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Effectiveness of Mindfulness Meditation on Stress and Depressive Symptoms among Nursing Students in a Selected Nursing Colleges in Chhatrapati Sambhajinagar

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Abstract: ***Background: Nursing students face academic and clinical pressure that often leads to stress and depressive symptoms, which affect learning and wellbeing. Mindfulness meditation is a simple, low-cost, non-pharmacological practice that may reduce these symptoms. This study aims to evaluate the effectiveness of mindfulness meditation in reducing stress and depressive symptoms among nursing students. Material and method: We used a quantitative approach with a pre-experimental, one-group pre-test post-test design, enrolling 50 nursing students through non-probability sampling. A two-part tool was used: a demographic proforma and a 30-item rating scale for stress and depressive symptoms (score 0-60). A seven-step mindfulness meditation programme was given between the pre-test and the post-test. Result: Before the intervention, 20% of students had mild, 72% moderate and 8% severe stress and depressive symptoms. After the intervention, 84% had mild and 16% moderate symptoms, and no student had severe symptoms. The mean score fell from 25.44 (SD 7.99) to 14.60 (SD 5.66), a mean difference of 10.84 (paired $t = 11.58$, $df = 49$, $p < 0.05$). Age and monthly family income were the only demographic variables significantly associated with post-test levels. Conclusion: The study concludes that stress and depressive symptom scores were significantly lower after the mindfulness meditation programme. As there was no control group, the findings need confirmation in a controlled study.***

Keywords: Effectiveness, Meditation, Stress, Depressive symptoms, Nursing students

1. Introduction

Nursing students face heavy academic workload, worry about grades and the responsibility of patient care, which often lead to stress and, when prolonged, to depressive symptoms that affect learning and wellbeing.[1]

Student mental health is a growing concern in India, where more than 13,000 student deaths by suicide were reported in 2021, with Maharashtra among the states with the highest numbers.[2]

This study therefore evaluated the effectiveness of mindfulness meditation, a simple and low-cost practice of non-judgemental, moment-by-moment awareness of thoughts and feelings, in reducing stress and depressive symptoms among nursing students.[3]

2. Objectives

1) To assess the level of stress and depressive symptoms among students of a selected nursing college.
2) To administer the mindfulness technique of meditation.
3) To evaluate the effectiveness of meditation on stress and depressive symptoms among nursing students.
4) To find the association between post-test scores and selected demographic variables.

3. Material and Methods

A quantitative approach with a pre-experimental, one-group pre-test post-test design was adopted to evaluate the effectiveness of mindfulness meditation on stress and depressive symptoms among students of S.S.U.P. Nursing College, Chhatrapati Sambhajinagar. A non-probability Purposive sampling technique was used to select 50 students based on defined inclusion and exclusion criteria. Students aged 18-25 years, of either gender, able to practise meditation and available at the time of data collection were included. Students who already practised meditation or were unwilling to participate were excluded. Data were collected using a two-part tool: a demographic proforma and a 30-item rating scale to assess stress and depressive symptoms over the preceding month. Each item was scored Never = 0, Sometimes = 1 and Always = 2, giving a total score of 0-60, graded as mild (0-20), moderate (21-40) and severe (41-60). The tool was validated by experts in nursing, clinical psychology and psychiatry, and its reliability ($r = 0.6$) was checked in a pilot study of 10 students conducted from 23 September to 4 October 2023.

After permission from the institutional ethics committee and the college authorities, written informed consent was obtained from each participant. The pre-test was conducted first, followed by a seven-step mindfulness meditation programme comprising mindful breathing, relaxation, observation, awareness, listening, immersion and appreciation, delivered by lecture cum demonstration with a pamphlet. The post-test was then administered with the same tool. Participation was voluntary and confidentiality was maintained.

Data Analysis:
Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (paired t-test and chi-square test) were used. The paired t-test compared pre-test and post-test scores, and the chi-square test assessed the

association between post-test levels and demographic variables. A p-value below 0.05 was taken as significant.

4. Result

Demographic characteristics of students

Table 1: Distribution of students according to age, gender, religion, marital status and semester, N=50

Variable	Category	f	%
Age (years)	18-19	32	64
	20-21	13	26
	22-23	4	8
	24-25	1	2
Gender	Male	18	36
	Female	32	64
Religion	Hindu	35	70
	Christian	3	6
	Muslim	3	6
	Other	9	18
Marital status	Married	1	2
	Unmarried	49	98
Semester	1st semester	29	58
	2nd semester	0	0
	3rd semester	15	30
	4th semester	6	12

Most students, 32 (64%), were aged 18-19 years, and 32 (64%) were female. Seventy per cent were Hindu and 49 (98%) were unmarried. More than half, 29 (58%), were in the 1st semester, followed by 15 (30%) in the 3rd and 6 (12%) in the 4th semester.

Table 2: Distribution of students according to family and lifestyle variables, N=50

Variable	Category	f	%
Type of family	Nuclear	30	60
	Joint	20	40
	Extended	0	0
Area of residence	Rural	26	52
	Urban	24	48
Monthly family income (Rs.)	Below 10,000	18	36
	10,001-20,000	12	24
	20,001-30,000	9	18
	Above 30,000	11	22
Father's occupation	Farmer	27	54
	Government/private job	12	24
	Business	3	6
	Other	8	16
Mother's occupation	Housewife	42	84
	Government/private job	7	14
	Business	0	0
	Other	1	2
Sleep per day	Less than 4 hours	0	0
	4-6 hours	24	48
	7-9 hours	24	48
	More than 9 hours	2	4
Exercise	Occasionally	6	12
	Alternate days	8	16
	Weekly	5	10
	Never	31	62
Habits	Alcoholism	0	0
	Smoking	0	0
	No habits	42	84
	Others	8	16

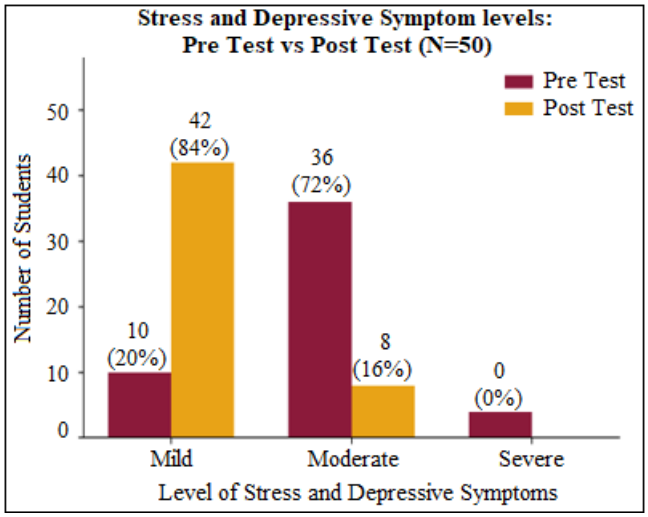
Thirty students (60%) belonged to nuclear families and 26 (52%) lived in rural areas. The largest group, 18 (36%), had a monthly family income below Rs. 10,000. The father was a farmer for 27 (54%) students and the mother a housewife for 42 (84%). Sleep of 4-6 hours and 7-9 hours was reported by 24 (48%) students each, 31 (62%) never exercised, and 42 (84%) had no habits.

Level of stress and depressive symptoms in pre-test and post-test

Table 3: Level of stress and depressive symptoms in pre-test and post-test, N=50

Level	Pre-test		Post-test	
	f	%	f	%
Mild (0-20)	10	20	42	84
Moderate (21-40)	36	72	8	16
Severe (41-60)	4	8	0	0

In the pre-test, 10 (20%) students had mild, 36 (72%) moderate and 4 (8%) severe stress and depressive symptoms. After the meditation programme, 42 (84%) had mild and 8 (16%) had moderate symptoms, and none had severe symptoms.



Graph 1: Level of stress and depressive symptoms in pre-test and post-test

Effectiveness of mindfulness meditation on stress and depressive symptoms

Table 4: Effectiveness of mindfulness meditation, N=50

Test	Mean	SD	Mean difference	df	Paired t	p value
Pre-test	25.44	7.99	10.84	49	11.58	< 0.05 (S)
Post-test	14.6	5.66				

The mean pre-test score was 25.44 (SD 7.99) and the mean post-test score was 14.60 (SD 5.66), a mean difference of 10.84. The calculated paired t value (11.58) was greater than the table value (2.01) at df = 49 and $p < 0.05$, so the difference is statistically significant.

Association between post-test level and demographic variables

Table 5: Association between post-test level and demographic variables, N=50

Variable	df	Chi-square	Table value	Result
Age	6	15.9	12.59	Significant
Gender	2	3.17	5.99	NS
Religion	6	7.12	12.59	NS
Marital status	2	0.63	5.99	NS
Semester	6	6.16	12.59	NS
Type of family	4	0.89	9.49	NS
Area of residence	2	1.04	5.99	NS
Monthly family income	6	12.68	12.59	Significant
Father's occupation	6	1.54	12.59	NS
Mother's occupation	6	2.85	12.59	NS
Sleep per day	6	3.31	12.59	NS
Exercise	6	1.53	12.59	NS
Habits	6	0.08	12.59	NS

Age (χ^2 = 15.90) and monthly family income (χ^2 = 12.68) showed a significant association with post-test levels at df = 6. Gender, religion, marital status, semester, type of family, area of residence, parental occupation, sleep, exercise and habits showed no significant association.

5. Discussion

In the present study, before the intervention, 72% of students had moderate and 8% had severe stress and depressive symptoms, and only 20% had mild symptoms. This shows that a large share of nursing students carry considerable stress and low mood before any support is offered. A cross-sectional study among college students in Mangalore found a similar burden, with depression present in about 79% of students and the largest group (41.2%) having moderate depression.[4]

After the meditation programme, 84% of students had mild symptoms, 16% had moderate symptoms and none had severe symptoms. Antony and Prasad reported a similar shift among undergraduate nursing students at Yenepoya Nursing College, Mangalore, where 57.1% of the intervention group had moderate depression before mindfulness meditation, and this decreased to mild levels after the intervention.[5]

The mean score fell from 25.44 to 14.60, a mean difference of 10.84, and the paired t value (11.58) was highly significant. Kaur and Sharma found a comparable fall in the mean stress score from 28.2 to 9.4 ($p = 0.001$) after a mindfulness training programme among nursing students in Amritsar, Punjab.[6]

Stress, worry and low mood often occur together, so the fall in the combined score is in line with reports that mindfulness eases related feelings as well. Stinson and Curl found that mindfulness meditation reduced anxiety, including apprehension, lack of focus and worry, among junior B.Sc. nursing students.[7]

The present study used one combined score, so it could not show whether stress or depressive symptoms improved more. A Korean study of nursing students found that a mindfulness-based stress coping programme significantly reduced stress and anxiety scores, whereas the difference in depression scores was not significant.[8]

Only age and monthly family income were significantly associated with post-test levels, while gender, religion, marital status, semester, type of family, residence, parental occupation, sleep, exercise and habits were not. In the Mangalore study of college students, the prevalence and severity of depression also increased significantly with age.[4] The association found here should be read with caution, because most students were in the youngest age group and many cells had very small counts.

The study had no control group, the sample was small and drawn from one college, and the self-developed scale gave a single combined score with modest reliability, so the findings cannot be generalised. A review of meditation, yoga and mindfulness in tertiary education students likewise found moderate benefits but noted that most studies were of poor quality and that results should be interpreted with caution.[9]

6. Conclusion

The study concludes that stress and depressive symptom scores among nursing students were significantly lower after a mindfulness meditation programme, and no student remained in the severe category. Mindfulness meditation is a simple, low-cost practice that can be taught easily by nurses and may be included in student wellbeing support in nursing colleges. Because this was a single-group study, the findings are preliminary, and a controlled study with a larger sample and a validated scale is recommended.

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