hierarchical view of positive and negative affect (Watson & Clark, 1992; Watson & Clark, 1994; Tellegen, Watson & Clark, 1988). Low positive affect shows a state of lower activation such as possible boredom or sluggishness while high positive affect is a more activated state. It may be that some of those in conditions 3 and 4 were just bored, uninspired, or possibly simply able to be still enough to relax and get sleepy without the distractions of normal college life. GNA and BNE did not decrease significantly, but there was a slight lowering of negative affect and emotion in all conditions which would indicate a state of more calmness.

An interesting observation in the mandalas in condition 1 was that many participants used the mandala as an expression to work through personal developmental change that they were experiencing in their lives as well as a way to express happiness or distress in relationships with others such as parents, lovers, friends, etc. This may be the reason more participants in condition 1 went from drawing negative emotions in

Time 1 to drawing positive or both emotions in Time 2 and/or Time 3, or better yet, integrating the sad with the happy in Time 3 (Figures A-1, A-2 & A-3).

Whereas conditions 1 and 2 asked participants to express their current feelings or feelings of love and joy, conditions 3 and 4 asked participants to do a simple drawing of one item and sit for twenty minutes (Figures A-11 & A-12). Although participants expressing love and joy did experience higher levels of GPE and BPE, they did not necessarily find the process any more satisfying. While many participants in condition 3 and condition 4 felt they gained no benefit from their participation in the drawing sessions, others felt they had time to enjoy the break from schoolwork or actually have time to think through some personal concerns.

In some instances, it was especially disappointing to the participants to be asked just draw a simple object. One participant said, "I was so excited to get to work with colored pencils and crayons, and then told to just draw one thing was disappointing. I still used various colors on my triangle." Yet in others, they revealed that they benefited for having time to sit and do nothing for twenty minutes, "It gave me at least 20 minutes that day that I did not have to do homework or anything else" (see Appendix for more comments).

Although not instructed to express emotions in their drawings, the follow-up questionnaire was given to all participants to answer in all four conditions. Even the participants in the empty circle and triangle conditions seemed to remember what they were feeling as they drew, whether simply boredom or actually expressing emotion through drawing. As demonstrated in Figure A-12, this participant said that they were

expressing anger and frustration because of something that happened just before the drawing session.

Additionally, the qualitative review revealed that hearts, sunshine, people, and flowers were used universally across conditions to express emotions of happiness or even sadness, when the hearts were broken, flowers wilting and clouds over the sun (Figures A-4, A-6). Developmental issues of separation were expressed by the symbols of a separation in the drawings of home and family on one side and clouds over hearts or rain to express their loneliness on the opposite side of the mandala.

Figures A-4 and A-5, A-6 and A-7, and A-8, A-9, and A-10 show positive changed over time in the mandalas. They appeared to go from scattered or segmented to more integration over the three week drawing periods. As Figure A-8 illustrates, it appears that it might have been difficult to understand how to draw feelings into a circle. As time went by, the mandala shows more emotion and possible understanding of what was being asked of the participant.

In sum, the current research did prove to have some positive outcomes. Although there were no gains in psychological or physical health, participants did experience increased positive emotion and affect after each drawing session and appeared to reap personal satisfaction from being able to express emotions in a new and creative way.

Limitations of Present Study

Several limitations were noted in the current research study. This first, is that the participants were college students without being prescreened for anxiety, depression, or posttraumatic symptoms. For example, given the high beginning levels of spiritual

meaning in the sample, it may have been hard to find a significant improvement. Future studies should focus on adult populations or participants with distinct clinical concerns such as depression, posttraumatic stress or bereavement.

Another limitation relates to the conditions in which the participants were tested. The study sessions were held in large classrooms and the influence of the moods and reactions of the other students could have distracted the participants. Although the instructions were read aloud, it appeared that some of the participants did not understand the concept of drawing "emotions" instead choosing to draw the events that created the emotions (see Figure A-13). Held in smaller rooms, there would have been more opportunity to ask for clarification without the embarrassment of holding up the other participants.

A study with college students in 1980 (Ireland & Brekke) found that in the first set of mandalas, the participants showed reserve and uncertainty, as they were unsure what was expected and the current research found similar ambiguity in some of the drawings (See Figure A-8). If the instructions were given with the explanation of what a mandala is and examples given, it is believed that more participants would engage faster and receive more benefit.

Directions for Future Research and Applications

The current research is important in that is explores other avenues of expressing emotions rather than simply relying on verbal or written strategies. Understanding personal feelings and emotions is the focus of many therapeutic interventions, and the mandala could be a useful additional tool for the therapist. Future research should focus

on using mandalas as interventions in therapy to help facilitate the expression of difficult, deep emotions. By helping the patient explore and process the images created in the mandalas as well as the feelings that they evoke, the therapist can help the patient discover meaning and become more self-aware. In addition, future research might follow up the expression of the difficult emotion with another mandala expressing their new found understanding or meaning of the first drawing. That is, they would provide positive meaning to their difficult feelings. Russell & Fosha, 2008 posit that following up negative catharsis with positive emotion provides a way to open up the thought process enabling patients to be more open and receptive in order to understand and build new thought schemas. This work seems incredibly important.

Looking to the future for the present line of research with mandalas, it will be important to improve the drawing directions for the participants to permit them to understand what a mandala is and examples should be shown with actual mandala drawings. As noted above, Ireland & Brekke, 1980 found this problem and future studies can eliminate the uncertainty of the first session for the participants and speed up the learning curve experienced in Time 1. In addition, a deeper explanation of what a mandala is, the image of the Self, or *imago Dei*, should inspire participants to create with deeper expression and meaning.

Some prior research on positive practices indicates that daily experience of the positive emotion intervention seemed to work best (Seligman et al., 2006). As in the loving kindness mediation study (Frederickson et al., 2008), it appears that a daily dose of positive emotion may go farther than just once a week. Future research should provide

opportunities for participants to draw daily instead of once a week. Creating mandalas expressing love and joy did succeed in creating positive affect immediately after the intervention and should prove be an effective intervention to produce sustained positive affect once the "dose" is discovered.

Conclusion

The current research supported some of the hypotheses proposed in the current study. Creating mandalas expressing love and joy do seem to promote positive emotion. By continuing to glean information and to come up with better ways to assess these interventions, perhaps the theories behind them can be more rigorously, scientifically supported. This research is important in that it may help to find ways to help those who may be reluctant or unable to express emotions verbally. Active imagination is a useful mechanism to express not only positive or negative emotions, but deep, spiritual emotions that each human being is aware of but may be unable to articulate.

The current research furthered the exploration of mandalas, positive emotion and expressive therapies. Research designs such as the current study that are easy to replicate are essential in the advancement of scientific research and can encourage the validation of treatments. Perhaps the original study by Henderson et al., 2007 was on the purer track. With so many people experiencing posttraumatic stress disorder, ways to explore and delve into that deep, troubling emotional pain is crucial now and it will continue to be so in the future.

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APPENDIX

Table A-1
Correlations Between All Measures

	SMST1	SMST2	SMST3	PDST1	PDST2	PDST3	PAID T1	PAID T2	PAID T3	PAIA T1	PAIA T2	PAIA T3	PILL T1	PILL T2	PILL T3
SMST1	1.000	.805**	.778**	-.062	-.050	-.221*	-.406**	-.379**	-.356**	-.088	-.052	-.031	-.011	-.018	.002
SMST2		1.000	.851**	-.068	-.169	-.211*	-.419**	-.460**	-.375**	-.136*	-.114*	-.077	-.082	-.056	-.012
SMST3			1.000	-.080	-.186	-.289**	-.406**	-.427**	-.394**	-.126*	-.107*	-.091	-.075	-.085	-.030
PDST1				1.000	.831**	.793**	.274**	.279**	.248**	.294**	.256**	.249**	.215**	.205**	.224**
PDST2					1.000	.854**	.430**	.547**	.467**	.489**	.606**	.537**	.369**	.432**	.417**
PDST3						1.000	.535**	.523**	.603**	.449**	.478**	.457**	.385**	.412**	.380**
PAIDT1							1.000	.792**	.752**	.457**	.482**	.471**	.283**	.289**	.256**
PAIDT2								1.000	.770**	.442**	.541**	.499**	.305**	.326**	.308**
PAIDT3									1.000	.476**	.546**	.564**	.335**	.360**	.360**
PAIAT1										1.000	.829**	.798**	.402**	.377**	.380**
PAIAT2											1.000	.870**	.363**	.385**	.403**
PAIAT3												1.000	.380**	.391**	.432**
PILLT1													1.000	.850**	.809**
PILLT2														1.000	.886**
PILLT3															1.000

Note. SMS 1–3 = Spiritual Meaning Scale at times 1, 2, and follow-up; PDS T1–3= Post-traumatic Stress Disorder Scale at times 1, 2, and follow-up;

PAIDT 1-3=PAI-Depression Scale at times 1, 2, and follow-up;   PAIA T1-3=PAI-Anxiety Scale at times 1, 2, and follow-up;

PILL T1–3= Pennebaker Inventory of Limbic Languidness at times 1, 2, and follow-up.

* $p < .05$. ** $p < .01$.

Table A-2

Means and SD on Individual Assessment Measures

Assessment	Mandala 1 group condition (n=95)* (n=29)PDS		Mandala 2 group condition (n=117)* (n=13)PDS		Mandala 3 group condition (n=86)* (n=15)PDS		Control Triangle Group 4 condition (n=61)* (n=12)PDS	
	M	SD	M	SD	M	SD	M	SD
SMS								
Time 1	64.49	8.99	64.95	9.30	66.93	7.22	63.34	18.85
Time 2	64.36	9.79	65.05	10.12	66.38	7.77	64.51	10.37
Time 3	64.16	10.22	64.89	10.29	67.14	8.21	63.38	12.70
PDS								
Time 1	22.17	10.84	19.77	9.45	18.87	7.43	18.00	8.91
Time 2	16.79	9.50	19.85	8.94	14.33	7.42	16.08	10.97
Time 3	17.69	10.87	19.08	10.34	14.80	9.41	16.83	8.73
PAID								
Time 1	39.47	10.01	38.54	9.48	38.31	8.09	40.05	9.47
Time 2	39.53	10.28	38.99	9.94	37.35	8.20	39.07	9.83
Time 3	39.85	10.62	39.13	10.92	38.94	9.67	38.18	9.86
PAIA								
Time 1	47.53	13.30	46.00	11.11	47.89	12.39	48.79	12.76
Time 2	45.04	12.26	45.59	11.50	46.53	13.24	47.66	12.61
Time 3	44.57	11.44	45.01	12.16	45.48	12.60	45.59	12.00
PILL								
Time 1	120.77	22.74	123.31	23.29	126.88	24.41	125.93	22.05
Time 2	116.05	25.39	120.01	26.69	122.91	28.33	117.92	22.08
Time 3	116.18	25.71	117.23	27.87	122.19	29.16	116.31	25.24

Note. SMS T1–3 = Spiritual Meaning Scale at times 1, 2, and follow-up; PDST 1–3=Post-traumatic Stress Disorder Scale at times 1, 2, and follow-up; PAID T1-3= PAI-Depression Scale at times 1, 2, and follow-up; PAIA T1-3=PAI-Anxiety Scale at times 1, 2, and follow-up; PILL T1–3= Pennebaker Inventory of Limbic Languidness at times 1, 2, and follow-up. *n numbers may be lower as some cases were excluded due to missing data.

Table A-3

Means and SD on PAID and PAIA Subscales for Affective (A), Cognitive (C), and Physical (P)

Assessment	Mandala 1 group condition (n=95)*		Mandala 2 group condition (n=117)*		Mandala 3 group condition (n=86)*		Control Triangle Group 4 condition (n=61)*	
	M	SD	M	SD	M	SD	M	SD
PAID-A								
Time 1	12.22	3.91	11.86	3.73	11.30	3.02	12.03	3.95
Time 2	12.01	3.89	10.93	2.80	10.93	2.80	11.63	4.00
Time 3	12.28	4.02	11.61	3.34	11.61	3.34	11.54	3.91
PAID-C								
Time 1	12.92	4.03	12.26	3.84	12.02	3.51	12.83	4.16
Time 2	13.04	4.52	12.57	4.22	11.50	3.10	12.13	3.55
Time 3	13.30	4.32	12.63	4.20	12.20	3.85	12.09	3.55
PAID-P								
Time 1	14.05	3.71	14.12	3.92	14.61	3.42	14.93	3.05
Time 2	39.53	3.94	14.00	3.62	14.52	3.70	15.00	3.45
Time 3	39.85	3.90	14.18	3.99	14.74	4.04	14.25	3.76
PAIA-A								
Time 1	16.96	6.92	16.12	4.23	16.36	4.26	17.11	4.80
Time 2	15.91	4.60	15.89	4.23	15.98	4.83	16.86	4.60
Time 3	15.78	4.13	15.80	4.40	15.53	4.57	16.18	4.62
PAIA-C								
Time 1	16.24	5.19	16.08	4.85	17.03	5.34	16.82	5.10
Time 2	15.88	5.02	16.07	4.86	16.41	5.20	16.81	5.06
Time 3	15.53	5.07	15.61	4.95	16.13	4.93	15.98	4.99
PAIA-P								
Time 1	14.33	4.20	13.80	3.25	14.54	4.12	14.85	4.31
Time 2	13.79	5.93	13.71	3.58	14.14	3.35	13.98	3.85
Time 3	13.24	3.57	13.59	3.97	13.94	4.54	13.43	3.68

Note.   PAID T1-3= PAI-Depression Scale at times 1, 2, and follow-up; PAIA T1-3=PAI-Anxiety Scale at times 1, 2, and follow-up;

*n numbers may be lower as some cases were excluded due to missing data.

Table A-4

Means and SD for Individual Measures for Positive Affect and Emotion

Assessment	Mandala 1 group condition (n=94)*		Mandala 2 group condition (n=117)*		Mandala 3 group condition (n=86)*		Control Triangle Group 4 condition (n=61)*	
	M	SD	M	SD	M	SD	M	SD
GPA								
BT 1	25.27	7.55	25.07	7.80	25.00	7.88	25.70	8.77
AT1***	25.83	8.60	28.34**	9.89	21.81	8.78	23.61	9.30
BT2	24.63	7.97	23.61	7.86	24.35	8.25	23.92	7.88
AT2***	25.18**	8.84	24.91**	8.49	21.13	8.61	22.20	8.70
BT3	23.70	8.39	23.26	8.35	23.08	9.01	22.77	9.27
AT3***	23.05	8.69	25.09**	9.02	20.44	8.92	20.74	9.91
FU+	24.16	8.01	25.32	8.49	25.99**	9.14	25.06	8.90
BPE								
BT 1	15.73	4.58	16.08	4.86	16.35	4.88	16.25	5.13
AT1***	15.41	5.02	17.04**	5.68	13.49	5.01	14.63	5.18
BT2	15.05	4.79	14.47	4.46	15.07	4.95	14.94	4.37
AT2***	14.94	5.00	15.04**	4.88	13.00	5.07	13.70	4.85
BT3	14.52	4.76	14.23	4.86	14.10	5.05	14.10	5.33
AT3***	13.82	4.97	15.08**	5.02	12.62	4.85	12.62	5.61
FU+	14.52	4.62	15.30	5.00	15.00**	5.37	15.00	4.87

Note: GPA= General Positive Affect; BPE=Basic Positive Emotion; BT1, 2, 3= Before Time 1, 2, 3;

AT1, 2, 3= After Time 1, 2, 3; FU = Follow-up.

* ns may be different in each group because not all participants completed all measures.

** $p < .05$.

***$p < .05$ for overall ANCOVA

+ $p < .05$ for overall ANCOVA for AT3FU but not BT1FU

Table A-5

Means and SD for Individual Measures for Negative Affect and Emotion

Assessment	Mandala 1 group condition (n=94)*		Mandala 2 group condition (n=113)*		Mandala 3 group condition (n=81)*		Control Triangle Group 4 condition (n=61)*	
	M	SD	M	SD	M	SD	M	SD
GNA								
BT 1	16.40	6.63	14.49	5.16	13.80	3.73	15.36	5.73
AT1	14.31	5.53	12.78	4.02	13.00	3.74	14.11	5.17
BT2	14.77	5.67	14.34	5.09	14.29	5.50	14.21	5.51
AT2	13.22	4.50	12.79	4.43	13.45	4.47	13.36	5.51
BT3	14.00	4.44	13.98	4.84	14.02	4.36	13.70	4.93
AT3	12.83	4.11	12.58	4.10	12.93	3.02	13.18	4.61
FU	14.97	6.57	14.23	5.42	13.28	4.58	13.69	4.64
BNE								
BT 1	9.31	3.40	8.41	2.81	8.10	2.19	8.65	2.59
AT1	8.42	3.05	7.69	2.14	7.61	2.14	7.85	1.98
BT2	8.57	3.15	8.07	2.63	8.00	2.72	8.11	2.68
AT2	7.98	2.70	7.58	2.41	7.54	2.29	7.63	2.59
BT3	8.11	2.49	7.91	2.44	7.63	2.02	7.95	2.49
AT3	7.61	2.45	7.43	2.12	7.15	1.44	7.58	2.23
FU	8.57	3.57	8.17	2.88	7.51	2.03	7.96	2.22

Note: Note: GNA= General Negative Affect; BNE=Basic Negative Emotion; BT1, 2, 3= Before Time 1, 2, 3;

AT1, 2, 3= After Time 1, 2, 3; FU = Follow-up.

* ns may be different in each group because not all participants completed all measures.

Table A-6

Means and SD for Individual Measures for Joviality and Serenity

Assessment	Mandala 1 group condition (n=94)*		Mandala 2 group condition (n=117)*		Mandala 3 group condition (n=86)*		Control Triangle Group 4 condition (n=61)*	
	M	SD	M	SD	M	SD	M	SD
JOY								
BT 1	20.31	7.78	21.14	7.88	21.10	7.73	21.92	5.73
AT1***	20.89	8.56	23.85**	8.49	18.86	7.66	20.95	8.24
BT2	19.27	7.05	18.34	6.59	19.51	7.03	19.31	6.47
AT2***	19.73	7.40	20.11**	7.02	16.49	7.22	18.76	7.42
BT3	19.02	7.13	18.05	7.03	17.70	7.13	18.92	7.71
AT3***	18.49	7.32	20.62**	7.25	16.31	7.05	17.10	7.94
FU+	19.31	6.80	19.91	7.20	22.13**	7.70	20.00	7.36
SER								
BT 1	9.49	2.99	10.27	2.67	10.82	3.37	10.26	2.68
AT1	9.74	3.07	10.20	3.20	10.39	3.37	10.48	2.89
BT2	9.12	2.84	9.15	2.63	9.58	3.05	9.60	2.68
AT2	9.38	2.92	9.83	2.90	9.75	3.08	9.90	2.72
BT3	9.51	3.18	9.30	2.78	9.22	3.22	9.57	3.07
AT3	9.79	3.12	9.78	3.03	9.21	3.39	9.43	3.06
FU	9.01	2.79	9.14	2.71	9.15	2.77	9.33	2.36

Note: JOY= Joviality; SER=Serenity; BT1, 2, 3= Before Time 1, 2, 3;
AT1, 2, 3= After Time 1, 2, 3; FU = Follow-up.
* ns may be different in each group because not all participants completed all measures.
** $p < .05$.
***$p< .05$ for overall ANCOVA
+ $p< .05$ for overall ANCOVA for AT3FU but not BT1FU

Table A-7

Theme, Change and Perceived Benefit of the Mandalas Expressing Feelings

| Category	Mandala Condition 1 (n=25)												Mandala Condition 2 (n=25)											
	Time 1				Time 2				Time 3				Time 1				Time 2				Time 3			
	Rater				Rater				Rater				Rater				Rater				Rater			
	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG
Theme																								
Positive	7	14	10	**10**	15	11	14	**13**	16	19	21	**19**	25	18	22	**22**	23	15	23	**20**	25	20	24	**23**
Negative	11	0	2	**5**	8	1	2	**4**	7	3	2	**4**	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**
Both	7	11	13	**10**	2	13	9	**8**	2	3	2	**2**	0	7	3	**3**	2	10	2	**5**	0	5	1	**2**
Change																								
Positive	13	5	12	**10**									12	4	3	**6**								
Negative	4	5	2	**4**									0	0	0	**0**								
None	8	15	11	**11**									13	21	22	**19**								
Benefits																								
Yes	22	24	25	**24**									20	23	20	**21**								
No	3	1	0	**1**									5	2	5	**4**								

Note: Theme=Emotional theme; Change= Change in mandala; Benefits= Expressed benefit by participant

Change and Benefit were assessed across the three time periods

Table A-8

Symbols Used in the Mandala Conditions 1 and 2

Category	Mandala Condition 1 (n=25)			Mandala Condition 2 (n=25)		
	Time 1	Time 2	Time 3	Time 1	Time 2	Time 3
Symbols						
Beach	0	0	5	0	2	2
Birds	1	1	2	3	5	0
Butterfly	1	3	1	1	1	1
Clouds	4	8	6	4	7	1
Cross	4	1	0	6	8	5
Flowers	6	8	5	6	6	6
Hearts	7	2	3	15	8	8
House	5	2	2	2	0	0
Music	7	2	0	6	1	2
Peace sign	2	1	4	3	0	1
People	9	4	0	11	3	6
Pet	2	1	1	1	3	1
Rain	3	3	1	1	5	2
Rainbow	1	1	0	1	2	2
School items	*	*	*	*	*	*
Smiley	3	1	2	6	1	1
Stars	4	3	3	2	4	4
Sun	8	8	4	16	11	6
Tears	2	1	0	1	4	2
Trees	3	4	4	2	7	7
Water	3	5	2	2	3	5
Abstract	4	3	3	0	2	5

Note: There were many different representations of school items such as computers, grades, desks, equations, books, etc.
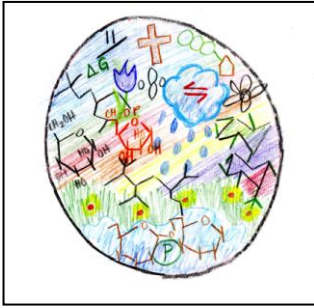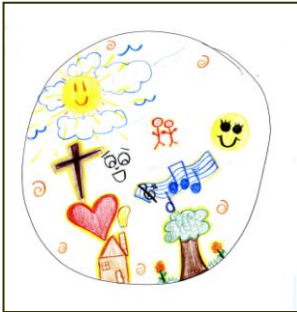
Figure A- 1.
Mandala with conflicting concerns, Condition 1, T1

Figure A-2.
Mandala expressing happiness, Condition 1, T2

Figure A-3.
Mandala integrating negative with positive, Condition 1, T3

Figure A- 4.
Using many symbols Condition 2, T1

Figure A-5
Integrated using less symbols Condition 2, T3

Figure A-6.
Using many symbols Condition 2, T1

Figure A-7
Integrated using less symbols Condition 2, T3
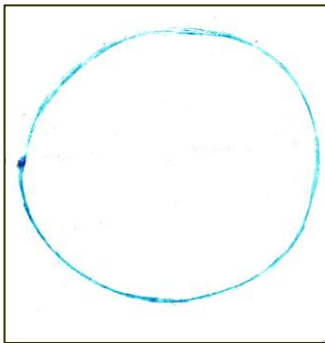
Figure A-8.
Mandala not into emotion
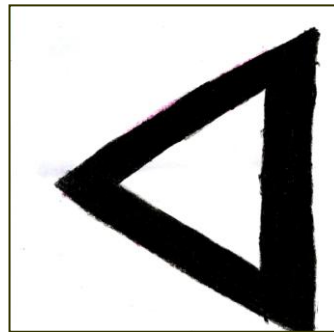*Condition 1, T1*

Figure A-9.
Mandala
Condition 1, T2

 Figure A-10
Mandala
Condition 1, T3

Figure A-11
Drawing of empty circle

Figure A-12
Drawing of triangle showing emotion

Figure A-13
Drawing of events
Condition 1, T1

Comments from Participants for the Study

Comments from participants in the current feelings mandala drawing condition 1:

"I felt better after putting my emotions on paper in a more abstract form."

"The study was actually a good way to relax and forget about things you needed to do."

Comments from participants in the love and joy mandala drawing condition 2:

"During my participation in the drawing sessions I was going through difficult changes in my life… I was in a state of depression when I started this experiment. Drawing was the best way to release my emotions. It was the only thing that made me feel better since it happened… I continue to draw. Thank you. This experiment helped me more than it might have helped you."

"It relaxed me when I was stressed and took my mind off of small petty things and reminded me of the true value in my life."

"It made me want to be a better person."

Comments from participants in the empty mandala drawing condition 3:

"I thought a lot about the traumatic event I went through but all in all I relaxed more."

"I was mad that all we had to draw was a circle, I wanted to draw something different."

Comments from participants in the triangle drawing condition 4:

"It seemed like the follow-up questionnaire helped me realize what I was going through now that the phases are over."

"It was weird, but I liked it. It helped me realize more about myself."

"This is so lame. I want to draw a cool picture to express myself and objects that might express me instead of this triangle."

Drawing Instructions Mandala

Drawing instructions for Condition 1, the current feelings mandala experimental condition are as follows:

(On the first day): What I would like to have you do over the next three weeks is draw three different pictures. Today as you begin drawing, I would like you to draw a large circle (see example). Then I would like you to fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the feelings that come up now. Fill it with any shapes, symbols, patterns, designs, or colors that feel right to you. It can be as abstract or structured as you like. Try not to censor yourself or allow any "rules" to interfere; there is no right or wrong way to fill in your circle. Let your emotions and intuitions guide you. The only restriction is that you DO NOT WRITE ANY WORDS. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed. Before you begin, take a few deep breaths, and then begin drawing.

(On the second drawing day): I hope your drawing assignment went well last week. Today, I want you to draw another picture. As you begin the drawing, I would like you to draw a large circle (see example). Then I would like you to fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the feelings that come up now. Fill it with any shapes, symbols, patterns, designs, or colors that feel right to you. It can be as abstract or structured as you like. Try not to censor yourself or allow any "rules" to interfere; there is no right or wrong way to fill in your circle. Let your emotions and intuitions guide you. The only restriction is that you DO

NOT WRITE ANY WORDS. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed. Before you begin, take a few deep breaths, and then begin drawing.

(On the final drawing day): This is the last day you will be asked to draw. Today, I want you to draw another picture. As you begin the drawing, I would like you to draw a large circle (see example). Then I would like you to fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the feelings that come up now. Fill it with any shapes, symbols, patterns, designs, or colors that feel right to you. It can be as abstract or structured as you like. Try not to censor yourself or allow any "rules" to interfere; there is no right or wrong way to fill in your circle. Let your emotions and intuitions guide you. The only restriction is that you DO NOT WRITE ANY WORDS. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed. Before you begin, take a few deep breaths, and then begin drawing.

Drawing instructions for Condition 2, the positive emotions of love and joy

mandala experimental condition are as follows:

(On the first day): What I would like to have you do for the next three weeks is to create

three different drawings representing the most wonderful, awe-inspiring experience of

your life. Think of an experience where you felt love, complete acceptance, amazing

grace, gratitude, abiding joy, humility, compassion, kindness, happiness, and hope. As

you draw, I want you to really let go and explore your deepest emotions and feelings.

You can draw a representation of the same positive experience on all three days or

different experiences each day. Whatever you choose to draw about, it is critical that you

really delve into your deepest emotions.

As you begin the drawing, I would like you to draw a large circle (see example).

Then fill the circle with whatever you feel belongs there and best represents your

emotions concerning your most wonderful experience. Fill it with any shapes, symbols,

patterns, designs, or colors that feel right to you. It can be as abstract or structured as you

like. Try not to censor yourself or allow any "rules" to interfere; there is no right or

wrong way to fill in your circle. Let your emotions and intuitions guide you. The only

restriction is that you DO NOT WRITE ANY WORDS. It is important that you try to

draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20

minutes have passed. Before you begin, take a few deep breaths, and then begin drawing.

(On the second drawing day): I hope last week's drawing session went well. Today, I

want you to draw another picture representing a wonderful experience in your life. Think

of an experience where you felt love, complete acceptance, amazing grace, gratitude,

abiding joy, humility, compassion, kindness, happiness, and hope. As you draw, I want you to really let go and explore your deepest emotions and feelings. Whatever you choose to draw about, it is critical that you really delve into your deepest emotions.

As you begin the drawing, I would like you to draw a large circle (see example). Then fill the circle with whatever you feel belongs there and best represents your emotions concerning your wonderful experience. Fill it with any shapes, symbols, patterns, designs, or colors that feel right to you. It can be as abstract or structured as you like. Try not to censor yourself or allow any "rules" to interfere; there is no right or wrong way to fill in your circle. Let your emotions and intuitions guide you. The only restriction is that you DO NOT WRITE ANY WORDS. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed. Before you begin, take a few deep breaths, and then begin drawing. (On the final drawing day): You have made it through the first two drawing sessions, and today is the last one. As you draw today, I again want you to delve into your deepest feelings and emotions about a wonderful experience in your life. Think of an experience where you felt love, complete acceptance, amazing grace, gratitude, abiding joy, humility, compassion, kindness, happiness, and hope. As you draw, I want you to really let go and explore your deepest emotions and feelings. Whatever you choose to draw about, it is critical that you really delve into your deepest emotions.

As you begin the drawing, I would like you to draw a large circle (see example). Then fill the circle with whatever you feel belongs there and best represents your emotions concerning your wonderful experience. Fill it with any shapes, symbols,

patterns, designs, or colors that feel right to you. It can be as abstract or structured as you like. Try not to censor yourself or allow any "rules" to interfere; there is no right or wrong way to fill in your circle. Let your emotions and intuitions guide you. The only restriction is that you DO NOT WRITE ANY WORDS. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed. Before you begin, take a few deep breaths, and then begin drawing.

Drawing instructions for Condition 3, the circle only mandala experimental condition are as follows:

(On the drawing first day): What I would like to have you do over the next weeks is draw three different circles. Today, I would like you to draw a large circle (see example). You must sit quietly after you draw your circle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.

(On the second drawing day): I hope your drawing assignment went well last week. Today, I want you to draw another large circle (see example). You must sit quietly after you draw your circle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.

(On the final drawing day): This is the last day you will be asked to draw. Today, I want you to draw another large circle (see example). You must sit quietly after you draw your circle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.

Drawing instructions for the Condition 4, triangle control condition are as follows:

<u>*(On the drawing first day):*</u> What I would like to have you do over the next weeks is draw three different drawings. Today, I would like you to draw a large triangle (see example). You must sit quietly after you draw your triangle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.

 <u>*(On the second drawing day)*</u>*: I hope your drawing assignment went well last week.* Today, I would like you to draw a large triangle (see example). You must sit quietly after you draw your triangle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.
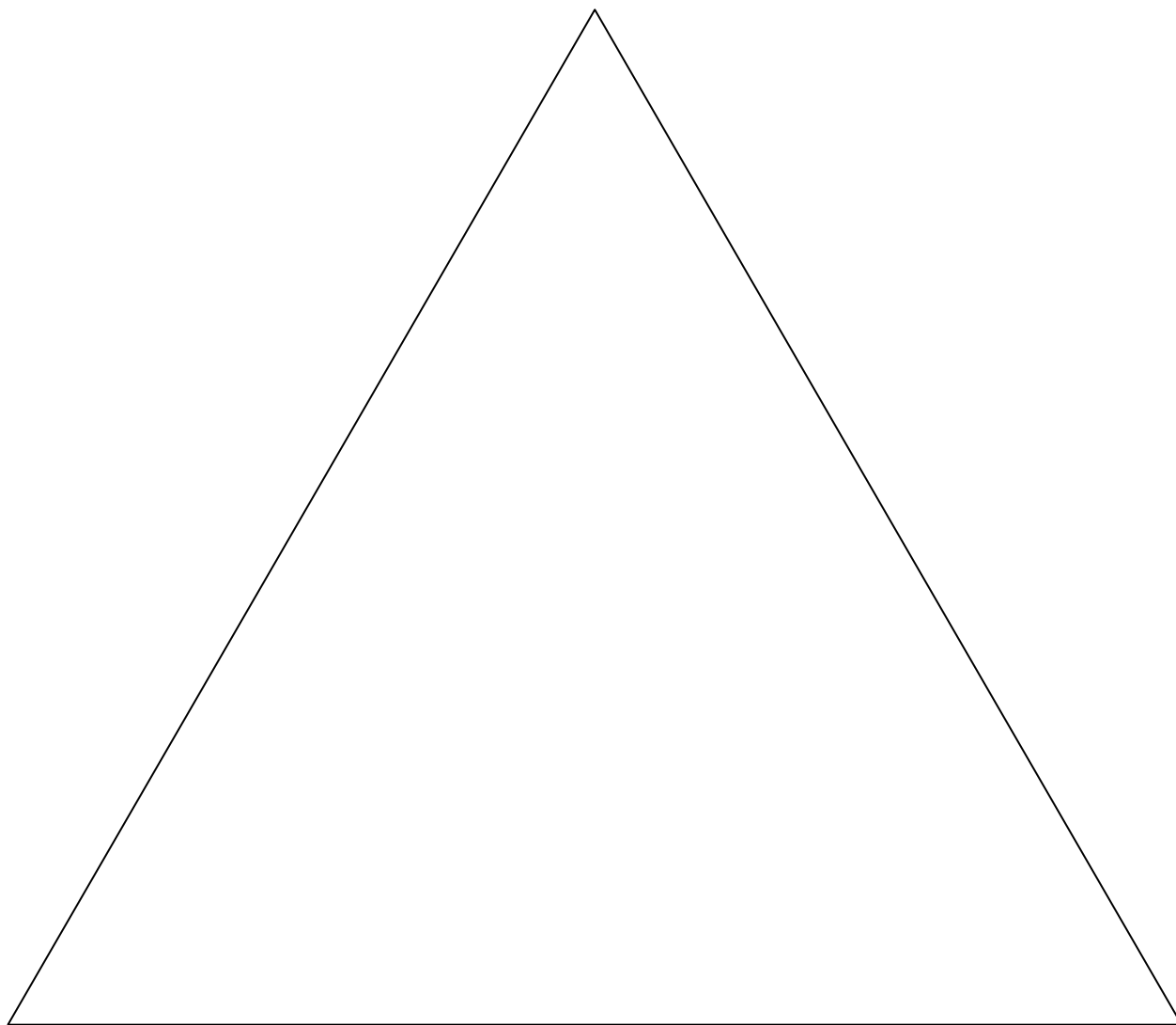
<u>*(On the final drawing day):*</u> *This is the last day you will be asked to draw.* Today, I would like you to draw a large triangle (see example). You must sit quietly after you draw your triangle. A researcher will let you know when 20 minutes has passed. Before you begin, take a few deep breaths, and then begin drawing.

Example of Circle:
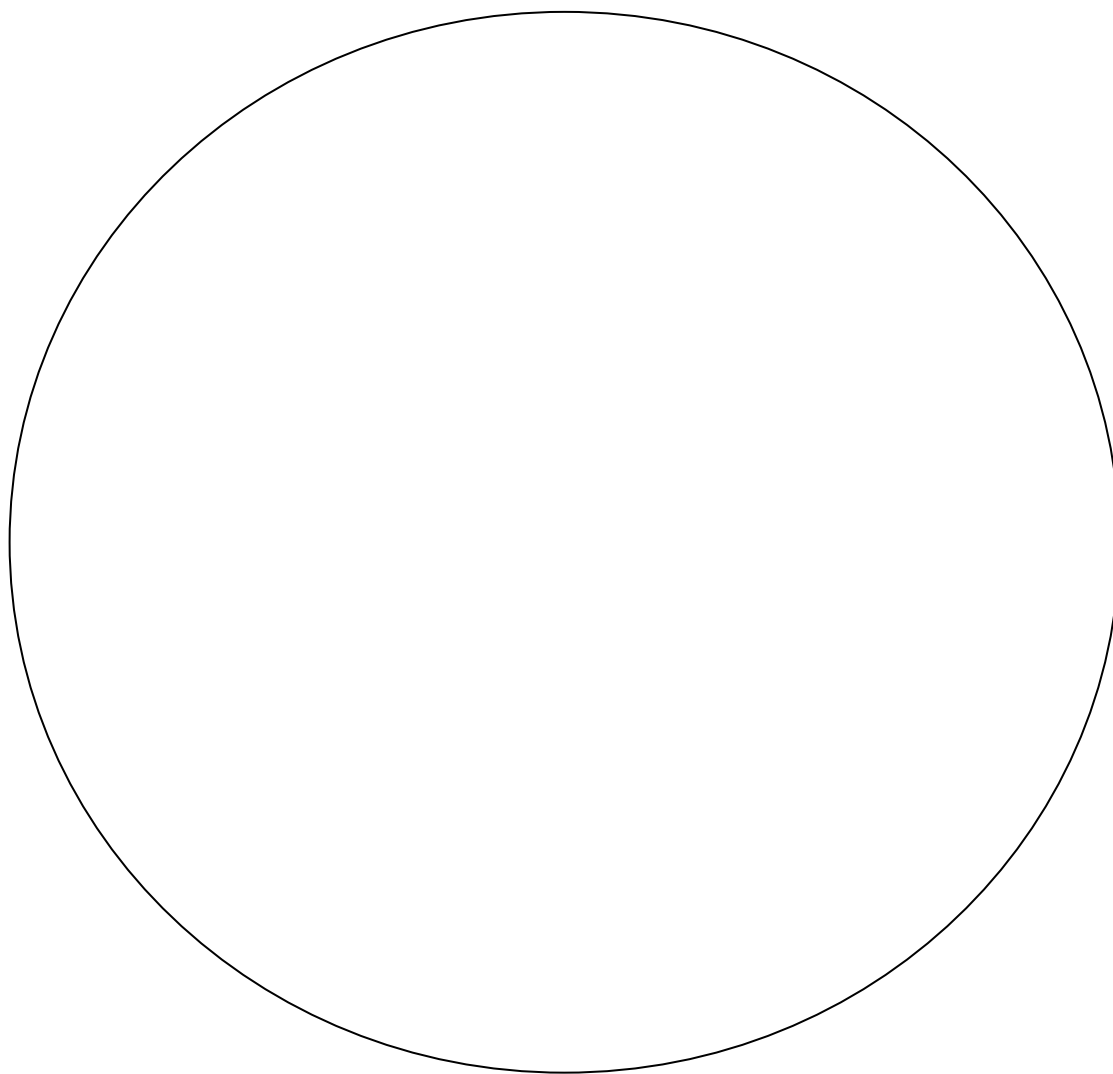
Example of Triangle:

Follow-up Questionnaire

ID Number: _____ Phone number: _____

Email Address: _____

Here are your three drawings. Please write a description of the emotions and feelings that you experienced as you drew your drawings.

1._____

_____

_____

_____

2._____

_____

_____

3._____

_____

_____

Please write a description of the symbolic meaning of each of your drawings. What did the colors represent? What did the symbols and shapes represent?

1._____

_____

_____

_____

2._____

_____

_____

3._____

_____

_____

_____

What, if any benefits did you receive from your drawing sessions?

_____

Other Comments?

_____

This information is intended for use in an examination the qualitative features and symbolic meaning of the drawings.

As with the rest of the study, your answers are confidential.

Mandala Rating Sheet

ID # M__	Mandala 1	Mandala 2	Mandala 3
1. Theme			
Positive			
Negative			
Both			
2. Change over time (compare the three)			
Positive			
Negative			
No Change			
3. Objects/Symbols			
Beach			
Birds			
Butterfly			
Clouds			
Cross			
Flowers			
Hearts			
House			
Music			
Peace sign			
People			
Rainbow			
School items			
Smiley			
Stars			
Sun			
Tears			
Trees			
Water			
Abstract			
Other:			

Positive change (T1 – T3):
Tendency towards being more centered, more balanced, more symmetric, more dynamic, more settled, brighter. If the respective mandala drawings demonstrated at least one of the above as a major feature it was rated as a positive change.

Negative change (T1 – T3): Tendency to restriction of freedom/dynamism or transition from open space/landscape to representation of encapsulated life (enclosed/indoors) could be noted.

No change (T1 – T3): No structural/compositional differences between drawings at Time 1 and Time 2 could be observed, and the general impressions of the drawings (color and theme) were similar at both times.

Participant Comments compared with change, symbols, etc: **Benefit Expressed?**

_____

VITA

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Publications:

Henderson, P., Rosen, D., & Mascaro, N. (2007). Empirical study on the healing nature of mandalas. *Psychology of Aesthetics, Creativity, and the Arts*. Vol 1, No. 3, 148-154. (In the top five articles downloaded since the journal's inception).

Rosen, D., Mascaro, N., Arnau, R., Escamilla, M., Tai-Seale, M., Ficht, A. Sanders, C., **Henderson, P.,** Hoang, U., & Stephenson, K. (2010) Depression in Medical Students: Gene-Environment Interactions. *Annals of Behavioral Science and Medical Education.*

Sotirova-Kohli, M., Rosen, D., Smith, S., Reece, S., and **Henderson, P**. (2010). Empirical Study of Kanji as Archetypal Images: Understanding the Collective Unconscious as Part of Japanese Language. *Journal of Analytical Psychology*.