The Review Of
DIABETIC
STUDIES OPEN ACCESS

Impact Of Mindfulness-Based Stress Reduction (MBSR) On Reducing Test Anxiety And Improving Academic Performance In High School Students

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Abstract:
A pre-experimental research study aimed Impact of Mindfulness-Based Stress Reduction (MBSR) on Reducing Test Anxiety and Improving Academic Performance among high school students at Agrwal Vidhya Vihar School, Surat, Gujarat. A quantitative research approach with a one-group pre-test post-test design was employed. A total of 90 students were selected using a non-probability purposive sampling technique based on inclusion criteria. Data were collected using PSS-10 developed through literature review, expert validation, and pretesting. The educational intervention was delivered via a MBSR Program. The same questionnaire was administered as a pre-test and post-test with a 7-day interval to assess Anxiety score improvement. Statistical analysis using paired t-test showed a significant increase in post-test scores, indicating the module's effectiveness. The chi-square test was used to find associations between post-test knowledge and demographic variables. Reliability of the tool was confirmed through test-retest (r = 0.84). The study concludes that structural educational interventions can effectively decreased anxiety and improved academic performance among high school students.

Results:
In this study, Out of 90 High school students According to the group of age (in year) 30 (33.3%) students belongs to 14 years of age, 20 (22.2 %) students belongs to 15 years of age, 21 (23.3 %) students belongs to 16 years of age, 19 (21.1%) students belongs to 17 years of age. According to the gender 53 (58.9 %) students belongs to Boys and 37 (41.1 %) students belongs to Girls. According to Standard 30 (33.3 %) students belongs from 9th Standard, 20 (22.2 %) students belongs from 10th standard, 21 (23.3) students belongs from 11th standard, 19 (21.1 %) students belongs from 12th standard.According to Type of family 34 (37.8 %) students belongs to joint family and 56 (62.2 %) students belongs to nuclear family. According to Residence 90 (100 %) students belongs to Urban area and no any students are coming from Rural area.According to Parents Status 87 (96.7 %) student's Parent are Alive & together, 3 (3.3 %) students Parent are Single Parent status.According to Academic performance 26 (28.9 %) students are <50% performance, 31 (34.4 %) students are >70 % performance and 33 (36.7 %) students are 50 to 70 % performance in study. Mean and standard deviation of Pre-test anxiety was 24.91 ± 4.80 and in the post test anxiety was 14.74 ± 6.01. The unpaired 't' test 12.919 grater than table value t=2.0 at p≤0.01. Hence, the hypothesis is retained.

Keywords: Anxiety, High School Students, Mindfulness-Based Stress Reduction therapy, pre-experimental research design, Nursing Education, Improving Academic Performance, pre-test post-test design.

Introduction

Recent years have witnessed a growing number of school going children and adolescents experiencing social, emotional, and behavioral problems that interfere with their academic achievements, interpersonal relationships, and their potential to become competent and productive adults [1]. In India, the age of children visiting psychiatrists and psychologists is falling steadily and the number of children

and adolescents requiring treatment in the form of medications and / or counselling are also increasing [2] .

School children and adolescents experience a significant amount of stress during their academic years[3 – 5] . Stress is generally defined as 'a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being [6] . Children are affected by both daily hassles as well as ongoing, enduring experiences, particularly those over which they perceive having no control.

School-going children can identify the stressors in their lives [7-8] and they have reported "school" as a major stressor particularly, negative feelings about school and negative experiences in school [9-11] . Personal inadequacy, fear of failure, interpersonal difficulties and inadequate study facilities are found to be contributory to the high academic stress levels [12] . The results of an ICMR study [13] on two thousand adolescents in the age range of 9-14 years have indicated mild to moderate levels of stress in a majority of students and the daily hassles such as scolding, not having friends, reminders to study were found to be correlated to the presentation of stress. According to Ramanathan [14] , nearly 35 percent of urban children aged between 8-14 years are stressed enough to need clinical attention. Dinesh [15] carried out a study on 420 children in the age range of 4-17 year and reported that more than 90% of the school children were facing above normal levels of stress in each age group. Majority of the children in the age group 13 to 15 years showed moderate to severe level of stress. Children and adolescents face enormous pressure from parents and teachers to work hard and do well to score good marks. Therefore, examinations symbolize emotional trauma and anxiety. Jain [16] highlights that students are overburdened with homework, tuition classes, and scholarship examinations. The pressure is high owing to the limited number of available seats, stringent criteria for selection and the high cut-off scores for professional courses such as medical, engineering, architecture, etc. As a result, the positive aspects of play--relaxing, coping with fear, giving vent to aggression, learning social rules, cooperating, and learning to handle difficult situations-are lost [16 – 17] .

Parental expectations further augment student's anxiety levels. Pushy and over enthusiastic parents consciously or unconsciously make them more prone to stress, early burnout, and depression [2, 16-19] . Other sources of stress for adolescents include their social interactions with teachers and peers, financial difficulties at home, marital problems between parents, the status of being physically ill, disabled, or suffering from emotional difficulties, etc [20] . These factors have an adverse impact on the psychological well-being of adolescents.

Methodology

This study adopted a Quantitative research approach and employed a pre-experimental research design one-group pre-test and post-test design. This method enabled the assessment of the effectiveness of mindfulness-based stress reduction therapy by comparing Participants' Anxiety and academic performance before and after the intervention within the same group.

The research was conducted at the Agrawal Vidhya Vihar School, Surat, Gujarat, Targeting Highschool Students. This cohort was selected for its relevance, as these students are in the foundational phase of their study, where building awareness about Anxiety is essential.

A sample of 90 students was choose through Non-probability Purposive sampling. Participants were selected based on inclusion criteria such as willingness to participate and presence during both testing period. Students who had prior formal therapy for Anxiety or were absent during either phase were excluded.

Data collection was performed using Perceived stress scale, formulated through extensive literature review and expert consultation. The tool assessed Scoring of anxiety. The therapy providing was reviewed by professionals in nursing and public health. The tool demonstrated good reliability, with a test-retest correction coefficient of r=0.84.

The procedure involved three phases. Initially, informed written consent was obtained from all participants. This was followed by a pre-test using the validated tool to determine baseline anxiety

reduction programme. The intervention phase involved delivering a mindfulness-based stress reduction therapy that utilized by demonstration. Sessions were conducted interactively in the classroom.

One-week post-intervention, the same checklist was administered as a post-test. The chosen interval aimed to provide adequate time for students to internalize the information without allowing significant recall loss.

Descriptive statistics, including mean, Standard Deviation (SD), Frequencies (*f*), and Percentage (%), were used to describe demographic variables and Anxiety Score. A paired t-test was employed to evaluate the effectiveness of the intervention by comparing pre-test and post-test scoring. Chi-square (χ^2) tests were used to examine Associations between anxiety score and selected demographic variables such as Age, Standard, Family Structure, Income, Residential area, Parents Status, Class performance.

Ethical approval was granted by the Institutional Ethics Committee of the Parul Institute of Nursing. All participants were assured of confidentiality, anonymity, and voluntary participation, in line with ethical principles of autonomy, beneficence, non-maleficence, and justice.

Results

Table 1: Frequency and percentage distribution of demographic variables of the participants (n=90)

Sr no.	Demographic Variables		Frequency (f)	Percentage (%)
1	Age	14 year	30	33.3
		15 year	20	22.2
		16 year	21	23.3
		17 year	19	21.1
2	Gender	Boys	53	58.9
		Girls	37	41.1
3	Standard	STD 9th	30	33.3
		STD 10th	20	22.2
		STD 11th	21	23.3
		STD 12th	19	21.1
4	Type of Family	Joint family	34	37.8
		Nuclear family	56	62.2
5	Residence	Urban area	90	100.0
6	Parent Status	Alive & together	87	96.7
		Single parent	3	3.3
7	Academic Performance	<50 %	26	28.9
		> 70 %	31	34.4
		50 to 70 %	33	36.7

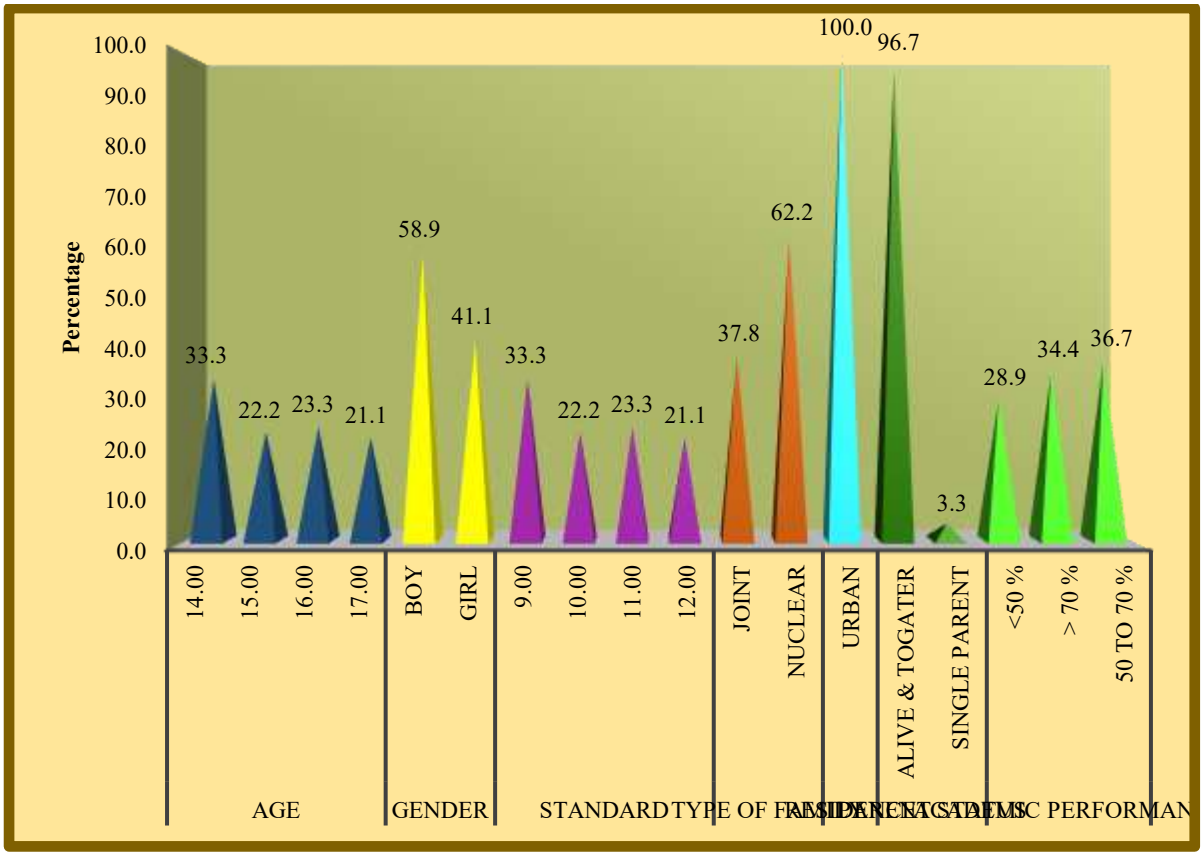

Table 2: Finding related to pre-test Anxiety scoring among High school Students

(n=90)

Pre Test Anxiety	Frequency (f)	Percentage (%)
High Anxiety	30	33.3 %
Moderate Anxiety	60	66.7 %

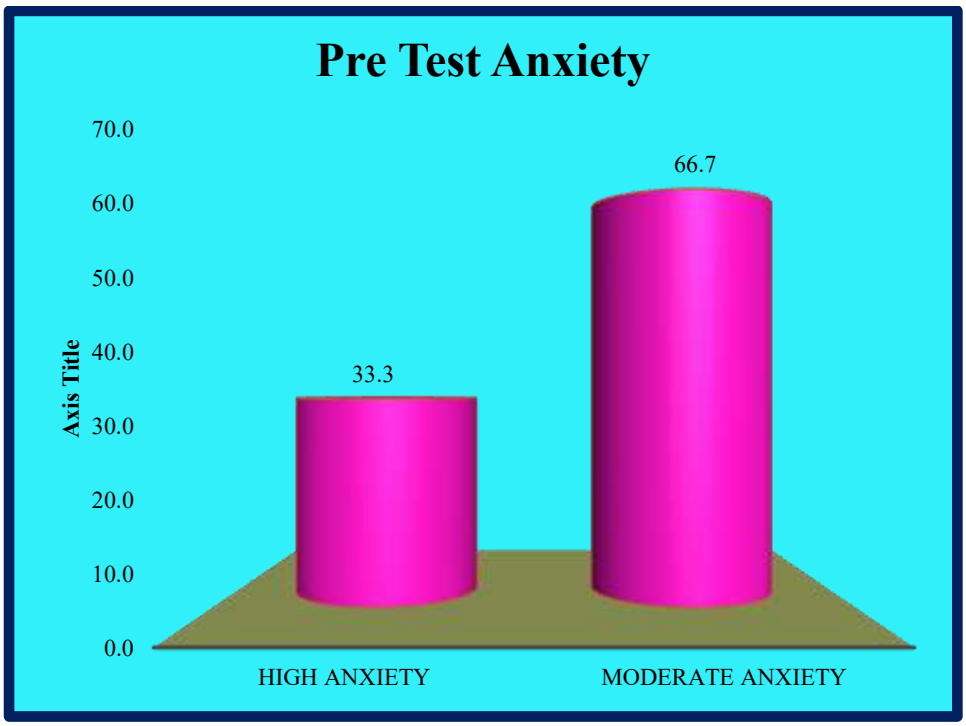

Table 3: Finding related to pre-test Anxiety scoring among High school Students

(n=90)

Post Test Anxiety	Frequency (f)	Percentage (%)
Low Anxiety	48	53.3 %
Moderate Anxiety	42	46.7 %

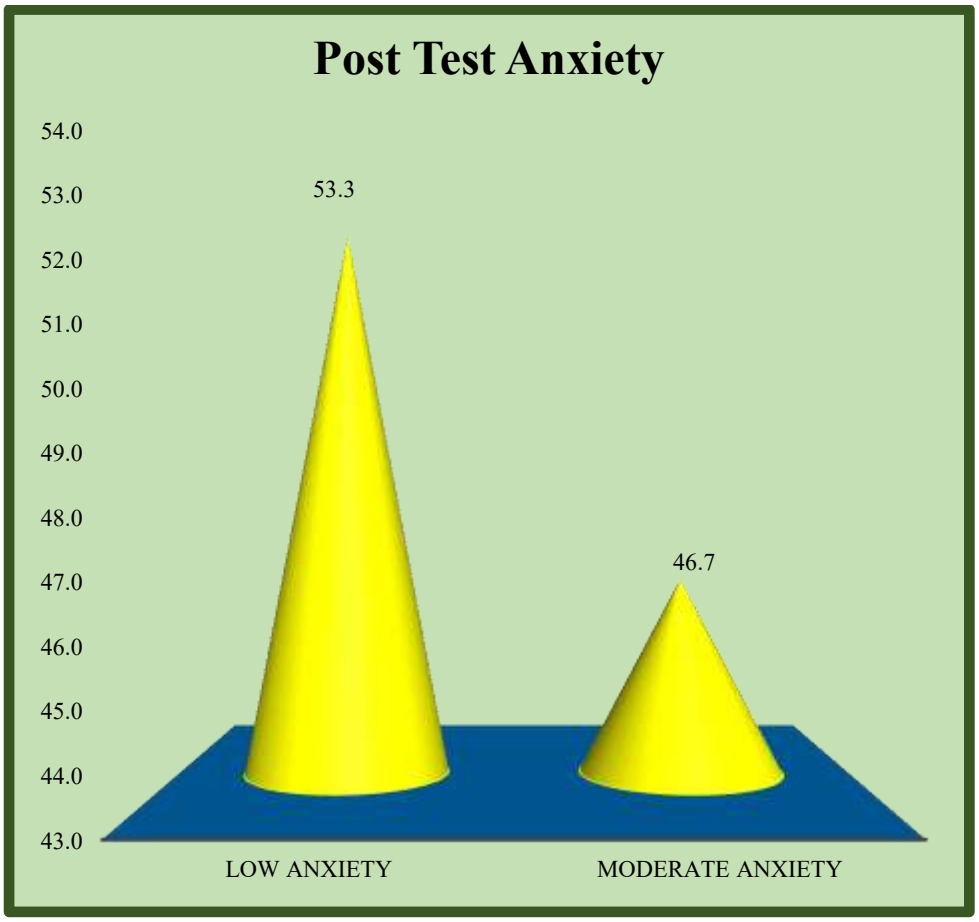

Table 4: Finding related to effectiveness of Mindfulness-Based Stress reduction therapy among Highschool Students **(n=90)**

	Mean	Std. Deviation	Mean Difference	Unpaired 't' Test	Table Value
Pre test Anxiety	24.91	4.80	10.17	12.919	2.0
Post test Anxiety	14.74	6.01			

As per the table no 4, the finding revealed a significant decreased the anxiety scores following the therapy programme. The mean pre-test score was 24.91 ± 4.80, while the post-test mean decreased to 14.74 ± 6.01, a unpaired t-test showed a calculated t-value of 12.919 grater than table value t=2.0 at $p \leq 0.01$.

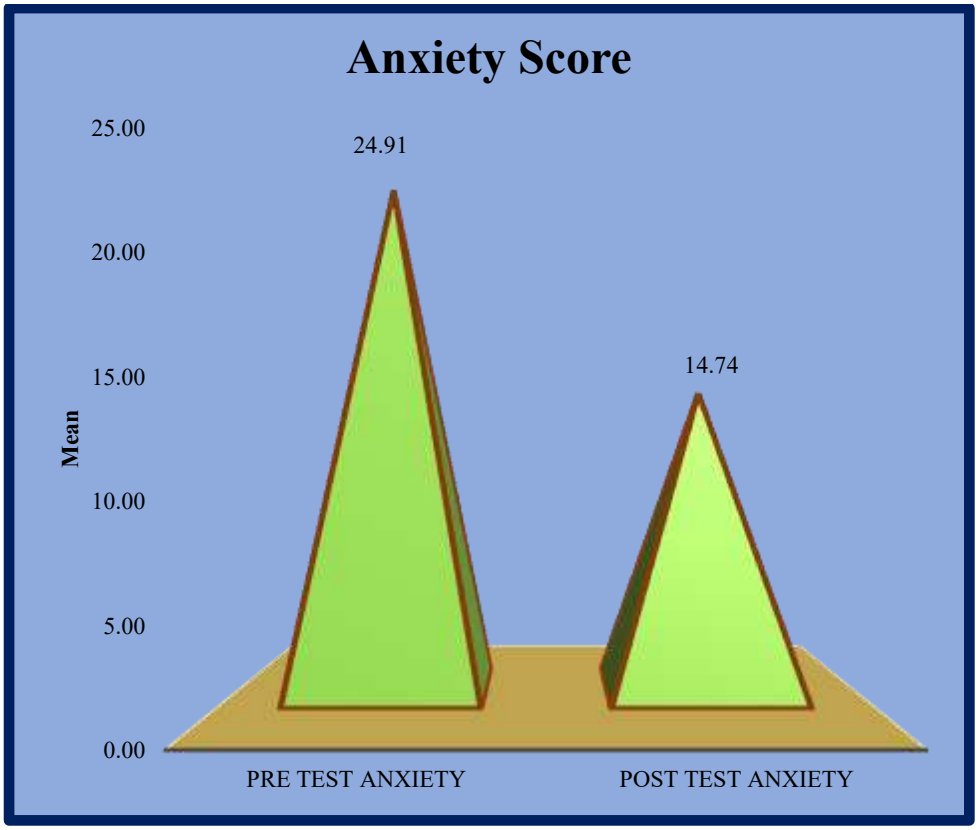

Table 5: Chi-square association between the pre-test score of high school students regarding Anxiety score and the selected Demographic Variables

(n=90)

Demographic Variables		Pre test Anxiety		Total	Chi Square (χ^2)	DF	Table Value	S/ NS
		High	Moderate					
Age	14 yr	6	24	30	4.459	3	7.82	NS*
	15 yr	7	13	20				
	16 yr	10	11	21				
	17 yr	7	12	19				
Gender	Boy	17	36	53	0.092	1	3.84	NS*
	Girl	13	24	37				
Standard	9^{th}	6	24	30	4.459	3	7.82	NS*
	10^{th}	7	13	20				
	11^{th}	10	11	21				
	12^{th}	7	12	19				
Type of Family	Joint	16	18	34	4.632	1	3.84	S
	Nuclear	14	42	56				
Residence	Urban	30	60	90	-			
Parent Status	Alive & togater	30	57	87	1.552	1	3.84	NS*
	Single parent	0	3	3				
	<50 %	10	16	26	0.566	2	5.99	NS*

Academic Performance	> 70 %	9	22	31				
	50 to 70 %	11	22	33				

Chi-square analysis showed significant association between pre-test anxiety score and the variable: type of family (χ^2 =4.632, t = 3.84).

Chi-square analysis showed No-significant Association between pre-test score and the Variables: Age (χ^2 =4.459, t = 7.82), Gender (χ^2 =0.092, t = 3.84), Standard (χ^2 =4.459, t = 7.82), Parents status (χ^2 =1.552, t = 3.84), Academic Performance (χ^2 =0.566, t = 5.99).

Demographic factors such as Age, Gender, Standard, Parents status, Academic performance, type of family significantly influenced baseline knowledge. These finding underscore the role of social-cultural and educational exposure in shaping students' understanding of public health topic like Anxiety Reduction Programm.

Discussion

The present study confirmed that a checklist for High school students anxiety score. The Mean and Standard deviation of pre test anxiety was 24.91 ± 4.80 and post test anxiety was 14.74 ± 6.01. The calculated 't' value in the 12.919 grater than table value t=2.0 at p≤0.01. indicating statistical significance.

Despite an increase in the awareness of adolescent problems, their issues are not being given adequate attention. This is partly due to the faulty notion that "turbulence during adolescence is normative and therefore their problems and symptoms can be dismissed as passing phenomena" [24 -26] and partly due to the lack of appropriate intervention facilities in schools. Some of the technique used in the past few decades for reducing stress in children and adolescents include individual counselling, supportive psychotherapy, yoga, meditation, life skills training and cognitive therapy techniques. The Cognitive Behavior Therapy (CBT) developed by Beck [27] comprises of behavioral and cognitive restructuring strategies for stress reduction. Several extensions of CBT appeared during the last 10–15 years that focus on mindfulness and acceptance rather than on restructuring. Hayes [28] described these interventions as "third generation" behavior therapies.

They include dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT), mindfulness-based stress reduction (MBSR), mindfulness- 77 based cognitive therapy (MBCT). The mindfulness based interventions make use of various forms of mindfulness exercises drawn from Buddhist origins [29, 30]. Kabat-Zinn [29] defined mindfulness as "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally." MBSR is an experiential learning program that includes weekly group sessions, regular home practice, and the core curriculum of formal and informal mindfulness practices. More recently Semple et al. have developed an MBCT-C program specifically for children [31] .

Mindfulness approaches emphasize awareness of thinking and instead of changing the problematic thoughts (restructuring), it teaches people to simply recognize that these thoughts are transient mental events that can be potentially problematic, but do not necessarily have to be so. There is significant and continued growth in empirical research investigating the efficacy of mindfulness-based interventions with clinical and non-clinical adult populations. On the other hand, the research examining the effectiveness of mindfulness-based interventions with children and adolescents is limited. Mindfulness based interventions have been used in the clinical children and adolescent population to treat anxiety [31, 35] , externalizing disorders [32, 33] , learning disability [34], anger [32], substance abuse [38] ,reduce stress and depressive symptoms and enhance self-regulatory capacities [37] , improve interpersonal relationships, school achievement and physical health in HIV infected and at-risk youth [38] . At present, there are very few studies that have used mindfulness training for reducing stress and enhancing well-being in adolescents, especially in the non-clinical setting [35, 37, 39] . In addition, there are no studies investigating the effect of mindfulness on the Indian adolescent population. Therefore, 78 the present

study aimed at examining the effectiveness of a Mindfulness-Based Stress Reduction (MBSR) program in reducing stress and enhancing well-being in adolescents.

Conclusion:
The study was done to effectiveness of mindfulness-based stress reduction on reducing anxiety test and improving academic performance among high school students studying in Agarwal Vidhya Vihar School, Surat, Gujarat. The Mean and Standard deviation of pre test anxiety was 24.91 ± 4.80 and post test anxiety was 14.74 ± 6.01. The calculated 't' value in the 12.919 grater than table value t=2.0 at p≤0.01.

Acknowledgment
The researchers express their sincere gratitude to Parul University, the Faculty of Nursing, and all participating High School Students for their valuable cooperation and support throughout the study.

Conflict of Interest
The authors declare no conflict of interest related to this research study.

Ethical consideration
Ethical approval was obtained from the Parul Institute Ethics Committee (PIEC), Vadodara, Gujarat. All participants were informed about the study objectives, and informed consent was obtained prior to data collection.

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