

# Effectiveness of Deep Breathing Exercises on Stress among the Students

Arsha Thulasi<sup>1</sup>, Dr. Sr. Bertha Pereppadan<sup>2</sup>

<sup>1</sup>Lecturer, Amrita College of Nursing, Kochi, Kerala, India.

<sup>2</sup>Principal, Holy Cross College of Nursing, Kollam, Kerala, India.

## ABSTRACT

**Introduction:** Stress is a mental or physical phenomenon formed through one's cognitive appraisal and stimulation and is a result of one's interaction with the environment. Stress among nursing students comes from many sources and it is a global issue. Students cannot avoid stress but their ability to cope with these stressors is important in achieving success in the academic performance. **Aim:** This study aimed to assess the effectiveness of Deep Breathing Exercises on stress among First Year B.Sc Nursing students. **Materials and Methods:** Pre-experimental research approach with one group pre-test-post-test design was used to conduct the study. Non-probability Judgmental sampling technique was used to select 40 samples from the total of 50 First Year B.Sc Nursing students. The tool used was Modified Stress Rating scale. **Result:** The present study revealed that the mean pre-test stress scores were 94.48 and standard deviation 16.839 and the mean post-test stress scores was 77.92 and the standard deviation was 5.650. The stress scores had reduced after the intervention of Deep Breathing Exercises technique. Paired 't' test was done to find out the effectiveness of Deep Breathing Exercises technique, with 't' value of (t=8.881) which showed that reduction in stress was significant ( $p < 0.05$ ). **Conclusions:** The study concluded that the Deep Breathing Exercises was an effective intervention in the reduction of stress among First Year B.Sc Nursing students.

**Keywords:** Effectiveness, Deep Breathing Exercises, Stress, Nursing students

## INTRODUCTION

Development of science and technology in recent years has made man's life fast, busy and full of crowding. The pressure on the muscles has been largely taken away by the machines, but the pressure on the nerves has greatly increased. This has resulted in stress disorders.<sup>6</sup> Stress is a mental or physical phenomenon formed through one's cognitive appraisal and stimulation and is a result of one's interaction with the environment. Stress among nursing students is a global issue<sup>5</sup>.

A study to compare the stress of students pursuing various professional courses found that nursing students experience higher levels of stress than other students. Stress is higher and there are a greater number of sources of stress among health professionals, especially nurses, with negative consequences for their health. Nursing students are prone to stress due to the transitional nature of college life. High stress is believed to affect health and academic functions of Nursing students.<sup>9</sup> The World Health Organization (WHO) has dubbed stress as the "Health Epidemic of the 21st Century"<sup>17</sup>. Globally, based on UNESCO reports 9 out of 10 First Year B.Sc Nursing students (87%) in 165 countries were affected with stress.<sup>20</sup>

In India, the studies shows that 93%–100% of First Year B.Sc Nursing students have medium to moderate stress while 1.9% of First Year B.Sc Nursing students exhibited severe stress.<sup>2</sup>In Kerala the studies showed that 22.5% of First Year B.Sc Nursing students experience high levels of stress and 77.5% experience moderate stress.

Nursing students are valuable human resources. Detection of potential stress among the nursing students is crucial since stress can lead to low productivity, low quality of life and suicidal ideas. Although some stress is expected in college and it can be a motivation to study and learn, too much stress can discourage learning. Stress is a double-edged sword that can either stimulate and motivate the students to peak performance or reduce the students to ineffectiveness.<sup>53</sup>Nursing students at the university level experience high stress, related to worry about successes, availability of time, engagement in patient care. There are many sources of stress among nursing students, which can be related to academic workload, numerous assignments, and exposure to new settings. The rate and level of stress and depression is alarming among nursing students of different academic fields.<sup>15</sup>

Students cannot avoid stress but their ability to cope with these stressors is important in achieving success in the academic performance. So managing stress effectively and seeking coping strategy in an appropriate way is very important for preventing the negative effects of stress.<sup>7</sup> In this study, we assessed the effectiveness of Deep Breathing Exercises on stress among the First Year B.Sc Nursing students in selected college at Kollam District, Kerala.

## **MATERIALS AND METHODS**

The present study was conducted among First Year B.Sc Nursing students in a selected College of Nursing at Kollam District, Kerala. A pre-experimental research approach with one group pre-test–post-test design was used to conduct the study. The present study, population comprises of all the First Year B.Sc Nursing students, and the sample consists of 40 First Year B.Sc Nursing students of Holy Cross College of Nursing at Kollam District. The Sampling technique used was non-probability -judgemental sampling technique. Data were collected using socio-demographic proforma and Modified Stress Rating scale which is developed by the researcher following the steps of tool development and validated by 11 experts in the field of Psychiatry. Reliability of the tool was found by using the Cronbach's Alpha method. The reliability of the tool was  $r=0.901$ , which indicates that the tool is highly reliable. There are 40 questions were there in the Modified Stress Rating Scale and each question carries 4 marks each. The categories of stress level in the Modified Stress Rating Scale are, Mild stress scores ranges from 40 to 80, Moderate stress scores ranges from 81-120 and Severe stress scores ranges from 121 to 160.

### *Data collection procedure:*

The pre-test was given for 50 First Year B.Sc Nursing students after taking signed informed consent. After analysing the pre-test stress scores, only the students with moderate and severe stress were taken for the study. According to the above facts only 40 students were eligible as participants for the study. Modified Stress Rating Scale was administered to the students before beginning the session. The questionnaire included baseline data and the Modified stress rating scale. Following the pre-test, Deep Breathing Exercises was taught to the students by demonstrating it for a duration of 30 minutes return demonstration was done by the students on the same day. Thirty minutes Deep Breathing Exercises was

practised by the participants for 7 consecutive days from 6:45 am to 7:15 am under the supervision of the researcher. On the eighth day post-test was carried out with the same measurement.

*Analysis:*The data were analysed using the SPSS version 16.0. The data were analysed in terms of descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired 't' test).

## RESULTS

### Sample characteristics:

Majority of the students' pattern of educational qualification, 95% were State Board and 5% were CBSE. Majority 95% students' medium of instruction during school education was English while remaining 5% studied in Malayalam medium. Majority 70% of the students' belongs to nuclear family while 17.5% students belongs to joint family and the remaining 12.5% belongs to extended family. Majority 65% of the students' area of living, in rural and the remaining 35% were in urban area. The sample characteristics were presented in the Table 1.

**Table 1: Frequency and percentage distribution of socio-demographic variables of the subjects  
n=40**

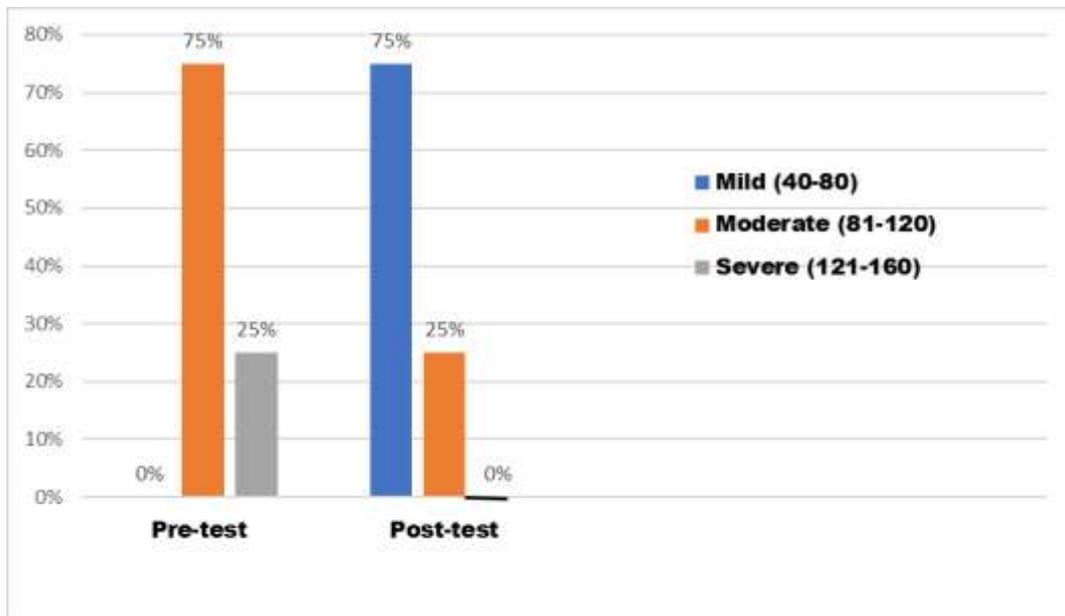
Demographic data	Frequency (%)
<b>Educational qualification</b>	
State board	38 (95)
CBSE	2 (5)
<b>Medium of instruction during school education</b>	
English	38 (95)
Malayalam	2 (5)
<b>Type of family</b>	
Nuclear	28 (70)
Joint	7 (17.5)
Extended	5 (12.5)
<b>Habitat</b>	
Rural	26 (65)
Urban	14 (35)

### Effectiveness of Deep Breathing Exercises on stress:

The significant changes on stress before and after the Deep Breathing Exercises were presented in the Figure 1. The finding of the present study showed that before administering Deep Breathing Exercises the pre-test stress scores shows 0% had mild stress, 75% had moderate stress and 25% had severe stress.

After conducting Deep Breathing Exercises for a period of seven days, 75% had mild stress, 25% had moderate stress and 0% had severe stress.

**Figure 1- Percentage distribution of pre-test and post-test stress among the subjects n=40**



**Table 2– Effectiveness of Deep Breathing Exercises on stress among First Year B.Sc Nursing students. n=40**

Stress scores	Mean	SD	Mean Difference	Paired t test	p value
Pre-test	94.48	16.839			
Post-test	77.92	5.650	16.56	8.881	.001**

\*\*significant at (p<0.01) level

The mean pre-test stress scores 94.48 ±16.839 was reduced to 77.92±5.650 in the post-test which was found to be statistically significant (t=8.881, p<0.01 ) (Table 2).

## DISCUSSION

### *Stress among First Year B.Sc Nursing students*

The present study aimed to evaluate the effectiveness of Deep Breathing Exercises on stress among 40 First Year B.Sc Nursing students of a selected Nursing College at Kollam District who had moderate to severe stress on Modified Stress Rating scale. The finding of the present study showed that before administering Deep Breathing Exercises the pre-test stress scores shows 0% had mild stress, 75% had moderate stress and 25% had severe stress.

A descriptive study was adopted by Dipti Singh and Monika Chaturvedi in 2019 to assess the stress among the First Year B.Sc Nursing students in BHCON in Indore. A total 30 students who were enrolled in the Nursing programme were taken as study respondents through consecutive sampling technique. Modified Stress Scale was used to assess the stress. The study showed that among students 30% of First

Year B.Sc Nursing students are having mild stress, 63.33% are having moderate stress, and 6.67% are having severe stress.<sup>10</sup>

#### *Effectiveness of Deep Breathing Exercises on stress among First Year B.Sc Nursing students*

The findings of the present study showed that after conducting Deep Breathing Exercises 75% had mild stress, 25% had moderate stress and 0% had severe stress. A similar study was conducted by Sneha et.al. to assess the effectiveness of Deep Breathing Exercises on stress among the First Year B.Sc Nursing students in selected College of Nursing. The findings showed that the mean post-test stress scores 24.65 were lower than their mean pre-test stress scores 51.55 among the samples. The results showed that the deep breathing exercise was very effective to reduce stress among First Year B.Sc Nursing students.<sup>7</sup>

#### *Association between pre-test stress scores among First Year B.Sc Nursing students and selected Socio demographic variables.*

The findings of the present study shows that there was no significant association between the pre-test stress scores and the selected socio-demographic variables. For supporting the similar findings related to the association of pretest scores with the selected socio demographic variables, an experimental study conducted by Kalavathi (2016) in Nellore. The results of the study showed that in pre-test (25%) students had mild stress, (37%) students had moderate stress and (38%) had severe stress. In post-test (49%) students had mild stress, (51%) had moderate stress and no severe stress. The study results also shows that there was no significant association between pre-test scores of stress and the selected socio-demographic variables.<sup>11</sup>

Thus it can be concluded that Deep Breathing Exercises was an effective intervention in reducing the stress among first year B.Sc Nursing students.

## **CONCLUSION**

To the best of our knowledge, the present study is the first study to investigate the effectiveness of Deep Breathing Exercises on stress among the First Year B.Sc Nursing students. People have a characteristic way of coping with stress based on their personality and they choose appropriate strategies to cope with stressors they confront.<sup>12</sup> The study revealed that the Deep Breathing Exercises were very effective in reducing the stress among the First Year Nursing B.Sc Nursing students. Finally this study was very useful and effective for the students to relieve their stress during their academic period and it can be recommended for the students daily before starting their Practical as well as their Theory sessions. It is well suited for people of the modern era surviving with various stress-related disorders as it encompasses yogic postures, breathing exercise and meditation, all the three components which can be practiced easily.<sup>13</sup> According to the theorist, life change creates a state of disequilibrium which imposes a period of readjustment which can be overthrown by the stress relieving strategies.<sup>14</sup>

## **Implications and recommendations**

The recommendations includes: The same study can be replicated by using a true experimental research design which might yield more reliable results, to validate the findings and to make generalization. Replication of the study could be done with a larger sample to validate and generalize the findings. A similar study could be conducted with only a male group or only a female group to find out the

difference in effectiveness of the Deep Breathing Exercises. A similar study could be conducted for Nursing faculty members. A similar study can be conducted among the post-graduate students. A study can be conducted on the effect of Deep Breathing Exercises on stress among patients, both medical and psychiatric patients.

### Limitations

The study has some limitations that should be considered: One important limitation of this study was, we used a small sample of students. The study did not use any control group, therefore there are possibilities of threats to validity. Only First Year B.Sc Nursing students were selected by judgmental sampling technique and therefore they do not represent the entire student population.

### REFERENCES

1. Dr. Annu Jose. prevalence of stress among students of medical college in central Kerala: Nepal Journal of Epidemiology.2014;V4(2):9-14.
2. Morgan T Clifford, King A Richard, Weisz R. John, Schopler John, Introduction to Psychology, Seventh edition, New Delhi: Tata McGraw Hill, 2003.
3. Charanjeev Singh, Sunita Sharma, Ravinder Kumar Sharma. Level of stress and coping strategies used by nursing interns: Nursing and Midwifery Research Journal. 2011;V 7 (4):152-153.
4. George et.al. Effectiveness of Deep Breathing Exercises on stress among the First Year B.Sc Nursing students in Assam. Nursing Research Journal. 2013 June 2;6.
5. Hakime Aslan, UmmuhanAkturk. Nursing education stress levels of nursing students and the associated factors Annals of Medical Research .2018; V 25(4).
6. American Psychological Association. Mental health issues increased significantly in young adults over the last decade: 2019: March 15.Available from: Science Daily/APA.
7. Sneha R G. Effect of deep breathing exercise to reduce stress among First Year BSc. Nursing students. MSc (Dissertation). Salem: MGR University;2018.
8. Emad Adel Shadaifat. Stress and Coping Strategies Among Nursing Students: Global journal of Health science.2018; march:10(5):32.
9. Kaur S, Bajwa DAK. Impact of Deep Breathing Exercises on Stress Level among First Year B.ScNursing Students. International Journal of Health Sciences. 2018;(9):6.
10. Singh D. Assess the Level of Stress among B.Sc. Nursing 1st Year Students in Selected Nursing Colleges of Indore. 4(1):2.
11. Kalavathi.B and 'Rajeswari.H. Effectiveness of Pranaama on Level of stress among the I year B.Sc Nursing students: International Journal of Recent Scientific Research. 2016;Vol 5(3):29-30.
12. George L, Balasubramanian A, Paul N, Leelamoni K. A study on perceived stress and coping mechanisms among students of a medical school in South India. J of Evidence Based Med &Hlthcare, pISSN-2349-2562, eISSN-2349-2570/ Vol 3/Issue 38/May 12, 2016. 2016 Apr 12;3.
13. Sarika KS, Kumar H, Balakrishnan V, Sundaram KR. Impact of Integrated Amrita Meditation® technique on stress in type 2 diabetic patients. Indian Journal of Medical Research. 2020 Nov;152(5):508–14.
14. Soumya Raj, M, A. Raj, and N., A., “Level of Stress and Coping Strategies among Institutionalised and Non-Institutionalised Elderly”, Indian Journal of Public Health Research & Development, vol. 11, no. 3, pp. 637-642, 2020.