Mandala Art Therapy As An Intervention For Depression, Anxiety, Stress And Resilience Among University Students

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ABSTRACT

University students often grapple with the transition from adolescence to adulthood, a period filled with various challenges and stressors that can lead to mental health issues, particularly depression and anxiety. The National Mental Health Survey of India (NMHS) in 2015-16 identified a significant prevalence of mood-related disorders affecting 5.8% of Indian adults and anxiety disorders affecting 3.9%. These findings underscore the pressing need to address mental health concerns among the younger population, including

university students. To explore potential interventions, a study was conducted to assess the effectiveness of Mandala Art Therapy in alleviating depression, anxiety, stress, and enhancing resilience in this vulnerable group. The term "mandala" is rooted in Sanskrit, an ancient Indian language, where it combines "Manda" (meaning center) and "La" to signify accomplishment, reflecting the therapeutic approach's focus on inner balance and well-being.

The study employed a rigorous methodology, obtaining ethical clearance from the Institutional Ethical Committee and selecting 30 participants who met specific inclusion criteria. These participants were then given a comprehensive explanation of the study's purpose and procedures, followed by instructions regarding the intervention protocol. Over the course of four weeks, participants engaged in eight sessions of Mandala Art Therapy, with a frequency of two sessions per week. The study measured four main variables, namely depression, anxiety, stress, and resilience, both before and after the intervention.

The results of this study demonstrated a significant positive impact of Mandala Art Therapy on the mental well-being of university students. Furthermore, individual assessments of depression, anxiety, and stress, as well as their collective effect, exhibited statistically significant improvements from pre- to post-intervention. In conclusion, this research underscores the potential of Mandala Art Therapy as an effective tool in reducing depression, anxiety, and stress, while simultaneously enhancing resilience among university students. The findings provide valuable insights into the positive impact of this ancient therapeutic approach, offering a promising avenue for addressing the mental health issues that often accompany the significant life changes and expectations faced by young adults pursuing higher education.

Keywords: Mandala art therapy, Depression, Anxiety, Stress, Resilience, University students.

Introduction

Students are a special set of individuals who are leaving behind the most important stage of their lives, during which they go through numerous unpleasant experiences. Depression is a multi-problematic condition that places a significant cost on society and affects people's ability to perform in their personal, social, interpersonal, and professional lives. Anxiety is an internalized arousal of dread, which may be genuine or imagined. An unconscious response to depressed tendencies, anxiety has the potential to develop into acute dread or panic. The psychological and physical symptoms include shaking hands and lips, dry mouth, frequent urination, and restless sleep. According to past research on mental health issues, university students have mental health issues because they are not adequately prepared for future expectations, pressures, and greater

obligations in both their academic and social lives. According to the National Mental Health Survey of India (NMHS), 2015–16, 5.8% of Indian adults suffer from mood-related disorders, while 3.9% of Indian adults suffer from anxiety disorders. The survey also shows that mood disorders (5.6%) and neurotic or stress-related disorders (6.93%) are more common in metropolitan metro areas by almost 2-3 times. Stress is a common reaction to pressures and obligations that may be temporary if they are perceived as harmful or hazardous. Anything that generates stress is known as a stressor. This might be a circumstance, an occurrence, or a person. Stressors are defined as personal or environmental occurrences that lead to stress.

The art therapy technique known as mandala therapy has been employed successfully in applied psychology. Sanskrit, an ancient Indian language, combines the terms "Manda" (which means centre) and "La" to form the word "mandala" (meaning accomplishment). It means getting to know people's core and essence, helping them be honest with themselves, and helping them develop a tranquil essence. Carl Jung, the creator of this type of psychotherapy, wrote down his dreams and drew them in a circle because he believed that Mandalas were a system that encoded human experience and served as a means of synchronization, support, and healing for anxieties and anxiety states. Carl Jung believed that difficult life situations, emotional tension, or crises called for the usage of mandalas. The main objective behind this research is to determine the efficacy of Mandala art therapy on depression, anxiety, stress and how it can help build resilience among university students.

Coloring mandalas can help in reducing anxiety which in turn can enhance their work outcomes, and improve their quality of life. This research promotes coloring mandalas as a relaxation method that can be used as a self-help activity or as a tool in various settings such as academic, clinical, work, etc. mandala design as one of the activities suggest that a brief period of art making can significantly reduce a person's state of anxiety. According to the National Mental Health Survey of India (NMHS), 2015–16, 5.8% of Indian adults suffer from mood-related disorders, while 3.9% of Indian adults suffer from anxiety disorders. The survey also shows that mood disorders (5.6%) and neurotic or stress related disorders (6.93%) are more common in metropolitan metro areas by almost 2-3 times. Doing art through coloring, painting, or sketching is a good way to improve mood and reduce self-reported anxiety levels (Sandmire, 2012). Curry and Kasser's (2005) study, which investigated if coloring a mandala might lessen anxiety, was duplicated by Van der Vennet R. & Serice S. in 2012. Their study, which involved 50 psychology majors, found that participants with anxious moods have been capable of significantly lowering their 4 anxiousness by coloring a predawn mandala and reduced their anxiety to a larger extent than participants who colored free-form on a blank sheet of paper or those who colored a plaid design. These findings are like those of Curry and Kasser (2005). Babouchkina A. and Robbins S. (2015) research showed the mandala's circular form is an "active element" in mood boosting. The psychoanalytic theory backs Jung's Mandala technique from 1973, which claims that creating a symmetrical Mandala through drawing or painting has positive effects on cognition and mood because it may calm the "internal turbulence" of people's emotional states. In the past, research has shown that people's anxiety levels drop when they color Intricate patterns because of their calming and relaxing qualities (Henderson, Rosen, & Mascaro; 2007; Sandmire et al., 2012). The mindfulness method, which helps individuals to pay close attention and concentrate on the present moment, is supported by the usage of

mandalas and is effective in cognitive-based tasks and academic circles (Carsley, Heath, & Fajnerova, 2015; Chen et al., 2019; Potash, Yun Chen, & Yan Tsang, 2016). As is often the case with creative pursuits, Jung (1973) discovered that the process of creating mandalas had a relaxing and healing impact on its creator while also enabling mental integration and being linked with the intrinsic potential to comprehend the divine (Allen, 2001; McNiff, 2004).As a fundamental tool for self-awareness, self-expression, resolving conflicts, assessment, and therapeutic repair, the mandala is utilized by a variety of psychotherapists (Cornell, 1994; DeLue, 1999; Elkis-Abuhoff, Gaydos, Goldblatt, Chen & Rose, 2009; Fincher, 1991; Fincher, 2002; Kellogg, Mac Rae, Bonny, & di Leo, 1977; Slegelis, 1987). One of the most often diagnosed mental health illnesses, generalized anxiety disorder is characterized by persistent worrying about a variety of topics for at least six months. It frequently coexists with depression. (2016) (Sue, Sue, Sue, & Sue). Doing art through coloring, painting, or sketching is a good way to improve mood and reduce self-reported anxiety levels (Sandmire, 2012). Rajendran (2020) proposed that coloring "therapeutic" pictures like mandalas, buildings, or made-up animals had more effective benefits on reducing anxiety than doodling with pens on white sheets of paper. Interventions involving mindfulness have been implemented to treat a variety of mental health problems, including anxiety, stress, and depression (Call, Miron, & Orcutt, 2013; Xu, Zhu, & Liu, 2019). A comprehensive therapy treatment plan, such as mindfulness-based stress reduction, might include mindfulness therapies (Kabat-Zinn, 1992). It has been 5 demonstrated that another component, mindfulness meditation, fosters resilience and lowers stress (Hwang et al., 2018). According to Kielo (1991), the act of creating art frequently communicates and brings to light previously unrecognized, unconscious knowledge (p. 14). Mandalas have been investigated as a burnout-reduction technique for nurses and as an assessment tool for those providing end-of-life care (Potash, Bardot, Wang, Chan, Ho, & Cheng, 2013). (Brooks et al., 2010).

Statement of the Problem

University students undergoing the transition from adolescence to adulthood often experience a range of mental health challenges, including depression and anxiety, which can be exacerbated by the demands of academic life and societal pressures. The National Mental Health Survey of India (NMHS) revealed a significant prevalence of mood-related and anxiety disorders among Indian adults. These findings underscore the urgent need to address the mental health concerns of young adults in the university setting. Therefore, the problem addressed in this study is how to effectively alleviate depression and anxiety, reduce stress, and enhance resilience among university students, especially during their pivotal transitional phase.

Rationale of the Study

The rationale for conducting this study is rooted in the recognition of the pressing mental health issues faced by university students during a crucial life stage. The transition from adolescence to adulthood brings about numerous challenges and stressors, which, when combined with the rigors of academia and societal expectations, can result in depression, anxiety, and stress. It is imperative to address these issues to safeguard the psychological well-being of young adults and equip them with the resilience needed to thrive in their academic and personal lives. Given the historical effectiveness of Mandala Art Therapy in addressing

psychological challenges, it is essential to investigate its potential as an intervention to mitigate the mental health issues faced by university students.

Significance of the Study

This study holds substantial significance due to its potential to contribute to the well-being of university students, a demographic vulnerable to mental health issues during a pivotal life transition. Understanding the effectiveness of Mandala Art Therapy as an intervention for alleviating depression, anxiety, and stress, while bolstering resilience, has practical implications for both mental health practitioners and educators. It offers a promising approach to support students in managing their emotional and psychological challenges effectively, ultimately leading to improved academic performance and a higher quality of life. Furthermore, the study aligns with broader societal goals of addressing mental health concerns, reducing the societal cost of mental health disorders, and fostering a more mentally resilient young adult population.

Objective of Current Research

The primary objective of the current research is to empirically assess the impact of Mandala Art Therapy on depression, anxiety, stress, and resilience among university students during the crucial phase of transitioning from adolescence to adulthood. Specifically, the research aims to:

Determine the effectiveness of Mandala Art Therapy in reducing levels of depression, anxiety, and stress among university students.

Investigate how Mandala Art Therapy enhances the resilience of university students facing mental health challenges.

Contribute to a better understanding of the potential of this ancient therapeutic approach as an intervention to address mental health issues among young adults.

Provide insights and practical recommendations for mental health practitioners and educators on the use of Mandala Art Therapy in supporting the psychological well-being of university students.

Hypothesis

H0-There are no significant differences noted amongst all 4 variables

H1-There is a significant difference noted in depression

H2-There is a significant difference noted in anxiety

H3-There is a significant difference noted in stress

H4-There is a significant difference noted in resilience

METHOD

Sample

This study follows a quasi-experimental design and employs convenience sampling, a type of non-purposive sampling. The sample size consists of 30 young adults aged 19 to 24 who are currently enrolled in university. The research will span over a duration of three months, with participants undergoing intervention in the form of Mandala Art Therapy through two sessions per week during this three-month period. This approach allows for a comprehensive examination of the impact of Mandala Art Therapy on the mental well-being of university students within this specific age range, providing valuable insights into the potential benefits of this intervention for this demographic.

Operational Definition

Depression: In this study, depression is operationally defined as the extent of emotional and psychological distress experienced by participants, measured using the Depression subscale of the DASS-21 (Depression, Anxiety, and Stress Scale). Higher scores on this scale indicate a higher level of depressive symptoms, reflecting feelings of sadness, hopelessness, low energy, and diminished interest or pleasure in activities.

Anxiety: Anxiety is operationally defined as the degree of nervousness and unease experienced by participants, assessed through the Anxiety subscale of the DASS-21 (Depression, Anxiety, and Stress Scale).

Higher scores on this scale indicate a greater level of anxious symptoms, reflecting symptoms such as restlessness, excessive worry, and a heightened state of arousal.

Stress: Stress is operationally defined as the level of psychological and emotional tension experienced by participants, evaluated using the Stress subscale of the DASS-21 (Depression, Anxiety, and Stress Scale). Higher scores on this scale signify a higher degree of stress, indicating responses to various stressors, including tension, irritability, and difficulty in relaxing.

Resilience: Resilience is operationally defined as the perceived ability to adapt and bounce back from adversity and stress. It is measured using the Brief Resilience Scale (BRS), with higher scores on this scale indicating higher levels of resilience. This construct includes both positively and negatively worded items and represents the participants' self-assessed capacity to recover from challenges and setbacks effectively, demonstrating psychological strength and flexibility.

Research Design

The research design for this study is a quasi-experimental design. Quasi-experimental designs are characterized by the manipulation of an independent variable (Mandala Art Therapy intervention) and the measurement of its impact on dependent variables (depression, anxiety, stress, and resilience) while lacking the random assignment typically seen in true experimental designs. In this study, the intervention is applied to a group of university students within a specific age range, and changes in the dependent variables are measured before and after the intervention.

Variables:

Independent Variable:

Mandala Art Therapy Intervention: This is the variable that is manipulated in the study. It involves the provision of Mandala Art Therapy to the participants, and the impact of this intervention is assessed on the dependent variables.

Dependent Variables:

1. Depression: The extent of emotional and psychological distress experienced by the participants is measured using the Depression subscale of the DASS-21. Higher scores on this scale indicate a higher level of depressive symptoms.

2. Anxiety: The degree of nervousness and unease experienced by participants is assessed through the Anxiety subscale of the DASS-21. Higher scores on this scale indicate a greater level of anxious symptoms.

3. Stress: The level of psychological and emotional tension experienced by participants is evaluated using the Stress subscale of the DASS-21. Higher scores on this scale signify a higher degree of stress.

4. Resilience: Resilience is measured using the Brief Resilience Scale (BRS), which assesses participants' perceived ability to adapt and bounce back from adversity and stress. Higher scores on this scale indicate higher levels of resilience, representing psychological strength and flexibility.

Tools

Self-Reporting Questionnaire (SRQ)-The Self-Reporting Questionnaire (SRQ) was developed by the WHO as an instrument to screen for mental disorders, including depression, anxiety-related disorders, and somatoform disorders.

The validity evidence collection for SRQ-20 has been carried out in several countries

and has even attempted to discover the probable factors that underlying SRQ-20(Chen et al., 2009; Kootbodien et al., 2015; Netsereab et al., 2018; Scholte et al.,82011;vander Westhuizen et al., 2015). The validity evidence of the SRQ-20 was collected based on relations to other variables and as a screening instrument.

Scoring and Interpretation. Scored as 0 (symptoms absent) or 1 (symptoms present). Score range 0-20; Scores >10 classified as mental distress. Responses are yes or no.

DASS-21- The DASS-21 is the short form of the DASS-42, a self-report scale designed to measure the negative emotional states of depression, anxiety, and stress. This scale is suitable for clinical settings to assist in diagnosis and outcome monitoring, as well as non-clinical settings as a mental health screener. The DASS is based on a dimensional rather than a categorical conception of psychological disorders, and scores emphasize the degree to which someone is experiencing symptoms rather than having diagnostic cut-off points.

Validity and Reliability

The DASS-21 was initially developed using a sample of responses from 504 students, taken from a larger sample of 950 first year university students. The items were subsequently checked for validity against outpatient groups including patients suffering from anxiety, depression, and other mental disorders. The DASS-21 has been extensively normed, with data used for interpretive purposes based on a sample of 1794 non-clinical adults (Henrey & Crawford, 2005). Consistent with the DASS42, the DASS-21 has internal consistency and concurrent validity in acceptable to excellent ranges (Antony et al., 1998).

Scoring and Interpretation

Score are presented as a total score and a score for the three subscales. For each of the three subscales percentiles and computed based on a community sample (Henry & Crawford,2005). In addition, scores for each subscale are categorized into five severity ranges: normal, mild, moderate, severe, and extremely severe. The severity labels are used to describe the full 9 range of scores in the population, so 'mild' for example means that the person is above the population mean but probably still below the typical severity of someone seeking help (i.e., it does not mean a mild level of disorder).

Each of the three DASS-21 scales contains 7 items.

• Depression: dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia, and inertia. (Items 3, 5, 10, 13,16, 17, 21)

• Anxiety: autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. (Items 2, 4, 7, 9, 15, 19, 20)

• Stress: levels of chronic nonspecific arousal, difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. (Items 1, 6, 8, 11, 12, 14, 18).

Brief Resilience Scale (BRS)- The Brief Resilience Scale was created to assess the perceived ability to bounce back or recover from stress. The scale was developed to assess a unitary construct of resilience, including both positively and negatively worded items. The possible score range on the BRS is from 1 (low resilience) to 5 (high resilience). Note that items 1, 3, and 5 are positively worded, and items 2, 4, and 6 are negatively worded. The BRS is scored by reverse coding items 2, 4, and 6 and finding the mean of the six items. For questions 1, 3, and 5:

1. Strongly Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree

• For questions 2, 4, and 6:

5. Strongly Disagree, 4. Disagree, 3. Neutral, 2. Agree, 1. Strongly Agree

• Add the responses varying from 1-5 for all six items giving a range from 6-30.

Divide the total sum by the total number of questions answered.

BRS score Interpretation

1.00-2.99 Low resilience

3.00-4.30 Normal resilience

BRS score Interpretation

4.31-5.00 High resilience

Various psychometric evaluation tools were used to evaluate the internal consistency, criterion validity, factorial validity, and construct validity of these resilience scales. The results showed that both scales had good criterion validity, with well-established measures of well-being, optimism, self-esteem, self-efficacy, and mental health, as suggested in the resilience literature.

Procedure

The primary goal of this research is to investigate the effectiveness of Mandala Art Therapy as an intervention for addressing depression, anxiety, stress, and resilience among university students aged 19-24. This quantitative study adopts a quasi-experimental design, employing non-purposive sampling with a convenience sampling method for participant recruitment. The research begins with eligibility criteria, where university students within the specified age range are sought, and those without pre-existing mental illnesses who willingly agree to participate are considered. To screen for psychological conditions, all potential participants complete the SRQ-20, and only those who meet the criteria proceed further. The measurement of depression,

anxiety, stress, and resilience is conducted using the DASS-21 and BRS scales, with pre-test scores documented. The individuals with high pre-test scores in the DASS-21 (indicating elevated levels of depression, anxiety, and stress) and high scores in the BRS (indicating lower resilience levels). These individuals receive the Mandala Art Therapy intervention, engaging in two sessions per week over a period of three months, using pre-printed Mandala paper, colors, and pens to create Mandala art. Following the intervention, all participants, undergo a post-test assessment utilizing the same scales from the pre-test. The collected data is then subjected to statistical analysis, such as the Wilcoxon Signed Rank Test, Paired T Test to assess the impact of the Mandala Art Therapy intervention. The results of this research will contribute to our understanding of whether Mandala Art Therapy can effectively alleviate depression, anxiety, and stress while enhancing resilience among university students. The implications of these findings extend to the realm of mental health support in educational settings, potentially offering a valuable tool for addressing the psychological well-being of young adults undergoing a critical life transition.

Data Analysis

This study is structured to assess the impact of Mandala Art Therapy as an intervention for university students aged 19-24, targeting depression, anxiety, stress, and resilience. The pre-test data analysis begins with the screening of psychological conditions using the SRQ-20, ensuring eligible participants proceed to the subsequent analysis. Pre-test measurements of depression, anxiety, and stress are conducted through the DASS-21, calculating mean scores for each subscale to establish a baseline understanding. The assessment of resilience is similarly analyzed using the BRS scale to determine participants' initial resilience levels. In the post-test phase, a comparative analysis evaluates the changes in depression, anxiety, stress, and resilience following the Mandala Art Therapy intervention. Statistical tests, such as the Wilcoxon Signed Rank Test, are applied to determine the significance of the changes within the experimental group, which received the intervention. This comprehensive data analysis aims to provide empirical evidence of the intervention's effectiveness in enhancing the mental well-being of university students during a crucial life transition.

Ethical considerations

In the context of the study assessing the effectiveness of Mandala Art Therapy as an intervention for university students' mental well-being, several ethical considerations were taken:

1. Informed Consent: All participants provided informed and voluntary consent to participate in the study. They were provided with comprehensive information about the study's objectives, procedures, potential risks, and benefits.

2. Participant Confidentiality: Protecting the confidentiality and privacy of participants is crucial. It was ensured that participants' personal information and responses are kept confidential and are not disclosed to anyone outside the research team.

3. Avoidance of Harm: The Mandala Art Therapy intervention was administered in a supportive and non-coercive manner.

4. Debriefing: After the study, I provided participants with a debriefing session, during which I shared the study's results and addressed any questions or concerns. This ensured that participants left the study with a full understanding of their involvement.

5. Ethical Review: I ensured that the research protocol was reviewed and approved by an institutional ethics committee to guarantee that the study complied with ethical standards and principles. I addressed any ethical concerns raised by the committee before the study commenced.

RESULTS AND DISCUSSION

Results

The results from a series of statistical tests and analyses were conducted on different sets of paired data. For the variables related to Depression (D1 and D2), Anxiety (A1 and A2), and Stress (S1 and S2), paired samples T-tests were performed. In all three cases, the results showed statistically significant differences between the paired datasets, with p-values less than 0.001. This indicates that the mean differences observed between D1 and D2, A1 and A2, and S1 and S2 were not due to chance and are indeed meaningful. The mean differences for these variables ranged from 16.000 to 22.000, suggesting substantial variations between the paired data points.

In contrast, for the Resilience variable (B1 and B2), the paired samples T-test yielded a p-value of 0.077, which is greater than the conventional significance threshold of 0.05. This suggests that the difference between B1 and B2 is not statistically significant, and they are more likely to be similar in nature. The mean difference for this variable was -1.000, indicating a relatively small deviation.

Furthermore, normality tests (Shapiro-Wilk) were conducted to assess the data distributions. For the variables related to Depression, Anxiety, and Stress, the p-values were greater than 0.05, suggesting that the data

distributions follow a normal pattern. However, for the resilience variable, B1 and B2, the p-value was less than 0.001, indicating a violation of the normality assumption, meaning that the data for B1 and B2 do not follow a normal distribution.

These results provide valuable insights into the relationships and differences between the paired variables under investigation. The statistically significant differences observed in Depression, Anxiety, and Stress variables suggest meaningful variations, while the non-significant difference in the Resilience variable indicates similarity between the paired data points. Additionally, the normality tests confirm that the data for the first three variables adhere to a normal distribution, while the data for the Resilience does not meet this assumption. These findings have implications for the interpretation and understanding of the relationships between these paired variables.

Discussion

The results of the paired samples T-tests revealed several significant findings related to the variables of Depression, Anxiety, and Stress (D1 and D2, A1 and A2, S1 and S2). These findings indicate meaningful differences between these paired datasets, with substantial mean differences ranging from 16.000 to 22.000. This suggests that the Mandala Art Therapy intervention had a significant impact in reducing Depression, Anxiety, and Stress among the participants.

SUMMARY AND CONCLUSION

Major findings

Mandala Art Therapy was effective in reducing Depression, Anxiety, and Stress, as evidenced by significant differences in paired datasets (D1 and D2, A1 and A2, S1 and S2), with substantial mean differences.

Implications

The findings have important implications for the use of Mandala Art Therapy as an effective intervention for addressing mental health concerns, specifically related to Depression, Anxiety, and Stress. The significant improvements observed in these variables suggest that Mandala Art Therapy can be a valuable tool for enhancing the well-being of individuals experiencing these conditions.

Limitations

1. The study's sample size may be limited in generalizability, and a larger and more diverse sample could provide further insights.

2. The study did not investigate the underlying causes of Resilience, which limits the ability to interpret the results fully.

3. The study assumes that the effects are solely due to the Mandala Art Therapy intervention, but other external factors may have contributed to the observed changes.

Further scope

Future research can build on these findings by exploring the long-term effects of Mandala Art Therapy and investigating the specific factors that influence its impact on various mental health variables. Additionally, studies could examine the therapeutic benefits of Mandala Art Therapy for different population groups and incorporate qualitative data to gain a deeper understanding of participants' experiences during the intervention. This can contribute to a more comprehensive understanding of the potential applications of art therapy in mental health treatment.

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Tables (Sociodemographic Table)

Variable	Count	Mean	Median	Min	Max
Age					
Gender					
Female	19	21.69	22	19	23
Male	12	22.36	24	20	24
Nationality					
Indian	31				
Educational Qualification					
Undergraduate	10	22.1	23	19	24
Postgraduate	21	22.06	22	19	24

Table 1. Paired Sample T-test

			Statistic		p	Mean difference		SE difference
D1	D2	Wilcoxon W	423.0	a	< .001	16.000		2.088
A1	A2	Wilcoxon W	463.0	b	< .001	18.000		1.824
S1	S2	Wilcoxon W	405.0	d	< .001	22.000		1.819
B1	B2	Wilcoxon W	25.0	e	0.077	-1.000		0.175

Table 2. Normality check (Shapiro Wilk)

			W	p
D1	-	D2	0.959	0.276
A1	-	A2	0.949	0.145
S1	-	S2	0.885	0.003
B1	-	B2	0.818	< .001

Note. A low p-value suggests a violation of the assumption of normality

Table 3. Paired Sample T-Test (Depression)

			Statistic		p
D1	D2	Wilcoxon W	423	a	< .001

Table.4 Paired Sample T-Test (Anxiety)

			Statistic		p
A1	A2	Wilcoxon W	463	a	< .001

Table.4 Paired Sample T-Test (Stress)

			Statistic	p
S1	S2	Wilcoxon W	405	< .001

Table 5. Paired Sample T-test (Resilience)

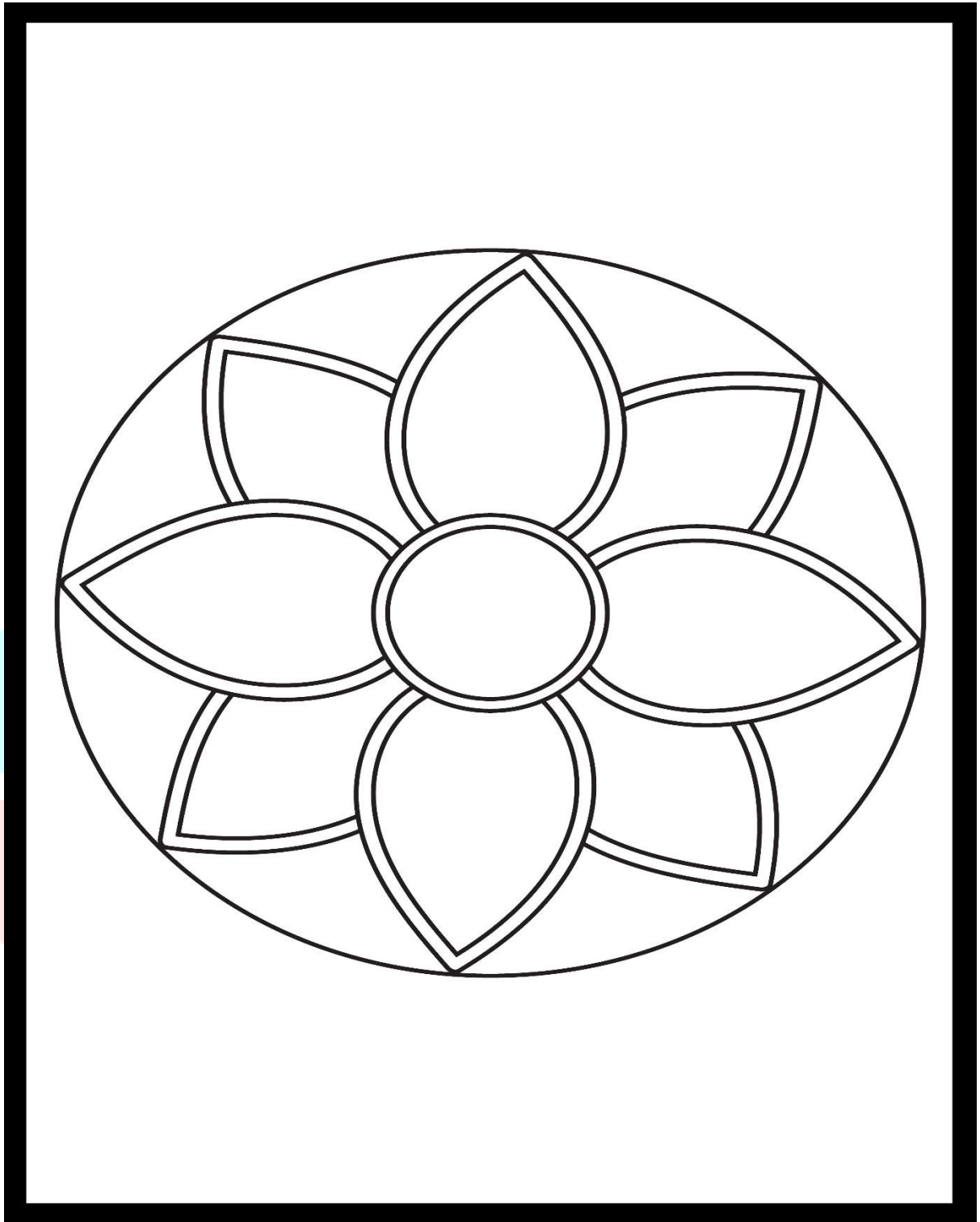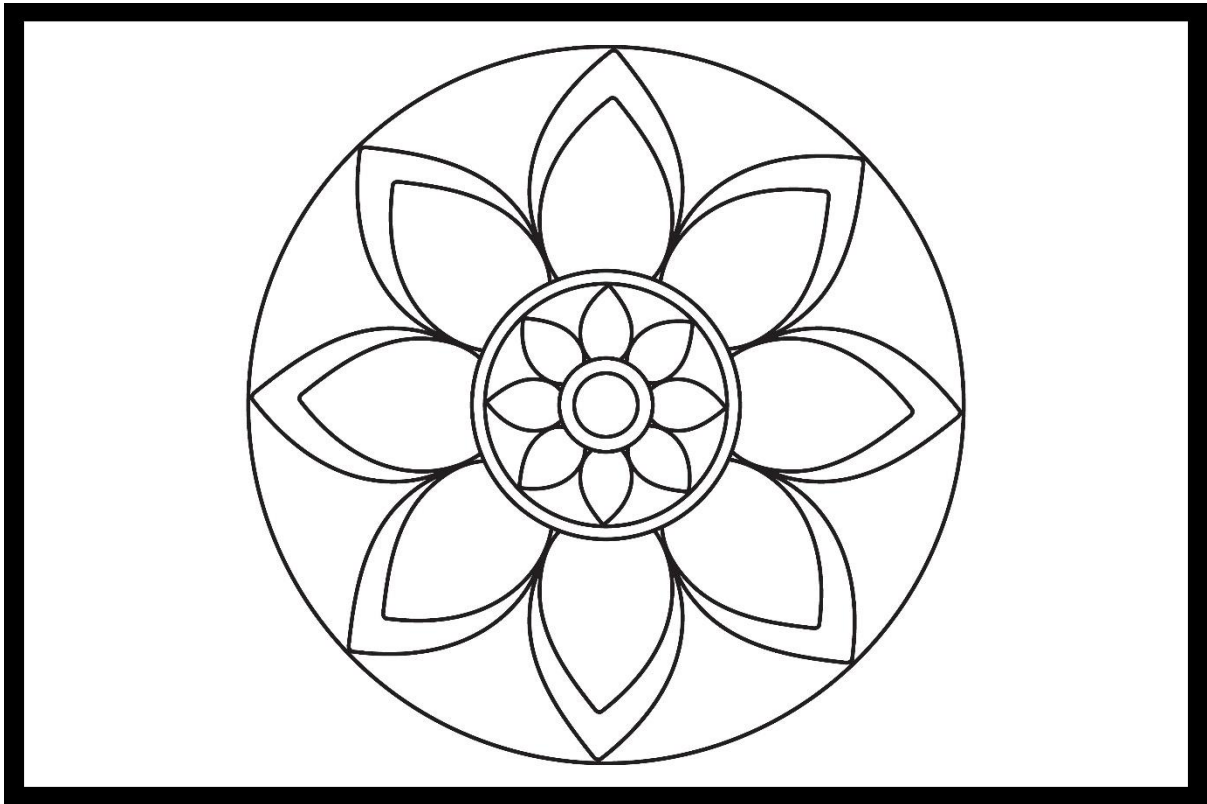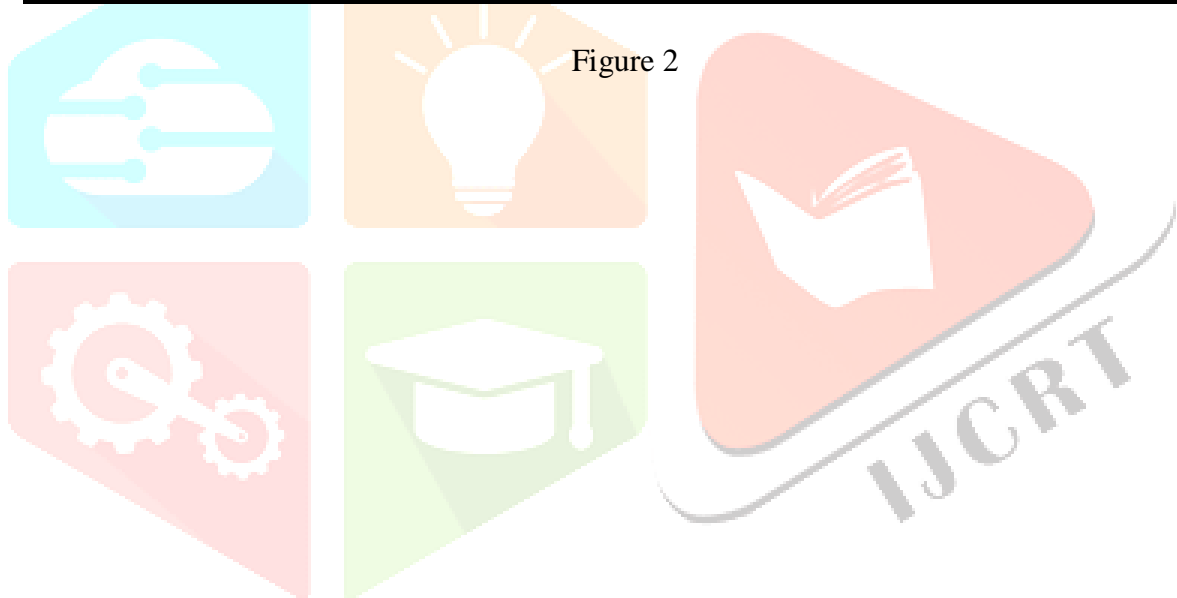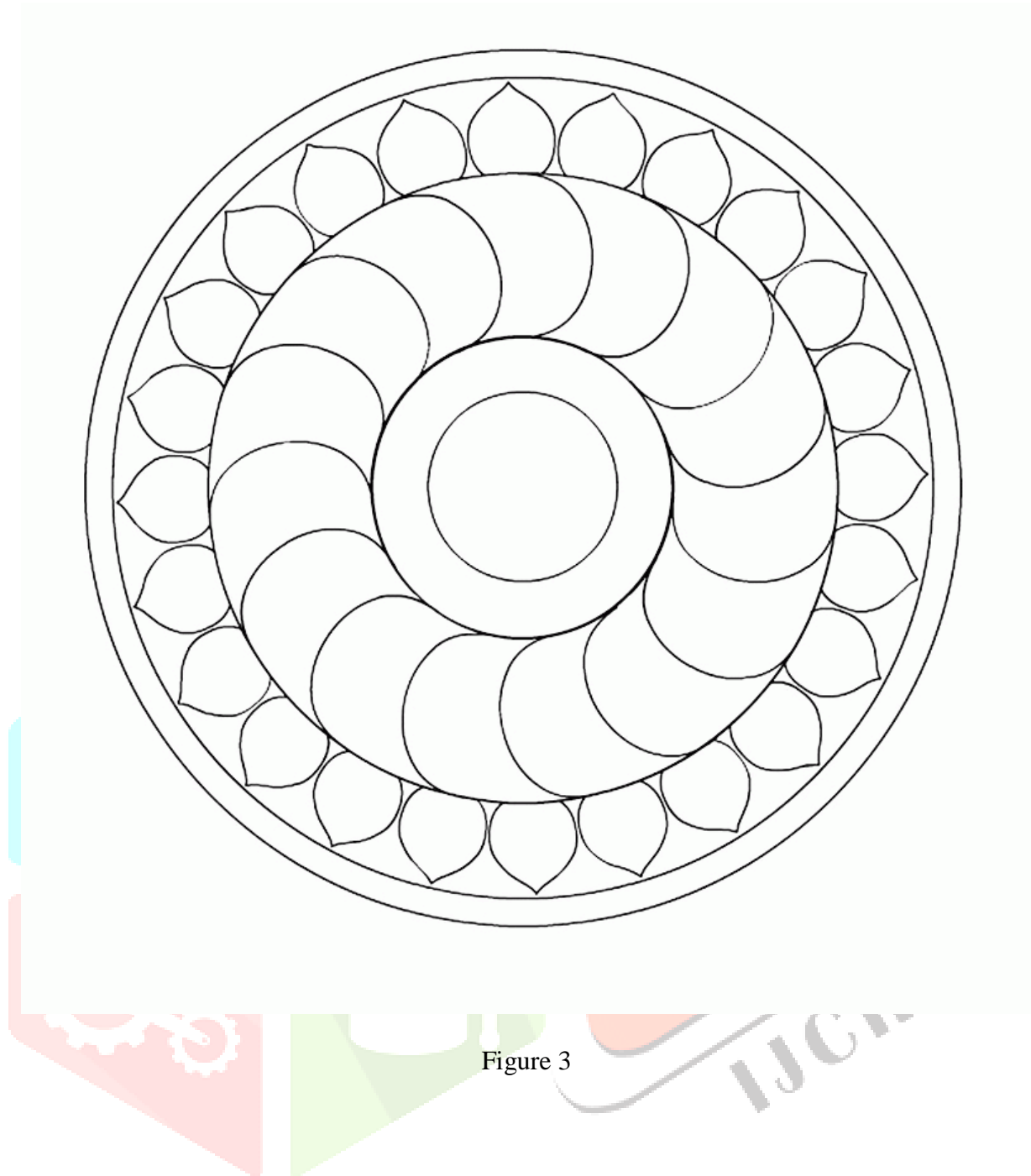|			Statistic	p
B1	B2	Wilcoxon W	25.0	0.077

Figures

Figure 1

Figure 2

Figure 3

Appendix – A
Informed Consent Form

You are invited to participate in a research study titled "Assessment of Mental Health and Resilience." The study, conducted by T M Sneha, aims to assess the effects of Mandala Art Therapy on mental health, specifically in terms of Depression, Anxiety, and Stress, as well as to measure your level of Resilience. If you agree to participate, you will be asked to complete a series of questionnaires and scales, including those assessing Depression, Anxiety, Stress, and Resilience, both before and after engaging in Mandala Art Therapy. Your responses will be kept confidential, and your data will be securely stored. Participation is entirely voluntary, and you may withdraw at any time without consequences. While there may be no direct benefits, your involvement contributes to valuable research that may aid individuals facing mental health challenges. By signing below, you provide your informed consent to participate in this study.

Participant's Name (Printed): _____ Participant's Signature: _____ Date: _____

Appendix B

Socio-Demographic Sheet

Full Name: _____

Date of Birth: _____ Age: _____

Gender: □ Male □ Female □ non-binary □ Prefer not to say □ Other (please specify): _____

Contact Number: _____

Email Address: _____

Current Address: _____

Educational Background:

Current Academic Year: □ First Year □ Second Year □ Third Year □ Fourth Year □ Postgraduate □ Other

(please specify): _____

Name of University/Institution: _____

Field of Study/Major: _____

Appendix C

Tools

A USER'S GUIDE TO THE SELF REPORTING QUESTIONNAIRE (SRQ)
WHO/MNH/PSF/94.8

SRQ-20

A copy of the English version of the Self Reporting Questionnaire-20 is shown below.

1.	Do you often have headaches?	yes/no
2.	Is your appetite poor?	yes/no
3.	Do you sleep badly?	yes/no
4.	Are you easily frightened?	yes/no
5.	Do your hands shake?	yes/no
6.	Do you feel nervous, tense or worried?	yes/no
7.	Is your digestion poor?	yes/no
8.	Do you have trouble thinking clearly?	yes/no
9.	Do you feel unhappy?	yes/no
10.	Do you cry more than usual?	yes/no
11.	Do you find it difficult to enjoy your daily activities?	yes/no
12.	Do you find it difficult to make decisions?	yes/no
13.	Is your daily work suffering?	yes/no
14.	Are you unable to play a useful part in life?	yes/no
15.	Have you lost interest in things?	yes/no
16.	Do you feel that you are a worthless person?	yes/no
17.	Has the thought of ending your life been on your mind?	yes/no
18.	Do you feel tired all the time?	yes/no
19.	Do you have uncomfortable feelings in your stomach?	yes/no
20.	Are you easily tired?	yes/no

3

DASS21

Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0   Did not apply to me at all
1   Applied to me to some degree, or some of the time
2   Applied to me to a considerable degree or a good part of time
3   Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3

Brief Resilience Scale (BRS)

Respond to each statement below by circling one answer per row.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times.	1	2	3	4	5
BRS 2	I have a hard time making it through stressful events.	5	4	3	2	1
BRS 3	It does not take me long to recover from a stressful event.	1	2	3	4	5
BRS 4	It is hard for me to snap back when something bad happens.	5	4	3	2	1
BRS 5	I usually come through difficult times with little trouble.	1	2	3	4	5
BRS 6	I tend to take a long time to get over setbacks in my life.	5	4	3	2	1

Scoring: Add the value (1-5) of your responses for all six items, creating a range from 6-30. Divide the sum by the total number of questions answered (6) for your final score.

Total score: _____ / 6

My score: _____ (average)

BRS Score	Interpretation
1.00 - 2.99	Low resilience
3.00 - 4.30	Normal resilience
4.31 - 5.00	High resilience

Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. and Bernard, J. (2008). The Brief Resilience Scale: Assessing the Ability to Bounce Back. *International Journal of Behavioral Medicine*, 15, 194-200.