RESEARCH PAPER

Academic Stress and Coping Among Higher Secondary Students: A Correlational Analysis

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Abstract

Background: The transition through higher secondary education imposes substantial academic stress on students, necessitating adaptive mechanisms for coping with stress. This study evaluates the relationship between academic stress and coping strategies among higher secondary school students, providing a foundation for targeted self-instructional interventions.

Methods: A descriptive correlational research design was utilized on a sample of 60 higher secondary students enrolled in a 'Plus Two', Science batch. 'Academic Stress' levels were measured using Lakaev's Academic Stress Response Scale, and 'Coping levels' were assessed using Carver's Brief Cope Inventory. Data underwent rigorous statistical analysis utilizing SPSS v 22 and MS Excel.

Results: The samples exhibited 'Mild to Moderate', Academic Stress with Mean Stress level of 47.83 ± 8.12 SD against a Mean Coping level of 54.25 ± 6.45 SD. Notably, 56.67% of the students demonstrated average coping levels, 43.33% exhibited poor coping levels, and 0% displayed good coping capacities. A statistically significant moderate negative correlation was found between academic stress and coping strategies ($r = -0.412$, $p=0.012$). Significant Associations were found between Academic Stress and Demographic variables such as Gender($p<0.05$), Birth Order($p<0.05$), AOM($P<0.05$) and Technique of Study ($P<0.01$). No Significant Association was observed between Coping Strategies and Demographic variables, except Gender ($p<0.05$) and Technique of Study ($p<0.05$).

Conclusion: Empirical evidence confirms a clear inverse relationship between academic stress and effective coping strategies. Educational institutions should integrate structured modules teaching Effective Communication and cultivating supportive Interpersonal Relationship networks to mitigate stress.

Keywords: Academic Stress; Coping Strategies; Higher Secondary; School Students; Correlational Analysis.

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1. Introduction

The Academic stress is a prevalent psychological state among secondary students, often exacerbated by the dual pressures of adolescence and intensifying educational obligations. Stress is the physiological and psychological response to a stimulus that disrupts equilibrium, and students are particularly susceptible to this disruption when academic demands outweigh their adaptive capabilities.1,2 In secondary and tertiary education settings, students face a wide range of ongoing normative stressors, including intense workloads, peer competition, grade anxiety, and future career planning which can reduce academic achievement, decrease motivation, and increase the risk of dropout.3,4 Globally, research indicates an alarming prevalence of student stress. A recent school-based study in the Belagavi district of India found that 74% of adolescents experienced high levels of academic stress,5 a trend mirrored in the secondary school populations of Kathmandu, Nepal, where perceived academic stress was remarkably high.6 This widespread psychological burden is best understood through the Transactional Model of Stress and Coping, which posits that stress emerges from a continuous transaction between individuals and their environment.7,8 When perceived school demands outweigh available resources, academic stress increases, necessitating functional strategies for Coping with Stress.9 While various coping frameworks exist, integrating Effective Communication and fostering a strong Interpersonal Relationship network are vital components of emotional resilience. Adolescents who rely on active problem-solving and social support experience lower rates of distress compared to those using maladaptive mechanisms like avoidance or self-blame.10,11 Despite the known risks, many senior school students lack the structured emotional competencies required to navigate these pressures.12 This study aims to quantify the relationship between academic stress and coping strategies among higher secondary science students, providing original data to support the development of targeted, self-instructional coping modules.

Objectives

1. To Assess the level of Academic Stress among Higher Secondary students
2. To Assess the Coping Strategies among Higher Secondary students
3. To Determine the relationship between academic stress and coping strategies among higher secondary students.

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4. To Find out the association between the level of academic stress and Coping strategies with selected demographic variables.
5. To Develop a self-instructional module on coping with academic stress (Distributed to students following the study completion)

2. Materials and Methods

Study Design, Setting, and Participants

A descriptive correlational research design was employed to examine the relationship between the independent variable (Academic stress) and the dependent variable (Coping strategies). The study was conducted at a Government Higher Secondary School located in 3. Chavara, Kollam. Using a purposive sampling technique, the study enrolled 60 higher secondary students actively studying in a Plus Two science batch.

Inclusion Criteria & Exclusion Criteria

Inclusion Criteria

1. Students enrolled in +2 Science batch
2. Who are willing and available at the time of data collection

Exclusion Criteria

1. Who are not willing to participate in the study
2. Under treatment for clinical anxiety, depression/other psychiatric disorder

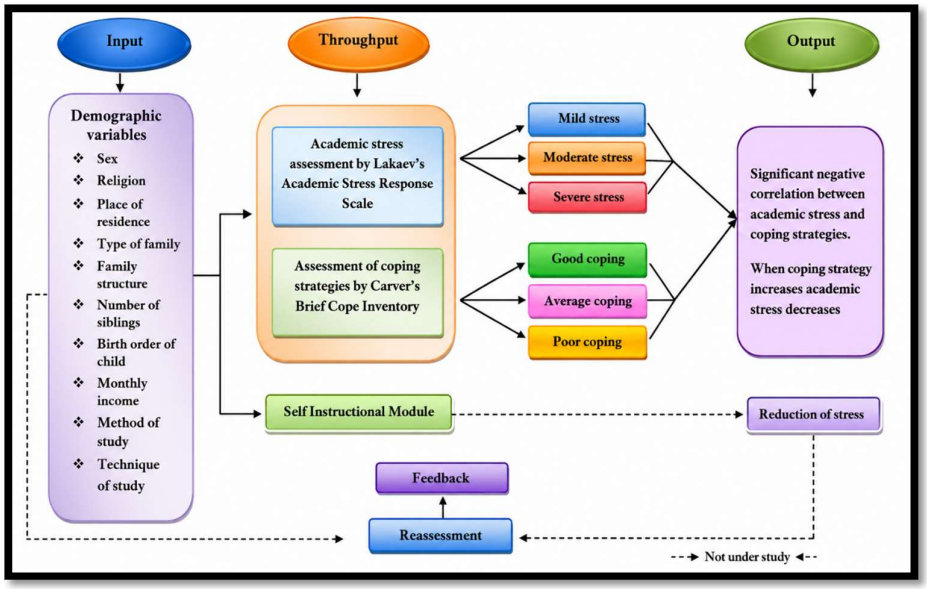

Figure 1: Schema of Conceptual Framework based on Sr. Callista Roy's Adaptation Model.

Tools & Techniques

A Socio-demographic proforma developed by the investigator which included age, sex, religion, place of residence, type of family, number of siblings, AOM, family structure, birth order, monthly income, method of study, technique of study, and history of illness was used to collect the baseline data. Academic Stress was assessed using the standardized tool, Lakaev's Academic Stress Response Scale (LASRS) and Carver's Brief COPE Inventory was used for assessing the coping strategy of students. A Self-Instructional Module was prepared regarding ways to reduce academic stress by using adequate coping strategies, which was distributed on completion of the study.

1.Lakaev's Academic Stress Response Scale: Utilized to quantify cognitive, physiological, and emotional reactions to academic pressures. The tool demonstrates high internal consistency and validity for adolescent populations.

2.Carver's Brief Cope Inventory: Employed to evaluate the multidimensional functional coping strategies used by students. The inventory measures reliance on proactive strategies (e.g., establishing an Interpersonal Relationship network) versus avoidant strategies.

Data Collection

Institutional ethical permission was secured prior to the commencement of data collection. Informed consent was formally obtained from all participating students and their respective parents or guardians. Participants were briefed on the study's purpose, assured of complete anonymity and confidentiality, and informed of their right to withdraw from the research at any time without consequences. Following the IEC clearance and formal permission from the school authorities, data was collected for a period of one month from 05/01/2014 to 03/02/2014.

Statistical Analysis Original data were coded and analysed utilizing advanced statistical software, specifically SPSS V 22 to generate both descriptive and inferential statistics. Frequencies and percentages were used to categorize academic stress and coping levels. Pearson's correlation coefficient was utilized to determine the relationship between the primary variables,

and Chi-square and Fisher's Exact test statistics were employed to assess associations with demographic factors. Statistical significance was ascertained at $p < 0.0$.

3.Results

Section I: Description of Sample Characteristics

Table 1: Frequency and % Distribution of Samples according to Demographic Variables (N=60)

Variables	Categories	Frequency (f)	Percentage (%)
Age	≤ 16 years	10	16.7
	17–18 years	50	83.3
Gender	Male	18	30.0
	Female	42	70.0
Place of Residence	Rural	52	86.7
	Urban	8	13.3
Type of Family	Nuclear	54	90.0
	Joint	6	10.0
Family Structure	Two Parent	55	91.7
	Single Parent	5	8.3
Number of Siblings	None	12	20.0
	One or more	48	80.0
Birth Order	Firstborn	28	46.7
	Later-born	32	53.3
Age of menarche, AOM *(Females, n=42)*	Early <12 yrs	14	33.3
	Normal ≥12 yrs	28	66.7
History of Illness	Present	8	13.3
	Absent	52	86.7
Monthly Income	< ₹20,000	18	30.0
	≥ ₹20,000	42	70.0
Method of Study	Self-Study	36	60.0
	Coaching/Tuition	24	40.0
Technique of Study	Rote Memorization	38	63.3
	Concept Mapping	22	36.7

Inference: The sample comprised predominantly female students (70%, n=42), with male students constituting the remaining 30% (n=18). The majority of the participants resided in rural areas (86.67%, n=52) compared to urban areas (13.33%, n=8). Family structure was heavily skewed toward nuclear families (90%, n=54), with only 10% (n=6) originating from joint families. Additional baseline variables, including biological markers such as age of menarche (AOM) for female participants, were recorded to test for sociodemographic associations.

Section II: Level of Academic Stress and Coping Strategy

Table 2: Descriptive Statistics of Variables

Variable	Mean	SD	Minimum	Maximum

Academic Stress	47.83	8.12	32	68
Coping Strategies	54.25	6.45	40	72

Inference: The mean Academic Stress among higher secondary students were 47.83±8SD and the Mean Coping strategy was 54.25±6.45SD. The higherscondary students elicited an overall Mild to Moderate Academic Stress levels with an Average Coping Strategies Score.

Table 3: Frequency and percentage distribution of level of academic stress (N = 60)

Level of Academic stress	Frequency(f)	Percentage (%)
Mild	45	75
Moderate	15	25
Severe	00	00
Total	60	100

Inference: 75% of students had mild academic stress and 25% have moderate academic stress.

Table 4: Frequency and percentage distribution of coping strategy score (N=60)

Coping strategy (Grading)	Frequency (f)	Percentage (%)
Poor	26	43.33
Average	34	56.67
Good	00	00
Total	60	100

Inference: The descriptive analysis revealed a substantial deficit in effective coping mechanisms among the samples. None of the participants (0%) demonstrated "good" coping skills. The majority (56.67%, n=34) exhibited "average" coping, while a concerning 43.33% (n=26) demonstrated "poor" coping mechanisms.

Section III: Relationship between Academic Stress and Coping Strategies among Higher Secondary Students.

Table 5: Correlation between Academic Stress and Coping Strategies

Variables Correlated	Mean	Standard Deviation	r-value	p-value	Significance
Academic Stress	47.83	8.12	-0.412	0.012	Significant ($p < 0.05$)
Coping Strategies	54.25	6.45			

Inference: Inferential statistical analysis utilizing Pearson's correlation coefficient revealed a statistically significant negative correlation ($r = -0.412$, $p < 0.05$) between academic stress and coping strategies. This indicates that an increase in functional strategies for coping with stress corresponds to a proportional decrease in academic stress levels.

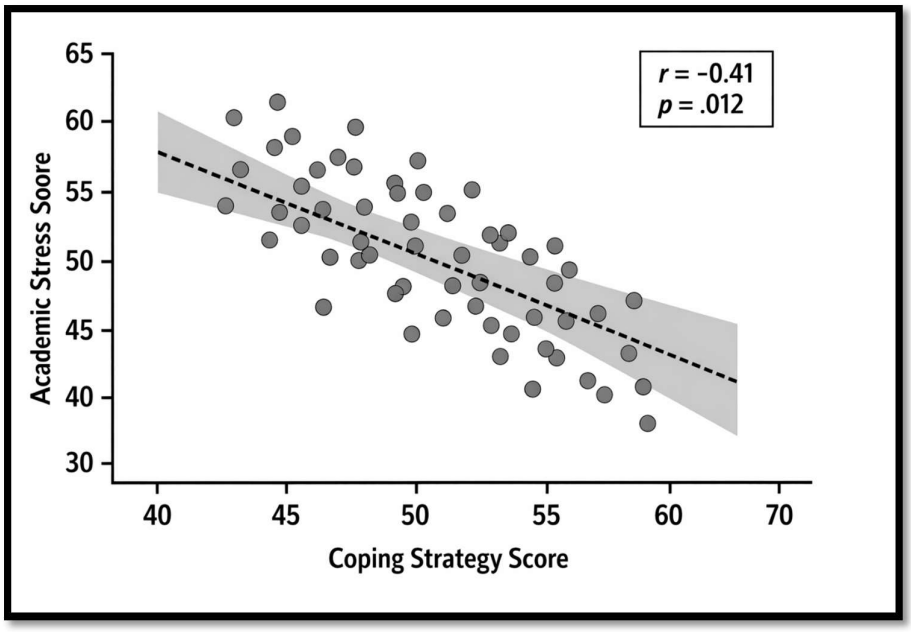

Figure 2: Scatter Plot Depicting the Relationship between Academic Stress and Coping Strategies

Section IV: Association between the level of academic stress, Coping strategies with selected demographic variables.

Table 6: Cross-Tabulation and Association Between Levels of Academic Stress & Demographic Variables

Demographic Variable	Categories	High Stress (n=38)	Moderate Stress (n=22)	Test Statistic Used	p-Value	Significance
Age	≤16 years (n=10)	6 (60.0%)	4(40.0%)	Fisher's Exact	1.000	Not Sig.
	17–18 years (n=50)	32 (64.0%)	18(36.0%)			
Gender	Male (n=18)	8 (44.4%)	10 (55.6%)	Fisher's Exact	0.038*	Significant
	Female (n=42)	30 (71.4%)	12 (28.6%)			
Residence	Rural (n=52)	33 (63.5%)	19 (36.5%)	$\chi 2$	0.705	Not Sig.
	Urban (n=8)	5 (62.5%)	3 (37.5%)	= 0.14		
Type of Family	Nuclear (n=54)	34 (63.0%)	20 (37.0%)	Fisher's Exact	1.000	Not Sig.
	Joint (n=6)	4 (66.7%)	2 (33.3%)			
Number of Siblings	None (n=12)	9 (75.0%)	3 (25.0%)	Fisher's Exact	0.514	Not Sig.
	One or more (n=48)	29 (60.4%)	19 (39.6%)			
Birth Order	Firstborn (n=28)	22 (78.6%)	6 (21.4%)	$\chi 2$	0.021	Significant
	Later-born (n=32)	16 (50.0%)	16 (50.0%)	= 5.28*		
AOM (Females, n=42)	Early <12 (n=14)	13 (92.9%)	1 (7.1%)	Fisher's Exact	0.021*	Significant
	Normal ≥12 (n=28)	17 (60.7%)	11 (39.3%)			
History of Illness	Present(n=8)	7 (87.5%)	1 (12.5%)	Fisher's Exact	0.228	Not Sig.
	Absent(n=52)	31 (59.6%)	21 (40.4%)			

Monthly Income	< ₹20,000 (n=18) ≥ ₹20,000 (n=42)	12 (66.7%) 26 (61.9%)	6 (33.3%) 16 (38.1%)	$\chi 2$ = 0.11	0.731	Not Sig.
Method of Study	Self-Study (n=36) Coaching (n=24)	20 (55.6%) 18 (75.0%)	16 (44.4%) 6 (25.0%)	$\chi 2$ = 2.34	0.126	Not Sig.
Technique of Study	Rote Memorization (n=38) Concept Map (n=22)	29 (76.3%) 9 (40.9%)	9 (23.7%) 13 (59.1%)	$\chi 2$ = 7.63**	0.005	Significant

** Significant at 0.05 level, **Significant at 0.01 levels.*

Inference: Significant association found with Gender($p<0.05$), Birth Order($p<0.05$), AOM($P<0.05$) and Technique of Study ($P<0.01$).

Table 7: Association between Coping Strategies & Demographic Variables (N=60)

Demographic Variable	Categories	Poor Coping (n=26)	Average Coping (n=34)	Test Statistic	p-value	Significance
Age	≤16 years (n=10) 17–18 years (n=50)	4 (40.0%) 22 (44.0%)	6 (60.0%) 28 (56.0%)	Fisher's Exact	1.000	Not Significant
Gender	Male (n=18) Female (n=42)	12 (66.7%) 14 (33.3%)	6 (33.3%) 28 (66.7%)	Fisher's Exact	0.028*	Significant
Residence	Rural (n=52) Urban (n=8)	22 (42.3%) 4 (50.0%)	30 (57.7%) 4(50.0%)	Fisher's Exact	0.684	Not Significant
Type of Family	Nuclear(n=54) Joint (n=6)	23 (42.6%) 3 (50.0%)	31 (57.4%) 3 (50.0%)	Fisher's Exact	0.651	Not Significant
Number of Siblings	None (n=12) One or more (n=48)	7 (58.3%) 19 (39.6%)	5 (41.7%) 29 (60.4%)	Fisher's Exact	0.229	Not Significant
Birth Order	Firstborn (n=28) Later-born (n=32)	15 (53.6%) 11 (34.4%)	13 (46.4%) 21 (65.6%)	χ^2 = 2.23	0.134	Not Significant
AOM (Females, n=42)	Early <12yrs. (n=14) Normal ≥12 (n=28)	8 (57.1%) 6 (21.4%)	6 (42.9%) 22 (78.6%)	Fisher's Exact	0.064	Not Significant
History of Illness	Present (n=8) Absent (n=52)	5 (62.5%) 21 (40.4%)	3 (37.5%) 31 (59.6%)	Fisher's Exact	0.274	Not Significant
Monthly Income	< ₹20,000 (n=18) ≥ ₹20,000 (n=42)	8 (44.4%) 18 (42.9%)	10 (55.6%) 24 (57.1%)	χ^2 = 0.01	0.908	Not Significant
Method of Study	Self-Study (n=36) Coaching (n=24)	12 (33.3%) 14 (58.3%)	24 (66.7%) 10 (41.7%)	χ^2 = 3.65	0.055	Marginally Significant
Technique of Study	Rote Memorization (n=38) Concept Map(n=22)	21 (55.3%) 5 (22.7%)	17 (44.7%) 17 (77.3%)	χ^2 = 6.01*	0.014	Significant

Inference: An association was found between gender, technique of study and coping strategies ($p<0.05$).

4. Discussion

The study found that the higher secondary students exhibited an overall mild to moderate levels of academic stress and average coping strategy scores. The central finding of this study is the significant, moderate negative correlation ($r = -0.412$) between academic stress and strategies for coping with stress. This aligns directly with the transactional model of stress, which explains that stress is mitigated when an individual's perceived coping resources outweigh the environmental stressors. However, given that nearly half the samples (43.33%) exhibited poor coping skills. While, good coping reduces stress, the absence of these skills leaves a massive portion of the samples highly vulnerable to unchecked academic stress. This clearly dictates the urgent need for structured, self-instructional interventions to systematically elevate the coping baseline of the entire student population. These findings align strongly with recent international literature; for instance, a 2024 study on senior school students also found a significant negative correlation between academic stress and coping self-efficacy, highlighting that higher stress is directly related with lower coping.13 The data revealed that a staggering 43.33% of students possessed poor coping mechanisms, and 0% exhibited good coping skills. This widespread deficit is consistent with findings from a study conducted in Saudi Arabia, where a majority of secondary students demonstrated low to moderate adaptive coping, heavily relying on maladaptive strategies like self-blame.10 Furthermore, the demands of heavy academic workloads inevitably require students to either adapt or suffer from psychological distress, making the identification of these coping deficiencies critical.14 Interestingly, the significant association between demographic variables (including Gender, Birth Order, AOM and Technique of Study) and academic stress levels are in accordance with broader adolescent studies, such as one conducted by Pillai et al. (2023), which found statistically significant higher stress levels in female students compared to males.15 The universal nature of the stress within the school students necessitates broad-based, curriculum-wide interventions rather than demographically isolated ones. To effectively manage these stressors, educational institutions must move beyond passive counselling and integrate structured, self-instructional modules into the curriculum. Building social and emotional competencies significantly aids students in navigating academic challenges.16 Developing modules that actively train students in “Life Skills” and “Effective Communication” techniques will help them to deal with the systemic demands of the higher secondary science curriculum. Furthermore, students can fundamentally shift their appraisal of academic threats, ultimately mitigating the adverse psychological impacts of their academic journey, leading to a quantifiable reduction in their academic stress burden. .17,18

5. Conclusion

This study provides empirical evidence of the inverse relationship between academic stress and coping strategies among higher secondary students. With nearly half the student body exhibiting poor coping skills and zero percent demonstrating optimal coping, the vulnerability of this population is evident. Enhancing students' coping skills is essential for reducing the burden of academic stress. Future educational policies should prioritize the implementation of comprehensive, self-instructional modules focusing on essential life skills, and communication skills, ultimately yielding a healthier, more resilient student body capable of successfully navigating complex academic environments.

Ethical Considerations

Institutional Ethical Committee (Human Ethical Committee, Upasana Hospital), letter Vide No. 03/UH/2013, dated 16/04/2013.

Conflicts of Interest

None to Declare

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