



"A STUDY TO DETERMINE EFFECT OF MINDFULNESS BASED BREATHING ON WELL BEING AMONG ADOLESCENTS WITH ACADEMIC ANXIETY"

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ABSTRACT

Adolescents today face intense academic pressure, leading to **high levels of stress and anxiety**, which can affect their **cognitive functioning, emotional stability, and overall health**. This current study explores how **structured Mindfulness - based breathing exercises can help adolescents manage academic anxiety and enhance their well-being**. The study used an **experimental pre-test and post-test design & involved 203 adolescents (aged 13–18 years)** from selected educational institution. Participants were screened for **moderate to high academic anxiety levels** using a **self-reported validated tool & questionnaires** (to captured students' experiences and feedback). A total of 156 students were found to have moderate to high anxiety. The pre-test results revealed that 77.22% of students experienced moderate to severe academic anxiety prior to the intervention. Following the program, the experimental group demonstrated remarkable improvements across multiple domains compared to the control group. Specifically, the intervention group showed a significant reduction in mean anxiety scores (67.42 to 46.55, $p < 0.001$). However statistically there was no significant relationship between the demographic variables and the effectiveness of the intervention. The key findings of the study suggest that students practicing mindful breathing techniques experience **significant emotional, psychological, and cognitive benefits**.

KEYWORDS : Adolescents, Academic anxiety, Mindfulness breathing interventions

INTRODUCTION

Adolescents today face intense academic pressure, leading to **high levels of stress and anxiety**, which can affect their **cognitive functioning, emotional stability, and overall health**. Academic anxiety is associated with symptoms like **nervousness, lack of concentration, sleep disturbances, and even depression**. Academic anxiety among adolescents is a growing concern affecting their mental health and academic performance. Mindfulness-based breathing techniques are being explored as non-pharmacological interventions to address this issue. Research suggests that **mindfulness-breathing interventions** encourage **present-moment awareness, deep relaxation, and controlled breathing**, which have been linked to reduced cortisol (stress hormone) levels and improved emotional regulation. This study explores how **structured Mindfulness - based breathing exercises can help adolescents manage academic anxiety and enhance their well-being**.

BACKGROUND OF THE STUDY

Adolescence is a critical phase of life marked by significant **physical, emotional, and cognitive changes**. During this stage, academic pressure is one of the primary sources of stress for students, leading to **academic anxiety**. This anxiety manifests in various forms, including **fear of failure, excessive worry about performance, inability to concentrate, sleep disturbances, and emotional distress**. If left unaddressed, academic anxiety can contribute to **poor academic performance, low self-esteem, and long-term mental health challenges** such as depression and chronic stress disorders.

According to World Health Organization (WHO), globally, it is estimated that one in seven (14%) of 10–19-year-olds experience mental health conditions, yet these remain largely unrecognized and untreated. But it has been observed that 70% of junior high school students experience high levels of academic anxiety, which negatively impacts their mental health and academic anxiety.

Several studies highlight the effectiveness of mindfulness breathing interventions:

- Yale University (2020): Breathing-based wellness programs improved mental well-being and reduced anxiety in 135 students¹³.
- Turkey (2021): 140 students practicing pranayamic breathing showed lower test anxiety and better academic performance¹⁴.
- University Study (2016): Mindful breathing reduced test anxiety and increased positive thinking in six days¹⁵.
- COVID-19 Study (2023): A 4-week breathing meditation program reduced stress and anxiety among 122 students¹⁶.

These findings suggest that mindfulness-based breathing techniques are low-cost, accessible, and highly effective in reducing academic anxiety while improving overall well-being.

NEED FOR THE STUDY:

Academic anxiety is a prevalent issue among adolescents, affecting their mental, emotional, and academic well-being. Many students experience Intense pressure to excel in academic, Increased stress due to competition and high expectations, Difficulty in concentrating and retaining information, Negative emotions such as fear, nervousness, and self-doubt, Physical symptoms like headaches, sleep disturbances, and fatigue.

Despite the growing recognition of **mental health concerns in academic settings**, there is still a **lack of structured non-pharmacological interventions** to help students manage academic anxiety effectively. Existing interventions often rely on counseling, medication, or lifestyle changes, but these may not always be accessible or sustainable for all students.

This study, therefore, seeks to address the following research problem:
Can mindfulness-based breathing techniques effectively reduce academic anxiety and improve the overall well-being of adolescents?

MATERIAL AND METHOD

The study used an **experimental pre-test and post-test design** to examine the effectiveness of mindfulness-based breathing exercises on adolescent well-being. The study involved **203 adolescents (aged 13–18 years)** from selected educational institution. Participants were screened for **moderate to high academic anxiety levels** using a **self-reported validated tool & questionnaires** (to capture students' experiences and feedback). A total of 156 students were found to have moderate to high anxiety. Using simple random sampling technique, the students were divided into experimental and control group (78 students in each group). The experimental group participated in a 21 days **mindfulness-based breathing intervention**, which included:

- **Techniques such as deep breathing, body scanning, and awareness-based breathing with 5 min duration.**
- **Daily 15-minute guided breathing sessions (morning) which included Diaphragmatic (Belly) Breathing, Box Breathing (Four-Square Breathing), Bhramari Breathing Technique (Humming Bee Breath), Basic Pranayama with Hand Mudra (Anulom Vilom / Alternate Nostril Breathing) exercises .**
- **Integration of mindfulness training into daily academic routines including holidays and absence from school.**
- **Post test was administered on the 22nd day.**

Data was analyzed using paired t-tests and ANOVA were used to compare pre- and post-test results.

RESULTS

The pre-test results revealed that 77.22% of students experienced moderate to severe academic anxiety prior to the intervention. Following the program, the experimental group demonstrated remarkable improvements across multiple domains compared to the control group. Specifically, the intervention group showed a significant reduction in mean anxiety scores (67.42 to 46.55, $p < 0.001$). However statistically there was no significant relationship between the demographic variables and the effectiveness of the intervention.

Students in the experimental group reported feeling calmer, more focused, and better equipped to manage academic stress. They also experienced enhanced emotional regulation, improved sleep quality, and expressed a more positive outlook toward their academic responsibilities.

Section I : ASSESSMENT OF LEVEL OF ACADEMIC ANXIETY AMONG ADOLESCENTS**Table 1 : Assessment of Level of Academic Anxiety among Adolescents**

n =156

Level of academic anxiety		Group frequency		Chi square value	
		Control	Intervention	Pre test	Post test
Mild	Pre test	00	01	2.786	80.357
	Post test	00	49		
Moderate	Pre test	58	50		
	Post test	58	18		
Severe	Pre test	12	18		
	Post test	12	01		
No anxiety	Pre test	00	00		
	Post test	00	01		

Table value standard $\chi^2 = 5.991465$ (pretest)Table value standard $\chi^2 = 7.814728$ (posttest)

Table 1 : Describes the level of academic anxiety among adolescents which was examined using Chi square test.

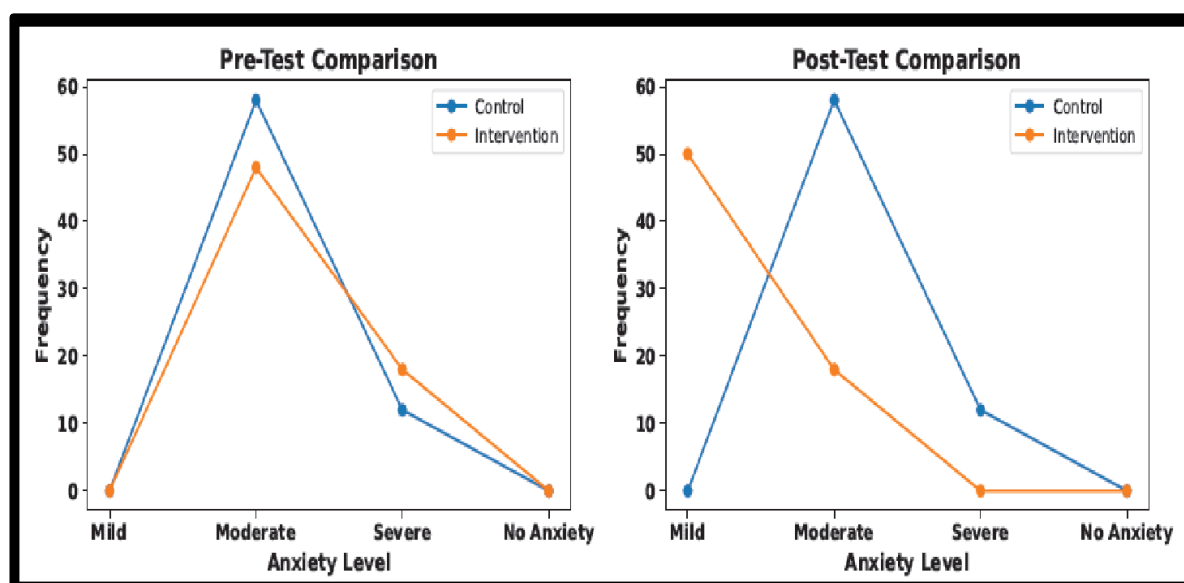


Fig 1 : Assessment of Level of Academic Anxiety among adolescents

EFFECTIVENESS OF MINDFULNESS BREATHING TECHNIQUES ON REDUCTION OF ACADEMIC ANXIETY

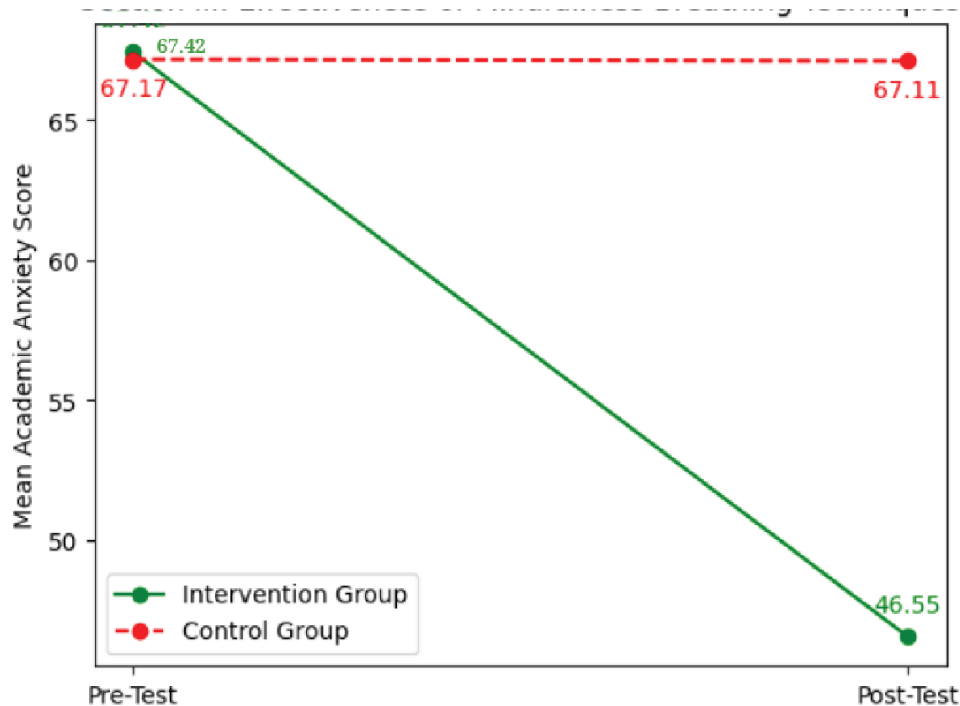
Table 2: Effectiveness of mindfulness breathing techniques on reduction of academic anxiety
(n=156)

Tabulated t -1.977431212

Table 1 shows that there is no significant difference in mean academic anxiety scores between the control and intervention groups before the test ($t = -0.152$, $p = 0.879$).

However, after the test, there was a significant difference in mean academic anxiety scores between the control and intervention groups ($t = 12.679$, $p < 0.001$).

Fig 2 : Effectiveness of mindful breathing technique on reduction of academic anxiety



DISCUSSION

Mindfulness-based breathing techniques are a simple yet effective method to manage academic stress, promoting overall adolescent well-being. The results of this study align with previous research highlighting the benefits of mindfulness practices in **reducing stress and anxiety among students**. The physiological impact of mindful breathing, such as **lower cortisol levels (stress hormone) and increased dopamine levels (happiness hormone)**, explains the significant improvements in anxiety reduction and emotional well-being. Integrating these practices into educational settings is crucial for proactive stress management. Despite initial challenges such as **student reluctance to engage in mindfulness practices**, most participants reported noticeable benefits, leading to **greater acceptance of the technique** over time.

LIMITATIONS OF THE STUDY

While the study aims to provide **valuable insights**, certain limitations must be acknowledged:

1. **Sample Size:** The study involves a **limited number of participants**, which **may not fully represent** all adolescents experiencing **academic anxiety** ⁽¹⁴⁾.
2. **Short-Term Analysis:** The intervention lasts **three weeks**, and the study **does not explore long-term effects** beyond this period ⁽²⁴⁾.
3. **Individual Differences:** Participants **may have different levels of engagement** and **responsiveness** to mindfulness-based breathing, affecting the uniformity of results ⁽²⁵⁾.
4. **Environmental Factors:** External stressors, such as **family issues, peer pressure, and lifestyle habits**, may also influence students' anxiety levels, **which are not controlled in this study** ⁽²⁶⁾.

CONCLUSION:

The key findings of the study suggest that students practicing mindful breathing techniques experience **significant emotional, psychological, and cognitive benefits**. Given the increasing prevalence of academic anxiety, **incorporating mindfulness breathing interventions in educational institutions** could be an effective strategy to promote adolescent mental health.

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