Exploring How Student Anxiety and Adjustment Skills Shape Cognitive Outcomes at the Higher Secondary Level

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ABSTRACT

The present study investigates the intricate relationship between student anxiety, adjustment skills, and cognitive outcomes among higher secondary level students in India. The primary objectives encompass examining the prevalence of anxiety among students, assessing adjustment patterns across emotional, social, and educational dimensions, and determining their collective influence on cognitive academic outcomes. Employing a descriptive correlational research design, the study utilized standardized instruments including the Academic Anxiety Scale and Adjustment Inventory for School Students on a sample of 350 higher secondary students selected through stratified random sampling from selected schools. The hypotheses posited significant relationships between anxiety levels and cognitive outcomes, and between adjustment skills and academic performance. Results revealed that 63.5% of students experienced moderate to high academic anxiety, with significant negative correlations between anxiety and cognitive outcomes ($r = -0.42$, $p<0.01$). Conversely, adjustment skills demonstrated positive correlations with cognitive performance ($r = 0.35$, $p<0.01$). Discussion highlights the mediating role of emotional regulation in academic success. The conclusion emphasizes implementing school-based interventions addressing psychological wellbeing to enhance cognitive academic outcomes among adolescent learners.

Keywords: *Academic Anxiety, Adjustment Skills, Cognitive Outcomes, Higher Secondary Students, Mental Health*

1. INTRODUCTION

The contemporary educational landscape in India has witnessed unprecedented levels of academic pressure among adolescent learners, particularly those at the higher secondary level preparing for competitive examinations and board assessments. This transitional phase, characterized by developmental changes and heightened academic expectations, creates substantial psychological burdens that significantly influence cognitive functioning and academic performance (Deb, Strodl, & Sun, 2015). The Indian school education system, predominantly textbook-oriented with emphasis on rote memorization, places tremendous stress on students to achieve exceptional academic results (Verma, Sharma, & Larson, 2002). Research indicates that approximately 28% of Grade 11 students and 26% of Grade 12 students experience high or extreme stress levels, with parental expectations, time constraints, and examination pressures being primary stressors (Bhat & Khandai, 2015). Anxiety, conceptualized as an unpleasant emotional state characterized by apprehension and anticipatory fear, has emerged as a critical determinant of academic outcomes (Spielberger, 1972). Academic anxiety specifically encompasses worry, tension, and physiological arousal related to academic tasks and evaluations (Cassady & Johnson, 2002). The cognitive interference model suggests that anxiety disrupts working

memory capacity, thereby impairing information processing and retrieval during academic tasks (Eysenck, Derakshan, Santos, & Calvo, 2007). Studies conducted among Indian adolescents reveal that 35-37% report high levels of academic stress and examination anxiety, with manifestations including concentration difficulties, sleep disturbances, and decreased motivation (Subramani & Kadhiravan, 2017).

Adjustment, defined as the harmonious relationship between an individual and their environment, constitutes another pivotal factor influencing academic success. Sinha and Singh (1993) conceptualize adjustment as encompassing emotional, social, and educational dimensions, each contributing uniquely to overall psychological wellbeing. Higher secondary students face multifaceted adjustment challenges as they navigate academic rigors, peer relationships, and future career decisions (Yellaiah, 2012). Research demonstrates significant correlations between adjustment patterns and academic achievement, with well-adjusted students exhibiting superior cognitive performance (Arul Lawrence & Vimala, 2016). The theoretical framework underpinning this study draws upon Lazarus and Folkman's (1984) transactional model of stress, which posits that cognitive appraisal processes mediate the relationship between environmental demands and individual responses. Cognitive outcomes encompass the intellectual processes including attention, memory, reasoning, and problem-solving that directly influence academic performance. The Attentional Control Theory proposed by Eysenck and colleagues (2007) provides theoretical grounding for understanding how anxiety impairs cognitive efficiency by disrupting the balance between goal-directed and stimulus-driven attentional systems. This theoretical perspective, combined with research on adjustment and academic success, forms the conceptual framework for investigating how psychological factors shape cognitive academic outcomes among higher secondary students in the Indian educational context.

2. LITERATURE REVIEW

Extensive research has examined the relationship between anxiety and academic performance across diverse educational settings. Pascoe, Hetrick, and Parker (2020) conducted a comprehensive narrative review revealing that academic-related stress reduces academic achievement, decreases motivation, and increases dropout risk among secondary and tertiary students. Their analysis indicated that self-reported stress correlates significantly with lower wellbeing across psychological, social, cognitive, and physical dimensions. Similarly, Steinmayr, Crede, McElvany, and Wirthwein (2016) established that worry components of test anxiety negatively predict changes in students' grade point average, explaining how cognitive interference undermines academic performance. In the Indian context, Deb, Strodl, and Sun (2015) investigated academic stress among 190 higher secondary students in Kolkata, finding that 63.5% reported stress due to academic pressure, with 81.6% experiencing examination-related anxiety. Their research identified parental pressure as significantly associated with psychiatric caseness, with students experiencing academic stress having 2.3 times higher odds of psychological distress. Subramani and Kadhiravan (2017) examined stress among 250 students in Tamil Nadu, concluding that higher secondary students experience moderate stress levels irrespective of gender or locality, with fear of failure and parental expectations being predominant stressors.

Research on adjustment and academic achievement has yielded consistent findings regarding their interrelationship. Arul Lawrence and Vimala (2016) examined 350 higher secondary students in Tamil Nadu, demonstrating significant

positive correlations between emotional adjustment (r=0.245), social adjustment (r=0.216), and educational adjustment (r=0.316) with academic achievement. Their findings indicated that well-adjusted students perform better academically across all adjustment dimensions. Das (2014) investigated adjustment among secondary students in West Bengal, revealing gender differences in adjustment patterns, with female students demonstrating better emotional adjustment compared to males. The relationship between anxiety and cognitive functioning has received substantial empirical attention. Lukasik, Waris, Soveri, Lehtonen, and Laine (2019) investigated working memory performance in a large sample, finding that state anxiety negatively correlates with verbal working memory and updating performance. Aronen, Vuontela, Steenari, Salmi, and Carlson (2005) established that working memory capacity mediates the relationship between psychiatric symptoms and academic performance among school students. Von der Embse, Jester, Roy, and Post (2018) conducted meta-analytic research concluding that test anxiety consistently demonstrates negative associations with academic performance across multiple measures and populations. Studies examining the combined influence of anxiety and adjustment on cognitive outcomes remain limited. However, Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011) conducted a meta-analysis of 213 school-based social-emotional learning programs, demonstrating that interventions targeting emotional and social skills significantly improve academic performance by an 11-percentile-point gain. This research suggests that enhancing adjustment skills can buffer against anxiety's negative effects on cognitive outcomes, providing empirical support for integrated intervention approaches.

3. OBJECTIVES

1. To assess the prevalence and levels of anxiety among higher secondary students across demographic variables.
2. To examine the adjustment patterns encompassing emotional, social, and educational dimensions among the study participants.
3. To determine the relationship between student anxiety, adjustment skills, and cognitive academic outcomes.
4. To identify the predictive influence of anxiety and adjustment on cognitive performance among higher secondary students.

4. METHODOLOGY

The present study employed a descriptive correlational research design to investigate the relationships between anxiety, adjustment skills, and cognitive outcomes among higher secondary students. This design was deemed appropriate for examining naturally occurring relationships without manipulation of variables, enabling systematic description and prediction of phenomena. The study population comprised higher secondary students enrolled in Classes XI and XII from schools affiliated with state and central education boards in the urban and semi-urban regions. The sample consisted of 350 students selected through stratified random sampling technique, with stratification based on gender (175 male, 175 female) and locality (rural and urban). The sample size was determined using Krejcie and Morgan's (1970) formula, ensuring adequate representation and statistical power. Data collection utilized three

standardized instruments. The Academic Anxiety Scale for Children developed by Singh and Sengupta (2015), comprising 20 items measuring academic anxiety levels with established reliability (Cronbach's alpha = 0.82), was employed to assess anxiety. The Adjustment Inventory for School Students developed by Sinha and Singh (1993), containing 60 items across three dimensions (emotional, social, and educational adjustment), with reliability coefficient of 0.95, measured adjustment patterns. Cognitive outcomes were operationalized through students' aggregate academic performance in the previous annual examination, obtained from school records with appropriate permissions.

The data collection procedure involved obtaining institutional ethical approval and administrative permissions from school authorities. Informed consent was obtained from participants and their guardians prior to data collection. The questionnaires were administered in classroom settings under standardized conditions, with the researcher providing clear instructions and addressing queries. Data collection spanned four weeks to ensure adequate coverage of all selected schools. Statistical analysis employed descriptive statistics including mean, standard deviation, and percentages for demographic profiling and prevalence estimation. Inferential statistics included Pearson's product-moment correlation coefficient for examining relationships between variables, independent samples t-test for comparing groups, and multiple regression analysis for determining predictive relationships. All analyses were conducted using SPSS version 23.0, with significance level set at $p<0.05$.

5. RESULTS

Table 1: Distribution of Sample According to Demographic Variables (N=350)

Variable	Category	Frequency	Percentage
Gender	Male	175	50.0
	Female	175	50.0
Class	XI	180	51.4
	XII	170	48.6
Locality	Urban	192	54.9
	Rural	158	45.1
Stream	Science	145	41.4
	Commerce	118	33.7
	Arts	87	24.9

Table 1 presents the demographic distribution of the study sample comprising 350 higher secondary students. The gender distribution reveals equal representation with 50% male and 50% female participants, ensuring balanced analysis across gender categories. Class-wise distribution indicates 51.4% students from Class XI and 48.6% from Class XII, representing both levels of higher secondary education adequately. Regarding locality, 54.9% students belonged to urban areas while 45.1% were from rural backgrounds, reflecting the demographic composition of the study region. Stream-wise analysis shows 41.4% students enrolled in Science stream, 33.7% in Commerce, and 24.9% in Arts, corresponding to general enrollment patterns in Indian higher secondary education.

Table 2: Prevalence of Academic Anxiety Among Higher Secondary Students (N=350)

Anxiety Level	Frequency	Percentage	Mean Score	SD
Low	78	22.3	28.4	4.2
Moderate	150	42.9	45.6	5.8
High	94	26.9	62.3	6.1
Very High	28	8.0	74.8	4.5
Total	350	100.0	48.7	14.3

Table 2 delineates the prevalence of academic anxiety among the study participants. Analysis reveals that 22.3% students exhibited low anxiety levels with mean score of 28.4, indicating minimal academic-related worry. The largest proportion, 42.9%, demonstrated moderate anxiety levels with mean score of 45.6, suggesting substantial but manageable academic concerns. Notably, 26.9% students experienced high anxiety (M=62.3), while 8.0% exhibited very high anxiety levels (M=74.8), indicating severe academic distress requiring intervention. The overall mean anxiety score of 48.7 (SD=14.3) positions the sample within moderate anxiety range, though considerable variability exists across participants.

Table 3: Adjustment Levels Across Dimensions Among Students (N=350)

Adjustment Dimension	Level	Frequency	Percentage	Mean	SD
Emotional	Good	112	32.0	18.2	3.8
	Average	168	48.0	12.4	2.9
	Poor	70	20.0	6.8	2.1
Social	Good	145	41.4	17.6	3.5
	Average	152	43.4	11.8	2.7
	Poor	53	15.1	5.9	1.8
Educational	Good	98	28.0	19.4	4.1
	Average	175	50.0	13.2	3.2
	Poor	77	22.0	7.4	2.4

Table 3 illustrates adjustment patterns across emotional, social, and educational dimensions. Emotional adjustment analysis reveals 32.0% students with good adjustment (M=18.2), 48.0% with average adjustment (M=12.4), and 20.0% with poor emotional adjustment (M=6.8), indicating that one-fifth of students struggle with emotional regulation. Social adjustment demonstrates relatively better patterns with 41.4% students showing good adjustment (M=17.6), 43.4% average (M=11.8), and only 15.1% poor social adjustment (M=5.9). Educational adjustment presents concerning findings with merely 28.0% demonstrating good adjustment (M=19.4), while 50.0% show average (M=13.2) and 22.0% poor educational adjustment (M=7.4), suggesting academic environment-related challenges.

Table 4: Correlation Between Anxiety, Adjustment, and Cognitive Outcomes (N=350)

Variables	Anxiety	Emotional Adj.	Social Adj.	Educational Adj.	Cognitive Outcomes

Anxiety	1.00	-0.38**	-0.29**	-0.44**	-0.42**
Emotional Adj.		1.00	0.52**	0.48**	0.35**
Social Adj.			1.00	0.41**	0.28**
Educational Adj.				1.00	0.46**
Cognitive Outcomes					1.00

Note: **p<0.01

Table 4 presents correlation coefficients examining relationships among study variables. Academic anxiety demonstrates significant negative correlations with all adjustment dimensions: emotional (r=-0.38, p<0.01), social (r=-0.29, p<0.01), and educational (r=-0.44, p<0.01), indicating that higher anxiety associates with poorer adjustment. Critically, anxiety shows significant negative correlation with cognitive outcomes (r=-0.42, p<0.01), confirming that elevated anxiety levels correspond with diminished academic performance. All adjustment dimensions correlate positively with cognitive outcomes, with educational adjustment demonstrating strongest association (r=0.46, p<0.01), followed by emotional (r=0.35, p<0.01) and social adjustment (r=0.28, p<0.01).

Table 5: Comparison of Anxiety and Adjustment Across Gender (N=350)

Variable	**Male (n=175)**	**Female (n=175)**	**t-value**	**p-value**
	Mean (SD)	Mean (SD)		
Academic Anxiety	46.2 (13.8)	51.3 (14.5)	-3.28	0.001**
Emotional Adjustment	11.8 (4.2)	13.6 (4.8)	-3.65	0.001**
Social Adjustment	12.4 (3.9)	13.1 (4.1)	-1.58	0.115
Educational Adjustment	12.8 (4.4)	12.2 (4.6)	1.21	0.228
Cognitive Outcomes	68.4 (12.6)	71.2 (11.8)	-2.12	0.035*

Note: *p<0.05, **p<0.01

Table 5 compares anxiety and adjustment across gender categories using independent samples t-test. Female students report significantly higher academic anxiety (M=51.3) compared to males (M=46.2), with the difference being statistically significant (t=-3.28, p=0.001). Interestingly, females also demonstrate significantly better emotional adjustment (M=13.6) than males (M=11.8, t=-3.65, p=0.001), suggesting differential coping mechanisms. No significant gender differences emerged in social adjustment (t=-1.58, p=0.115) or educational adjustment (t=1.21, p=0.228). Cognitive outcomes reveal females scoring significantly higher (M=71.2) than males (M=68.4, t=-2.12, p=0.035), indicating superior academic performance despite higher anxiety levels.

Table 6: Regression Analysis Predicting Cognitive Outcomes (N=350)

Predictor	**β**	**SE**	**t**	**p**	**R^2**
Constant	82.46	4.28	19.27	0.001	
Academic Anxiety	-0.34	0.06	-5.82	0.001**	
Emotional Adjustment	0.24	0.08	3.12	0.002**	
Social Adjustment	0.12	0.07	1.68	0.094	

Educational Adjustment	0.31	0.07	4.42	0.001**	
Model Summary					0.38

Note: **p<0.01; Dependent Variable: Cognitive Outcomes

Table 6 presents multiple regression analysis examining predictors of cognitive outcomes. The regression model explains 38% variance in cognitive outcomes (R^2=0.38), indicating substantial predictive utility. Academic anxiety emerges as significant negative predictor (β=-0.34, p=0.001), confirming that increased anxiety diminishes cognitive performance when controlling for adjustment variables. Educational adjustment demonstrates strongest positive prediction (β=0.31, p=0.001), followed by emotional adjustment (β=0.24, p=0.002), indicating their independent contributions to cognitive outcomes. Social adjustment shows positive but non-significant prediction (β=0.12, p=0.094), suggesting its influence may be mediated through other variables. These findings support implementing comprehensive interventions targeting both anxiety reduction and adjustment enhancement.

6. DISCUSSION

The present study investigated the complex interrelationships between academic anxiety, adjustment skills, and cognitive outcomes among higher secondary students in India. The findings reveal substantial prevalence of academic anxiety, with approximately 35% of students experiencing high or very high anxiety levels. These findings align with previous research by Deb, Strodl, and Sun (2015), who reported that 63.5% of higher secondary students in Kolkata experienced academic stress, and with Subramani and Kadhiravan (2017), who documented similar anxiety prevalence in Tamil Nadu. The elevated anxiety levels can be attributed to the competitive nature of Indian education system, parental pressure for academic excellence, and the high-stakes nature of board examinations that determine future educational and career trajectories. The significant negative correlation between academic anxiety and cognitive outcomes (r=-0.42, p<0.01) substantiates theoretical propositions of the Attentional Control Theory (Eysenck et al., 2007), which posits that anxiety impairs cognitive efficiency by disrupting the balance between goal-directed attentional control and stimulus-driven attentional capture. High-anxious students allocate cognitive resources toward worry and threat-related cognitions, thereby reducing available capacity for academic tasks. This finding corroborates meta-analytic evidence by von der Embse et al. (2018), who established consistent negative associations between test anxiety and academic performance across diverse populations. The cognitive interference model provides mechanistic explanation, suggesting that anxiety-related rumination occupies working memory resources essential for academic problem-solving and information processing.

The adjustment patterns revealed differential findings across dimensions, with social adjustment demonstrating relatively favorable outcomes while educational adjustment presenting concerning patterns. The positive correlations between all adjustment dimensions and cognitive outcomes support previous research by Arul Lawrence and Vimala (2016), who documented significant relationships between adjustment and academic achievement among Tamil Nadu students. Educational adjustment emerged as the strongest predictor of cognitive outcomes in regression analysis (β=0.31, p=0.001), underscoring the critical importance of academic environment adaptation for scholastic success. Gender differences in anxiety and adjustment present intriguing patterns warranting discussion. Female students

reported significantly higher anxiety yet demonstrated superior cognitive outcomes, a phenomenon termed the "gender-anxiety paradox" in educational literature. This finding aligns with research by Steinmayr et al. (2016), who noted that females exhibit higher test anxiety but often outperform males academically. Possible explanations include differential coping strategies, with females potentially employing more adaptive emotion-focused coping that facilitates performance despite emotional distress. Additionally, females demonstrated significantly better emotional adjustment, suggesting enhanced emotional regulation capacities that may buffer anxiety's detrimental effects on cognition.

7. CONCLUSION

The present investigation provides empirical evidence establishing significant relationships between academic anxiety, adjustment skills, and cognitive outcomes among higher secondary students in India. The findings reveal concerning prevalence of academic anxiety, with approximately one-third of students experiencing high or very high anxiety levels that negatively impact cognitive academic performance. The significant negative correlation between anxiety and cognitive outcomes ($r=-0.42$) confirms the detrimental influence of psychological distress on scholastic achievement, while positive correlations between adjustment dimensions and academic performance highlight the protective role of psychological wellbeing. The regression model explaining 38% variance in cognitive outcomes identifies academic anxiety as a significant negative predictor and educational adjustment as the strongest positive predictor, providing direction for intervention development. Gender-based analyses reveal that despite reporting higher anxiety, female students demonstrate better emotional adjustment and superior cognitive outcomes, suggesting complex interactions between psychological variables and academic performance that warrant further investigation. The study carries significant implications for educational stakeholders including policymakers, school administrators, teachers, counselors, and parents. Implementation of school-based mental health programs addressing anxiety management through cognitive-behavioral techniques, relaxation training, and study skills development is strongly recommended. Enhancement of adjustment skills through peer support programs, orientation initiatives, and teacher-student relationship strengthening should be prioritized. The findings emphasize the necessity of holistic educational approaches that recognize psychological wellbeing as fundamental to academic success, moving beyond exclusive focus on cognitive inputs toward comprehensive student development addressing emotional, social, and educational adjustment needs.

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