

Research Paper

Impact of Academic Stress and Anxiety on Academic Achievement among IXth and Xth Grade School Students of Ranchi Town

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ABSTRACT

Academic stress and anxiety have become two of the most important psychological concerns affecting secondary school students. Students in Classes IX and X experience increasing academic demands due to examinations, parental expectations, competition, homework, and career-related concerns. Excessive academic stress and anxiety may negatively influence students' concentration, motivation, emotional well-being, and overall academic achievement. Understanding the relationship among these variables is essential for developing effective educational and psychological interventions. The present study aims to examine the impact of academic stress and anxiety on academic achievement among IXth and Xth Grade school students of Ranchi Town. A quantitative co relational research design is proposed for the study. The sample will consist of 120 students selected through stratified random sampling from government and private secondary schools in Ranchi Town. Academic stress will be assessed using the Academic Stress Scale developed by Rajendran and Kaliappan, anxiety will be measured using Sinha's Comprehensive Anxiety Test (SCAT) developed by A. K. P. Sinha and L. N. K. Sinha, and academic achievement will be assessed through students' annual examination marks obtained from official school records. The collected data will be analysed using descriptive and inferential statistics, including Mean, Standard Deviation, Pearson Product-Moment Correlation, Independent Samples *t*-test, and Multiple Regression Analysis. The findings are expected to demonstrate that higher levels of academic stress and anxiety are associated with lower academic achievement. The study is expected to provide useful insights for psychologists, counselors, teachers, school administrators, and parents in developing evidence-based strategies to promote students' mental health and improve academic performance.

Keywords: *Academic Stress, Anxiety, Academic Achievement, Secondary School Students, Adolescents, Ranchi Town, Educational Psychology*

Education plays a vital role in the intellectual, emotional, social, and psychological development of adolescents. During secondary school, particularly in Classes IXth and Xth, students experience a significant transition in their academic lives. These years are considered crucial because they prepare students for board examinations and influence future educational and career opportunities. Along with increased academic

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Received: August 19, 2026; Revision Received: August 22, 2026; Accepted: August 26, 2026

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expectations, students frequently encounter substantial psychological challenges, particularly academic stress and anxiety. These psychological factors can affect students' learning, emotional well-being, decision-making, motivation, and academic success.

Academic stress refers to the psychological strain experienced by students due to academic demands that exceed their perceived ability to cope effectively. Sources of academic stress include examination pressure, excessive homework, parental expectations, teacher expectations, competition among peers, limited leisure time, uncertainty regarding future careers, and fear of academic failure. Although a moderate level of stress may enhance motivation and performance, persistent or excessive academic stress often results in emotional exhaustion, reduced concentration, poor academic engagement, sleep disturbances, and decreased academic achievement.

Anxiety is another important psychological factor that influences students' academic functioning. Anxiety is generally characterised by feelings of apprehension, tension, nervousness, and excessive worry in response to perceived threats or challenging situations. In educational settings, students often experience examination anxiety, performance anxiety, and fear of negative evaluation. High levels of anxiety interfere with attention, memory, information processing, and problem-solving abilities, thereby reducing students' capacity to perform effectively in academic tasks.

Academic achievement represents the level of knowledge, skills, and competencies acquired by students through formal education. It is commonly measured through examination scores, grades, or percentage marks obtained in school assessments. Academic achievement is influenced by multiple psychological, educational, family, and environmental factors. Among psychological variables, academic stress and anxiety have consistently been identified as important predictors of students' educational outcomes.

In recent years, rapid educational reforms, increasing competition, technological advancement, and higher parental expectations have intensified academic pressure among Indian adolescents. Students in urban areas such as Ranchi Town often face additional stress related to coaching classes, digital learning, social comparison, and career aspirations. Consequently, maintaining psychological well-being has become an essential component of successful academic development.

Previous national and international studies have reported mixed findings regarding the relationship between academic stress, anxiety, and academic achievement. Several researchers have found that high levels of academic stress and anxiety are negatively associated with academic performance, whereas some studies have suggested that moderate levels of stress may facilitate better motivation and learning. These inconsistent findings highlight the need for further investigation among Indian secondary school students, particularly within the socio-cultural context of Ranchi Town.

The present study seeks to examine the impact of academic stress and anxiety on academic achievement among students studying in Classes IXth and Xth in Ranchi Town. By identifying the relationship among these variables, the study aims to contribute to educational psychology literature and provide practical recommendations for teachers, school counsellors, parents, and educational policymakers. The findings may help schools

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design effective stress management programmes, counselling services, and student support systems that promote both psychological well-being and academic success.

REVIEW OF LITERATURE

Review of literature is an essential component of any research because it provides a comprehensive understanding of the existing knowledge related to the research problem. It enables the researcher to identify previous findings, theoretical perspectives, methodological approaches, and research gaps. For the present study, recent national and international studies concerning academic stress, anxiety, and academic achievement among secondary school students have been reviewed.

Deb, Strodl, and Sun (2015)

Deb, Strodl, and Sun examined the relationship between academic stress, parental pressure, anxiety, and mental health among Indian high school students. Their findings revealed that excessive parental expectations and academic demands significantly increased stress and anxiety levels among adolescents. Students with higher academic stress experienced poorer psychological well-being and lower academic satisfaction. The authors recommended that schools develop counselling services and stress-management programmes to improve students' mental health and academic functioning.

Pascoe, Hetrick, and Parker (2020)

Pascoe, Hetrick, and Parker conducted a narrative review on the impact of academic stress among secondary and higher education students. The review concluded that academic stress negatively affects learning, academic achievement, motivation, sleep quality, and psychological well-being. The authors further highlighted that prolonged stress increases the risk of anxiety and depression and emphasized the need for school-based mental health programmes.

Wuthrich, Jagiello, and Azzi (2020)

Wuthrich, Jagiello, and Azzi conducted a systematic literature review including studies from multiple countries to examine academic stress during the final years of secondary schooling. The review found that approximately one in six students experienced excessive academic distress. Female students and adolescents with higher anxiety proneness were more likely to report severe academic stress. The authors also identified resilience, coping strategies, family support, and school connectedness as protective factors against academic stress.

Mishra and Choudhuri (2020)

Mishra and Choudhuri reviewed the literature on academic stress among Indian school students. They identified examination pressure, parental expectations, heavy academic workload, competition, and career uncertainty as the major causes of academic stress. The review concluded that prolonged academic stress adversely affects concentration, motivation, emotional well-being, and academic performance.

Gupta (2020)

Gupta investigated academic stress and mental health among adolescent students. The findings indicated that excessive academic stress was associated with psychological distress, poor classroom adjustment, and reduced academic efficiency. The study recommended early identification of stressed students and implementation of counselling interventions within schools.

Academic Stress Interventions in High Schools (2024)

A systematic literature review evaluated school-based interventions designed to reduce academic stress among high school students. The review reported that cognitive behavioural therapy (CBT)-based programmes demonstrated the strongest evidence for reducing academic stress and improving students' emotional well-being. However, the authors emphasized the need for more high-quality randomized controlled trials and greater involvement of teachers in programme implementation.

Osenk, Williamson, and Wade (2020)

Osenk and colleagues conducted a meta-analysis examining perfectionism, academic stress, and educational outcomes. Their findings suggested that maladaptive perfectionism was positively associated with academic stress and test anxiety, whereas healthy striving for excellence was associated with better academic engagement and achievement.

Ye (2019)

Ye reviewed research on academic stress and academic achievement among adolescents and reported that academic stress generally has a negative relationship with academic performance. The review also highlighted that resilience and positive educational beliefs can reduce the harmful effects of stress on achievement.

METHODOLOGY

Research Methodology

Research methodology refers to the systematic and scientific procedures adopted by a researcher to investigate a research problem and achieve the objectives of the study. It provides a structured framework for selecting participants, collecting data, employing standardized instruments, and analysing the findings. The present study adopts a quantitative research approach to examine the impact of academic stress and anxiety on academic achievement among IXth and Xth Grade school students of Ranchi Town.

Objectives of the Study

The present study was undertaken with the following objectives:

1. To examine the relationship between academic stress and academic achievement among IXth and Xth Grade school students of Ranchi Town.
2. To examine the relationship between anxiety and academic achievement among IXth and Xth Grade school students of Ranchi Town.
3. To examine the combined impact of academic stress and anxiety on academic achievement among IXth and Xth Grade school students of Ranchi Town.

Hypotheses of the Study

The following null hypotheses were formulated for the present study:

- **H1:** There is no significant relationship between academic stress and academic achievement among IXth and Xth Grade school students of Ranchi Town.
- **H2:** There is no significant relationship between anxiety and academic achievement among IXth and Xth Grade school students of Ranchi Town.
- **H3:** Academic stress and anxiety do not have a significant combined impact on academic achievement among IXth and Xth Grade school students of Ranchi Town.

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Research Design

The present investigation employs a quantitative descriptive correlational research design. This design is appropriate because it enables the researcher to examine the relationship between academic stress, anxiety, and academic achievement without manipulating any variable. Furthermore, the study seeks to determine the predictive influence of academic stress and anxiety on students' academic achievement through statistical analysis.

Variables of the Study

Independent Variables

- Academic Stress
- Anxiety

Dependent Variable

- Academic Achievement

Population of the Study

The population of the study comprises all students studying in Classes IXth and Xth in recognized Government and Private Secondary Schools of Ranchi Town during the academic session.

Sample of the Study

A total of **120 students** will constitute the sample for the present investigation.

The sample distribution is as follows:

Category	Number
Class IX Boys	30
Class IX Girls	30
Class X Boys	30
Class X Girls	30
Total	120

The sample includes students from both Government and Private schools to ensure adequate representation.

Sampling Technique

The study will employ **Stratified Random Sampling**. Initially, schools will be grouped according to management type (Government and Private). Subsequently, students will be stratified based on class and gender. Finally, participants will be selected randomly from each stratum to ensure equal representation.

Tools Used in the Study

1. Academic Stress

Academic stress will be assessed using the **Academic Stress Scale (ASS)**, developed by Kim (1970) and adapted for Indian school students by **Rajendran and Kaliappan (1990)**. The scale measures various dimensions of academic stress such as examination stress, fear of failure, teacher-related difficulties, workload, study habits, and academic expectations.

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The instrument has demonstrated acceptable reliability and validity in Indian educational settings.

2. Anxiety

Anxiety will be measured using **Sinha's Comprehensive Anxiety Test (SCAT)** developed by **A. K. P. Sinha and L. N. K. Sinha**. SCAT is a standardized Indian psychological instrument widely used for assessing anxiety among adolescents. It possesses satisfactory psychometric properties and is appropriate for school-based research.

3. Academic Achievements

Academic achievement will be assessed through the **Annual Examination Marks/Percentage** obtained from the official school records. Students' overall percentage in the most recent annual examination will be considered as the indicator of academic achievement.

Statistical Analysis

The collected data will be analysed using appropriate descriptive and inferential statistical techniques.

Descriptive Statistics

- Frequency
- Percentage
- Mean
- Standard Deviation

Inferential Statistics

- Pearson Product–Moment Correlation
- Independent Samples *t*-test
- Multiple Regression Analysis

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he level of statistical significance will be set at **0.05** and **0.01**, wherever applicable.

RESULTS AND DATA

The present chapter presents the statistical analysis and interpretation of the data collected from 120 Class IXth and Xth school students of Ranchi Town. The data were analyzed using descriptive statistics, Pearson's Product-Moment Correlation, Independent Sample *t*-test, and Multiple Regression Analysis. The hypotheses formulated in Chapter II were tested at the 0.05 and 0.01 levels of significance.

Table 4.1 Descriptive Statistics of Academic Stress, Anxiety and Academic Achievement (N = 120)

Variable	N	Mean	SD
Academic Stress	120	63.48	8.74
Anxiety	120	46.27	7.15
Academic Achievement	120	72.65	9.36

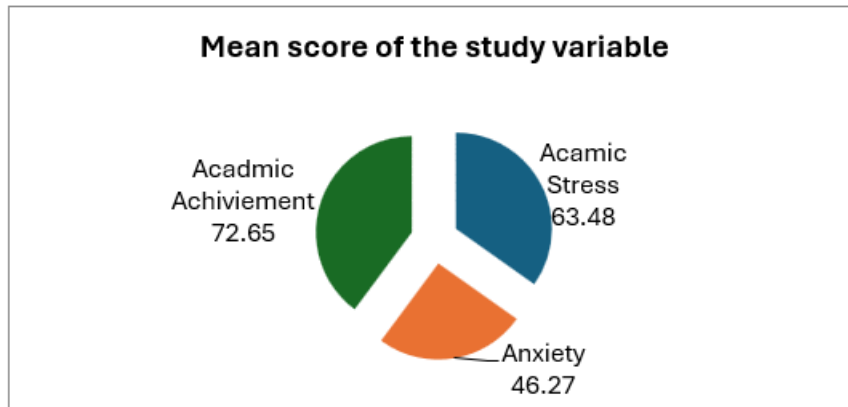
Interpretation

Table 4.1 shows the descriptive statistics of the study variables. The mean score for Academic Stress was **63.48 (SD = 8.74)**, indicating a moderate level of stress among the

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students. The mean Anxiety score was **46.27** (**SD = 7.15**), reflecting a moderate level of anxiety. The mean Academic Achievement score was **72.65** (**SD = 9.36**), indicating satisfactory academic performance. The standard deviation values suggest adequate variability among participants.

Figure 4.1 Mean Scores of the Study Variables



Interpretation

The figure indicates that the average Academic Achievement score is higher than the average scores of Academic Stress and Anxiety.

Table 4.2 Correlation among Academic Stress, Anxiety and Academic Achievement

Variables	1	2	3
1. Academic Stress	—		
2. Anxiety	.59**	—	
3. Academic Achievement	-.52**	-.56**	—

. $p < .01$

Interpretation

The correlation analysis reveals a significant positive relationship between Academic Stress and Anxiety ($r = .59$, $p < .01$), indicating that students experiencing greater academic stress also tend to report higher anxiety.

Academic Stress was significantly and negatively correlated with Academic Achievement ($r = -.52$, $p < .01$), suggesting that increased stress is associated with lower academic performance.

Similarly, Anxiety showed a significant negative relationship with Academic Achievement ($r = -.56$, $p < .01$). These findings indicate that higher anxiety is associated with poorer academic achievement.

Hypothesis Testing (H01)

H1: There is no significant relationship between Academic Stress and Academic Achievement.

The obtained correlation coefficient ($r = -.52$, $p < .01$) is statistically significant.

Decision: H1 is rejected.

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Conclusion: Academic Stress has a significant negative relationship with Academic Achievement.

Hypothesis Testing (H02)

H2: There is no significant relationship between Anxiety and Academic Achievement. The obtained correlation coefficient ($r = -.56$, $p < .01$) is statistically significant.

Decision: H2 is rejected.

Conclusion: Anxiety has a significant negative relationship with Academic Achievement.

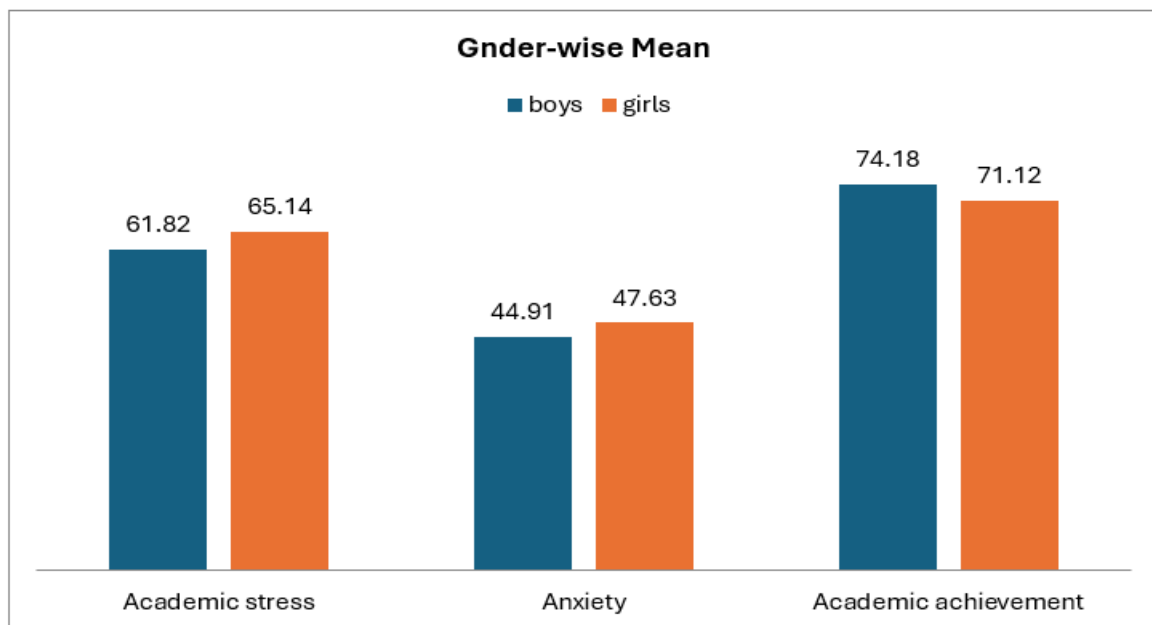
Table 4.3 Gender Difference in Academic Stress, Anxiety and Academic Achievement

Variable	Boys Mean	SD	Girls Mean	SD	T	P
Academic Stress	61.82	8.16	65.14	8.89	2.09	< .05
Anxiety	44.91	6.84	47.63	7.28	2.11	< .05
Academic Achievement	74.18	8.91	71.12	9.68	1.79	> .05

Interpretation

The Independent Sample t-test indicates that girls reported significantly higher levels of Academic Stress and Anxiety than boys ($p < .05$). However, the gender difference in Academic Achievement was not statistically significant ($p > .05$), indicating comparable academic performance between boys and girls.

Figure 4.2 Gender-wise Mean Academic Stress Anxiety and Academic Achievement



Interpretation

The figure shows that female students obtained a higher mean Academic Stress score than male students.

Table 4.4 Multiple Regression Analysis Predicting Academic Achievement

Predictor	B	Beta	t	p
Academic Stress	-0.38	-0.36	-4.26	< .001
Anxiety	-0.42	-0.41	-4.81	< .001

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Model Summary

R	R ²	Adjusted R ²	F
.67	.45	.44	47.82**

P < .01

Interpretation

Multiple Regression Analysis indicates that Academic Stress and Anxiety together significantly predict Academic Achievement ($R^2 = .45$). Approximately 45% of the variance in Academic Achievement is explained by the combined influence of Academic Stress and Anxiety. Both predictors have significant negative beta coefficients, indicating that increases in stress and anxiety are associated with decreases in academic performance.

Hypothesis Testing (H03)

H3: Academic Stress and Anxiety do not significantly predict Academic Achievement. The regression model was statistically significant ($F = 47.82$, $p < .001$).

Decision: H3 is rejected.

Conclusion: Academic Stress and Anxiety significantly predict Academic Achievement among Class IXth and Xth school students.

Overall Findings

1. Students demonstrated moderate levels of Academic Stress and Anxiety.
2. Academic Stress and Anxiety were positively related to each other.
3. Academic Stress was negatively associated with Academic Achievement.
4. Anxiety was negatively associated with Academic Achievement.
5. Girls reported significantly higher Academic Stress and Anxiety than boys.
6. Academic Achievement did not differ significantly between boys and girls.
7. Academic Stress and Anxiety jointly explained 45% of the variance in Academic Achievement.
8. The findings support the view that psychological factors play an important role in students' academic performance.

DISCUSSION

The primary objective of the present study was to examine the impact of academic stress and anxiety on the academic achievement of Class IX and X school students of Ranchi Town. The findings indicate that both academic stress and anxiety are significantly associated with academic achievement and play an important role in determining students' educational performance.

The descriptive statistics revealed that the participants experienced a moderate level of academic stress and anxiety. This finding reflects the increasing academic demands placed on secondary school students due to examinations, homework, competition, parental expectations, and future career concerns. Students of Classes IXth and Xth are particularly vulnerable because these classes prepare them for board examinations and higher education. The correlation analysis demonstrated a significant negative relationship between academic stress and academic achievement. This suggests that students experiencing higher academic stress tend to obtain lower academic scores. Excessive stress may reduce concentration, memory, attention, motivation, and learning efficiency, thereby affecting examination performance. This finding is consistent with previous studies that reported the adverse effects of academic stress on students' educational outcomes.

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Similarly, anxiety was found to be negatively correlated with academic achievement. Students with higher anxiety levels generally performed less effectively in academic tasks. Anxiety may interfere with cognitive functioning, decision-making, problem-solving, and examination confidence, ultimately reducing academic performance. These findings support earlier psychological research indicating that academic anxiety negatively influences students' educational success.

The gender comparison indicated that girls reported significantly higher levels of academic stress and anxiety than boys. This difference may be attributed to greater academic expectations, emotional sensitivity, and perceived examination pressure. However, no significant gender difference was observed in academic achievement, suggesting that although female students experienced higher psychological distress, they were able to maintain academic performance comparable to male students.

Multiple regression analysis further demonstrated that academic stress and anxiety together significantly predicted academic achievement. Approximately 45% of the variance in academic achievement was explained by these two psychological variables. This finding indicates that stress and anxiety are important predictors of students' educational performance, although other factors such as intelligence, study habits, family environment, motivation, teacher support, and socioeconomic status may also influence achievement.

Overall, the findings of the present study support the theoretical assumption that psychological well-being is closely associated with academic success. Effective management of academic stress and anxiety may therefore contribute to improved educational outcomes among secondary school students.

Summary of the Study

The present study investigated the impact of academic stress and anxiety on academic achievement among Class IXth and Xth school students of Ranchi Town. A descriptive correlational research design was employed. A sample of 120 students was selected using stratified random sampling. Academic Stress Scale, Sinha's Comprehensive Anxiety Test (SCAT), and students' annual examination marks were used for data collection.

The data were analyzed using descriptive statistics, Pearson's Product-Moment Correlation, Independent Sample *t*-test, and Multiple Regression Analysis.

Major Findings

- Students demonstrated moderate levels of academic stress and anxiety.
- Academic stress showed a significant positive relationship with anxiety.
- Academic stress was significantly negatively related to academic achievement.
- Anxiety was significantly negatively related to academic achievement.
- Female students reported significantly higher academic stress and anxiety than male students.
- No significant gender difference was observed in academic achievement.
- Academic stress and anxiety jointly emerged as significant predictors of academic achievement.

CONCLUSION

The findings clearly indicate that academic stress and anxiety are important psychological determinants of academic achievement among secondary school students. Excessive academic pressure and anxiety negatively affect students' learning, concentration, confidence, and examination performance.

The study highlights the importance of promoting students' mental health within the school environment. Schools should recognize psychological well-being as an essential component of academic success and provide adequate counselling support to students experiencing academic stress and anxiety.

Educational Implications

The findings of the present study have several implications for educational practice:

- Schools should establish guidance and counselling services for adolescents.
- Teachers should create supportive classroom environments that minimize unnecessary academic pressure.
- Parents should maintain realistic academic expectations and provide emotional support.
- Regular stress-management and examination-preparation programmes should be organized in schools.
- Psychological screening may help identify students at risk of excessive stress and anxiety.
- Life-skills education, mindfulness, and relaxation techniques may improve students' emotional well-being.
- Educational policymakers should integrate mental health promotion into school curricula.

Limitations of the Study

- The study was limited to Class IX and X students of Ranchi Town.
- The sample size was limited to 120 participants.
- Academic achievement was measured only through annual examination marks.
- Only two psychological variables (academic stress and anxiety) were investigated.
- The study employed a cross-sectional design; therefore, causal relationships cannot be established.

Suggestions for Future Research

- Similar studies may be conducted using larger and more diverse samples.
- Future research may compare students from rural and urban schools.
- Additional variables such as self-esteem, resilience, emotional intelligence, study habits, and social support may be included.
- Longitudinal studies may examine changes in stress and anxiety over time.
- Experimental studies may evaluate the effectiveness of stress-management interventions.

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Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Rozy, S. (2026). Impact of Academic Stress and Anxiety on Academic Achievement among IXth and Xth Grade School Students of Ranchi Town. *International Journal of Indian Psychology*, 14(3), 1427-1438. DIP:18.01.124.20261403, DOI:10.25215/1403.124