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A Study to Assess the Effectiveness of Mindfulness on Stress Among Adolescents in Selected School, Erode

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ABSTRACT

Stress has become an inevitable part of daily life, particularly during adolescence—a critical developmental stage marked by various emotional, academic, and social stressors. Globally, studies have reported that adolescent stress levels range from 20% to 45%. The aim of the present study was to assess the effectiveness of mindfulness meditation in reducing stress among adolescents. A pre-experimental one-group pre-test and post-test design was adopted for this purpose. The study was conducted at Municipal Higher Secondary School, Karungalpalayam, Erode, among thirty adolescents who met the inclusion criteria. Participants were selected using a simple random sampling technique. The inclusion criteria comprised adolescents aged between 13 and 15 years, studying in 9th and 10th standard, of both genders, and scoring more than 40 on the Stress Questionnaire Scale (SQS). A pre-test was conducted using the SQS to assess the baseline level of stress. Mindfulness meditation was then administered for 30 minutes daily over a period of seven days. A post-test was conducted using the same tool to evaluate the effectiveness of the intervention. The demographic data revealed that most participants were male, Hindu, resided in urban areas, attended school six days per week with eight-hour school days, engaged in four hours of classroom study, and participated in outdoor games and other extracurricular activities. The highest pre-test mean score was 23.1 ± 0.45 (58%), whereas the post-test mean score was 20.6 ± 1.1 (52%), indicating a 6% reduction in stress levels. The overall pre-test mean score was 44.6 ± 1.01 (56%). The paired *t*-test value was 6.13, which is greater than the critical table value of 1.671, indicating a statistically significant reduction in stress levels after the intervention. **Conclusion :** The study concluded that mindfulness meditation was effective in reducing stress among adolescents and can be considered a useful of non-pharmacological approach to be adopted for stress management in school based settings.

Keywords: Adolescents, Stress, Coping Strategies, Stress Management Program, Pre Experimental study

INTRODUCTION

Adolescence is often described as the "best years of a person's life," yet this stage is also characterized by significant emotional, physical, and psychological challenges. It is "a period when individuals begin to function independently of their parents" and is widely considered a crucial phase of development. Behavioural scientists have termed adolescence a time of "storm and stress" due to the considerable adaptation required by the rapid changes in both body structure and function (Planning Commission, 2011). According to the World Health Organization (WHO, 2014), "1.2 billion adolescents aged 10–19 years make up 16 per cent of the world's population," and in India, adolescents represent nearly 22.8% of the population. These individuals, who embody the future of society, face intense pressure while navigating identity, independence, and societal expectations. Therefore, it is essential for adults to supervise and support their developmental journey to help them transition into healthy adulthood.

Academic life plays a pivotal role in adolescent development, especially during higher secondary education, which can influence not only further studies but also career decisions. As demands grow, adolescents often find themselves "going nonstop until they fall asleep exhausted at night," leading to disrupted sleep cycles and chronic fatigue. Stress in this context manifests in two forms: eustress, or positive stress that motivates, and distress, which "suppresses learning and is linked with frustration over academic failure" **(Smeltzer et al., 2016).** Research shows that many adolescents experience distress due to the pressure to perform, parental expectations, peer competition, and fear of failure. A study found that "37.7% of teachers felt that school is giving a lot of academic stress to the child," and about 10.1% of students reported experiencing severe stress, citing parental and academic factors **(Sahler et al., 2021).** Stress at this level may lead to symptoms such as mood swings, sleep disturbances, and even aggression. Unchecked stress during adolescence can contribute to serious mental health issues, including depression, anxiety, and even suicide. According to WHO's 2012 report, "the estimated suicide rate per 1 lakh people in India, in the age group of 15–29 years, was 35.5," and examination stress was cited in numerous cases of student suicides. Alternative approaches like Complementary and Alternative Medicine (CAM) have gained attention for their holistic benefits. Mindfulness, defined as "moment-by-moment awareness" and derived from the Pali word *sati*, encourages non-judgmental presence and self-regulation (**Landreth, 2022)**. Research supports its effectiveness: "Mindfulness-based therapy may be useful in altering affective and cognitive processes that underlie multiple clinical issues" **(Landreth, 2022).** Clinical trials among adolescents show significant improvements in anxiety, depression, sleep quality, and self-esteem among those practicing Mindfulness-Based Stress Reduction (MBSR). Thus, incorporating mindfulness techniques offers a promising strategy for managing adolescent stress and enhancing mental well-being.

STATEMENT OF PROBLEM

"A study to assess the Effectiveness of Mindfulness meditation on stress among adolescents in selected schools, Erode

OBJECTIVES

1. To assess the stress levels among adolescents before and after mindfulness meditation.
2. To determine the effectiveness of mindfulness meditation in reducing stress.
3. To examine the associations between post-test stress scores and demographic variables.

MATERIALS AND METHODS:

The design used for this study, pre experimental one group pretest and post-test with design 30 Experimental samples were selected by Simple Random Sampling technique, experimental group at Municipal Higher Secondary School, Karungalpalayam, Erode. After selection, the data was obtained, with the help of Demographic and Personal scale and Modified Student Stress Questionnaire mindfulness program was initated.

DEVELOPMENT OF THE TOOL

There are two sections of tools which were used. They are; Section A: Demographic variables and Personal variable

It consists of demographic characteristics of adolescents, i.e., age, gender of the student, class of study, religion, siblings of the student, father's education and mother's education

Section B: Personal variable

It consists of personal characteristics of adolescents, i.e., number of working days of school per week, number of working hours per day at school, number of study hours per day at school, number of study hours per day at home, extracurricular activities at school and extracurricular activities at home,

Section C: Modified Student Stress Questionnaire.

It consists of Stress Questionnaire for Students. This is a standardized tool developed my Ministry of Health. It was used to assess the level of stress among adolescent. It consists of 20 questions.

SCORING PROCEDURE

Table 1. Level of stress amongst students

Level of Stress	Actual scores	Percentage
No Stress	0 – 20	0
Mild Stress	21 – 40	47
Moderate Stress	41 – 60	40
Severe Stress	61 – 80	13

Ethical Consideration

1. Written permission was obtained from Director and Principal of Dhanvantri College of Nursing at Namakkal District.
2. Written permission was obtained from Head Master at Municipal Higher Secondary School, Karungalpalayam, Erode
3. Prior informed consent was obtained from students in the selected school.

VALIDITY

The content validity of the demographic variables, modified Student Stress Scale was validated with guide and experts. The experts were Nursing faculties, Psychiatrist, Psychologist, Statistician, Meditation teacher. The tool was modified according to the suggestions and recommendations of the experts.

RELIABILITY

The reliability of modified Student Stress Scale was tested by implementing the tool on 30 adolescents at

Government Higher Secondary School to establish the reliability of the tool. The reliability was checked by Inter-Ratter Reliability Method for Students stress questionnaire The r' value was 0.85 for the two tools respectively and the tools were found to be reliable.

Period of data collection

The data was collected from the period of 05.06.2024 to 05.07.2024. The investigator collected the data from adolescents.

Pre test

Pretest was conducted among the adolescents by using Student Stress Scale questionnaire for students to assess their level of stress on the day before the intervention that had been planned.

Implementation of Mindful Mediation

Mindfulness meditation involved 10 minutes of warm up exercise followed by meditation for 20 minutes. During meditation, the participants of was continuously given instruction by the investigator to focus on their mind and body, to observe what is happening in their body and what type of thoughts were in their mind on that present. Adolescents were practiced before the investigator for thirty minutes, daily for 7 days

Post test

Student Stress Scale questionnaire for students was used to evaluate level of stress among the adolescents after the intervention.

Data Analysis

There are two sections of tools which were used. They are;

Section A: Demographic variables of the school age children. It consists of demographic characteristics of school age children such as Age, Gender, standard and scholastic performance.

Section B: Modified Student Stress Scale. It contains 04 subsets. It is a standardized tool used to assess the memory among school age children.

Table– 1 DESCRIPTIONS OF SAMPLES CHARACTERISTICS

Frequency and percentage distribution of demographic variables of adolescents ***(N=30)***

S. No.	Demographic Variables		Adolescents	
			(N)	(%)
1.	**Age in years**	Thirteen	14	47
		Fourteen	6	20
		Fifteen	10	33
2.	**Gender**	Male	13	43
		Female	17	57
3.	**Class of study**	9th standard	16	53
		10th standard	14	47
4.	**Religion**	Hindu	20	67
		Muslim	6	20
		Christian	4	13
		Others	0	0
5.	**Place of residence**	Urban	21	70
		Rural	9	30

6.	**Type of family**	Nuclear	16	54
		Joint	10	33
		Extended	4	13
7.	**Siblings**	Single child	6	20
		One	12	40
		Two	5	17
		Three	7	23
		More than three	0	0
8.	**Father's education**	Illiterate	8	27
		Primary School	12	40
		Elementary School	6	20
		Higher Secondary	4	13
		Graduate or Postgraduate	0	0
9.	**Mother's education**	Illiterate	10	33
		Primary School	6	20
		Elementary School	6	20
		Higher Secondary	8	27
		Graduate or Postgraduate	0	0

Table-2 Frequency and percentage distribution of personal variables of adolescents (N=30)

S. No.	**Personal Variables**		**Adolescents**	
			(N)	**(%)**
1.	**No. of working days of school/week**	5	0	0
		6	89	74
		7	31	26
		Others	0	0
2.	**No. of working hours/ day at school**	5	0	0
		6	0	0
		7	34	28
		8	86	72
		Others	0	0
3.	**No. of study hours/ day at school**	1	52	43
		2	0	0
		3	28	23
		4	40	34
		Others	0	0
4	**No. of study hours / day at home**	1	6	5
		2	18	15
		3	44	37

		4	52	43
		Others	0	0
5.	**Extracurricular activity Involved at school**	Indoor games	38	32
		Outdoor games	41	34
		Dance/singing	18	15
		Yoga/meditation	6	5
		Martial arts	17	14
		Others	0	0
		None	0	0
6.	**Extracurricular activity Involved at home**	Indoor games	12	10
		Outdoor games	18	15
		Dance/singing	21	17
		Yoga/meditation	11	9
		Martial arts	7	6
		Others	51	43
		None	0	0

Table-3 Frequency and percentage distribution of pre & post test scores on stress among adolescent (N=30)

Level of stress	**Pretest score**		**Post test score**	
	Frequency (N)	**Percentage (%)**	**Frequency (N)**	**Percentage (%)**
No stress	0	0	0	0
Mild stress	4	13	14	47
Moderate stress	18	60	12	40
Severe Stress	8	27	4	13

Table-4. Mean, SD, and Mean percentage of pre and post test scores on stress among adolescents(N=30)

Area	**Max. Score**	**Pre test**			**Post test**			**Difference Difference in mean**
		Mean	**SD**	**Mean%**	**Mean**	**SD**	**Mean %**	
Academic stress	40	23.1	0.45	58	20.6	1.1	52	6

Non Academic stress	40	21.6	0.21	54	19.3	0.9	48	6
Total	80	44.6	1.01	56	39.9	0.61	50	6

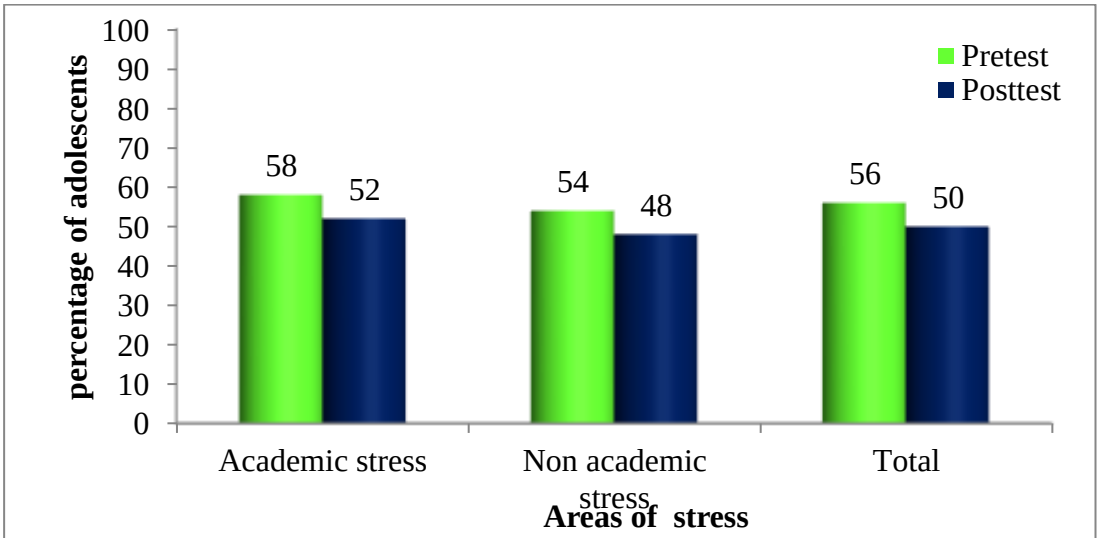

Fig 4.2 Bar diagram shows the pre and post test mean percentage of stress among adolescents

Table – 5 Paired "t" test value of pre and post test scores of adolescents group

S. No	Level of stress	Paired 't' Value	Table Value	Level of Significant
	Stress			
	Academic stress	4.42	1.671	P< 0.05 Significant
	Nonacademic stress	5.24	1.671	P< 0.05 Significant
	Total	**6.13**	**1.671**	**P< 0.05 Significant**

Paired' test was calculated to analyze the effectiveness between pre and post test scores among adolescent. It shows that the overall score for stress was 6.13, which is higher than the table value of 1.671. It seems that mindfulness mediation was effective in reducing the stress among adolescents.

Table–6 Association between experimental group I post-test III scores of stress with demographic and personal variables of the adolescents

Sl. No.	Demographic Variables and Personal variables	DF	χ^2	Table value	Level of Significant
A	**Demographic Variables**				
	Age (in year)	2	0.4	4.99	Not Significant

	Gender	1	3.3	3.84	Not Significant
	Class of study	2	5.02	4.99	**Significant***
	Religion	2	2.1	4.99	Not Significant
	Place of residence	1	0.5	3.84	Not Significant
	Type of family	2	1.5	4.99	Not Significant
	Siblings	2	6.17	4.99	**Significant***
	Fathers education	2	1.06	4.99	Not Significant
	Mothers education	2	1.81	4.99	Not Significant
B	**Personal variables**				
.	No. of working days of school/week	1	1	3.84	Not Significant
.	No. of working hours/ day at school	1	1.04	3.84	Not Significant
.	No. of study hours/ day at school	1	0.42	3.84	Not Significant
.	No. of study hours / day at home	1	0.30	3.84	Not Significant
.	Extracurricular activity Involved at school	1	0.37	3.84	Not Significant
.	Extracurricular activity Involved at home	1	0.21	3.84	Not Significant

χ^2 Value with $P < 0.05$

Chi- square value reveals that there was significant association between level of stress post test scores among adolescents when compared with demographic variables like class of study and number of siblings, whereas there was no significant association when compared with age, gender of the student, religion, place of residence, type of family, father's education and mother's education, (P >0.05).

There was no significant association between level of stress post test scores among adolescents when compared with personal variables like number of working days of school per week, number of working hours per day at school, number of study hours per day at school, number of study hours per day at home, extracurricular activities at school, extracurricular activities at home, (P >0.05).

DISCUSSION

There are two sections of tools which were used.

Section A: Demographic variables of the school age children.

Section B: Modified Student Stress Scale

While assessing the level of stress among adolescents before and after mindfulness meditation, In pretest most (60%) of them had moderate stress, and lowest percentage (13%) of adolescents had mild stress , In posttest most of them (47%) had mild stress and 13% of adolescent had severe stress., It seems that mindfulness mediation was effective in reducing the stress among adolescents. Thus there is a significant level of stress among adolescents before and after mindfulness meditation. So this hypothesis was accepted While **determining the effectiveness of mindfulness meditation on stress among adolescents ,** In pretest highest mean score was 23.1± 0.45, which is 58%, In posttest 20.6 ±1.1 which is 52% showing the difference of 6%. The overall pretest mean score was 44.6 ±1.01 which is 56%, In

posttest 39.9± 0.61 which is 50% showing the difference of 6%., Academic stress and nonacademic stress also shows mean difference of 6%. It seems that mindfulness mediation was effective in reducing the stress among adolescents. The overall score for stress was 6.13, which is higher than the table value of 1.671. The present study results are consistent with the findings of the following studies: One of the study result coincided with study on stress management among adolescents that the majority of adolescents (63%) experienced moderate stress specifically in the interpersonal domain. This study aims to analyze the stress and the stress manifestations among adolescents. Data were collected using stress rating scale and stress manifestation checklist from adolescents (N= 46) who were selected through convenience sampling from a selected school in Erode. Another cross-sectional study was conducted at higher secondary schools in Tamil Nadu. 1120 adolescents were included in the study after screening by MINI-kid tool. Modified Educational Stress Scale for Adolescents was administered to all children. Adolescents who had academic stress were at 2.4 higher risk of depression than adolescents without academic stress. In the present study, reliability score for Beck Depression Inventory was 0.85, and for Modified Educational Stress Scale was 0.81. A study for assessing stress among school going adolescents focuses on students in the eleventh grade. Chronic stress tends to be particularly high for this cohort, as it is generally the point at which students consolidate their portfolios in preparation for college applications. Nearly half (49%) of all students reported feeling a great deal of stress on a daily basis and 31 percent reported feeling somewhat stressed. Another study among junior college student's results showed that among the 396 students participated in the study, 118 (30.2%) were positive for stress. Stress was observed in 69 (38.1%) female students and 49 (23.3%) male students. This there is a significant difference in effectiveness of mindfulness meditation on stress among adolescents. So this hypothesis was accepted. **While finding the association between post test scores of stresses among adolescents with their demographic variables** Chi- square value reveals that there was significant association between level of stress post test scores among adolescents when compared with demographic variables like class of study and number of siblings, whereas there was no significant association when compared with age, gender of the student, religion, place of residence, type of family, father's education and mother's education, (P >0.05).There was no significant association between level of stress post test scores among adolescents when compared with personal variables like number of working days of school per week, number of working hours per day at school, number of study hours per day at school, number of study hours per day at home, extracurricular activities at school, extracurricular activities at home, (P >0.05). Thus there is a significant association between post test scores of stress among adolescents with their demographic variables. So this hypothesis was rejected

CONCLUSION

Based on this finding of the study the following conclusion were drawn. The study findings revealed that Most of the adolescent's males, living in urban area, nuclear family, fathers and mothers were graduate, had six days working per week, had eight hours working per day, four hours of study at school, had outdoor games at school and had other type of extracurricular activities at home. There was no significant association when compared with age, gender of the student, religion, place of residence, type of family, father's education, mother's education, father's occupation and mother's occupation and monthly income of the family in rupees except class of study, number of siblings and number of study hours at home per day. The study concluded that Mindfulness meditation is more effective in reducing level of stress among adolescents

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