

Effectiveness of Deep Breathing Exercises on Stress Management Among Nursing Students

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Abstract

Introduction: Exams, clinical duties, academic pressure, and interpersonal difficulties are common sources of stress for nursing students. Learning outcomes, clinical performance, and psychological well-being can all be negatively impacted by ongoing stress. Deep breathing exercises are easy, affordable, and non-pharmacological methods for reducing stress and promoting relaxation. The goal of the current study was to evaluate how well deep breathing techniques helped nursing students manage their stress.

Methodology: A one-group pretest-post-test quantitative pre-experimental research design was used. One hundred B.Sc. nursing students from particular nursing schools in Kanpur, Uttar Pradesh, participated in the study. Participants were selected by non-probability convenience sampling. The Perceived Stress Scale (PSS) was used to measure stress levels. Students engaged in deep breathing exercises for 15 minutes every day for four weeks after the pretest. After the intervention was finished, a post-test evaluation was carried out. The analysis employed both descriptive and inferential statistics.

Results: The findings revealed that before the intervention, 62% of nursing students had high stress, 30% had moderate stress, and 8% had low stress. After the intervention, 58% had low stress, 34% had moderate stress, and only 8% had high stress. The mean pretest stress score was 29.84 ± 5.62 , while the mean post-test stress score was 18.46 ± 4.21 . The calculated paired t-value was 19.78, which was statistically significant at $p < 0.001$.

Conclusion: Nursing students found that deep breathing exercises helped them feel less stressed. Frequent integration of breathing exercises into nursing education programs may enhance academic achievement and foster psychological well-being. Studies have repeatedly demonstrated that mind-body and breathing-based therapies help nursing students feel less stressed.

Keywords: Nursing education, relaxation therapy, deep breathing exercises, stress management, and mental health.

INTRODUCTION

Stress is a common occurrence that affects people of all ages and occupations.¹ Due to their rigorous academic schedules, clinical training requirements, exams, patient care obligations, and professional expectations,

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nursing students are especially susceptible to stress. Due to its detrimental effects on clinical performance, psychological well-being, and academic success, stress among nursing students has grown to be a significant concern in nursing education. According to research, nursing students endure high amounts of stress during their academic careers.²

Stress is a physiological and psychological reaction to demands, either internal or external, that surpass a person's capacity for coping.³ Stressors that nursing students frequently face include academic stress, clinical stress, interpersonal issues, financial concerns, and adjustment challenges. Anxiety, sadness, sleep problems, poor focus, emotional tiredness, and decreased academic production are all possible outcomes of excessive stress.⁴

Theoretical knowledge and real-world clinical experiences are combined in nursing education.⁵ Students must gain knowledge, hone their clinical skills, interact with patients in an effective manner, and adjust to challenging healthcare settings. Stress levels are frequently raised as a result of these conflicting demands. Excessive stress can hinder judgment, lower self-esteem, and have a detrimental impact on patient results.⁶

For this reason, stress management is a crucial part of nursing education. Effective stress management practices help kids maintain emotional balance, develop resilience, and enhance learning experiences.⁷ Nursing students' stress levels have been lowered using a variety of interventions, including mindfulness, yoga, relaxation techniques, meditation, physical activity, and breathing exercises. Research has shown that stress management strategies improve academic achievement and psychological well-being.⁸

One of the easiest and most successful methods of relaxation is deep breathing. By stimulating the parasympathetic nervous system, deep breathing, which entails slow, deliberate inhalation and expiration, encourages relaxation.⁹ This physiological reaction promotes mental stability and relaxation while lowering blood pressure, heart rate, and muscle tension.¹⁰ Deep breathing exercises are simple to learn, don't require any equipment, and may be done in a variety of contexts.¹¹

Deep breathing techniques have been shown to lower stress, anxiety, and physiological arousal. Frequent

practice improves autonomic balance, increases oxygenation, and fosters psychological health.¹² Studies conducted among nursing students have revealed significant reductions in stress following breathing-based therapies. In educational contexts, deep breathing exercises have been found to be useful and approachable methods for stress management.¹³

Stress is becoming more common among nursing students, which emphasizes the need for practical, affordable, and simple solutions.¹⁴ Deep breathing techniques could be a useful tactic for improving kids' academic performance and emotional well-being.¹⁵ Thus, the goal of the current study was to evaluate how well deep breathing techniques helped nursing students manage their stress.¹⁶

OBJECTIVES

1. To assess the pretest level of stress among nursing students.
2. To assess the post-test level of stress among nursing students following deep breathing exercises.
3. To evaluate the effectiveness of deep breathing exercises on stress management among nursing students.
4. To determine the association between pretest stress scores and selected demographic variables.

HYPOTHESES

H₁: There will be a significant difference between pretest and post-test stress scores among nursing students after deep breathing exercises.

H₂: There will be a significant association between pretest stress scores and selected demographic variables.

METHODOLOGY

Research Approach:

Quantitative research approach.

Research Design:

pre-experimental one-group pretest, post-test design.

Setting:

Selected nursing colleges of Kanpur, Uttar Pradesh.

Population:

B.Sc. Nursing students.

Sample Size:

100 nursing students.

Sampling Technique:

non-probability convenience sampling.

Inclusion Criteria:

- B.Sc. Nursing students studying in selected colleges.
- Students willing to participate.
- Students available during the data collection period.

Exclusion Criteria:

- Students undergoing psychiatric treatment.
- Students absent during data collection.

Research Variable

Independent Variable:

Deep Breathing Exercises.

Dependent Variable:

Stress Level.

Research Tool

Section A:

Demographic Variables.

Section B:

Perceived Stress Scale (PSS).

RESULTS

Table 1: Distribution of Nursing Students According to Pre-test Stress Level

Stress Level	Frequency (f)	Percentage (%)
Low Stress	8	8.0
Moderate Stress	30	30.0
High Stress	62	62.0
Total	100	100.0

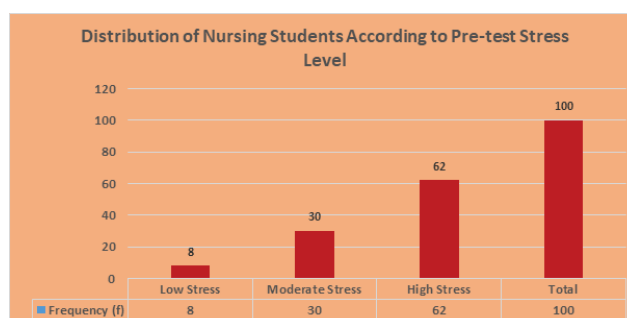


Figure 01: Nursing Students According to Pre-test Stress Level

Scoring Criteria

Low Stress: 0–13

Moderate Stress: 14–26

High Stress: 27–40

Validity:

Established by experts in psychiatric nursing, psychology, and nursing education.

Reliability:

Cronbach's Alpha = 0.89.

Pilot Study:

Conducted among 10 nursing students excluded from the main study.

Data Collection Procedure

Permission was obtained from the principals of selected nursing colleges in Kanpur. Informed consent was obtained from participants. Pretest stress assessment was conducted using the Perceived Stress Scale. Students then practiced deep breathing exercises for 15 minutes daily for four weeks under supervision. Post-test assessment was conducted after completion of the intervention.

Ethical Considerations

- Institutional ethical approval obtained.
- Written informed consent obtained.
- Confidentiality maintained.
- Participation was voluntary.

Table 2: Distribution of Nursing Students According to Post-test Stress Level

Stress Level	Frequency (f)	Percentage (%)
Low Stress	58	58.0
Moderate Stress	34	34.0
High Stress	8	8.0
Total	100	100.0

Table 3: Comparison of Pretest and Post-test Stress Scores

Variable	Mean	SD	Mean Difference	t-value
Pretest	29.84	5.62	11.38	19.78*
Post-test	18.46	4.21		

*Significant at $p < 0.001$

DISCUSSION

The findings revealed that nursing students experienced considerable stress before the intervention. Following four weeks of deep breathing exercises, a significant reduction in stress levels was observed. The improvement in post-test scores demonstrates the effectiveness of deep breathing exercises as a stress management strategy.

These findings are consistent with previous studies reporting that breathing exercises reduce stress, anxiety, and physiological responses among nursing students. Controlled breathing techniques activate relaxation mechanisms and improve emotional regulation, thereby contributing to reduced perceived stress.

CONCLUSION

The study concluded that deep breathing exercises were highly effective in reducing stress among nursing students. Regular practice of breathing exercises can enhance psychological well-being, improve coping abilities, and support academic success. Nursing institutions should encourage students to adopt breathing-based relaxation techniques as part of routine stress management programmes.

RECOMMENDATIONS

1. Larger sample sizes may be used in comparable research.
2. Comparative research may be done between different relaxation techniques.
3. Student wellness programs must to include deep breathing exercises.
4. Longitudinal research can evaluate long-term efficacy.
5. Nursing courses must to incorporate stress management instruction.

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Nil

CONFLICT OF INTEREST: None

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