

A Study to Assess the Effectiveness of Mandala Colouring on Level of Stress Among Nursing Students in Selected College of Kannur District

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Abstract: Background: Stress is a common psychological problem among nursing students due to academic workload, clinical exposure, and personal expectations. **Aim:** To assess the effectiveness of mandala colouring on stress levels among undergraduate nursing students. **Methodology:** A quantitative quasi-experimental one-group pre-test and post-test design was adopted. The study included 30 BSc nursing students selected through cluster sampling. Data were collected using socio-demographic variables, Perceived Stress Scale (PSS-10), and Student Stress Inventory (SSI). Mandala colouring was administered for six consecutive days, 30 minutes per day. **Results:** In the pre-test, 56.7% of students had moderate stress and 43.3% had mild stress. After the intervention, 80% had mild stress and 20% had moderate stress. A statistically significant reduction in stress was observed ($p < 0.001$). **Conclusion:** Mandala colouring is an effective, simple, and cost-effective intervention for reducing stress among nursing students.

Keywords: Mandala Colouring, Stress, Nursing Students, Art Therapy, Stress Reduction.

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I. INTRODUCTION

Stress is a natural psychological response to demanding situations. Nursing students are particularly vulnerable to stress due to academic workload, clinical responsibilities, examinations, and interpersonal challenges. High levels of stress may negatively affect academic performance, emotional well-being, and physical health.

Stress among nursing students arises from multiple factors, including academic pressure, clinical exposure, lack of leisure time, and fear of making errors during patient care. If not effectively managed, stress can lead to anxiety, burnout, and reduced learning capacity.

Recently, non-pharmacological interventions such as art therapy have gained attention for stress management. Mandala colouring, which involves filling symmetrical circular designs with colours, promotes relaxation,

mindfulness, and emotional balance. Therefore, this study aims to assess the effectiveness of mandala colouring in reducing stress among nursing students.

II. REVIEW OF LITERATURE

Stress among nursing students is increasing due to academic and clinical demands, negatively impacting their performance and health. According to the American College Health Association (2017), 31.7% of students experience academic-related stress. A study by Wanda M C et al. (2023) found that a significant proportion of students experienced mild to moderate levels of stress, anxiety, and depression.

Mohamed N A (2024) reported that 57.5% of nursing students experienced moderate stress, while 25.7% had high stress levels. These findings highlight the need for effective stress management strategies.

Mandala colouring is a simple, cost-effective, and non-pharmacological intervention. Ravina K et al. (2024) reported that after mandala therapy, a significant number of students shifted from moderate to low stress levels. Similarly, Juan L et al. (2025) found that mandala art therapy significantly reduced anxiety, depression, and grief.

Kerala-based studies also support these findings. Sneha T M et al. reported a significant reduction in stress levels following mandala colouring ($p < 0.001$). Neethu P V et al. (2025) demonstrated a statistically significant difference in stress levels before and after mandala colouring using paired t-test analysis.

III. METHODOLOGY

- Research Approach:
Quantitative research approach
- Research Design:
Quasi-experimental one-group pre-test and post-test design
- Setting:
Canossa College of Nursing, Cherukunnu, Kannur
- Population:
Undergraduate BSc nursing students
- Sample Size: 30
- Sampling Technique:
Cluster sampling technique
- Data Collection Tools:
Socio-demographic variables (18 items), Perceived Stress Scale (PSS-10), Student Stress Inventory (SSI)

- Intervention:
Mandala colouring was administered for 6 days, 30 minutes per day.
- Data Analysis:
 - Descriptive statistics: Frequency, percentage, mean, standard deviation
 - Inferential statistics: Paired t-test, chi-square test

Ethical Consideration: Ethical clearance was obtained from the institutional ethics committee. Informed consent was obtained from all participants.

IV. FINDINGS AND ANALYSIS

➤ *Socio-Demographic Variables*
Most participants were aged between 18–22 years and all were female. The majority belonged to nuclear families and were supported by their parents. Most had no prior exposure to mandala colouring.

➤ Level of Stress

- Pre-test:
 - ✓ Moderate stress: 56.7%
 - ✓ Mild stress: 43.3%
- Post-test:
 - ✓ Mild stress: 80%
 - ✓ Moderate stress: 20%

This indicates a reduction in stress following the intervention.

➤ Effectiveness of Mandala Colouring

Table 1 Comparison of Pre-test and Post-test Mean Stress Scores

Components	Pre-test mean	Post-test mean	t value	n=30
				P value
Physical	20.5(±4.7)	16(±3.94)	8.62	<0.001***
Interpersonal Relationship	17.5(±4.17)	18(±4.16)	5.26	<0.001***
Academic	24.5(±7.23)	20(±6.34)	8.60	<0.001***
Environmental	19(±5.41)	16.5(±4.01)	9.15	<0.001***

***Significance at 0.001 level *Significance at 0.05 level

The mean scores of stress decreased after the intervention across various stress domains such as academic stress, physical stress, and environmental stress. The findings indicate that mandala colouring is an effective technique for reducing stress among nursing students.

- *Association with Demographic Variables*
A significant association was found between stress level and the average number of study hours per day ($p < 0.05$).

V. DISCUSSION

The study revealed that most nursing students experienced moderate stress due to academic and clinical demands. The mandala colouring intervention significantly reduced stress levels, with a shift from moderate to mild stress.

These findings are consistent with Ravina et al. (2024) and Neethu et al. (2025), who also reported significant reductions in stress following mandala therapy.

Mandala colouring promotes relaxation, improves concentration, and enhances emotional well-being, making it an effective stress management strategy.

However, the study was limited by a small sample size, short duration, and inclusion of only female participants. Further research with larger samples and controlled designs is recommended.

VI. CONCLUSION

The study concludes that nursing students experience considerable levels of stress, primarily due to academic and clinical demands. Mandala colouring significantly reduces stress levels and serves as a simple, safe, and cost-effective intervention.

It can be recommended as a practical stress management technique and may be incorporated into nursing education and student wellness programs.

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