

The Healing Nature of Mandalas: Empirical Study of Active Imagination

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Abstract

Mandalas in therapy were first used by Carl Jung, who found that the act of drawing mandalas had a calming and healing effect on patients while at the same time facilitating psychic integration. There are no reported empirical studies of the healing impact of mandalas on mental health. However, James Pennebaker has studied the efficacy of written expression regarding traumatic events in promoting mental well-being (Pennebaker, 1997). Using the rationale of Pennebaker's written disclosure paradigm, the primary purpose of the present study was to examine the benefits for those suffering from Post Traumatic Stress Disorder (PTSD) of processing traumatic events through the creation of mandalas. Benefits to participants were measured in terms of changes in the variables of PTSD symptoms, depressive symptoms, anxiety, spiritual meaning, and the frequency of occurrence of physical symptoms and illness. Relative to those in the control condition, individuals assigned to the experimental mandala-creation group reported greater decreases in symptoms of trauma at the 4-week follow up. Such results should motivate research evaluating benefits to individuals who are either reluctant or unable to write about their experiences, or who prefer visual-spatial to verbal exercises.

Introduction

The expression and disclosure of previously experienced traumatic events is associated with better subsequent physical and mental health (Esterling, L'Abate, Murray, & Pennebaker, 1999; Smyth & Helm, 2003). Recent attention has been given to the efficacy of written expression of traumatic events in promoting physical and psychological well-being, and various studies have resulted in a body of research supporting a written disclosure paradigm (see Pennebaker, 1997 for a review). According to this paradigm set forth by James Pennebaker, writing about traumatic or stressful events in an emotional way for as little as 15 minutes over 3 to 4 consecutive days brings about improvements in physical and mental health (Pennebaker & Seagal, 1999).

The principle of therapeutic exposure posits that repeated exposure to aversive conditioned stimuli leads to the extinguishment of negative emotions associated with such stimuli, resulting in beneficial outcomes (Foa & Rothbaum, 1998). Some researchers contend that written disclosure serves as a context in which individuals are repeatedly exposed to traumatic memories (i.e., exposure to aversive stimuli and the negative emotions associated with it), which allows for the gradual extinction of negative emotional associations across sessions (Kloss & Lisman, 2002; Pennebaker, 1997; Sloan & Marx, 2004). This is theorized to be one of the mechanisms underlying the overall effectiveness of the written disclosure paradigm.

Another theory regarding the effectiveness of written disclosure on physical and mental health has to do with the cognitive changes associated with this type of writing. Research has suggested (e.g., Esterling et al., 1999; Park & Blumberg, 2002; Pennebaker, 1997) that the formation of a narrative incorporating the details of a traumatic event with the thoughts and emotions surrounding the experience can facilitate a cognitive integration of the experience. This cognitive restructuring serves to resolve the traumatic experience as well as bring a sense of meaning to the event as insights are gained through the process of writing. Once a meaningful and integrated narrative is formed, it is hypothesized that the traumatic event can then be summarized, stored, and allowed to become a memory rather than a ghost that chronically haunts

consciousness, subsequently leading to a decrease in psychological distress (Smyth, True, & Souto, 2001).

Although the innovative work of Pennebaker and other researchers has supported the utility of the written disclosure paradigm and the numerous benefits associated with the written disclosure of trauma, the written disclosure paradigm has been found to be ineffective among individuals with disordered cognitive processes or relatively severe depression (Gidron, Peri, Connolly, & Shalev, 1996; Stroebe, Stroebe, Schut, Zech, E., & van den Bout, 2002). Individuals who have difficulties with cognitive processing (e.g., those with schizophrenia, autism, learning disorders, mental retardation, or dementia) often lack the cognitive faculties necessary to form a cohesive written narrative. There are also individuals who lack a strong enough command of written language to engage in a written disclosure task, such as children and those who are illiterate or undereducated. And of course there are those who simply prefer visual-spatial exercises and experiences as opposed to verbal ones. Disclosure of trauma by such individuals might be more effectively accomplished through a creative artistic task which one can symbolically depict a traumatic event.

The vast majority of written disclosure studies involve only written expression, however; Judith Pizarro (2004) performed a recent study that examined whether art therapy was as effective as writing therapy in improving the outcomes of psychological and health measures. The study compared the efficacy of art and writing therapy on reducing the effects of trauma exposure. Pizarro sampled 41 participants using two experimental groups (expressive art therapy or writing therapy) and a control art condition. Consistent with Pennebaker's findings, there was a significant decrease 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 surmises, "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). A combination of the two was suggested in which writing could heal while art could make the process more enjoyable thus increasing therapy compliance.

Rather than completely dismissing art therapy as an effective means of processing trauma, an artistic task that lends itself particularly well to the symbolic expression and disclosure of a traumatic event is mandala drawing. A mandala is a circular drawing that is thought to promote psychological healing and integration when created by an individual. The use of the mandala as a therapeutic tool was first espoused by Carl Jung, who suggested that the act of drawing a mandala has a calming and healing effect on its creator while at the same time facilitating psychic integration. The mandala serves as a symbolic representation of emotionally laden and conflicting material, yet at the same time provides a sense of order and integration to this material. In this manner, drawing a mandala serves a similar function to written disclosure in that it provides organization to complex emotional experiences.

Art psychotherapists today widely use the mandala as a basic tool for self-awareness, self-expression, conflict resolution, and healing (Slegelis, 1987). Within the realm of art therapy the mandala generally refers to any art form that is executed within a circular context. The mandala has been found to be an effective therapeutic tool within numerous populations and settings, including: schizophrenia and psychotic disorders, dissociative disorders (Cox & Cohen, 2000), Attention-Deficit Hyperactivity Disorder (Smitherman-Brown & Church, 1996), and dementia patients (Couch, 1997). Efforts have also been made to use mandalas as a diagnostic tool and to formalize mandala analysis so that it is a more objective process (Kellogg, Mac Rae, Bonny, & di Leo, 1977; Kellogg, 1978)

Pure empirical research on the use of mandalas as a therapeutic tool is sparse. Some research has been undertaken to formalize the use of mandalas as a diagnostic tool in therapy (Kellogg, 1978) and to develop a more objective system by which to analyze mandala symbolism (Kellogg et al., 1977). Although most research into the healing aspects of mandala drawing has been limited to case studies and clinical observations (Couch, 1997; Kellogg et al., 1977; Smitherman-Brown & Church, 1996), they do provide promising results.

One such study was conducted by Cox and Cohen (2000), examining the patterns in mandala artwork produced by an individual diagnosed with Dissociative Identity Disorder (DID). Most of these individuals have been shamed into secrecy by childhood abusers and find they are unable to discuss sensitive information regarding abuse. Symbolic coding of traumatic events in drawings allows clients the ability to maintain secrecy (both from their therapists and from themselves) while at the same time symbolically communicating and resolving traumatic material (Cohen & Cox, 1989, 1995).

Another study by M.H. Slegelis (1987) sought to examine Jung's tenet that drawing within the circular form of the mandala promotes psychological healing. More specifically, drawing mandalas would be expected to have a calming and relaxing effect on their creators. This is one of the first and only attempts undertaken to scientifically examine Jung's theory that mandala creation promotes psychological health. Although the results of this study lend support to the argument that mandalas have calming and healing properties, the design and analyses are relatively weak and thus limit the inferences that can be drawn from the results.

The present study sought to undertake the empirical testing of the psychological and physical health benefits of mandala drawing within a trauma population. In choosing a research design and methodology that would adequately achieve this goal, the author drew upon the techniques and methodology employed in a body of research by James Pennebaker and colleagues that examines the physical and psychological health benefits of disclosure of traumatic events through writing. The current study design is modeled closely after the recent study conducted by Sloan and Marx with the exception of the exclusion of the salivary cortisol samples (See Sloan & Marx, 2004).

The primary purpose of the current study was to examine the healing aspects of drawing mandalas. Specifically, the psychological and physical health benefits of mandala drawing as a creative means of traumatic disclosure that would symbolically organize and integrate emotions and experiences, while serving the same function as writing a narrative. The drawing of a mandala provides cognitive integration and organization to complex emotional experiences that will give a sense of personal meaning as well as serving as a mechanism of therapeutic exposure as does the written disclosure task. These benefits were measured in terms of changes in the variables of trauma symptom severity, depression, anxiety, spiritual meaning, and the frequency of occurrence of physical symptoms and illness.

It was hypothesized that individuals assigned to a mandala drawing condition would show a significant increase in psychological and physical health relative to control group participants both immediately following the intervention and at a 4-week follow up. Furthermore, it was expected that those in the mandala group would report more improvement in mental and physical health at the 4-week follow up than they report directly following the completion of the intervention, whereas the control group would show no significant change across the entirety of the study. Improvements in psychological health would be evidenced by decreases in self-reported depression, anxiety, PTSD symptom severity, and an increase in spiritual meaning. Improvements in physical health would be determined through decreases in the self-reported frequency of occurrence of physical symptoms, physician visits, and sick days.

Methods

Participants

The qualified participants consisted of 36 undergraduate students participating for course credit, recruited from Introduction to Psychology classes at a large southwestern university. There were both male (n=7) and female (n=26) students ranging in age from 18 to 23 (mean age =18.39). Three participants did not indicate sex or age. These individuals were selected through a prescreen procedure for both the experience of trauma and trauma symptom severity using the Posttraumatic Stress Disorder Scale (PDS; Foa, 1996). Those who reported experiencing one or more traumatic stressor(s) (determined by responses drawn from a checklist contained in the PDS) and showed at least moderate levels of Post Traumatic Stress Disorder (PTSD) symptom severity (i.e., greater than 10 on the PDS) were regarded as potential participants for the study. Potential participants were excluded from the study if they reported being currently in psychotherapy or currently taking psychotropic medication. This exclusion criterion was included to ensure that changes in outcome measures were due to experimental manipulation and not the effects of therapy or medication. These inclusion criteria were modeled after the Sloan & Marx study on written disclosure. (See Sloan & Marx, 2004, for a detailed rationale for choosing these criteria).

Measures

Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1996) is a 49-item self-report measure to aid in the detection and diagnosis of PTSD. Participants report on PTSD symptoms that they have experienced within the last month. This measure not only yields PTSD diagnostic information but also provides an index of PTSD symptom severity. Items are rated with regard to presence (i.e., yes or no) and with regard to symptom severity. Symptom severity scores are rated from below 10 (mild), 10-20 (moderate), 21-35 (moderate-to-severe), to above 35 (severe) (Foa, 1996). PDS symptom severity scores were used as the primary means of indicating changes in the severity of participants' traumatic symptoms from baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). In the present study, the coefficient alpha for the symptom severity score of the PDS was .87.

Beck Depression Inventory, second version (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item self-report measure that assesses the symptoms of depression. The BDI-II was included to examine changes in depressive symptomatology from baseline (time 1) to completion of the intervention (time 2) to one-month follow-up (time 3). Its coefficient alpha in the current study was .89.

State-Trait Anxiety Inventory (STAI – Spielberger, 1983) is a 40-item, self-report measure that assesses levels of transitory feelings of anxiety, worry, and fear (state), and the more stable (trait) tendencies to feel worried and react anxiously. Test-retest reliability for the Trait-anxiety scale is good (.65 to .86), whereas the range for the State-anxiety scale is .16 to .62. This low level of stability for the State-anxiety scale is expected because responses to the items on this scale are thought to reflect the influence of transient situational factors at the time of testing. The STAI was included in this study to assess changes in both state and trait anxiety levels from baseline to follow-up at times 2 and 3. The trait items of the STAI had a coefficient alpha of .92 and the state items had an alpha of .90.

Spiritual Meaning Scale (SMS; Mascaro, Rosen, & Morey, 2003) 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 has been shown to have a one-month test-retest

reliability of .84 and an internal consistency of .87. Convergent and discriminate validity are good as well. The SMS was included as a measure in this study because having meaning in one's life positively correlates with psychological health (Harris & Standard, 2001), and negatively correlates with depression, anxiety, and psychological distress (Chamberlain & Zika, 1988; Debats, 1990; Zika & Chamberlain, 1992). Furthermore, it was Jung's contention that the process of individuation as one moves toward the integration of the Self, a process which is catalyzed by drawing mandalas, leads to a stronger sense of personal meaning in life (Jung, 1963). The SMS had a coefficient alpha of .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. Cronbach's alphas range from .88 to .91; 2-month test-retest reliability ranges from .79 to .83. The PILL was used in this study to measure physical health outcomes, and it had a coefficient alpha of .93.

Self-Assessment Manikin (SAM; Bradley & Lang, 1994). The pencil-and-paper version of this instrument will be used to obtain participants' subjective ratings of valence (pleasant vs. unpleasant) and arousal (excited vs. calm) both immediately before and after each drawing session. The SAM consists of two sets of five cartoon pictures depicting different levels of affective valence and arousal.

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 (n=19) and control conditions (n=17) were tested separately in small groups of 5 to 10 individuals. The drawing sessions took place across three consecutive days, with all participants drawing for a total of 20 minutes each session.

At the beginning of the first session for each condition, the lead investigator briefly explained the purpose of the study and written informed consent was obtained. This included informing subjects of the sensitive nature of the study and providing them with a list of individuals or psychological service providers to contact if they felt distressed at any time during or after the experiment.

All participants completed the PDS, BDI-II, State-Trait Anxiety Inventory, SMS, PILL, and a demographic questionnaire immediately before drawing at the first session. With the exception of the demographic questionnaire, the same measures were completed immediately following the last drawing session and at a one-month follow-up. When participants in both conditions finished the self-report measures, they were given a large envelope containing two SAMs, one blank sheet of paper, and an instruction sheet specific to their condition. A box of crayons and a pencil were also provided. A research assistant instructed them to open their envelopes and follow along as the specific instructions provided within their envelope were read aloud by the assistant (see Appendix A). The research assistant then prompted them to complete the first SAM before beginning drawing. The research assistant instructed the participants to draw for 20 minutes, then to complete the second SAM. Their drawing and the instruction set were put in the envelope before leaving. Participants were thanked for their participation and reminded to return the following day.

At the end of the third session, a trained research assistant debriefed subjects after they completed the second set of dependent variable measures (i.e., the PDS, BDI-II, STAI, and SMS). However, this debriefing did not involve telling subjects the true nature of the study for fear of biasing the results at the follow-up session. Therefore, this was an abbreviated debriefing

that focused more on how they were doing and ascertaining if there were any problems they have experienced. A full debriefing as to the nature of the study and the expected results was provided to the participants following the completion of the third set of dependent variable measures at the one-month follow-up. An outcome questionnaire assessing overall satisfaction with the study was completed at the follow-up session as well (see Appendix B). Participants in the mandala-drawing group were also asked to write a description of the symbolic meaning of their mandalas after completing the measures at the one-month follow-up. This information was used for a brief examination of the qualitative features and symbolic meaning of the mandalas.

Results

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 one-month follow-up. The covariate for each ANCOVA was the value for the respective outcome variable at the beginning of the study, before the mandala-drawing manipulation (or control drawing manipulation). Controlling for baseline levels of traumatic symptoms as measured by the PDS, those in the mandala condition were experiencing fewer symptoms of trauma than those in the control condition at one-month follow-up ($F(1,35) = 6.615, p < .015$). These results are illustrated clearly in Table 1, which indicates that although those in the mandala condition were experiencing more severe symptoms of trauma than those in the control condition at baseline and at the end of the last day of drawing, they were experiencing less severe symptoms by one-month follow-up. Simply put, even though they had more severe traumatic symptoms before the study, a month after the study the mandala group had less severe symptoms of trauma than the control group. The fact that the experimental group did not exhibit the lowered level of traumatic symptoms until a month after the experimental manipulation suggests that the exercise led to changes deep within cognition, thus facilitating increasing gains over time as opposed to the diminishing gains over time that are typically seen in such studies.

Whereas there were differences between the two groups with respect to PTSD symptoms, there were no significant differences on the other measures (i.e. the BDI-II, State-Trait Anxiety Inventory, SMS, or PILL), suggesting that the mandala drawing exercise was specific to symptoms of traumatic stress (see Table 2).

Qualitative Analysis

A brief exploratory analysis of the qualitative features of the mandala drawings from this study was reviewed. This is the reason why participants were asked to provide a description of the symbolic meaning of their mandalas after completing the last set of measures at the one-month follow-up session. As shown in Appendix A, the mandala control groups were asked to “create three different drawings representing the most traumatic, upsetting experience of your life”. They were also instructed to “really let go and explore your deepest emotions and thoughts”. In these drawings, it was evident that many participants used extensive symbolism to represent emotions. For example, tears and broken hearts were used for sadness. Sunshine and smiley faces were used for happiness, and dark colors for depression and brighter colors for hope. Figures 1 and 2 show drawings from the same participant who was expressing the trauma that she experienced by verbal abuse in her family. She explains that Figure 1 represents “the effect of verbal abuse and everything that it shattered in my life”. Figure 2 represents “A lifeline of my life. My life before the abuse was steady and full of achievements. Although my life is steady once again, it is not what it used to be”. Figure 3 is a mandala drawn by a participant that had an auto accident that totaled her vehicle. She explains that the yellow star represented both

the intensity of her feelings and the hope she knew she would feel eventually. The control condition were asked to draw a cup, bottle or clock on the three days. This was interpreted in many ways, with some participants taking artistic liberty as shown in Figure 4. The satisfaction survey revealed that many of the participants reported being helped by the study where they could express their trauma (See Appendix C).

Discussion

Benefit of Mandala Drawing for Health Outcomes

In the current study, we examined the benefits that individuals suffering from clinical levels of traumatic distress could gain from processing their trauma through the creation of mandalas. Although it was hypothesized that there would be significant improvements in numerous health outcomes, the only outcome for which there were significant relative improvements was PTSD symptom severity. Such results are only partially consistent with studies relying on verbal processing tasks (Sloan & Marx, 2004), because gains in the present study were specific to trauma symptom severity, whereas gains in verbal processing tasks appear to be more broadly ranging. Results of the current investigation are nevertheless noteworthy, because the condition of interest in the current study was PTSD and participants were selected who had elevated levels of traumatic distress, though not necessarily elevated levels of depression, anxiety, or physical symptoms, or decreased levels of meaning in life. Therefore, the mandala drawing exercise appeared effective in ameliorating symptoms of the clinical condition for which participants were specifically chosen. The current mandala drawing exercise and similar ones should be investigated as ways of supplementing or substituting for verbal processing treatments for trauma victims, particularly those who, due to personality features or cognitive factors, are unable or unwilling to process traumatic experiences through verbal means.

Strengths and Weaknesses

An obvious weakness of this study is the small sample size. The current project was essentially a pilot study to test the feasibility of this line of research, and similar studies with greater sample size should be conducted. Further, although the participants were undergraduate college students with PTSD, it would be beneficial to have a sample from a larger population of individual's suffering from more severe levels of trauma. Another shortcoming was the lack a direct comparison of a mandala drawing task with a writing task, and the need for more control groups. For instance, a condition would be desirable in which individuals were asked to reflect on their trauma but were not allowed to symbolically depict or write about that trauma, or a condition in which individuals were asked to reflect on their trauma while drawing an irrelevant object or writing about an irrelevant topic. Ideally, all these conditions would be examined in a single study, and the different health benefits for different manipulations could be uncovered.

Directions for Future Research

Extending this line of research with children and adolescents who are victims of abuse would be an area of great interest. Some children, depending upon age and educational opportunities, lack the ability to adequately and effectively express traumatic experiences through written or verbal language. Furthermore, children are often shamed into secrecy by their abusers and are fearful to disclose incidences of abuse. Mandalas drawn by such children could potentially serve the need of expression of traumatic experiences in a simpler and less threatening way than writing or talking about the events. Research in this area is warranted by the apparent relieve of trauma severity by the mandala-drawing group.

Scientific research into Jungian theory is sparse. Jung's theories are often criticized as being too vague or too complex and difficult to understand, and therefore better left to the realms of art or religion (Slegelis, 1987). It seems as though Jung has been unable to gain the respect he deserves among more scientific schools of thought due to this lack of research. Similarly, the field of art psychotherapy has lacked the credibility and respect of more scientific fields due to a lack of empirical research. Future study should be explored to bridge the worlds of the artistic and the scientific in an effort to make both Jungian theory and art psychotherapy technique more credible.

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Table 1
Trauma Severity Across sessions

Assessment	Mandala Group Condition (n=19)		Control Group Condition (n=17)	
	M	SD	M	SD
PDS1	19.37	7.06	15.71	6.89
PDS2	18.05	9.71	15.41	8.49
PDS3	13.42	8.45	15.47	8.62

PDS1-3 = Post-traumatic Stress Disorder Scale at times 1, 2, and follow-up

Table 2
Individual Assessment Measures

Assessment	Mandala Group Condition (n=19)		Control Group Condition (n=17)	
	M	SD	M	SD
<u>BDI-II</u>				
Time 1	17.95	9.26	15.35	7.11
Time 2	16.63	11.74	13.35	7.03
F/U	13.95	9.50	13.06	8.55
<u>STAI-State</u>				
Time 1	45.05	10.75	48.69	12.60
Time 2	41.16	11.30	43.44	10.11
F/U	40.95	11.54	42.00	13.26
<u>SMS</u>				
Time 1	64.05	6.81	64.88	13.08
Time 2	62.83	9.19	63.05	13.87
F/U	63.79	10.49	64.94	12.38
<u>PILL</u>				
Time 1	127.50	29.84	123.6	24.28
Time 2	120.80	29.71	123.0	22.47
F/U	114.90	24.13	121.1	16.91
<u>Doc Visit</u>				
Before	.47	.70	.41	.87
After	.63	.90	.94	1.56
<u>Sick Days</u>				
Before	1.89	2.54	2.18	3.72
After	2.26	2.82	2.53	3.71

Appendix A

Experimental Group Instructions

(On the first day):

What I would like to have you do for the next three days is to create three different drawings representing the most traumatic, upsetting experience of your life. As you draw, I want you to really let go and explore your deepest emotions and thoughts. You can draw a representation of the same traumatic experience on all three days or different experiences each day. In addition to a traumatic experience you can also draw a picture about a major conflict or problems that you have experienced or are experiencing now. Whatever you choose to draw about, it is critical that you really delve into your deepest thoughts and emotions. Ideally, I would like you to draw a representation of traumatic experiences or conflicts that you have not previously discussed in great detail with others.

As you begin the drawing, I would like you to draw a large circle.. Then I would like you to fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the traumatic experience or problem you have chosen to reflect upon as you draw. 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. 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.

(On the second day):

I hope yesterday's drawing session went well. Today, I want you to draw another picture representing a traumatic experience in your life. It could be the same experience you reflected upon yesterday or it could be something different. Just like yesterday, I really want you to explore your deepest thoughts and feelings.

Remember to begin by drawing a large circle.. Then fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the traumatic experience or problem you have chosen to reflect upon as you draw. 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. It is important to try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed.

(On the third day):

You have made it through the first two sessions, and today is the last one. As you draw today, I again want you to delve into your deepest thoughts and emotions about a traumatic experience in your life.

Remember to begin by drawing a large circle. Then fill the circle with whatever you feel belongs there and best represents your thoughts and emotions concerning the traumatic experience or problem you have chosen to reflect upon as you draw. 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. Try to draw continuously for the entire 20 minutes. A researcher will signal you to stop once 20 minutes have passed.

Control Group Instructions

(On the first day):

What I would like to have you do over the next three days is draw three different pictures. Each day I will give you a different drawing assignment. Today I would like you to draw the cup that is on display in the middle of the room. Make your picture as detailed as possible. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop when 20 minutes have passed.

(On the second day):

I hope your drawing assignment went well yesterday. Today I would like you to draw the water bottle that is on display in the middle of the room. Make your picture as detailed as possible. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop when 20 minutes have passed.

(On the final day):

This is the last day of the experiment. Today I would like you to draw the clock on the wall in the front of the room. Once again, make your picture as detailed as possible. It is important that you try to draw continuously for the entire 20 minutes. A researcher will signal you to stop when 20 minutes have passed.

Appendix B

Creativity, Expression and Healing

Satisfaction Survey

Name: (optional): _____ ID Number: _____
Phone number: _____ Email Address: _____

1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly Disagree

How satisfied were you with the time you spent with this study? 1 2 3 4 5

Do you feel it was worth the five credits? 1 2 3 4 5

How could the study be improved? 1 2 3 4 5

Do you have any ideas on future studies using drawings? 1 2 3 4 5

How could the study be improved? Do you have any ideas on future studies using the drawings Do you have any other comments?

If you drew a manala (circle with drawings), please write a description of the symbolic meaning of each of your three mandalas. Were the colors significant? Symbols, shapes?

1. _____

2. _____

3. _____

This information is intended for use in a subsequent study examining the qualitative features and symbolic meaning of the mandalas.

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

Appendix C

Comments from participants in the mandala drawing condition:

“I really enjoyed the study. This was a creative approach to dealing with my problems with my illness. I felt more at ease after the drawings.”

“The drawings were an excellent way of subconsciously getting down to the real feelings that so many of us have tried to build a wall around. Sometimes these walls need to come down so real healing can begin...thank you.”

“20 minutes is a long time to have to sit and draw, especially when thinking about a painful memory. Maybe shorten the time to 15 minutes.”

“I feel better now that I have completed the study!”

Comments from participants in the control drawing condition who drew a cup, bottle and clock:

To improve the study, maybe the participants could “draw things that make you feel happy”

“I think the study could be improved by using better models that are to be drawn.”

“Drawings need more details; colors, shapes.”

Figure 1

Figure 2

Figure 3

Figure 4