



Academic pressure and its effects on the mental health of secondary school students in the Noakhali coastal region of Bangladesh

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ABSTRACT

This research investigated the sources of academic pressure and their impact on the mental health of secondary students in the Noakhali coastal region. A quantitative research design was used, and data were collected from 180 students across six secondary schools using a structured five-point Likert-scale questionnaire. Data were analysed by using the statistics package (SPSS), including reliability analysis, descriptive statistics, t-test, and Pearson's correlation analysis. The findings uncovered a high rate of academic pressure, with mean scores (> 4) for major sources such as teacher expectations, family expectations, and competitive school environments, etc. Socio-economic influences such as family obligations and financial burdens, as well as environmental factors, were found to significantly increase academic stress ($p < .001$). The results further proved that academic pressure had a huge negative impact on students' mental health. The study presents context-specific empirical findings about the mental health of adolescents in coastal areas and highlights the need for integrated school, family, and policy-level interventions to minimise academic pressure and support the mental health of adolescents.

Keywords: Academic pressure; mental health; secondary school students; coastal region; Bangladesh

INTRODUCTION

Academic pressure among secondary school students has been a major concern in Bangladesh, given the highly competitive nature of the education system. Students are under constant pressure from schools, coaching institutes, private tuition institutes, and parents to achieve good marks in national exams (Anjum et al., 2022; Siddik et al., 2023). Marks and rankings are given greater importance in the education system than the holistic development of learning, thereby creating a stressful environment for adolescents. Students are frequently evaluated through ongoing exams, quizzes, and standardised testing, which places greater pressure on them to perform (Tran et al., 2024; Islam et al., 2021). In the coastal region, with environmental vulnerabilities such as cyclones, floods, and riverbank erosion, pressures on schooling are further heightened, leaving additional stress and disruptions to learning (Liu, 2025).

In the Noakhali coastal region, these pressures are further complicated by a vulnerable environment. Frequent cyclones, tidal surges, riverbank erosion, and flooding regularly disrupt schooling, leading to uncertainty in students' schoolwork routines (Goldberg et al., 2024). Adolescents have to deal with the mix of both educational needs and anxiety with natural hazards, leading to an increased level of stress, anxiety, and depressive symptoms (Stearse et al., 2023; Pascoe et al., 2023).

Certain parental pressure on students to excel despite these constraints in order to attain the opportunities of upward social mobility attached to academic excellence (Mayya et al., 2022) The combined pressure of academic, environmental and socio-economic factors contributes to the reduction in mental health among adolescents, which appears as sleep problems, anxiety and lack of motivation (Pienyu et al., 2024; Olivera et al., 2023). Families with limited financial resources may not be able to afford private tuition or access to additional learning materials, which would place added pressure on students to achieve well with fewer resources (Deng et al., 2022).

The coastal location of Noakhali brings special stressors that set it apart from urban or inland areas. Environmental disruptions, such as school closings due to floods or cyclone warnings, disrupt the learning schedule and create uncertainty, which increases students' psychological stress (Hai, 2025). Studies have revealed that adolescents who are exposed to chronic environmental stress have a heightened level of anxiety and lower resilience (Walsham et al., 2023).

By examining the interplay between academic pressure and mental health, the research addresses a critical need for evidence-based strategies to support adolescent psychological well-being (Nguyen et al., 2024). Insights from the research can help teachers design classroom interventions that reduce undue academic pressure, provide targeted support for students who exhibit signs of stress, and foster a supportive learning environment that promotes mental resilience (Singh & Kaur, 2025; Nath et al., 2025). Evidence-based recommendations for exam scheduling, counselling services, and stress management workshops can improve student well-being and academic performance (Jiang et al., 2021; Podiya et al., 2025). Awareness of the sources and consequences of academic stress allows parents to adopt supportive behaviours at home, guide their children in effective coping strategies, and moderate expectations to prevent excessive pressure (Hogberg, 2020; Hosseinkhani et al., 2020).

Understanding the dynamic presence of these factors will help educators, parents, and policymakers institute interventions to reduce stress and promote well-being. Despite growing awareness, research on Noakhali coastal students has remained limited, highlighting a significant research gap (Miskimon et al., 2022). This study seeks to address this gap by examining the sources of academic stress, their relationship to mental health outcomes, and the possible strategies available to help students manage them in this unique situation.

Research objective

To investigate the relationship between academic pressure and its effects on the mental health of secondary school students in the Noakhali coastal region of Bangladesh.

Specific objectives

- To identify the major sources of academic pressure among secondary school students in Noakhali.
- To examine how socio-economic and environmental conditions contribute to students' academic stress levels.
- To propose strategies to reduce academic stress and promote mental well-being among secondary students in Noakhali.

This study aims to explore how academic pressure affects the mental health of secondary students in Noakhali, while accounting for both socio-economic and coastal environmental

factors. By identifying key sources of stress, such as school workload, tuition, parental expectations, and environmental disruptions. It further proposes practical strategies for mitigating stress, including school-based interventions, parental guidance, and policy recommendations.

LITERATURE REVIEW

In Hong Kong, studies show that the high exam demands and heavy homework impact the anxiety and sleep issues among students in the secondary school (Chyu & Chen, 2022). Parental expectation for high performance is associated with increased stress and depressive symptoms in a sample of urban high school students. Parental expectation for high performance is linked to more stress and depressive symptoms in a sample of urban high school students in Vietnam (Nguyen & Phan, 2024). Students experiencing excessive work and time stress showed increases in levels of anxiety and fatigue, and these effects did not fade at the end of the school year (Dunacan et al., 2021).

Similarly, research in South Korea shows that high-stakes test competition and competition-driven coaching programs cause high levels of stress and depression among students at key periods of academic achievement (Yeom et al., 2020). Heavy homework workload, examination pressure, and parental expectations were linked to anxiety, irritability, and poorer academic achievement (Kim, 2024). More similar trends are reported in African countries, including Uganda and Kenya, with intense schooling, evaluation by exams, and parental pressure combining to produce sleep disorders, feelings of anxiety, and depression among pupils (Anyanwu, 2023; Cai et al., 2024).

Research in China reflects that parental and teacher expectations increased psychological pressure, which resulted in an increase in anxiety, depression, and low engagement in social activities (Jiang et al., 2021). For secondary school students, there was increased anxiety and depressive symptoms from high expectations from school and family with heavy academic burdens (Zhu et al., 2021). Parental expectations, peer competition, and exam-centric teaching methods were found to be some of the major stressors that cause anxiety, decreased motivation, and mental fatigue among secondary students (Yi et al., 2024).

The pressure of success in SSC and HSC examinations, parental expectations, and constant evaluation were found to be inducing a situation of increased anxiety, sleep disturbances, and

depressive symptoms (Islam et al., 2021). Also, studies have shown that SSC and HSC exams cause intense stress because they are high-stakes exams that can determine future academic and career pathways (Akter & Barua, 2025). The competitive nature of the environment means that students are spending long hours reading up, taking private tuition, and receiving extra coaching, with symptoms of anxiety, depression, and sleep interruptions a common consequence (Yuting & Rashid, 2025).

Adolescents from lower-income families are often confronted with barriers such as inadequate access to educational resources, a reduction in the availability of educational materials, and constraints on private tuition, which places a greater level of stress on them as they attempt to compete with their peers who have better resources (Singh & Pandey, 2025). Studies also indicate that rural students face more challenges, including constraints in school infrastructure and environmental disruptions, but urban students are not immune to pressure from higher parental expectations and severe competition (Gupta, 2020).

Few schools have access to counselling or psychological services, leaving the students to deal with the stress of academia on their own (Jones et al., 2022). The lack of structured interventions often leads to untreated anxiety, depressive symptoms, and maladaptive coping mechanisms, which can have a negative impact on academic performance and general well-being (Kaur, 2012). According to Shin (2024), academic pressure and young people's mental health are discussed, along with relationships between exam stress, parental expectations, heavy homework, and outcomes, such as anxiety, depression, and sleeping difficulties.

Environmental vulnerabilities, including cyclones, flooding, and riverbank erosion, directly disrupt schooling and further stress students (Zhu et al., 2021). Poverty and limited access to educational resources also exacerbate this stress, as students may struggle to keep up with their education while living with fluctuating life conditions (Chung & Park, 2024). Frequent school closures due to flooding or cyclone warnings disrupt school schedules, making it harder to learn and take tests, which adds to the apprehension of losing time on coursework and exams (Goldberg et al., 2024). These disruptions, combined with high expectations from parents and teachers, create a compounded environment of stress that is unique to coastal students (Chandana & Madhavi, 2025).

In coastal communities in Africa and Asia, provincial contamination has been linked to interact with schooling demand, enhancing adolescent psychological distress (Anyanwu,

2023). Anxiety, sleep disturbance, and depressive symptoms are reported by students who passively experience repeated environmental disruptions, which may illustrate the effect of synergies between environmental and academic stressors (Shilpa et al., 2024).

Although existing studies have extensively examined academic pressure and its impact on students' mental health globally, there remains a significant gap in understanding how environmental stressors, particularly in coastal areas like Noakhali, interact with academic pressure. While studies such as Goldberg et al. (2024) and Steare et al. (2023) have highlighted the challenges posed by environmental factors, there is limited research on how these factors interact with academic pressures to affect students' mental health, especially in areas prone to frequent natural disasters. Furthermore, existing literature tends to focus on short-term effects of academic pressure, such as exam stress and homework, but there is little exploration of the long-term impact of continuous exposure to both academic and environmental stressors. The effects of these stressors on academic performance and mental health outcomes over extended periods in disaster-prone areas such as Noakhali have not been thoroughly investigated.

RESEARCH METHODOLOGY

Research design

This study used a quantitative research design to explore the relationship between academic pressure and the mental health of secondary school students in the coastal area of Noakhali, Bangladesh. A quantitative approach is well-suited to bodies of work that aim to measure psychological constructs such as stress, anxiety, and perceived academic pressure by numerical data and with standardised instruments (Creswell & Creswell, 2018). A structured survey questionnaire with Likert-scale items was adopted because this method is effective for measuring attitudes and mental health-related indicators in educational research (McCombes, 2023).

Sampling and sampling technique

The research was based on a population of 180 secondary students (90 males and 90 females) enrolled in 6 secondary schools in the Coastal area of Noakhali (see Table 1). The schools were selected using purposive sampling, which is suitable when the researcher intends to select study sites based on specific geographic or other contextual features, such as disaster-prone areas

(Etikan, 2016). Based on the selected schools, simple random sampling was used to identify student participants from classes 6-10, ensuring every eligible learner had an equal chance of being included in the study to minimise sampling bias.

Table 1: *Sampling breakdown of the study*

School	School selection method	Students selected	Male	Female	Sampling technique
		30	15	15	
		30	15	15	
		30	15	15	Simple random sampling
School (n=6)	Purposive	30	15	15	
		30	15	15	
		30	15	15	
Total (N)		180	90	90	

Source: *Author's own compilation*

Data collection tools

A structured Likert-scale questionnaire was used as the primary instrument to collect quantitative data for this study. The questionnaire was designed to gather information about academic pressure, socio-economic and environmental stressors, mental health symptoms, and coping strategies (see Table 2). The main questionnaire items were measured using a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree).

Table 2: *Structure of the study data collection tools*

Sections	Content description	Number of items	Purpose/variable measured
Demographic information	Gender, class, residence, family income, and coaching status	5	Background characteristics
Key sources of Academic pressure	Homework load, tests, family expectations, teacher expectations, competition, and coaching pressure	6	Key sources of academic pressure
Socio-economic and environmental stressors	Financial hardship, family responsibilities, cost of education, disaster effects, and school closure	6	External factors influencing stress

Mental health symptoms	Anxiety, sleep problems, worry, sadness, physical symptoms, fear, and reduced confidence	7	Impact of academic pressure on mental health
Strategies and support	School support, teaching clarity, parental support, expectation control, rest, sports, and counselling	7	Coping strategies and support needs

Source: Author's own compilation

Validity and reliability of the tools

To ensure the quality of the research instrument, attention was paid to both validity and reliability. Content validity was established by reviewing the questionnaire with experts in the subject and experienced school teachers. Their feedback was useful in refining the item clarity, wording, and alignment with the study objectives.

To establish reliability, a pilot study of 20 students from a similar population not included in the final sample was conducted. The pilot data were then tested for test reliability using the Statistical Package for the Social Sciences (SPSS) and Cronbach's Alpha, a commonly accepted measure of internal consistency for Likert-type scales. A coefficient value of 0.70 or above was considered acceptable and indicates that the instrument is suitable for measuring the intended constructs (Taber, 2017).

Data collection procedure

A structured procedure was followed in getting data from the selected 6 secondary schools in the coastal region of Noakhali (see Table 3). A certain step-by-step approach ensured ethical compliance, accuracy, and consistency in the administration of data, which is essential for maintaining data quality in quantitative research (Creswell & Creswell, 2018). The questionnaire was distributed to students directly in the classroom settings after getting permission from the school authorities. Participants were informed about the nature of the research and assured of their confidentiality, and then completed the survey.

Table 3: *Data collection procedure*

Steps	Procedure description
School permission	Formal approval was obtained from the head teachers of the 6 selected schools.
Participant briefing	Students were informed about the study's purpose, confidentiality, and voluntary participation.

Informed consent	Verbal/parental assent was ensured as per school policy.
Questionnaire distribution	Paper-based survey questionnaires were given to students in their classrooms.
Completion time	Students were given 15-20 minutes to complete the survey independently.
Data collection	Completed questionnaires were gathered and checked for completeness.
Data coding	Responses were coded and entered into SPSS for analysis.

Source: Author's own compilation

Data analysis techniques

The collected data were analysed systematically using the Statistical Package for the Social Sciences (SPSS). The analysis procedures were congruent with the study objectives and accurately interpreted academic pressure, environmental stressors, mental health outcomes, symptoms, and Strategies and support (see Table 4). Data were analysed using both descriptive and inferential statistical techniques. Before analyses were run, data were cleaned, coded, and checked for missing values in order to ensure accuracy and reliability.

Table 4: Data analysis procedures and their purpose

Analysis type	SPSS procedure	Purpose / Output
Data coding and cleaning	Variable view coding, value labels, and missing data check	Preparing a clean dataset for analysis
Descriptive statistics	Mean, SD	Summarising demographic data and overall response patterns
Reliability test	Cronbach's alpha	Measuring internal consistency of questionnaire sections
Correlation analysis	Pearson correlation	Examining the relationship between academic pressure and mental health
Mean difference	One-sample t-test	Testing whether the mean of a variable differs significantly from a hypothesised value

Source: Author's own compilation

DATA ANALYSIS AND FINDINGS

The data were gathered using a structured questionnaire using a Likert scale and analysed using Statistical Package for the Social Sciences (SPSS). Quantitative data analysis with statistical software such as SPSS is commonly recommended for educational research because it enables accurate interpretation of relationships between variables.

Reliability test

To determine the internal reliability of the questionnaires, a reliability test was performed using Cronbach's alpha in the Statistical Package for the Social Sciences (SPSS). A Cronbach's alpha coefficient with a measure of alpha > 0.70 is indicated as acceptable, and the items are measuring the same latent construct well (Taber, 2017).

Table 5: *Reliability test of the items*

Case processing summary			
		N	%
Cases	Valid	180	100.0
	Excluded ^a	0	.0
	Total	180	100.0
Cronbach's alpha		N of items	
0.865		31	

Source: Data compilation

Table 5 presents the reliability test results for the questionnaire items. The Cronbach's Alpha value of 0.865 indicates a high degree of internal consistency, suggesting that the questionnaire items were intended to measure constructs such as academic pressure and mental health.

Demographic information

The demographic profile of the respondent students provides an overview of students' background characteristics, including gender, class level, school location, family income, and private tutoring status, which are important for understanding the context of the study sample.

Table 6: *Demographic profile of respondent students (N = 180)*

Demographic variable	Category	Frequency (N)	Percent (%)	Valid percent	Cumulative percent
Sex	Male	90	50	50	50
	Female	90	50	50	100
Class	6	30	17	17	17
	7	30	17	17	34
	8	40	22	22	56
	9	40	22	22	78

		10	40	22	22	100
School location	Urban		30	17	17	17
	Rural		30	17	17	34
	Coastal region		120	66	66	100
Monthly Family Income	1-10000 BDT		37	21	21	21
	10001-20000 BDT		95	53	53	74
	20001-30000 BDT		22	12	12	86
	30001-40000 BDT		26	14	14	100
Private/Tutoring status	Yes		167	92	92	92
	No		13	8	8	100

Source: Data compilation [Note: N means total participants]

Table 6 indicates that the total number of respondents was 180 students, evenly distributed across the two genders. Both male and female students represented 50% (N = 90) of the sample. In terms of class distribution, students from classes 6 and 7 comprised 17% each, while students from classes 8, 9, and 10 comprised 22% each of the respondents. This distribution suggests that the upper secondary grades were slightly over-represented in the sample. Regarding school location, most students (66%) came from the coastal region, and urban and rural areas accounted for 17% of respondents. This is due to the study's focus on the coastal context of Noakhali.

Regarding family income, more than half of the students (53%) came from families with 10,001-20,000 BDT per month, followed by 21% from the lowest-income group (1-10,000 BDT). This means most respondents were from low- to middle-income households. Finally, the table shows that a very high percentage of students (92%) received private tutoring, thus pointing out the prevalence of coaching practices among secondary school students.

Data analysis and findings from the student's questionnaire

The analysis includes descriptive statistics, a one-sample t-test, and a Pearson correlation analysis to investigate students' perceptions of academic pressure, socio-economic and environmental stressors, and mental health outcomes. Descriptive statistics, including mean and standard deviation, were computed to summarise the central tendency and variability of the study variables. For inferential analysis, one-sample t-tests were conducted to examine whether the section-wise composite mean scores significantly differed from the test value. In addition, Pearson's correlation coefficient was employed to assess the relationships among the

study constructs. All inferential analyses were performed using section-wise composite mean scores derived from multiple questionnaire items.

Table 7: Descriptive statistics analysis by section-wise composite mean scores

Descriptive statistics			
Sections	N	Mean	Std. deviation
Key sources of academic pressure	180	4.1565	.46616
Socio-economic and coastal environmental factors	180	4.0667	.47911
Mental health symptoms	180	4.2206	.35935
Strategies and support needed	180	4.2714	.31786
Valid N (list-wise)	180		

Source: SPSS data compilation output

The descriptive statistics for the major study variables, based on section-wise composite mean scores, are presented in Table 7. The results show that the mean values ($M > 4.00$) of all the sections were high, based on responses from 180 participants. The key sources of academic pressure reported were academic pressure ($M = 4.16$, $SD = 0.47$) and socio-economic and coastal environmental factors ($M = 4.07$, $SD = 0.48$). In addition, the mean score of mental health symptoms was 4.22 ($SD = 0.36$). Furthermore, the highest mean score was reported for strategies and support needed ($M = 4.27$, $SD = 0.32$). The valid number of cases included in the analysis was 180.

Overall, the composite mean scores across all questionnaire items indicate consistently high levels for academic workload, examination pressure, parents' and teachers' expectations, socio-economic challenges, emotional stress, and required coping strategies, suggesting that students are experiencing substantial academic and psychological strain.

Table 8: One-sample t-test analysis statistics by section-wise composite mean scores

One-sample t-test						
Sections	Test value = 3					
	t	df	Sig. (2-tailed)	Mean difference	95% Confidence interval of the difference	
					Lower	Upper
Key sources of academic pressure	33.284	179	$p < .001$	1.15648	1.0879	1.2250

Socio-economic and coastal environmental factors	29.870	179	p < .001	1.06667	.9962	1.1371
Mental health symptoms	45.572	179	p < .001	1.22063	1.1678	1.2735
Strategies and support needed	53.664	179	p < .001	1.27143	1.2247	1.3182

Source: SPSS data compilation output

Table 8 shows the results of the one-sample t-test on the section-wise composite mean scores to determine whether there are significant differences in perceptions, with the neutral test value set at 3 on a five-point Likert scale. The findings show that all the sections demonstrate statistically significant differences ($p < .001$). For key sources of academic pressure, the results represent a very high t-value ($t = 33.284$, $df = 179$, $MD = 1.16$, $p < .001$). Similarly, a significant effect was observed due to socio-economic and coastal environmental factors ($t = 29.870$, $df = 179$, $MD = 1.07$, $p < .001$). In addition, the results revealed that mental health symptoms differed significantly from the test-value ($t = 45.572$, $df = 179$, $MD = 1.22$, $p < .001$). Strategies and support required have the highest t-value ($t = 53.664$, $df = 179$, $MD = 1$, $p < .001$). The 95% confidence interval for all sections did not include the test value, indicating consistent differences across the variables.

Overall, the one-sample t-test results suggest that respondents strongly perceived academic pressure, socio-economic and coastal environmental challenges, and mental health symptoms, while also emphasising a high need for strategies and support. These findings confirm that the issues measured by the questionnaire items were not only present but experienced at a substantially high level among the participants.

Table 9: Pearson correlation analysis statistics by section-wise composite mean scores

Correlations						
Sections			Key sources of academic pressure	Socio-economic and coastal environmental factors	Mental health symptoms	Strategies and support needed
Key sources of academic pressure	of	Pearson correlation	1	.758**	.579**	.609**
		Sig. (2-tailed)		p < .001	p < .001	p < .001
Socio-economic and coastal environmental factors	and	Pearson correlation	.758**	1	.587**	.571**
		Sig. (2-tailed)	p < .001	p < .001	p < .001	p < .001

Mental health symptoms	Pearson correlation	.579**	.587**	1	.490**
	Sig. (2-tailed)	p < .001	p < .001	p < .001	p < .001
Strategies and support needed	Pearson correlation	.609**	.571**	.490**	1
	Sig. (2-tailed)	p < .001	p < .001	p < .001	

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS data compilation output

Table 9 shows the results of the Pearson correlation analysis among the major study variables based on the section-wise composite mean score. The results support the presence of strong, statistically significant positive correlations ($p < .001$) across all sections. A very strong positive correlation was found between the key sources of academic pressure and socio-economic and coastal environmental factors ($r = .758$, $p < .001$). In addition, the correlations between key sources of academic pressure and mental health symptoms ($r = .579$, $p < .001$) and strategies and support needed ($r = .609$, $p < .001$) were significant and positive.

Furthermore, socio-economic and environmental factors were significantly correlated with mental health symptoms ($r = .587$, $p < .001$) and strategies and support needed ($r = .572$, $p < .001$). A moderate positive correlation was also observed between mental health symptoms and strategies and support needed ($r = .49$, $p < .001$)

Overall, the Pearson correlation results show that all section-wise composite mean scores were positively and significantly interrelated, with correlation coefficients ranging from moderate to strong. This indicates consistent, statistically significant associations among academic pressure, socio-economic and coastal environmental factors, mental health symptoms, and the need for strategies and support, as measured by the questionnaire items.

DISCUSSION

Key sources of academic pressure

The results of the present study show that the academic pressure among secondary school students of the Noakhali coastal region is significantly high. As shown in Table 7, the aggregate mean score on key sources of academic pressure was $M = 4.16$ ($SD = 0.47$), which was considerably above the neutral midpoint of the scale. The results in Table 8 from the one-

sample t test are consistent with this finding and reveal a statistically significant difference from the test value of 3 ($t = 33.284, p < .001$).

These results suggest that excessive homework, frequent class tests, high expectations from teachers and parents, competitive academic environments, and pressure to achieve high examination scores are dominant stressors for students. The finding is directly related to Objective 1 and confirms the presence of considerable academic pressure among secondary school students in the Noakhali coastal region. This finding is not dissimilar to other studies, which have found that academic workload and performance expectations are the main drivers of student stress and anxiety (Nguyen & Phan, 2024; Ye et al., 2025).

Moreover, the Pearson correlation analysis in Table 9 shows a strong positive correlation between academic pressure and mental health symptoms ($r = .579, p < .001$), indicating that higher academic demands are directly associated with lower mental health outcomes.

Socio-economic and coastal environmental factors

The study's findings even show that socio-economic and coastal environmental factors play a significant role in students' academic stress levels. As reported in Table 7, the average score for the socio-economic and environmental stressors was $M = 4.07$ ($SD = 0.48$). The results of the one-sample t-test in Table 8 show that this value is significantly greater than the neutral point ($t = 29.870, p < .001$), indicating a strong perceived external pressure among students.

These results indicate that financial difficulties, family obligations, lack of educational materials, and frequent exposure to natural disasters such as cyclones and flooding increase the stress of education. This result aligns with Objective 2 and demonstrates the contextual vulnerability of students in the coastal region. The result is in line with previous studies that emphasise how students in disaster-prone and poor areas face compounded educational and psychological difficulties (Nath et al., 2024; Shilpa et al., 2024).

Furthermore, the correlation study in Table 9 shows a very strong association between academic pressure and socio-economic and environmental variables ($r = .758, p < .001$). This points to the fact that academic stress cannot be understood in isolation from students' wider social and environmental contexts, which adds to the ecological approach to student mental health.

Mental health symptoms

The results clearly show that academic pressure has a significant negative impact on students' mental health. As demonstrated in Table 7, the composite mean score of mental health symptoms was $M = 4.22$, $SD = 0.36$, which indicates a high prevalence of anxiety, stress, sleep disturbances, emotional distress, and decreased self-confidence. A further supporting and confirming piece of evidence for this finding is a one-sample t-test, shown in Table 8 ($t = 45.572$, $p < .001$), indicating that mental health problems are significantly more serious than the neutral level.

The high correlations between mental health symptoms and academic pressure ($r = .579$, $p < .001$) and socio-economic stressors ($r = .587$, $p < .001$) reported in Table 9 indicate that both academic pressure and socio-economic stress may be contributing to students' psychological well-being in tandem. These findings are consistent with other studies that have found that prolonged academic stress is associated with anxiety disorders, emotional exhaustion, and psychosomatic symptoms in adolescents (Pienyu et al., 2024).

Strategy and support are needed to reduce mental pressure

The findings on stress-reduction strategies indicate a strong demand for supportive mechanisms. As shown in Table 7, the strategies and support needed had the highest mean score ($M = 4.27$, $SD = 0.32$). The results of the one-sample t-test in Table 8 also indicate the highest level of statistical significance ($t = 53.664$, $p < .001$), suggesting that students strongly agree on the importance of support systems. This statistic supports Objective 3 and reinforces the moderating role of supportive mechanisms to reduce mental pressure.

The results of the correlation presented in Table 9 show that strategies and support are significantly correlated with academic pressure ($r = .609$, $p < .001$) and mental health symptoms ($r = .490$, $p < .001$). These findings indicate that the higher the levels of stress in a student's life, the greater the reliance on parental support, peer assistance, supportive teaching practices, counselling services, and reduced academic overload. This is consistent with stress-buffering theory, which emphasises the role of social and institutional support in mitigating psychological distress (Högberg, 2020).

RECOMMENDATIONS

Based on the findings of this study, several recommendations are made to reduce academic pressure and promote mental well-being. These recommendations are addressed to key stakeholders, including educational policymakers, teachers, parents, mental health professionals, and the community. Implementing these strategies will help address the sources of academic stress and provide better support systems for students.

Policy reforms and curriculum changes

1. The authority should introduce alternative assessment types, such as project-based, formative, and cooperative learning, so that students are not always evaluated solely by exams.
2. Policy makers should revise the curriculum to ensure it fosters balanced learning, not only academic achievement but also personal development, creativity, and well-being.
3. Policy makers should introduce mental health education into the curriculum, where students learn about stress management and mental health issues from an early age.

Teacher training and professional development

1. Trainers should identify the symptoms of academic stress and learn how to offer emotional support to students.
2. Trainers should set academic expectations that are realistic to specific student capabilities, while also instilling a growth mind-set and encouraging students to put more effort into work rather than grades.
3. Trainers should integrate mental health awareness into their teaching practices so that they can better support students who are struggling with emotional or psychological challenges
4. Teachers should create a positive and supportive classroom environment that promotes open communication, peer collaboration, and free of stress learning.

Parental involvement and awareness

1. Teachers should conduct parental awareness campaigns to inform parents about the need to establish achievable academic standards and the dangers of excessive academic pressure on students' psychological health.

2. Teachers should encourage parents to maintain open communication with their children regarding the stresses they face at school, and ensure that the home atmosphere is balanced in terms of emotional well-being and academic success.
3. School authorities should support parental engagement in the school activities, such as parent-teacher sessions and workshops that centre on the management of academic stress and enhancement of mental health

Mental health support in schools

1. Schools should implement mental health support services, since academic pressure has great potential to affect the mental health of students; it is advisable.
2. School authorities should recruit trained school counsellors or mental health workers to help meet students' emotional and psychological needs.
3. Schools should offer stress management training and counselling programs that enable students to cope with academic pressure by acquiring coping skills, such as relaxation, mindfulness, and time management.
4. School authorities should ensure that mental health resources are available and widely advertised at the school to encourage students to seek help when needed.

Peer support and social networks

1. School authorities should introduce peer mentoring services in which older students provide mentoring and emotional support to younger students, particularly those under high-acquisition stress.
2. Schools should arrange group activities, such as sports, art, or relaxation clubs, cultural events, or social gatherings, to help establish effective social networks and give students opportunities to connect and relax outside the classroom.

Addressing socio-economic barriers and environmental disruptions

1. The government should offer financial aid in the form of a scholarship or subsidy to students whose families fall under the low-income category to reduce the strain created by the tuition fees and the school fees.

2. Schools are also encouraged to give learning materials such as textbooks, paperwork, and technology so that all the students have equal chances to perform well, irrespective of their socio-economic status.
3. Authority should arrange socio-economic programs that deal with socio-economic challenges (e.g., delivering meals or tutoring after school), which can be used to reduce the extra stress that students have to take because of financial difficulties.
4. Local communities and educational officials ought to strive to counter or at least prepare against the effects of environmental disturbance, like floods or cyclones, which have been found to increase academic stress.
5. Schools must come up with an emergency response strategy and make learning resources available to the learners during school closures.

Promoting a holistic approach to student well-being

1. Schools should include physical activity and recreational breaks in their routine, as physical activity has been shown to reduce stress and enhance positive mood.
2. Authorities should create relaxation areas in schools where students can relax, meditate, or practice mindfulness.
3. Authorities should encourage work-life balance, encouraging students to incorporate hobbies, sports, and social activities that serve as stress relievers and enhance students' well-being.
4. These strategies can be applied in the school, family, and community levels to provide a more supportive, balanced, and mentally healthy environment for students.

The following recommendations will not only contribute to reducing the adverse impact of academic pressure but also create a well-rounded educational experience that will ensure students in the Noakhali coastal area are capable of succeeding not only academically but in general.

CONCLUSION

This study examined the impacts of academic pressure on the mental health of secondary school students in the coastal region of Noakhali, Bangladesh, with a special focus on academic, socio-economic, and environmental pressures. The results of the study show that academic pressure among students is very high, based on the composite mean score $M = 4.16$

for the key sources of academic pressure and the result of a one-sample t-test, which is significantly ($p < .001$) ($t = 33.284$). These results confirm that overloading with schoolwork, competitive school environments, and high expectations from teachers and parents are major reasons students are stressed.

The study further shows the critical roles of socio-economic and coastal environmental factors in the intensification of academic pressure. Students indicated that they have high levels of stress regarding financial hardship, family responsibilities, and environmental disruptions ($M = 4.07$) and ($t = 29.870$, $p < .001$). The strong positive correlation between academic pressure and socio-economic and environmental factors ($r = .758$, $p < .001$) indicates the compounded nature of the stress students experience in coastal regions.

Mental health consequences were significantly affected by these pressures. High levels of anxiety, emotional distress, sleep problems, and decreased self-confidence were reported, with a mean score of $M = 4.22$ and a highly significant t-value ($t = 45.572$, $p < .001$). The positive correlations for mental health symptoms and both academic pressure ($r = .579$) and socio-economic stressors ($r = .587$) support the study's central proposition that heightened academic pressure causes poor mental health outcomes.

Finally, the results highlight the importance of supportive strategies for mitigating academic stress. Students who strongly supported the need for parental support, peer, supportive teaching practices, and school-based mental health services, with the highest composite mean ($M = 4.27$) and t-value ($t = 53.664$, $p < .001$). These results provide strong support for the moderating influence of support mechanisms and suggest that comprehensive, multi-level interventions are necessary to enhance students' mental well-being in coastal regions.

Limitations of the study

This research, which employed a quantitative design and included 180 students from the Noakhali region, has several limitations. The research was based specifically on students' views, not on those of teachers and parents. This restricts the context of broader dynamics that lead to academic pressure and its impact on students' mental health. The views of the teachers and parents would offer a better picture of what affects academic stress. The sample size is 180 students, which is representative of the region, yet the rather small sample would not allow

generalising about all students in the secondary schools of the Noakhali region. The reliability and the generalisation of the findings would be enhanced by a larger sample.

Future research directions

Although this research is a valuable contribution to understanding how academic pressure affects students' mental health, future research may take several directions. To begin with, the views of teachers and parents would provide a more detailed picture of the factors contributing to academic stress, as the study has only mentioned students. Quantitative-qualitative data analysis would be useful in this case to gain a more detailed understanding of stakeholders' perspectives on academic pressure and their involvement.

It should also be considered in future research to analyse the other stressors, including peer influence, social media, and school bullying, which may influence mental health. Comparative analysis across various areas of Bangladesh or abroad would help determine whether socio-economic and environmental conditions have similar or different effects on academic pressure. Finally, the study of interventions and coping mechanisms, including stress-coping programs or support networks, may be used to develop evidence-based interventions to reduce academic stress among learners.

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No potential conflict of interest was reported by the author(s).

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DATA AVAILABILITY STATEMENT

Data will be available upon request.

ETHICAL CONSIDERATIONS

Ethical approval was obtained from the research and ethics committee of the Department of Educational Administration, Noakhali Science and Technology University, with approval number 2025/10, dated 10 September 2025. Participation was voluntary, and all respondents were guaranteed that their answers would remain confidential and would be used only for research purposes. Consent was provided by the participants. The participant's name was changed to codes for confidentiality. All ethical considerations adhered to the broader principles of educational research in Bangladesh.

DECLARATION OF GENERATIVE AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of the report, the authors used ChatGPT-5 (free version) to reorganise the language, correct grammar, and refine sentence structure, while maintaining the author's main idea. Moreover, after using the service, the author reviewed and edited the content as needed.

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