



Effects of Academic Achievement and Gender on Adjustment Problems, Self-Esteem, and Academic Anxiety among High School Students

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ABSTRACT

The present study examined the effects of academic achievement and gender on adjustment problems, self-esteem, and academic anxiety among high school students. A 2×2 factorial research design was employed, with academic achievement (high and low) and gender (boys and girls) as the independent variables. The initial sample comprised 240 students from two government high schools in Jajpur district, Odisha. Based on their annual school examination scores, the top 25% and bottom 25% of students were selected as high-achievement ($N=60$) and low-achievement ($N=60$) groups respectively, resulting in a final sample of 120 students (61 boys and 59 girls) aged 14–16 years. Adjustment problems, self-esteem, and academic anxiety were assessed using the Adjustment Inventory for School Students, the Self-Esteem Inventory, and the Academic Anxiety Scale for Children, respectively. Data were analysed using two-way analysis of variance (ANOVA) and Pearson's product-moment correlation. The findings revealed a significant main effect of gender on adjustment problems, with boys reporting greater adjustment problems than girls. Neither academic achievement nor the interaction between academic achievement and gender had a significant effect on adjustment problems. For self-esteem, the main effects of academic achievement and gender were not significant; however, a significant interaction effect indicated that high-achieving boys reported the highest self-esteem, whereas high-achieving girls reported the lowest. No significant main or interaction effects were found for academic anxiety. Correlation analysis revealed a significant positive relationship between adjustment problems and academic anxiety, whereas self-esteem was not significantly related to either adjustment problems or

academic anxiety. The findings suggest that gender plays a more prominent role than academic achievement in adolescents' adjustment, while the relationship between academic achievement and self-esteem varies across gender. These findings highlight the importance of promoting students' psychological well-being alongside academic performance and support the need for gender-sensitive educational and counselling interventions in schools.

Keywords: academic achievement, gender, adjustment problems, self-esteem, academic anxiety, high school students.

INTRODUCTION

Academic achievement is widely regarded as one of the most important indicators of educational success and future life opportunities, particularly during adolescence, a developmental stage that significantly influences individuals' educational trajectories, career aspirations, and psychosocial growth. In contemporary societies, especially in developing countries such as India, academic performance is often viewed as a critical determinant of future educational, occupational, and social prospects. Consequently, adolescents face increasing pressure from parents, teachers, and society to attain high levels of academic success while simultaneously coping with the numerous physical, emotional, cognitive, and social challenges characteristic of this developmental period. Although academic achievement is generally associated with positive developmental outcomes, it is also closely linked to several psychological factors, including adjustment, self-esteem, and academic anxiety, which can substantially influence students' educational experiences and overall well-being. Recognizing the complex interplay between academic performance and these psychological variables, educational researchers have increasingly focused on understanding the factors that facilitate academic success and promote the holistic development of school-going adolescents (Horanicova et al., 2024).

Adolescence represents a critical developmental stage characterized by substantial biological, cognitive, emotional, and social changes. During this period, students encounter multiple academic and interpersonal demands that require effective adaptation. The ability to cope successfully with these demands is reflected in an individual's level of adjustment. Adjustment refers to the process through which individuals maintain harmony between their personal needs and environmental expectations while effectively managing challenges, conflicts, and stressors. In educational settings, school adjustment encompasses academic engagement, social integration, emotional well-being, and positive adaptation to school-related demands.

School adjustment plays a crucial role in determining students' educational outcomes. Students who are well adjusted tend to exhibit greater academic engagement, positive relationships with teachers and peers, effective coping strategies, and stronger academic performance. Conversely, poor adjustment is associated with behavioural difficulties, emotional distress, reduced academic motivation, absenteeism, and lower scholastic achievement. Recent research has further demonstrated that adaptive coping strategies contribute significantly to school adjustment and academic achievement among adolescents, highlighting the importance of psychosocial adaptation in educational success (Morales-Castillo, 2022). These findings suggest that adjustment is not merely a consequence of academic success but also a significant determinant of educational outcomes.

Another important psychological factor influencing students' educational experiences is self-esteem. Self-esteem refers to an individual's overall evaluation of personal worth, competence, and

value. It reflects the extent to which individuals perceive themselves as capable, successful, and worthy of respect. High self-esteem has consistently been associated with positive psychological adjustment, resilience, motivation, and academic engagement. Students with strong self-esteem are more likely to approach challenges confidently, persist in the face of difficulties, and maintain positive expectations regarding their academic capabilities.

The relationship between self-esteem and academic achievement has attracted considerable scholarly attention. Contemporary research suggests that self-esteem and academic achievement share a reciprocal relationship, with each influencing the other over time. A recent meta-analytic review reported that self-esteem serves as an important socio-emotional predictor of academic achievement during adolescence and those positive academic experiences, in turn, contribute to the development of healthy self-esteem (Wagner et al., 2024). Similarly, studies have demonstrated that self-esteem enhances academic engagement, motivation, and persistence, which subsequently contribute to improved academic performance (Acosta-Gonzaga, 2023). These findings support the view that self-esteem functions as an important psychological resource that facilitates educational success.

The significance of self-concept and self-evaluation becomes even more pronounced within collectivist societies, where educational achievement is often strongly linked to family expectations and social recognition. A recent review of studies conducted in collectivist cultural contexts found that positive academic self-concept is associated with improved educational outcomes, although cultural factors may influence the strength and nature of this relationship (Weva et al., 2024). Given the cultural emphasis placed on educational achievement in India, examining self-esteem in relation to academic performance remains particularly relevant.

Academic anxiety constitutes another important variable affecting students' educational functioning. Academic anxiety refers to feelings of tension, apprehension, worry, and nervousness associated with academic tasks, examinations, classroom participation, and performance evaluation. While moderate levels of anxiety may enhance alertness and motivation, excessive anxiety can interfere with concentration, memory, problem-solving abilities, and academic performance. Academic anxiety is increasingly recognized as a major concern among adolescents due to rising academic competition, performance pressures, and expectations from parents and educational institutions.

Research consistently indicates that heightened academic anxiety negatively affects students' psychological well-being and educational outcomes. Students experiencing high levels of academic anxiety often report fear of failure, self-doubt, reduced academic confidence, and avoidance of challenging tasks. Recent investigations into examination-related anxiety have demonstrated that academic evaluation frequently evokes negative emotional responses among students and may adversely affect both well-being and performance (Franchino et al., 2026). Furthermore, academic anxiety has been linked to lower levels of self-esteem, reduced school engagement, and poorer academic adjustment, suggesting that these psychological variables are closely interconnected.

Scholastic achievement itself is a multidimensional construct reflecting the extent to which students attain educational objectives and demonstrate mastery of academic content. Academic achievement is influenced not only by intellectual abilities but also by motivational, emotional, social, and environmental factors. Contemporary educational research emphasizes that successful academic performance results from the interaction of cognitive competencies and psychosocial resources,

including self-esteem, self-efficacy, adjustment, and emotional well-being (Horanicova et al., 2024). Consequently, understanding the psychological correlates of academic achievement has become a central concern in educational psychology.

Gender is another variable that may influence students' academic and psychological experiences. Gender differences in self-esteem, adjustment, academic anxiety, and academic achievement have been reported across diverse cultural contexts. Recent systematic reviews suggest that gender moderates the relationship between academic self-concept and educational outcomes, although findings remain inconsistent across studies and educational settings (Wang & Yu, 2023). Some studies indicate that female students demonstrate stronger academic engagement and school adjustment, whereas others report differences in self-esteem and anxiety levels. These inconsistencies highlight the need for further investigation, particularly within the Indian educational context where sociocultural expectations continue to shape gender-specific experiences and opportunities.

Despite extensive research examining academic achievement, self-esteem, adjustment, and academic anxiety individually, relatively few studies have explored the combined influence of academic achievement and gender on these psychological variables among Indian high school students. Understanding these relationships is important because adolescence is a formative period for the development of self-concept, emotional regulation, and educational aspirations. Therefore, the present study seeks to examine the role of academic achievement and gender in shaping adjustment, self-esteem, and academic anxiety among high school students. The findings are expected to contribute to the growing body of literature on adolescent development and provide practical implications for educators, counsellors, and policymakers seeking to promote both academic success and psychological well-being.

REVIEW OF LITERATURE

Academic achievement during adolescence is influenced by a complex interaction of cognitive, emotional, social, and environmental factors. Among the psychological variables that have received considerable attention in educational research are adjustment, self-esteem, and academic anxiety. These factors not only affect students' academic performance but also contribute significantly to their overall psychological well-being and educational development. Consequently, researchers have increasingly sought to understand how these variables interact with academic achievement and gender during the critical developmental stage of adolescence.

Academic Achievement and Adjustment Problems

Adjustment refers to the process through which individuals successfully adapt to the demands and challenges of their environment while maintaining psychological well-being. Conversely, adjustment problems refer to the difficulties experienced by individuals in adapting effectively to educational, social, emotional, and personal demands. In school settings, adjustment problems may manifest as academic, emotional, or social difficulties that interfere with students' overall functioning

and academic performance. Successful adjustment enables students to cope effectively with academic challenges, establish positive interpersonal relationships, and engage meaningfully in learning activities. Conversely, poor adjustment has been associated with behavioural difficulties, emotional distress, absenteeism, and reduced academic performance.

Previous studies have consistently demonstrated a positive relationship between adjustment and academic achievement. Raju and Rahamtulla (2007) reported that students' adjustment was significantly influenced by school-related factors such as class level, medium of instruction, and school management. Similarly, Adhimbo et al. (2011) found that students with higher levels of school adjustment exhibited significantly better academic performance than their less-adjusted counterparts. More recent evidence suggests that adaptive coping and school adjustment contribute directly to academic engagement and scholastic achievement among adolescents (Morales-Castillo, 2022). Students who demonstrate effective adjustment are more likely to develop positive attitudes toward learning, participate actively in classroom activities, and achieve better educational outcomes.

Gender and Adjustment Problems

Research has consistently examined gender differences in school adjustment, although findings have not always been uniform across cultural contexts. Several studies suggest that female students generally demonstrate better school adjustment than male students. Wang et al. (2008) reported that girls obtained higher scores on academic competence, self-perceptions, and school adjustment, while exhibiting fewer learning problems than boys. Similarly, Prakash and Coplan (2007), in their study of Indian school children, found that girls demonstrated better socio-emotional adjustment and achieved significantly higher academic ratings than boys. Kiuru et al. (2009) further observed that girls showed stronger school engagement and greater satisfaction with their educational experiences than boys, indicating better overall school adjustment.

Other investigations, however, have reported inconsistent findings. Adhimbo et al. (2011) found no significant gender differences in overall school adjustment, although high-achieving students demonstrated better engagement and adjustment than low achievers. These inconsistent findings suggest that gender differences in adjustment may vary across educational systems, sociocultural environments, and developmental stages. Therefore, further investigation within the Indian educational context remains necessary.

Academic Achievement and Self-Esteem

Self-esteem is a fundamental component of psychological functioning and refers to an individual's overall evaluation of personal worth and competence. It influences motivation, persistence, emotional well-being, and social relationships. Educational psychologists have long argued that students with positive self-esteem are more likely to demonstrate confidence in their academic abilities and persist in the face of challenges.

A substantial body of research supports the positive association between self-esteem and academic achievement. Anthony et al. (2007) reported that students with higher self-esteem generally

achieved better academic outcomes than students with lower self-esteem. Likewise, Pullmann and Allik (2008) found that self-esteem contributes significantly to academic success and overall psychological adjustment. Contemporary research further suggests that self-esteem and academic achievement share a reciprocal relationship, whereby positive academic experiences enhance self-esteem and high self-esteem promotes academic engagement and persistence (Wagner et al., 2024).

Recent studies have highlighted the role of self-esteem in promoting academic motivation and engagement. Acosta-Gonzaga (2023) reported that students with higher self-esteem demonstrated stronger academic engagement and better educational outcomes. Similarly, Weva et al. (2024), in a review of studies conducted in collectivist societies, concluded that positive self-concept and self-esteem are important predictors of academic achievement.

Gender and Self-Esteem

Gender differences in self-esteem have been widely investigated, although empirical findings remain mixed. Several studies have reported no significant gender differences in adolescents' global self-esteem (Crain & Bracken, 1994; Marsh, 1993; Osborne & LeGette, 1982). In contrast, other researchers have found that male adolescents generally report higher overall self-esteem than females (Byrne & Shavelson, 1987; Keltikangas-Järvinen, 1990; Markstrom-Adams, 1995; Marsh, 1994). Widaman et al. (1992) further observed that boys tend to report higher self-esteem in areas such as mathematics, emotional competence, physical appearance, and general self-worth, whereas girls score higher in verbal competence, honesty, parental relationships, and same-sex peer relations.

Franzis et al. (2008), in a study of gifted and average-ability adolescents, reported that boys demonstrated significantly higher academic self-esteem, motivation, and interest in mathematics than girls. Nevertheless, more recent evidence suggests that gender differences in self-esteem are influenced by sociocultural contexts and educational experiences rather than gender alone (Wang & Yu, 2023). Collectively, these findings indicate that the association between gender and self-esteem remains complex and warrants further investigation among Indian adolescents.

Given the strong emphasis on educational attainment in Indian society, understanding the relationship between self-esteem and academic performance remains particularly important.

Research examining gender differences in self-esteem has produced mixed findings. While some studies suggest that male students report higher global self-esteem, others indicate that female students demonstrate stronger academic self-concept and educational engagement (Wang & Yu, 2023). These inconsistencies suggest that the relationship between gender and self-esteem may vary across developmental stages and sociocultural contexts.

Academic Achievement and Academic Anxiety

Academic anxiety refers to feelings of worry, apprehension, and tension associated with academic activities, including examinations, classroom participation, and performance evaluation. Although moderate anxiety may enhance alertness and motivation, excessive anxiety can impair

cognitive functioning and academic performance. Academic anxiety has emerged as a significant concern among adolescents due to increasing academic competition and societal expectations.

Hill (1972) reported that anxiety negatively affects concentration, memory, and learning processes, resulting in poorer academic performance. Similarly, Weigfield and Eccles (1989) argued that repeated experiences of failure and negative evaluation contribute to the development of anxiety, which subsequently undermines academic motivation and achievement. Cassady (2010) further observed that academic anxiety extends beyond examination-related concerns and may affect students' engagement with various academic subjects.

Recent research continues to support the negative association between academic anxiety and educational outcomes. Franchino et al. (2026) found that examination-related anxiety significantly influenced students' emotional well-being and academic functioning. Students experiencing high levels of academic anxiety often report fear of failure, reduced self-confidence, avoidance behaviours, and lower academic achievement. Furthermore, academic anxiety has been linked to diminished self-esteem and difficulties in school adjustment, suggesting that these psychological constructs are closely interconnected.

Gender and Academic Anxiety

Gender differences in academic anxiety have also attracted considerable research attention. Earlier Indian studies suggested that boys may experience greater academic anxiety because of stronger societal expectations regarding future occupational success and financial responsibility. Pramod (1996) argued that adolescent boys generally exhibit stronger future orientation than girls, making them more concerned about academic success. Similarly, Ojha (2005) reported that a higher proportion of boys experienced extremely high levels of academic anxiety compared with girls.

However, other studies have produced contrasting results. Bhansali et al. (2007), in a comparative study of adolescents aged 16–18 years, found that girls reported significantly higher incidence and intensity of academic anxiety than boys. Likewise, Hembree's (1988) comprehensive review concluded that female students generally experience higher levels of test anxiety than males. More recent research indicates that although gender differences in academic anxiety continue to be reported, the magnitude of these differences appears to vary across educational settings and cultural contexts, suggesting that academic anxiety is influenced by multiple psychosocial factors beyond gender alone.

Gender differences in academic anxiety have also been reported. Earlier studies suggested that female students generally experience higher levels of academic and test anxiety than male students (Hembree, 1988). Although recent findings remain mixed, gender continues to be considered an important variable in understanding anxiety-related educational outcomes.

Taken together, the existing literature demonstrates that academic anxiety is negatively associated with academic performance, but evidence regarding gender differences remains inconsistent. These inconsistencies highlight the need for further investigation among Indian secondary school students, thereby providing a rationale for the present study.

Synthesis of Literature and Research Gap

The reviewed literature indicates that adjustment, self-esteem, and academic anxiety are important psychological correlates of academic achievement among adolescents. Well-adjusted students tend to achieve higher academically, while positive self-esteem promotes academic engagement and persistence. In contrast, elevated levels of academic anxiety often hinder educational performance and psychological well-being. Although previous studies have examined these variables independently, relatively few investigations have explored their combined relationship with academic achievement and gender among Indian high school students.

Furthermore, much of the existing literature has been conducted in Western or non-Indian contexts, limiting the generalizability of findings to Indian adolescents. Given the unique educational pressures, cultural expectations, and gender norms prevalent in India, further research is warranted to examine how academic achievement and gender influence adjustment, self-esteem, and academic anxiety among high school students. The present study seeks to address this gap and contribute to a more comprehensive understanding of the psychological factors associated with adolescent academic development.

Objectives of the Study

1. To examine differences in adjustment problems, self-esteem, and academic anxiety across different levels of academic achievement among adolescent students.
2. To investigate gender differences in adjustment problems, self-esteem, and academic anxiety among adolescent students.
3. To examine the interaction effect of academic achievement and gender on adjustment problems, self-esteem, and academic anxiety among adolescent students.
4. To examine the relationships among adjustment problems, self-esteem, and academic anxiety among adolescent students.

Hypotheses

1. Academic achievement will significantly influence adjustment problems, self-esteem, and academic anxiety among adolescent students.
2. Gender will significantly influence adjustment problems, self-esteem, and academic anxiety among adolescent students.
3. There will be a significant interaction effect of academic achievement and gender on adjustment problems, self-esteem, and academic anxiety among adolescent students.
4. Adjustment problems, self-esteem, and academic anxiety will be significantly interrelated among adolescent students.

METHOD

Research Design

The study employed a 2×2 factorial design to examine the effects of academic achievement and gender on adjustment, self-esteem, and academic anxiety among high school students. Academic achievement (high vs. low) and gender (males vs. females) served as the independent variables, whereas adjustment problems, self-esteem, and academic anxiety constituted the dependent variables.

Operational Definitions of the Variables

Academic Achievement: Academic achievement refers to students' performance in the annual school examination conducted by their respective schools. For the purposes of the present study, students were classified into high achievers and low achievers on the basis of their examination scores. The top 20% of students constituted the high-achievement group, whereas the bottom 20% constituted the low-achievement group.

Gender: Gender refers to the biological sex of the participants as recorded in the school records. In the present study, gender consisted of two categories: boys and girls.

Adjustment Problems: Adjustment problems refer to the extent to which students experience difficulties in adapting to the educational, social, and emotional demands of school life. In the present study, adjustment problems were operationally defined as the total score obtained on the Adjustment Inventory for School Students (AISS) developed by Sinha and Singh (1971). Higher scores indicate greater adjustment problems, whereas lower scores indicate better adjustment.

Self-Esteem: Self-esteem refers to an individual's overall evaluation of self-worth, competence, and personal value. In the present study, self-esteem was operationally defined as the total score obtained on the Self-Esteem Inventory developed by Prasad and Thakur (1977). Higher scores indicate higher levels of self-esteem.

Academic Anxiety: Academic anxiety refers to feelings of worry, tension, and apprehension associated with academic activities such as examinations, classroom participation, and educational expectations. In the present study, academic anxiety was operationally defined as the total score obtained on the Academic Anxiety Scale developed by Singh and Sen Gupta (1971; revised 1986). Higher scores indicate higher levels of academic anxiety.

Participants

The initial sample comprised 240 high school students (120 boys and 120 girls) enrolled in Grades 9 and 10 at two government high schools—Nandipur High School and B.B. High School—located in Jajpur district, Odisha. The participants were between 14 and 16 years of age, and Odia was their mother tongue.

A purposive sampling technique was employed to identify students with different levels of academic achievement. Based on their performance in the annual school examination, students were ranked according to their academic achievement. The top 25% of students ($N = 60$; 28 boys and 32 girls) were classified as high achievers, whereas the bottom 25% ($N = 60$; 33 boys and 27 girls) were classified as low achievers. The middle 50% of students were excluded from the study to maximize the distinction between the two achievement groups. Consequently, the final sample comprised 120 students, distributed into four groups: high-achieving boys ($n = 28$), high-achieving girls ($n = 32$), low-achieving boys ($n = 33$), and low-achieving girls ($n = 27$).

Measures

Adjustment Inventory for School Students. Adjustment was assessed using the *Adjustment Inventory for School Students* (AISS; Sinha & Singh, 1971), published by the National Psychological Corporation. The inventory consists of 60 dichotomous (Yes/No) items designed to measure adjustment problems across three domains: emotional, social, and educational adjustment. Responses indicative of maladjustment are scored 1, whereas adjustment-oriented responses are scored 0. Higher total scores indicate greater adjustment problems. The inventory has been widely used in educational and psychological research and has demonstrated satisfactory reliability and validity. For the present study, an Odia version of the inventory was used. The original Hindi version was translated into Odia by the researchers and reviewed by language experts to ensure linguistic equivalence and conceptual accuracy.

Self-Esteem Inventory. Self-esteem was measured using the *Self-Esteem Inventory* developed by Prasad and Thakur (1977) and published by the Agra Psychological Research Cell. The inventory assesses an individual's perception of self-worth, competence, and personal value. Higher scores reflect higher levels of self-esteem. The instrument has been extensively employed in Indian educational and psychological research and has demonstrated satisfactory psychometric properties. As the original instrument was available in Hindi, an Odia version was prepared for the present study through translation by the researchers and subsequent expert review to ensure content equivalence.

Academic Anxiety Scale. Academic anxiety was assessed using the *Academic Anxiety Scale* developed by Singh and Sen Gupta (1971) and revised in 1986 by the National Psychological Corporation. The scale was specifically designed for adolescent students and measures anxiety associated with academic activities such as examinations, classroom participation, and educational expectations. Higher scores indicate higher levels of academic anxiety. Previous studies have reported satisfactory reliability and validity of the scale for use with school-going adolescents. Because the original scale was in English, it was translated by the researchers into Odia for the present study. The translated version was reviewed by subject experts and language specialists to ensure clarity, accuracy, and cultural appropriateness.

Procedure

Prior to data collection, formal permission was obtained from the principals of the participating schools. Students meeting the selection criteria were identified on the basis of their academic records. After establishing rapport with the students, the selected participants were administered the three psychological instruments in classroom settings during regular school hours.

Standardized instructions were provided before the administration of each instrument. Participants were encouraged to seek clarification whenever necessary and were assured that their responses would remain confidential and would be used solely for research purposes. To maintain anonymity, students were instructed not to write their names on the questionnaires. The instruments were administered sequentially, and completed questionnaires were collected immediately after administration.

Following data collection, responses were scored according to the respective scoring manuals of the instruments. The obtained data were entered into the Statistical Package for the Social Sciences (SPSS) for analysis. Descriptive statistics (means and standard deviations), two-way analysis of variance (ANOVA), and Pearson product-moment correlation analyses were performed to examine the study hypotheses.

RESULTS

The effects of academic achievement and gender on adjustment problems, self-esteem, and academic anxiety were examined using descriptive statistics (means and standard deviations) and inferential statistics. Three separate two-way analyses of variance (ANOVAs) were conducted on adjustment problems, self-esteem, and academic anxiety scores. In addition, Pearson product-moment correlation coefficients were computed to examine the relationships among adjustment problems, self-esteem, and academic anxiety.

Table 1

Means and Standard Deviations of Adjustment Problems by Academic Achievement and Gender

Academic Achievement	Gender				Combined	
	Males		Females			
	M	SD	M	SD	M	SD
High	21.33	3.73	20.60	2.60	20.96	3.21
Low	22.16	3.87	19.50	2.96	20.83	3.67
Combined	21.75	3.79	20.05	2.82	20.90	3.44

Note. M = Mean; SD = Standard Deviation.

Students with high academic achievement ($M = 20.96$, $SD = 3.21$) and those with low academic achievement ($M = 20.83$, $SD = 3.67$) obtained similar mean adjustment scores, suggesting little difference between the two achievement groups. With respect to gender, male students ($M = 21.75$, $SD = 3.79$) obtained higher mean adjustment scores than their female counterparts ($M = 20.05$, $SD = 2.82$). Because higher adjustment scores indicate greater adjustment problems, male students appeared to

experience more adjustment difficulties than female students. Examination of the cell means further revealed that among male students, students with high academic achievement ($M = 21.33$, $SD = 3.73$) obtained lower adjustment scores than students with low academic achievement ($M = 22.16$, $SD = 3.87$), whereas among female students, students with low academic achievement ($M = 19.50$, $SD = 2.96$) obtained higher self-esteem scores than students with high academic achievement ($M = 20.60$, $SD = 2.60$). However, the statistical significance of these differences was examined using a two-way analysis of variance (ANOVA), the results of which are presented subsequently.

Table 2

Two-Way Analysis of Variance for Adjustment Problems by Academic Achievement and Gender

Source	df	Mean Square	F	p
Academic Achievement	1	.53	.04	.827
Gender	1	86.70	7.77	.006**
Gender x Academic Achievement	1	28.033	2.514	.116
Error	116	11.151		

**p is significant at .01 level of significance.

A Two-way ANOVA was conducted on the adjustment scores of the high school students to examine the effects of academic achievement and gender on adjustment. The analysis revealed no significant main effect of academic achievement on adjustment, $F(1, 116) = 0.04$, $p = .827$. However, a significant main effect of gender adjustment was observed, $F(1, 116) = 7.77$, $p < .01$, indicating that boys reported significantly higher adjustment problems than girls. The interaction effect of academic achievement and gender adjustment was not significant, $F(1, 116) = 2.51$, $p = .116$. The mean scores indicated that boys ($M = 21.75$, $SD = 3.79$) experienced greater adjustment problems than girls ($M = 20.05$, $SD = 2.82$). These findings suggest that gender, rather than academic achievement, plays a significant role in adolescents' adjustment problems.

Table 3

Means and Standard Deviations of Self-Esteem by Academic Achievement and Gender

Academic Achievement	Gender				Combined	
	Males		Females			
	M	SD	M	SD	M	SD

High	142.83	14.94	132.03	16.03	137.43	16.30
Low	134.36	16.03	140.40	13.14	137.38	16.09
Combined	138.60	15.98	136.21	15.13	137.40	15.98

Note. M = Mean; SD = Standard Deviation.

Students with high academic achievement ($M = 137.43$, $SD = 16.30$) and those with low academic achievement ($M = 137.38$, $SD = 16.09$) obtained nearly identical mean self-esteem scores, suggesting little difference between the two achievement groups. With respect to gender, male students ($M = 138.60$, $SD = 15.98$) obtained slightly higher mean self-esteem scores than their female counterparts ($M = 136.21$, $SD = 15.13$). Examination of the cell means further revealed that among male students, students with high academic achievement ($M = 142.83$, $SD = 14.94$) obtained higher self-esteem scores than students with low academic achievement ($M = 134.36$, $SD = 16.03$), whereas among female students, students with low academic achievement ($M = 140.40$, $SD = 13.14$) obtained higher self-esteem scores than students with high academic achievement ($M = 132.03$, $SD = 16.03$). However, the statistical significance of these differences was examined using a two-way analysis of variance (ANOVA), the results of which are presented subsequently.

Table 4

Two-Way Analysis of Variance for Self-Esteem by Academic Achievement and Gender

Source	df	Mean Square	F	p
Academic Achievement	1	0.07	.00	.986
Gender	1	170.40	.74	.389
Gender x Academic Achievement	1	2125.20	9.31	.003**
error	116	228.11		

**p is significant at .01 level of significance.

A Two-way ANOVA was conducted on the self-esteem scores of the high school students to examine the effects of academic achievement and gender on self-esteem. The analysis revealed no significant main effect of academic achievement on self-esteem, $F(1, 116) = 0.00$, $p = .986$, and no significant main effect of gender on self-esteem, $F(1, 116) = 0.74$, $p = .389$. However, the interaction effect of academic achievement and gender on self-esteem was statistically significant, $F(1, 116) = 9.31$, $p < .01$. The pattern of means indicated that high-achieving boys obtained the highest self-esteem scores ($M = 142.83$, $SD = 14.94$), whereas high-achieving girls obtained the lowest self-esteem scores ($M =$

132.03, SD = 16.03). The findings suggest that the relationship between academic achievement and self-esteem differs according to gender. In other words, the effect of academic achievement on self-esteem depends on the gender. Specifically, high academic achievement appears to be associated with enhanced self-esteem among boys but not among girls.

Table 5

Means and Standard Deviations of Academic Anxiety by Academic Achievement and Gender

Academic Achievement	Gender				Combined	
	Males		Females			
	M	SD	M	SD	M	SD
High	8.96	3.04	9.23	2.54	9.10	2.87
Low	9.16	3.43	9.73	2.91	9.45	3.16
Combined	9.06	3.21	9.48	2.72	9.27	2.97

Note. M = Mean; SD = Standard Deviation.

Students with high academic achievement ($M = 9.10$, $SD = 2.87$) obtained slightly lower mean academic anxiety scores than students with low academic achievement ($M = 9.45$, $SD = 3.16$), suggesting marginally lower levels of academic anxiety among the high-achieving group. With respect to gender, female students ($M = 9.48$, $SD = 2.72$) obtained slightly higher mean academic anxiety scores than their male counterparts ($M = 9.06$, $SD = 3.21$) suggesting marginally lower levels of academic anxiety among females. Examination of the cell means further revealed that among male students, students with high academic achievement ($M = 8.96$, $SD = 3.04$) obtained lower academic anxiety scores than students with low academic achievement ($M = 9.16$, $SD = 3.43$), also among female students, students with high academic achievement ($M = 9.23$, $SD = 2.54$) obtained lower academic anxiety scores than students with low academic achievement ($M = 9.73$, $SD = 2.91$). However, the statistical significance of these differences was examined using a two-way analysis of variance (ANOVA), the results of which are presented subsequently.

Table 6

Two-Way Analysis of Variance for Academic Anxiety by Academic Achievement and Gender

Sources	df	Mean Square	F	p
Academic Achievement	1	3.67	.40	.52

Gender	1	5.20	.57	.44
Gender x Academic Achievement	1	.67	.07	.78
Error	116	9.00		

A Two-way ANOVA was conducted on the academic anxiety scores of the high school students to examine the effects of academic achievement and gender on academic anxiety. The analysis revealed that neither academic achievement had a significant effect on academic anxiety, $F(1, 116) = 0.40, p = .52$, nor gender had a significant effect on academic anxiety, $F(1, 116) = 0.57, p = .44$. Furthermore, the interaction effect between academic achievement and gender on academic anxiety was not statistically significant, $F(1, 116) = 0.07, p = .78$. Mean scores showed only marginal differences across groups, indicating that academic anxiety levels were comparable among high- and low-achieving students as well as among boys and girls. These findings suggest that academic anxiety is relatively independent of both academic achievement and gender in the present sample.

Correlations Among Adjustment Problems, Self-Esteem, and Academic Anxiety

Table 7

Intercorrelations Among Adjustment Problems, Self-Esteem, and Academic Anxiety

Variables	Adjustment	Self-Esteem	Academic Anxiety
Adjustment	—	-.08	.21*
Self-Esteem		—	.03
Academic Anxiety			—

Note. Values are Pearson product-moment correlation coefficients. * r is significant ($p < .05$).

Pearson product-moment correlation analysis was conducted to examine the relationships among adjustment problems, self-esteem, and academic anxiety. As shown in Table 7, adjustment problems were positively correlated with academic anxiety ($r = .21, p = .02$). This weak but statistically significant positive correlation indicates that students who reported greater adjustment problems also tended to report higher levels of academic anxiety. However, adjustment problems were not significantly correlated with self-esteem ($r = -.08, p = .39$), and self-esteem was not significantly correlated with academic anxiety ($r = .03, p = .75$). These results indicate that, among the variables examined, only adjustment problems and academic anxiety were significantly associated.

DISCUSSION

The present study examined the effects of academic achievement and gender on adjustment problems, self-esteem, and academic anxiety among high school students. It also investigated the relationships among these psychological variables. Overall, the findings indicate that gender plays a more prominent role than academic achievement in students' adjustment, whereas the relationship between academic achievement and self-esteem varies according to gender. In contrast, academic anxiety appears to be relatively independent of both academic achievement and gender within the present sample.

The first major finding revealed a significant gender difference in adjustment problems, with boys reporting greater adjustment difficulties than girls. However, academic achievement did not significantly influence adjustment, nor was there a significant interaction between academic achievement and gender. These findings suggest that adjustment during adolescence may be influenced more strongly by gender-related socialization experiences than by academic performance itself. Previous studies have similarly reported better school adjustment among girls than boys (Prakash & Coplan, 2007; Wang et al., 2008). Girls are often socialized to be more compliant, emotionally expressive, and relationship-oriented, characteristics that may facilitate adaptation to school environments. In contrast, boys may experience greater societal expectations regarding independence, achievement, and future occupational success, particularly in rural Indian settings, which may increase adjustment difficulties. The absence of an academic achievement effect suggests that psychosocial adjustment cannot be explained solely by scholastic success and may instead depend upon broader family, social, and emotional factors.

The second important finding concerns self-esteem. Neither academic achievement nor gender independently influenced self-esteem; however, a significant interaction between these variables was observed. Specifically, high-achieving boys reported the highest self-esteem, whereas high-achieving girls reported the lowest self-esteem. This finding indicates that the psychological meaning attached to academic success differs for boys and girls. Previous research has consistently demonstrated a reciprocal relationship between self-esteem and academic achievement (Acosta-Gonzaga, 2023; Wagner et al., 2024). However, the present findings suggest that academic success alone does not uniformly enhance self-esteem across genders. Cultural expectations and gender-role socialization may partly explain this interaction. In many traditional communities, academic success among boys is often strongly associated with future career opportunities and social recognition, which may reinforce positive self-evaluations. For girls, although educational opportunities have improved substantially, academic achievement may not always translate into equivalent psychological benefits because of continuing societal expectations regarding traditional gender roles. Nevertheless, this interpretation should be viewed cautiously because the present study did not directly measure gender-role attitudes or family expectations.

The study further found no significant effects of academic achievement, gender, or their interaction on academic anxiety. Although female students obtained slightly higher mean anxiety scores than male students and low achievers reported marginally greater anxiety than high achievers, these differences were not statistically significant. This finding differs from earlier research suggesting higher anxiety among girls (Hembree, 1988) but is consistent with recent evidence indicating that academic pressure is increasingly experienced by both boys and girls. Contemporary educational systems expose adolescents to similar examination pressures, parental expectations, and competitive academic

environments regardless of gender. Consequently, academic anxiety may have become a common educational experience rather than a gender-specific phenomenon.

Correlation analysis revealed a significant positive relationship between adjustment problems and academic anxiety. Students who experienced greater adjustment difficulties also reported higher academic anxiety. This finding supports theoretical perspectives suggesting that poor emotional, educational, and social adjustment increases vulnerability to anxiety in academic settings. Students struggling to adapt to school demands may perceive examinations and classroom expectations as more stressful, thereby experiencing greater anxiety. On the other hand, self-esteem was not significantly related to either adjustment problems or academic anxiety. Although previous studies have frequently reported significant associations among these variables, the absence of such relationships in the present investigation may reflect the relatively homogeneous nature of the sample or the influence of other unmeasured psychological variables, such as resilience, perceived social support, or academic self-efficacy.

Taken together, the findings demonstrate that adolescent psychological functioning is influenced by multiple interacting factors rather than academic achievement alone. Gender differences remain evident in adjustment, whereas the relationship between academic success and self-esteem is moderated by gender. Furthermore, adjustment problems appear to be closely associated with academic anxiety, highlighting the importance of supporting students' emotional and social adaptation alongside their academic development.

CONCLUSION

The present study contributes to the understanding of the relationships among academic achievement, gender, adjustment problems, self-esteem, and academic anxiety among high school students. The findings indicate that gender significantly influences adjustment, with boys experiencing greater adjustment difficulties than girls. Although neither academic achievement nor gender independently affected self-esteem, their interaction was significant, suggesting that the association between academic success and self-esteem differs for boys and girls. Academic anxiety, however, did not vary significantly across academic achievement or gender groups. Furthermore, adjustment problems were positively associated with academic anxiety, indicating that students experiencing greater adjustment difficulties are more likely to experience higher academic anxiety.

These findings emphasize that adolescents' psychological well-being cannot be understood solely through academic performance. Educational institutions should therefore adopt a holistic approach that gives equal importance to students' emotional adjustment, social adaptation, and psychological well-being alongside academic excellence. Schools should strengthen counselling services, promote positive teacher-student relationships, encourage parental involvement, and create supportive learning environments that reduce unnecessary academic pressure while fostering healthy self-esteem and adjustment among adolescents.

Overall, the study highlights the importance of integrating psychological support with educational practices to facilitate the healthy development of adolescents. Such efforts can contribute not only to improved academic outcomes but also to students' long-term emotional resilience and overall well-being.

Limitations of the Study

The findings of the present study should be interpreted in light of several limitations.

1. The study employed a relatively small sample of 120 students, which may limit the statistical power and generalizability of the findings.
2. Participants were selected from only two government high schools located in rural areas of Jajpur district, Odisha. Consequently, the findings may not be generalizable to urban populations or students from other regions of India.
3. The study included only students classified as high and low achievers, excluding those with average academic achievement. This may have reduced the representativeness of the sample.
4. The cross-sectional research design limits conclusions regarding causal relationships among academic achievement, adjustment problems, self-esteem, and academic anxiety.
5. Data were collected using self-report psychological inventories, which may be influenced by social desirability, response bias, or inaccurate self-perceptions.
6. Several potentially important variables, such as socioeconomic status, parental education, parenting style, family functioning, school climate, peer relationships, and academic self-efficacy, were not examined and may have influenced the observed relationships.
7. Although standardized instruments were translated into Odia, formal psychometric validation of the translated versions was not undertaken, which may have affected measurement precision.

Implications of the Study

The findings of the present study have several practical implications for educators, school counsellors, parents, and educational policymakers.

1. Since boys reported greater adjustment problems than girls, schools should develop gender-sensitive counselling and life-skills programmes that enhance emotional regulation, coping skills, and social adjustment among adolescent boys.
2. The significant interaction between academic achievement and gender on self-esteem suggests that interventions aimed at strengthening self-esteem should consider gender-specific experiences rather than adopting a uniform approach for all students.
3. The positive association between adjustment problems and academic anxiety indicates that improving students' emotional and social adjustment may help reduce anxiety related to academic activities. School-based psychological support services should therefore focus on both adjustment and anxiety management.
4. Teachers should create supportive classroom environments that emphasize learning, personal growth, and constructive feedback instead of excessive performance comparison, thereby promoting healthy psychological development.
5. Parents should maintain realistic academic expectations and encourage open communication with adolescents to reduce unnecessary psychological pressure and foster healthy emotional adjustment.

6. Educational policymakers should integrate mental health promotion, counselling services, and socio-emotional learning programmes into secondary school curricula to support adolescents' overall well-being alongside academic achievement.

Suggestions for Future Research

Future research may extend the present study in several directions.

1. Similar studies should be conducted using larger and more diverse samples drawn from different states, educational boards, and both rural and urban settings to enhance the generalizability of findings.
2. Longitudinal studies are needed to examine how adjustment problems, self-esteem, academic anxiety, and academic achievement influence one another over time.
3. Future investigations should include additional psychological and contextual variables, such as academic self-efficacy, resilience, emotional intelligence, perceived social support, parenting style, family functioning, school climate, and peer relationships.
4. Qualitative or mixed-methods studies may provide deeper insights into adolescents' lived experiences of adjustment problems, self-esteem, and academic anxiety.
5. Future research should examine whether similar patterns are observed among students from different socioeconomic backgrounds, private schools, tribal communities, and different cultural regions of India.
6. Intervention-based studies evaluating the effectiveness of school counselling programmes, socio-emotional learning interventions, mindfulness training, or stress-management programmes in improving adjustment and reducing academic anxiety would provide valuable practical evidence.
7. Future studies should examine the mediating or moderating roles of gender, self-esteem, resilience, and family support in explaining the relationship between academic achievement and psychological well-being.

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