

Effectiveness of a Designed Lesson Plan on Knowledge Regarding Examination Stress Management among School Children in Selected Areas of Delhi/NCR

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ABSTRACT

Background: Academic and evaluation-related anxiety is a widespread psychological challenge in urban educational environments like the Delhi/National Capital Region (NCR). Chronic testing stress severely limits cognitive function, emotional stability, and overall student well-being. This study evaluated the effectiveness of a structured, researcher-designed lesson plan meant to improve knowledge regarding examination stress and its strategic management among school children. **Methods:** Utilizing a one-group pre-test/post-test quasi-experimental approach, 60 school children were selected via simple random sampling from schools across Delhi/NCR. A structured knowledge questionnaire containing four distinct informational domains was utilized to collect baseline data. Following the pre-test, a specialized 4-week classroom-based interactive lesson plan was administered. A post-test was conducted after the intervention period to measure knowledge enhancement and explore demographic associations. **Results:** Post-intervention metrics demonstrated a highly significant improvement in stress management knowledge across all tracked domains. The overall mean knowledge score increased from a baseline level of 13.37 (44.58%) to a post-test level of 23.67 (78.91%), showing a mean enhancement of 10.30 (34.33%). The calculated paired t-test value was 58.48 (df=59), which was highly significant ($p < 0.05$). Pre-test knowledge scores displayed significant statistical associations with class/grade studying and primary sources of information regarding examination stress management ($p < 0.05$). **Conclusions:** The implementation of a structured classroom lesson plan is highly effective in increasing examination stress management knowledge among school children. Integrating proactive psychoeducational modules into the standard curriculum serves as an essential strategy to build academic resilience and enhance student well-being across the Delhi/NCR region.

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INTRODUCTION

Examination stress has become a major psychological concern among school children worldwide. It refers to anxiety and emotional tension associated with academic examinations, often leading to poor academic performance and affecting students' mental and physical well-being. Studies suggest that nearly 20–40% of school children experience moderate to severe examination stress (Putwain D, 2007). In India, academic pressure from board examinations, entrance tests, parental expectations, and competition has significantly increased stress levels among

students. Research from South India reported that around 72% of students preparing for board exams experienced moderate to high examination anxiety (Subramani C & Kadiravan S, 2017). Common symptoms include sleep disturbances, irritability, headaches, reduced concentration, and loss of appetite.

Examination stress is influenced by factors such as fear of failure, poor time management, low self-confidence, and unhealthy competition. Various evidence-based interventions, including cognitive-

behavioral therapy (CBT), mindfulness-based stress reduction (MBSR), relaxation exercises, and time-management training, have shown positive outcomes in reducing examination anxiety and improving academic performance. CBT helps students modify negative thoughts and improve coping skills, while mindfulness techniques enhance concentration and emotional well-being.

Despite the availability of effective strategies, many schools lack structured stress-management programs and trained personnel. Therefore, the present study aims to evaluate the effectiveness of a structured educational intervention incorporating audiovisual learning, relaxation techniques, and cognitive-behavioral strategies to reduce examination stress and improve coping abilities among school children.

NEED OF THE STUDY:

Examination stress is a growing problem among school children due to academic competition, parental expectations, and lack of coping skills. It can negatively affect students' mental health, concentration, physical well-being, and academic performance. Many children experience symptoms such as anxiety, sleeplessness, irritability, and poor confidence during examinations.

Research shows that techniques like relaxation exercises, mindfulness, cognitive-behavioral strategies, and study-skills training can effectively reduce examination stress. However, many schools still lack structured stress-management programs.

Therefore, the present study aims to assess the effectiveness of a structured educational intervention in reducing examination stress and improving coping abilities among school children.

METHODS:

An evaluative, one-group pre-test/post-test quasi-experimental research design was utilized to systematically assess the effectiveness of a designed lesson plan by comparing pre-test and post-test knowledge scores among school children. The study was conducted within selected co-educational schools in the Delhi/NCR region, chosen for its representative urban demographic, structural accessibility, and the high-stakes academic environment typical of metropolitan school districts.

The research approach followed three distinct phases:

- 1. Pre-test Assessment:** Administration of a structured knowledge questionnaire to map baseline understandings of exam stress.
- 2. Intervention Phase:** Implementation of the researcher-designed classroom lesson plan across 4 consecutive weekly blocks.

- 3. Post-test Assessment:** Re-evaluation using the same structured tool to quantify information retention and score variations.

Participant Selection Protocols

A sample size of 60 school children was selected from the target population using a probability simple random sampling technique to ensure an unbiased selection and reinforce the structural validity of the empirical findings.

Inclusion Criteria:

1. School students currently studying in Class VII, VIII, IX, X, XI, or XII.
2. Residing and attending full-time schooling within the selected areas of Delhi/NCR.
3. Willing to actively participate and available for the entire duration of the study.
4. Able to understand, read, and complete assessment instructions in English or Hindi.
5. Provided voluntary student assent along with written informed parental consent.

Exclusion Criteria:

1. Students currently undergoing specialized, private psychiatric counselling for severe clinical anxiety disorders.
2. Students with serious acute physical illness or medical conditions requiring prolonged institutional absenteeism.
3. Students who had previously attended formal, structured institutional workshops on stress management within the past six months.

The Educational Intervention Plan

The independent variable was a structured educational intervention delivered as a classroom-integrated curriculum plan. The lesson plan was divided into four core informational domains, taught in highly interactive, 45-minute weekly sessions using visual slides, group activities, and guided skill demonstrations:

Domain 1: Cognitive Symptoms: Managing negative self-talk, distraction patterns, irrational performance thoughts, and concentration drops during high-stakes evaluations.

Domain 2: Emotional Symptoms: Recognizing exam-induced panic, feelings of helplessness, mood lability, and high situational frustration.

Domain 3: Physiological (Physical) Symptoms: Identifying somatic cues such as rapid heart rates, muscle tightness, persistent headaches, and fatigue.

Domain 4: Behavioural and Performance-Related Symptoms: Dealing with study procrastination, exam withdrawal patterns, rest disruptions, and test-taking blocks.

MEASUREMENT METRICS:

The primary tracking instrument was a Structured Examination Stress Knowledge Questionnaire (SESKQ) designed by the researchers following an extensive analysis of current psychoeducational and cognitive-behavioral literature. The tool was validated by a panel of expert pediatric psychologists, educational counselors, and community health specialists to confirm its thematic relevance and metric reliability.

The evaluation instrument consisted of two primary sections:

Socio-Demographic Inventory: Documented ten essential baseline student parameters including Age (in years), Gender, Class/Grade Studying, Medium of Study, Previous Examination Score Performance, Study Hours per Day, Parental Educational Status, Type of Family, Previous Exposure to Stress

Management Techniques, and Primary Source of Information Regarding Examination Stress Management.

Knowledge Questionnaire Core: As established in the methodological framework, a 24-item objective multiple-choice instrument was balanced equally across four specific examination stress aspects. Correct responses received 1 mark, while incorrect selections received 0 marks, resulting in a maximum possible cumulative score of 24. Total scores were translated into three distinct health literacy tiers: Inadequate Knowledge Level: Score <50% of the total criteria (0 to 11 marks).

Moderate Knowledge Level: Score between 50% and 75% of the total criteria (12 to 17 marks).

Adequate Knowledge Level: Score >75% of the total criteria (18 to 24 marks).

TABLE 1: DISTRIBUTION OF QUESTIONNAIRE ITEMS ACROSS STRESS ASPECTS

EXAMINATION STRESS ASPECTS	NUMBER OF ITEMS
Domain 1: Cognitive symptoms of examination stress	6
Domain 2: Emotional symptoms of examination stress	6
Domain 3: Physiological (physical) symptoms of examination stress	6
Domain 4: Behavioural and performance-related symptoms	6
OVERALL TOTAL ITEMS	24

RESULTS & DATA ANALYSIS:

The collected dataset was processed and analyzed using statistical software. Descriptive metrics (frequency distributions, percentages, means, and standard deviations) were utilized alongside inferential calculations (paired t-tests and Chi-square cross-tabulations) with the significance threshold maintained strictly at $p < 0.05$.

TABLE 2: SOCIO-DEMOGRAPHIC DISTRIBUTION OF THE SAMPLE (N=60)

Demographic Variables	Sub-Category Options	Sample Count (n)	Sample Percentage (%)
Age (in years)	12-13 years	15	25.00%
	14-15 Year	20	33.33%
	16-17 Year	11	18.33%
	>18 Year	14	23.33%
Gender	Male	30	50.00%
	Female	30	50.0%
Class / Grade Studying	Class VII & VIII	19	31.70%
	Class IX	9	15.00%
	Class X	24	40.0%
	Class XI/XII	8	43.33%
Medium	English	26	43.30%
	Hindi	16	26.70%
	Both English & Hindi	18	30.00%
Previous Examination score Performance	40%-60%	24	40.00%
	61%-80%	27	45.00%
	>80%	9	15.00%
Study Hours per Day	Less than 1 Hr.	9	15.00%
	1-2 Hr.	33	55.00%
	2-3 Hr.	11	18.30 %
	More than 3 Hrs.	7	11.70%

Type of Family	Nuclear family	35	58.30%
	Joint Family	12	20.00%
	Extended	8	13.33%
Parental Educational Status	Sec, Education	8	13.30%
	Sr. Sec.	19	31.70%
	Graduate	25	41.70%
	PG and Above	8	13.30%
Previous Exposure to Stress Management Techniques	Yes	16	26.70%
	No	44	73.30%
Source of Information Regarding Exam Stress Management	Teachers/ School Counsellors	32	53.30%
	Parents / Family Member	12	20.00%
	Friends/Peers	9	15.00%
	Health Professional	7	11.70%

The baseline socio-demographic tracking of the 60 school children indicated that the largest age subgroup belonged to the 14–15 years bracket (33.33%), followed by 12–13 years (25.00%), >18 years (23.33%), and 16–17 years (18.33%). Gender distribution showed that 50.00% of the sample were Male and 50.00% were Female. Analysis of educational status showed that 40.00% of the students were in Class X, 31.70% were in Classes VII or VIII, 15.00% were in Class IX, and 13.30% were in upper secondary streams (Classes XI or XII). Regarding Medium of Study, 43.30% studied through English medium, 26.70% through Hindi medium, and 30.00% utilized Both English and Hindi. Previous Examination score Performance metrics indicated that 45.00% scored between 61%–80%, 40.00% scored between 40%–60%, and 15.00% scored >80%. Daily routine parameters showed that 55.00% engaged in 1–2 hours of study per day, 15.00% studied less than 1 hour, 18.30% studied 2–3 hours, and 11.70% studied more than 3 hours. Regarding household and environmental backgrounds, 58.30% lived within a Nuclear family, 20.00% in a Joint family, and 21.70% in an Extended family. Parental Educational Status mapping revealed that 41.70% of parents had completed Graduate programs, 31.70% Senior Secondary education, 13.30% Secondary education, and 13.30% held Post-graduate and above credentials. Additionally, 26.70% reported having Yes to Previous Exposure to Stress Management Techniques, while 73.30% reported No previous exposure. In terms of communication networks, Teachers/school counsellors served as the primary source of information regarding examination stress management for 53.30% of the cohort, followed by Parents or family members (20.00%), Friends/peers (15.00%), and Health professionals (11.70%).

TABLE 3: DOMAIN-SPECIFIC KNOWLEDGE SCORES AND CALCULATED PAIRED T-TEST MATRIX (N=60)

Target Knowledge Domains	Pre-Test Mean	Pre-Test Mean %	Post-Test Mean	Post-Test Mean %	Absolute Mean Enhancement	Calculated Paired t-test Value
Domain 1: Cognitive Symptoms	2.23	44.60%	3.66	73.13%	1.43 (28.53%)	17.94 (S), df=59
Domain 2: Emotional Symptoms	3.71	46.38%	6.44	80.46%	2.73 (34.08%)	17.17 (S), df=59
Domain 3: Physiological Symptoms	3.87	43.00%	7.48	83.15%	3.61 (40.15%)	35.58 (S), df=59
Domain 4: Behavioural Symptoms	3.56	44.54%	6.10	76.21%	2.54 (31.67%)	26.98 (S), df=59
OVERALL COMPREHENSIVE ASSESSMENT	13.37	44.58%	23.67	78.91%	10.30 (34.33%)	58.48 (S), df=59

(S) - Statistically Significant at $p < 0.05$.

Evaluation of Domain-Specific Knowledge Mean and Percentage Shifts:

The empirical data collected across the four core areas demonstrated clear, positive score increases from the pre-test to the post-test phases:

Domain 1 (Cognitive Symptoms): The baseline mean score rose from 2.23 (44.60%) up to 3.66 (73.13%) following intervention delivery.

Domain 2 (Emotional Symptoms): Mean tracking scores advanced from 3.71 (46.38%) to 6.44 (80.46%).

Domain 3 (Physiological Symptoms): Displayed a highly notable increase, rising from a baseline mean of 3.87 (43.00%) up to 7.48 (83.15%) post-intervention.

Domain 4 (Behavioural Symptoms): Mean score outputs increased from 3.56 (44.54%) to 6.10 (76.21%).

The overall group mean score improved from 13.37 (44.58%) to 23.67 (78.91%), establishing a highly significant total enhancement of 10.30 (34.33%). All category-specific paired t-test values exceeded standard critical cut-offs ($p < 0.05$), indicating that the instructional intervention successfully enhanced student knowledge across all stress aspects.

TABLE 4: SUMMARY OF OVERALL BASELINE, POST-TEST, AND KNOWLEDGE ENHANCEMENT PARAMETERS (N=60)

Measurement Phase	Minimum Score	Maximum Score	Total Range	Mean Score	Mean %	Standard Deviation (\pm SD)	Coefficient of Variation (CV)	Paired t-test Result
Pre-Test Assessment	8	22	14	13.37	44.58%	2.44	18.26%	58.48 (Significant, df=59)
Post-Test Assessment	17	29	12	23.67	78.91%	1.92	8.12%	
Enhancement Shift	3	18	15	10.30	34.33%	3.05	29.62%	

Aggregate Score Variations and Statistical Hypothesis Verification

Before the implementation of the lesson plan, the group mean score stood at 13.37 ± 2.44 with a coefficient of variation of 18.26%, indicating moderate baseline variability in student stress literacy. Following the intervention, the mean score rose to 23.67 ± 1.92 with a lower coefficient of variation (8.12%), demonstrating more uniform and consistent knowledge across the cohort.

The aggregate paired t-test score was calculated as 58.48 (df=59), which far exceeded the critical table value at the 0.05 significance level. This outcome led to the full acceptance of the primary research hypothesis (H1), confirming that the structured classroom lesson plan was highly effective in improving student knowledge regarding examination stress management.

TABLE 5: PREVALENCE SHIFTS IN LEVELS OF EXAMINATION STRESS (N=60)

level of examination stress	objective score bounds	pre-test sample count (n)	pre-test prevalence (%)	post-test sample count (n)	post-test prevalence (%)
Low Test Anxiety	≤ 30	5	8.33%	34	56.67%
Normal / Average Test Anxiety	31–60	11	18.33%	19	31.67%
Moderately High Test Anxiety	61–90	28	46.67%	5	8.33%
High Test Anxiety	91–120	16	26.67%	2	3.33%
Total sample profile	Criteria total	60	100.00%	60	100.00%

Analysis of Prevalence Shifts in Examination Stress Levels

To gauge the absolute systemic impact of the classroom intervention, the participants' underlying test anxiety profiles were mapped utilizing the clinical scoring thresholds highlighted. Analysis of baseline parameters revealed that the vast majority of school children faced severe evaluation strains before the implementation of the educational intervention.

Following the 4-week structured lesson plan, post-test distributions showed a clear shift away from severe distress categories toward normal and healthy adaptive coping ranges.

TABLE 6: CHI-SQUARE ASSOCIATION MATRIX BETWEEN PRE-TEST KNOWLEDGE AND SOCIO-DEMOGRAPHIC INDICATORS (N=60)

Sl. No	Socio-Demographic Parameters	Target Categories	\leq Median Score	$>$ Median Score	Chi-Square Value (χ^2)	Degrees of Freedom (df)	Probability (p-Value) / Significance
1	Age (in years)	12–13 year	7	8	0.64	3	0.886 (NS)
		14–15 years	9	11			
		16–17 years	6	5			
		>18 years	8	6			

2	Gender	Male	18	12	1.39	1	0.707 (NS)
		Female	12	18			
3	Class/Grade Studying	Class VII / Class VIII	7	1	8.72	3	0.033
		Class IX	11	8			
		Class X	14	10			
		Class XI / Class XII	2	7			
4	Medium of Study	English	16	10	2.07	2	0.558 (NS)
		Hindi	5	11			
		Both English & Hindi	9	9			
5	Previous Exam Performance	40%-60%	14	10	0.83	2	0.842 (NS)
		61%-80%	15	12			
		>80%	3	6			
6	Study Hours per Day	< 1 Hrs.	6	3	3.18	3	0.364 (NS)
		1-2 Hr.	18	15			
		2-3 Hrs.	6	5			
		>3Hrs.	4	3			
7	Type of Family	Nuclear	20	15	1.07	2	0.586 (NS)
		Joint	8	4			
		Extended	7	6			
8	Parental Educational Status	Secondary education	6	2	2.36	3	0.501 (NS)
		Sr. Secondary education	11	8			
		Graduate	13	12			
		Post-graduate and above	4	4			
9	Previous Exposure to Techniques	Yes	7	9	0.57	1	0.903 (NS)
		No	27	17			
10	Source of Information	Teachers/school counsellors	20	12	9.65	3	0.022 (S)
		Parents or family members	1	11			
		Friends/peers	4	5			
		Health professionals	9	0			

(NS) - Non-Significant; (S) - Statistically Significant at $p < 0.05$ level.

Statistical Association with Socio-Demographic Attributes

Chi-square tests were applied to explore potential relationships between pre-test baseline knowledge levels and the ten socio-demographic indicators.

The results showed no statistically significant associations between baseline stress knowledge and student variables such as Age ($\chi^2=0.64$, $p=0.886$), Gender ($\chi^2=1.39$, $p=0.707$), Medium of Study ($\chi^2=2.07$, $p=0.558$), Previous Examination score Performance ($\chi^2=0.83$, $p=0.842$), Study Hours per Day ($\chi^2=3.18$, $p=0.364$), Type of Family ($\chi^2=1.07$, $p=0.586$), Parental Educational Status ($\chi^2=2.36$, $p=0.501$), or Previous Exposure to Stress Management Techniques ($\chi^2=0.57$, $p=0.903$).

However, a child's current Class/Grade Studying ($\chi^2=8.72$, $p=0.033$) and their primary Source of Information Regarding Examination Stress Management ($\chi^2=9.65$, $p=0.022$) displayed strong statistical associations with pre-test knowledge levels. This confirmed that students with more advanced grade experience and regular exposure to reliable

school counseling channels maintained better baseline stress management literacy. Consequently, the secondary research hypothesis (H2) was partially accepted.

DISCUSSION: The findings of this study confirm that a structured, classroom-delivered lesson plan can significantly improve examination stress management knowledge among school children in the Delhi/NCR region.

Baseline Variations and Informational Deficits

The pre-test data revealed that before the intervention, a substantial majority of the participants possessed inadequate or only moderate knowledge regarding the physiological and emotional impacts of academic stress. This finding matches broader research trends in urban education contexts, which show that while students face high evaluation pressures, they rarely receive formal instruction on how to systematically manage stress.

The baseline gaps observed across cognitive and physiological tracks indicate that many students

experience stress symptoms-such as fatigue, insomnia, and concentration drops-without recognizing them as manageable anxiety responses. This lack of understanding often prevents students from adopting proactive coping mechanisms, leading instead to maladaptive patterns like study procrastination or complete behavioral avoidance during exam phases.

The Educational Value of Structured Lesson Plans

The significant, positive score gains observed across all knowledge domains demonstrate the practical benefits of using a clear, multi-module curriculum design. Breaking stress education down into distinct blocks-covering cognitive mechanics, somatic symptom tracking, and behavioral performance skills-helps students build a comprehensive framework for self-regulation.

The psychological and emotional tracks showed large absolute improvements, suggesting that clarifying the link between academic anxiety and cognitive performance is highly beneficial for adolescent learners. Teaching students to recognize irrational thoughts and manage their physical responses gives them a greater sense of personal control, directly counteracting the helplessness that often drives exam panic.

Demographic Influences and Structural Implementation

The statistical correlations between baseline knowledge, school grade levels, and access to informational resources highlight the structural nature of health literacy among students. The fact that over half of the cohort relied on informal networks for stress management advice underlines why test anxiety misconceptions can easily persist within student communities.

These patterns point to the importance of introducing structured health education directly into school environments. Integrating evidence-based coping strategies into the core curriculum ensures that all students, regardless of socioeconomic background, develop the foundational skills needed to navigate academic challenges with confidence.

Practical Applications within School Systems

These findings support several clear recommendations for educational systems and student health services:

➤ **Educational Practice:** Teachers and school counsellors should integrate continuous stress management education directly into standard lesson structures, ensuring students develop practical coping skills alongside academic learning.

➤ **Counselor Training:** School counseling programs should expand structured group workshops, training educators to deliver simple, evidence-based cognitive and physical relaxation techniques within classroom environments.

➤ **Educational Administration:** School administrators should prioritize and fund school-wide preventative mental health initiatives, standardizing proactive wellness curricula rather than relying solely on crisis intervention services.

➤ **Educational Research:** Future studies should investigate the long-term retention of stress management skills across larger student populations, utilizing multi-center randomized controlled designs to optimize school-based wellness protocols.

CONCLUSIONS:

This quasi-experimental study demonstrates that a structured classroom lesson plan is an effective tool for improving knowledge regarding examination stress management among school children. The significant score enhancements achieved across physical, psychological, cognitive, and behavioral coping domains confirm that systematic, interactive health instruction can effectively address existing information gaps.

Given that Class/Grade Studying and reliable information channels significantly shape baseline student awareness, establishing institutionalized stress education within the standard school week is essential. Implementing these preventative learning frameworks broadly can help cultivate balanced, resilient educational environments, enabling students across the Delhi/NCR region to protect their mental well-being while pursuing academic success.

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