



# A Quasi-Experimental Study To Assess The Effectiveness Of Mindfulness-Based Relaxation Training On Stress Level Among Adolescents Studying In Selected Senior Secondary Schools Of Jhotwara, Jaipur, Rajasthan

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## Abstract

### Background:

Adolescents frequently experience psychological stress due to academic demands, peer relationships, and social pressures. Mindfulness-based relaxation training has emerged as an effective non-pharmacological approach to improve emotional regulation and reduce stress among adolescents.

### Aim:

To assess the effectiveness of mindfulness-based relaxation training on stress levels among adolescents studying in selected senior secondary schools of Jhotwara, Jaipur, Rajasthan.

### Methods:

A quasi-experimental control group pretest–posttest design was used. A total sample of 100 adolescents was selected using stratified random sampling and divided into experimental (n=50) and control (n=50) groups. Stress levels were assessed using a standardized perceived stress scale. The experimental group received mindfulness-based relaxation training for two weeks, while the control group received no intervention. Data were analyzed using descriptive statistics, independent *t*-test, and paired *t*-test.

### Results:

The experimental group showed a significant reduction in mean stress score after intervention compared to the control group ( $p < 0.001$ ).

**Conclusion:**

Mindfulness-based relaxation training was effective in reducing stress among adolescents and can be integrated into school mental health programmes.

**Keywords:** Adolescents, Stress, Mindfulness, Relaxation Training, School Health, Quasi-Experimental Study

**1. Introduction**

Adolescence is a crucial developmental period characterized by significant physical, emotional, cognitive, and social changes. During this transitional phase, adolescents often experience heightened emotional sensitivity and increased exposure to academic demands, peer influence, and social expectations. These factors can contribute to elevated levels of stress, which may adversely affect mental health, learning ability, behavior, and overall psychosocial adjustment. If not properly managed, persistent stress during adolescence may lead to long-term emotional and psychological difficulties.

In recent years, stress among school-going adolescents has emerged as an important public health concern due to increasing academic competition and lifestyle pressures. High stress levels can interfere with concentration, academic performance, interpersonal relationships, and self-esteem, emphasizing the need for early preventive and supportive interventions within school settings. Schools provide an ideal environment for implementing mental health promotion programmes aimed at enhancing coping skills and emotional resilience among students.

Non-pharmacological interventions, particularly mindfulness-based relaxation training, have gained considerable attention as effective approaches for stress reduction. Mindfulness practices encourage individuals to focus on the present moment with awareness and acceptance, helping reduce negative thoughts, emotional reactivity, and psychological distress. Such interventions promote relaxation, improve attention, and enhance emotional regulation, thereby supporting better mental well-being among adolescents.

School-based mindfulness programmes are increasingly recognized as practical, cost-effective, and feasible strategies to address stress-related problems among students. By integrating relaxation techniques and mindfulness practices into educational settings, adolescents can develop healthier coping mechanisms and improved emotional stability. Therefore, the present study was undertaken to assess the effectiveness of mindfulness-based relaxation training in reducing stress levels among adolescents studying in selected senior secondary schools.

## 2. Need of the Study

### 2. Need of the Study

Adolescence is a sensitive developmental stage during which individuals experience rapid biological, psychological, and social changes. These transitions often make adolescents more vulnerable to stress arising from academic pressure, peer relationships, family expectations, and social challenges. Increasing competition in educational settings and changing lifestyle patterns have contributed to a rising prevalence of stress among school-going adolescents. Excessive stress during this period can negatively influence mental health, academic achievement, emotional regulation, and social adaptation, thereby affecting overall well-being.

Evidence suggests that unmanaged stress during adolescence may lead to long-term psychological problems such as anxiety, depression, reduced self-esteem, and poor coping ability. Many adolescents lack adequate awareness and practical strategies to manage stress effectively. Therefore, early identification and implementation of preventive mental health interventions are essential to promote emotional stability and healthy development. Schools provide an ideal platform for implementing such interventions because adolescents spend a substantial portion of their time in educational environments.

Mindfulness-based relaxation training has emerged as an effective non-pharmacological approach for reducing stress and improving emotional well-being. Mindfulness techniques help individuals focus on the present moment, reduce negative thinking patterns, and improve coping mechanisms. These practices are simple, cost-effective, and easily adaptable within school settings, making them appropriate for large-scale implementation among adolescents.

Despite growing evidence supporting mindfulness-based interventions, limited school-based interventional studies have been conducted among adolescents in Jhotwara, Jaipur, Rajasthan. There is a need to generate local evidence regarding the effectiveness of mindfulness-based relaxation training in reducing stress among adolescents. The findings of this study may help educators, school health nurses, and policymakers develop structured mental health promotion programmes and integrate mindfulness-based strategies into routine school health services, ultimately improving the psychological well-being of adolescents.

### 3. Objectives

1. To assess pretest stress levels among adolescents in both groups.
2. To implement mindfulness-based relaxation training in the experimental group.
3. To compare pretest and posttest stress levels within groups.
4. To compare posttest stress scores between experimental and control groups.
5. To determine association between stress levels and demographic variables.

### 4. Hypothesis

#### H<sub>1</sub> (Research Hypothesis):

There will be a statistically significant difference between the posttest stress scores of the experimental and control groups after administration of mindfulness-based relaxation training among adolescents.

#### H<sub>0</sub> (Null Hypothesis):

There will be no statistically significant difference between the posttest stress scores of the experimental and control groups after administration of mindfulness-based relaxation training among adolescents.

### 5. Methodology

#### 5.1 Research Approach

A **quantitative research approach** was adopted to objectively assess the effectiveness of mindfulness-based relaxation training on stress levels among adolescents.

#### 5.2 Research Design

The study employed a **quasi-experimental control group pretest–posttest research design** to evaluate the effectiveness of the intervention by comparing outcomes between experimental and control groups.

#### Schematic Representation of Research Design

Group	Pretest	Intervention	Posttest
Experimental	O <sub>1</sub>	Mindfulness-Based Relaxation Training	O <sub>2</sub>
Control	O <sub>1</sub>	No Intervention	O <sub>2</sub>

#### 5.3 Setting of the Study

The study was conducted in selected senior secondary schools located in Jhotwara, Jaipur, Rajasthan.

## 5.4 Population

The target population comprised adolescents aged 15–18 years studying in senior secondary schools.

## 5.5 Sample Size

The total sample size consisted of **100 adolescents**, divided into two groups:

- **Experimental Group:** 50 participants
- **Control Group:** 50 participants

## 5.6 Sampling Technique

Participants were selected using **stratified random sampling**, ensuring appropriate representation of different classes and demographic characteristics.

## 5.7 Inclusion Criteria

- Students aged between 15–18 years.
- Adolescents willing to participate in the study.
- Students present during the period of data collection.

## 5.8 Exclusion Criteria

- Adolescents diagnosed with psychiatric illness.
- Students who had previously undergone similar mindfulness or relaxation training.

## 5.9 Variables of the Study

- **Independent Variable:** Mindfulness-based relaxation training.
- **Dependent Variable:** Stress level among adolescents.
- **Demographic Variables:** Age, gender, class level, and family type.

## 5.10 Data Collection Tools

Data were collected using the following instruments:

1. **Demographic Data Questionnaire** – to collect baseline information.
2. **Standardized Perceived Stress Scale (PSS)** – to assess stress levels among adolescents.

### 5.11 Description of Intervention

The mindfulness-based relaxation training included the following components:

- Deep breathing exercises
- Guided mindfulness meditation
- Body awareness techniques
- Positive affirmation practices

The intervention was conducted for **20 minutes daily over a period of 14 days**.

### 5.12 Validity and Reliability

Content validity of the tools was established through expert review in the fields of nursing, psychology, and education. Reliability of the Perceived Stress Scale was confirmed with a reliability coefficient of **0.86**, indicating good consistency.

### 5.13 Ethical Considerations

- Ethical clearance was obtained from the institutional ethical committee.
- Permission was obtained from school authorities.
- Informed consent was secured from participants.
- Confidentiality and anonymity of participants were maintained throughout the study.

### 5.14 Plan for Data Analysis

Data were analyzed using descriptive and inferential statistics:

- **Descriptive statistics:** Mean, standard deviation, frequency, and percentage.
- **Inferential statistics:**
  - Paired *t*-test
  - Independent *t*-test
  - Chi-square test

## 6. Results

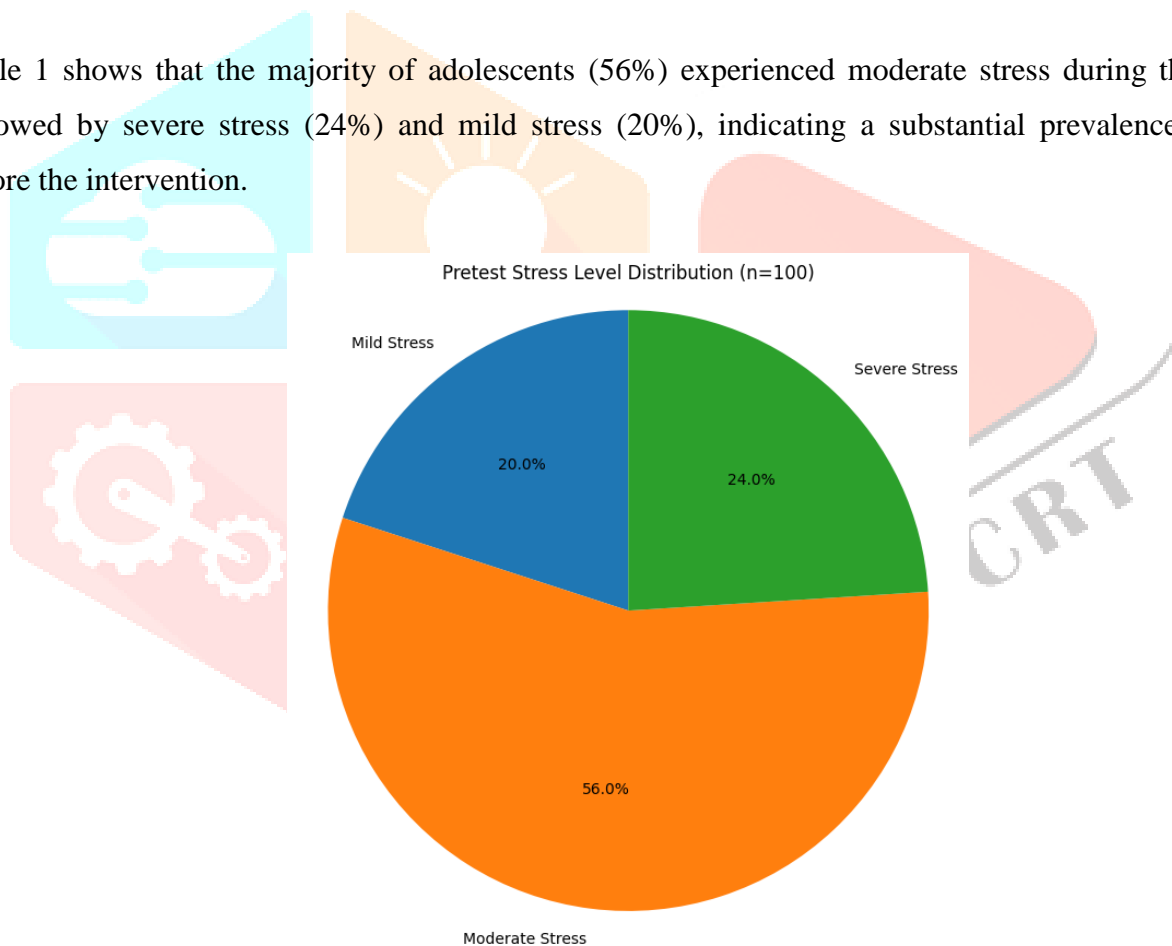
The data collected from 100 adolescents were analyzed using descriptive and inferential statistics to assess the effectiveness of mindfulness-based relaxation training on stress levels.

**Table 1: Pretest Stress Level Distribution (n = 100)**

Stress Level	Frequency	Percentage
Mild Stress	20	20%
Moderate Stress	56	56%
Severe Stress	24	24%

### Interpretation

Table 1 shows that the majority of adolescents (56%) experienced moderate stress during the pretest, followed by severe stress (24%) and mild stress (20%), indicating a substantial prevalence of stress before the intervention.

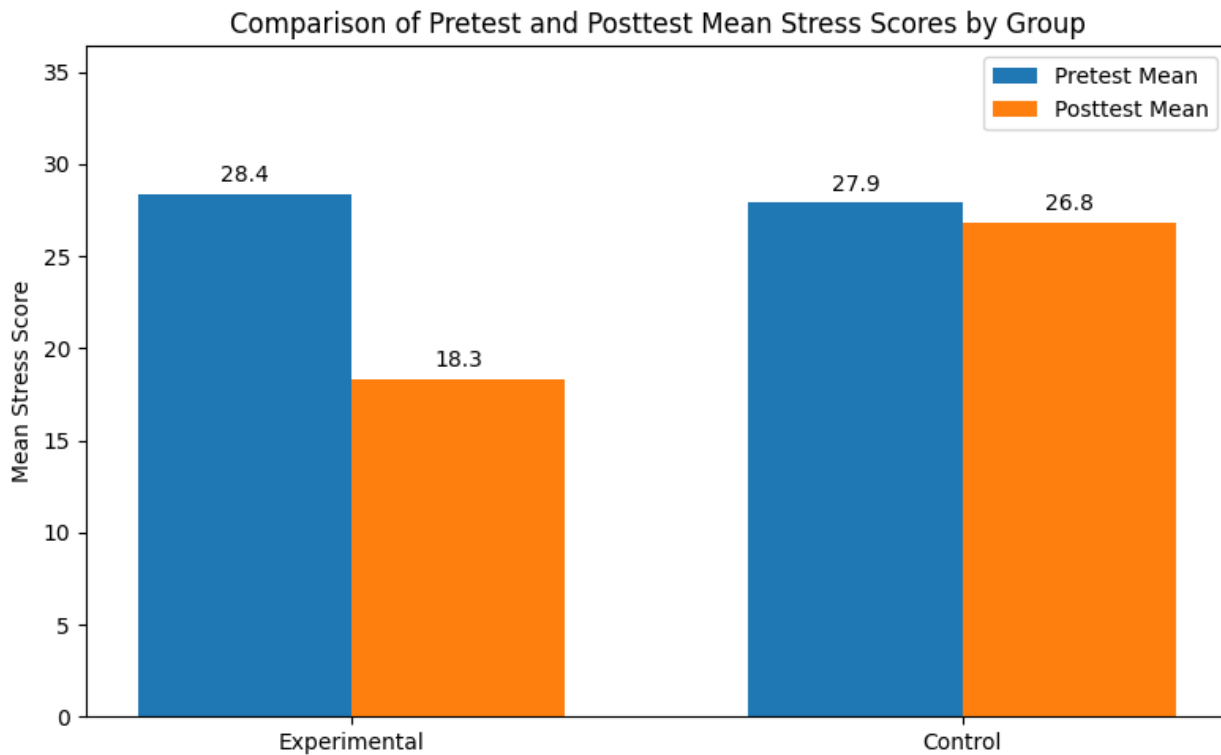


**Table 2: Comparison of Mean Stress Scores**

Group	Pretest Mean $\pm$ SD	Posttest Mean $\pm$ SD	<i>t</i> -value	<i>p</i> -value
Experimental	28.4 $\pm$ 5.2	18.3 $\pm$ 4.6	9.85	<0.001
Control	27.9 $\pm$ 5.0	26.8 $\pm$ 5.1	1.12	>0.05

## Interpretation

Table 2 reveals a statistically significant reduction in stress levels in the experimental group after mindfulness-based relaxation training ( $p < 0.001$ ). In contrast, the control group showed no statistically significant change. This finding indicates the effectiveness of the intervention in reducing stress among adolescents.

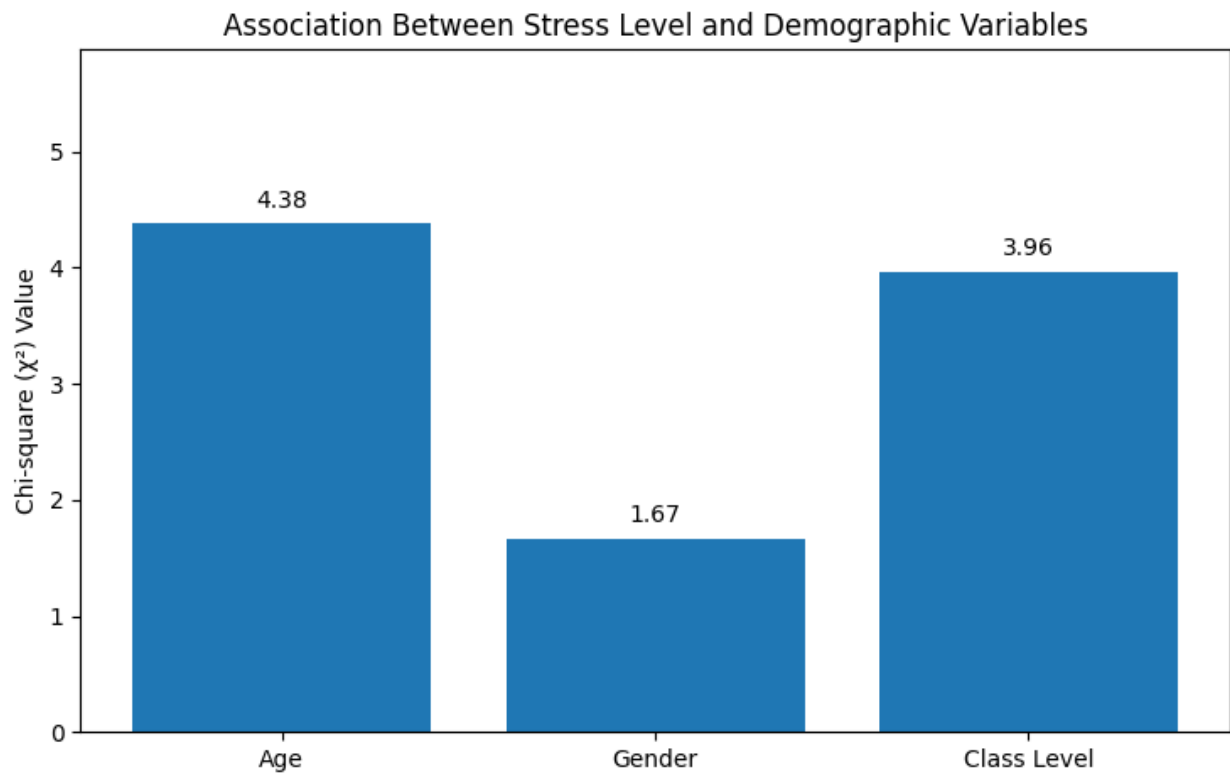


**Table 3: Association Between Stress Level and Demographic Variables**

Variable	$\chi^2$ Value	$p$ -value	Significance
Age	4.38	0.03	Significant
Gender	1.67	0.19	Not Significant
Class Level	3.96	0.04	Significant

## Interpretation

Table 3 indicates a statistically significant association between stress levels and demographic variables such as age and class level ( $p < 0.05$ ). However, gender was not significantly associated with stress levels.



## 8. Discussion

The present study aimed to assess the effectiveness of mindfulness-based relaxation training on stress levels among adolescents studying in selected senior secondary schools. The findings demonstrated a statistically significant reduction in posttest stress scores among participants in the experimental group compared to the control group. This indicates that mindfulness-based relaxation training was effective in reducing stress among adolescents.

Mindfulness techniques such as deep breathing, guided meditation, body awareness, and positive affirmations helped participants improve attention, emotional regulation, and coping skills. These practices enabled adolescents to manage academic and social stressors more effectively, resulting in enhanced psychological stability. The improvement observed in the experimental group may be attributed to regular engagement in structured relaxation activities, which promote calmness and reduce negative thinking patterns.

The findings of the study are consistent with previous research highlighting the positive effects of school-based mindfulness and relaxation interventions on adolescent mental health. Several studies have reported improvements in concentration, emotional control, and stress management following mindfulness-based programmes, supporting the effectiveness of non-pharmacological interventions within educational settings. The study further emphasizes the importance of integrating mental health promotion strategies into school health services to foster emotional well-being among adolescents.

## 9. Conclusion

The study concludes that mindfulness-based relaxation training is an effective intervention for reducing stress among adolescents studying in selected senior secondary schools. The structured mindfulness sessions significantly improved emotional stability and coping abilities among participants. Incorporating mindfulness-based practices into school health programmes can contribute to promoting mental well-being, enhancing academic performance, and improving overall psychosocial functioning among adolescents.

## 10. Recommendations

Based on the findings of the study, the following recommendations are suggested:

- Conduct randomized controlled trials with larger sample sizes to improve generalizability.
- Undertake long-term follow-up studies to evaluate sustained effects of mindfulness training.
- Include teachers and parents in stress management programmes to create supportive environments for adolescents.
- Integrate mindfulness-based relaxation sessions into routine school health and counselling programmes.
- Replicate similar studies in different educational settings and geographical areas.

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