IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Exploring Gender Differences In Test Anxiety Among Senior Secondary School Students Of Odisha

Priti Sriranjan
Assistant Professor of Psychology
PG Dept. of Applied Psychology
S.B.R. Govt. Women's College, Berhampur, Odisha, India

Abstract: Senior secondary school students' academic performance is significantly hampered by test anxiety, especially in high-stakes educational systems like India's. This study examines whether and to what degree students in Classes XI and XII experience gender-based disparities in test anxiety. Using purposive sampling, a sample of 120 students—60 males and 60 females—was chosen from urban senior secondary schools in Odisha. Spielberger's Test Anxiety Inventory (TAI), created in 1980, was used to gauge cognitive and affective reactions to test stress. To compare the mean test anxiety scores of male and female students, an independent samples t-test was used. A statistically significant difference was found in the study, showing that female students had much greater levels of test anxiety than their male counterparts (p <.01). These results highlight the necessity of gender-sensitive mental health and academic counselling programs in schools. For educators, psychologists, and policymakers seeking to enhance student well-being and educational outcomes, the study provides valuable insights and contributes to the growing body of research on academic stress.

Keywords: Test Anxiety, Gender Differences, Senior Secondary Students, Psychological Assessment, t-test

I. INTRODUCTION

1.1 Background of the study

Students, parents, teachers, and psychologists are becoming increasingly concerned about test anxiety in today's demanding academic climate. Students are under tremendous pressure to do well, especially in societies like India, where results on senior secondary exams dictate both professional paths and chances for higher study. An important turning point in a student's academic career occurs during their time in classes XI and XII. Students frequently suffer from psychological stress that shows up as exam anxiety due to expectations from their families, schools, and society.

Test anxiety is a complex phenomenon with emotional, cognitive, physiological, and behavioural components that go beyond simple test worry. Fear of failing, racing thoughts, bodily discomfort (such as perspiration or a fast heartbeat), and even avoidance actions are some examples of these. Test anxiety can impair memory recall, focus, information processing, and ultimately academic performance if left unchecked (Eysenck, Derakshan, Santos & Calvo, 2007; Sarason, 1984; Song, Chang & Zhou, 2021; Zeidner, 1998).

Even high performers suffer from crippling anxiety because of the dread of performing poorly or falling short of expectations; therefore, this phenomenon is not just confined to low-performing kids. Teenagers' anxiety-related academic suffering has increased as a result of India's growing academic rivalry, which is made worse by coaching cultures, cut-off pressures, and restricted admittance to prestigious universities. This study explores the potential differences in test anxiety experiences between male and female students in this high-stakes setting.

1.2 Theoretical Framework

Spielberger's Transactional Model of Test Anxiety (1980), which views anxiety as a dynamic reaction to perceived evaluative threats, serves as the foundation for this investigation. Two main components make up the model's division of test anxiety:

Worry: This cognitive dimension involves negative expectations, catastrophic thoughts, and preoccupation with failure. It often interferes with working memory and task performance.

Emotionality: This affective dimension refers to the autonomic nervous system's physiological responses, such as muscle tension, increased heart rate, and sweating, during test situations.

Individuals differ in their vulnerability to each element, and the way the two interact frequently dictates the severity and consequences of test anxiety, according to Spielberger. A student with low emotionality but high worry, for instance, may outperform one with high emotionality and high anxiety.

Examining gender disparities is a particularly pertinent use of this theoretical framework. According to research, male students may underreport emotional symptoms because of gender socialisation that discourages emotional expression, whereas female students tend to score higher on the emotionality scale and frequently experience more intense physiological symptoms during tests (Lowe et al., 2008; Putwain, 2007). Contextual elements like peer comparison, family expectations, and school pressure—all of which differ by gender in the Indian sociocultural context—can also play a part because of the transactional aspect of the paradigm (Deb, Chatterjee & Walsh, 2010).

1.3 Gender and Emotional Response in Academic Settings

Students' emotional and psychological experiences are significantly influenced by their gender, especially in educational settings. Several empirical studies and meta-analyses have demonstrated that internalising disorders, such as depression and anxiety, are more common in girls, particularly during adolescence, a time of biological, emotional, and cognitive transitions (Deb et al., 2015; Malhotra & Patra, 2014).

Girls are frequently under pressure to perform well academically as well as to adhere to gender standards that place a high importance on emotional intelligence, hard work, and social acceptance. These demands might result in heightened anxiety connected to performance, fear of failing, and more self-monitoring. Additionally, research has shown that girls are more likely to dwell on their academic setbacks, which exacerbates their anxiety reactions (Chapell et al., 2005; Rana & Mahmood, 2010).

However, because of societal norms regarding emotional restraint and masculinity, male students may be less inclined to disclose emotional discomfort or seek treatment, even when they are equally affected by academic pressure. Male test anxiety may therefore show up more quietly or go unreported, which might distort views and treatments. Furthermore, over time, gendered feedback mechanisms—in which boys are commended for their aptitude and girls for their neatness and effort—may unintentionally impact the emergence of worry tendencies.

Examining how male and female students experience and report test anxiety at a crucial scholastic stage is necessary due to these gender-based emotional and cognitive disparities. This knowledge may be used to develop intervention plans that are specifically designed to meet the psychological requirements of each gender in educational environments.

.

1.4 Relevance to the Indian Educational Context

Senior secondary exams are seen in India as both knowledge tests and as a means of gaining admission to esteemed universities and securing a successful career. Students, particularly women, are more susceptible to test-related stress due to the fierce rivalry, cultural norms, and lack of mental health resources in schools (Johal, 2022).

Gender-based psychological experiences in Indian schools are not well studied, despite growing awareness. Comprehending these experiences is essential for creating focused treatments that cater to the mental health requirements of certain student populations.

II. REVIEW OF LITERATURE

Test anxiety has been extensively studied in the domains of clinical and educational psychology during the last few decades. It has a detrimental correlation with student motivation, emotional health, and academic achievement, according to several studies. More recent studies have increasingly focused on demographic characteristics, particularly gender, that modulate the feeling of anxiety in evaluative contexts, whereas a large portion of the early research viewed test anxiety as a generic phenomenon.

Cassady and Johnson (2002) investigated the link between college students' academic performance and cognitive test anxiety in seminal research. They discovered a substantial inverse association between test results and concern components of anxiety. This study demonstrated how anxiety affects working memory and information processing, which may be more sensitive in female students based on subsequent research, even though it was not gender-specific.

This research was extended by Chapell et al. (2005), who investigated graduate and undergraduate students from a variety of institutions and specialties. According to their extensive research, test anxiety was consistently greater among female students than among male students. Although the results were solid, the sample was restricted to college students in the United States, which raises questions about the cultural generalisability, particularly concerning the demanding and hierarchically structured Indian educational system.

Putwain (2007) studied test anxiety in secondary school students in the UK and discovered that girls had far greater anxiety levels, especially in high-stakes areas like science and maths. A thorough examination of how gender-based educational aspirations affected these results was absent from the research. In comparable academic settings, cultural expectations that Indian female students should be "ideal achievers" or "obedient learners" may cause even more anxiety reactions.

Deb et al. (2015) shed important light on the emotional strain high school students in India face when they study for board exams. According to their study conducted in metropolitan Kolkata, anxiety and parental pressure were substantially linked to academic stress, and female students reported greater levels of psychological discomfort. Although this study made significant advances, it did not isolate test anxiety as a separate concept, which is what the present research attempts to address; instead, it focused on "academic stress" in general.

In a related study, Rana and Mahmood (2010) evaluated Pakistani students' academic performance and test anxiety, finding gender-based trends that were comparable to those in India. Although their study focused on how teacher behaviour and the school environment shape test anxiety, it provided no statistical analysis and did not employ a t-test to evaluate gender differences.

When taken as a whole, these studies show a consistent pattern: female students report higher levels of test anxiety than male students, most likely as a result of a combination of cultural conditioning, academic expectations, emotional socialisation, and biological sensitivity. Few studies, meanwhile, have isolated gender differences in test anxiety at the senior secondary level in India using standardised, psychometrically sound instruments. Additionally, there is a lack of research that uses statistical techniques such as the independent samples t-test to directly compare male and female students, especially in Class XI and XII populations—children who are at a pivotal point in their academic careers.

2.1 Rationale of the Study

Test anxiety has been the subject of much research worldwide, but the majority of these studies are set in Western environments, where student expectations, cultural norms, and academic systems are very different from those in India. Board examinations and competitive admission exams put a lot of academic pressure on students in India, particularly at the senior secondary level. There is no research utilising standardised instruments to isolate test anxiety as a distinct variable during this crucial educational period, although these high-stakes assessments frequently cause increased psychological suffering, especially among teens.

There have been reports of gender variations in academic stress, with research regularly demonstrating that female students report higher levels of exam anxiety than their male counterparts. However, in the context of Indian schools, these findings are frequently reported descriptively and lack thorough statistical confirmation. Girls' anxiety may be exacerbated by cultural elements like parental expectations and gender standards. However, few Indian studies have used statistical methods like the independent samples t-test to examine gender differences in test anxiety using trustworthy psychometric tests like Spielberger's Test Anxiety Inventory (TAI).

By investigating gender-based variations in test anxiety among Class XI and XII students in urban India, this study seeks to fill these research gaps. To guarantee reliable assessment, it utilizes a standardized, validated psychological scale. To ascertain if discovered gender differences are statistically significant, a t-test analysis is applied. In order to improve student well-being and enhance academic success at a crucial juncture in their educational journey, the findings are anticipated to provide further light on how male and female students experience academic stress differently and to guide the development of gender-sensitive treatments.

2.2. Objectives of the Study

1. To assess the level of test anxiety among senior secondary school students.
2. To compare test anxiety levels between male and female students.

2.3. Hypotheses

Null Hypothesis (H_0): There is no significant difference in test anxiety between male and female senior secondary school students.
Alternative Hypothesis (H_1): There is a significant difference in test anxiety between male and female senior secondary school students.

III. METHOD OF STUDY

3.1 Research Design

The study follows a quantitative, comparative, and cross-sectional research design to assess gender differences in test anxiety among senior secondary school students.

3.2 Sampling Technique

Purposive sampling was employed in this study to choose 120 senior secondary school students from four urban English-medium schools in Bhubaneswar and Cuttack, Odisha, 60 of whom were male and 60 of whom were female. Participants were chosen according to certain requirements, including active board test preparation, participation consent, and enrolment in Class XI or XII. In order to guarantee the inclusion of students at a crucial academic level, purposeful sampling was selected. A credible comparison was made possible by maintaining equal representation of each gender. Before distributing the Test Anxiety Inventory, participants' informed consent was acquired, and permission was acquired from the school administration.

3.3 Tools Used

1. Test Anxiety Inventory (TAI): Spielberger's (1980) Test Anxiety Inventory (TAI) was used in the study to provide a precise and reliable evaluation of test anxiety. Specifically created to detect individual variations in test-related anxiety, the TAI is a well-known and psychometrically validated tool. It has twenty self-report items, evenly split into two subscales: Emotionality (affective component) and Worry (cognitive component), each with ten items. Respondents use a 4-point Likert scale, with "Almost Never" to "Almost Always," to indicate how frequently they experience thoughts and feelings connected to worry. Because of its excellent construct validity, cultural flexibility, and dependability in a variety of educational contexts, the TAI was selected. It has shown outstanding internal consistency (Cronbach's alpha > 0.85) in earlier research. The inventory has also been successfully used with adolescent populations in both Western and Indian contexts.

2. Demographic Information Sheet: A Demographic Information Sheet was administered to gather data on age, gender, class, and academic stream to contextualize the responses and aid in analysis.

3.4 Procedure

The researcher visited four chosen schools in Bhubaneswar and Cuttack after securing the required authorisations from the school administration. After being educated about the study's goal, students in Classes XI and XII gave their informed permission. During free time in the classroom, a demographic information sheet and the Test Anxiety Inventory (TAI) were distributed. To promote candid answers, students were given

clear instructions and were assured that their answers would remain private and confidential. Under the researcher's guidance, the inventory was finished in around 15 to 20 minutes. Following data collection, the data were coded and imported into SPSS for statistical analysis using the independent samples t-test.

3.5 Statistical Analysis

An independent samples t-test was employed to compare test anxiety scores between male and female students using SPSS software.

IV. RESULTS

Table 4.1: Descriptive Statistics of Test Anxiety Scores

Gender	N	Mean	SD
Male	60	37.12	7.84
Female	60	42.85	8.25

Table 4.2: Independent Samples t-test Results

Variables	t	df	p-value (2-tailed)	Mean Difference
Male vs Female	-4.01	118	0.000**	-5.73

Note: ***p<0.01 indicates statistical significance.*

V. DISCUSSION AND CONCLUSION

5.1 Analyses of Research Findings

The present study aimed to investigate gender differences in test anxiety among senior secondary school students. Based on the analysis, the results revealed a statistically significant difference in test anxiety scores between male and female students. As shown in Table 4.1, female students (M = 42.85, SD = 8.25) reported notably higher levels of test anxiety compared to their male counterparts (M = 37.12, SD = 7.84). The mean difference of 5.73 points is both statistically and educationally meaningful.

The independent samples t-test (Table 4.2) confirmed the significance of this difference, with a t-value of -4.01, degrees of freedom (df) = 118, and a p-value of 0.000 ($p < 0.01$). This strongly supports the hypothesis that gender plays a significant role in influencing students' test anxiety levels. The higher scores among females align with previous studies suggesting that adolescent girls are often more self-critical and emotionally reactive in evaluative academic situations than boys.

Numerous psychological and educational variables, such as gender-specific expectations, academic demands, emotional sensitivity, and internalised fears of failure, especially among high-achieving female students, may be responsible for these findings. Cultural standards could also be at play since females in Indian schools are frequently taught to place a high value on academic achievement, which makes exams more stressful.

All things considered, the findings support the notion that female students are more likely to suffer from test anxiety, highlighting the necessity of gender-sensitive instructional strategies.

5.2 Delimitations of the Study

1. The sample was limited to urban, English-medium schools, excluding rural or vernacular institutions.
2. Only two cities in Odisha were surveyed, limiting generalizability.
3. Self-report data may be prone to social desirability bias.

5.3 Implications of the Study

1. Gender-Sensitive Mental Health Interventions: The fact that test anxiety is substantially greater among female students points to the necessity of gender-responsive mental health initiatives in educational institutions. The particular emotional difficulties that female students encounter can be addressed with the use of stress-reduction strategies and customised counseling sessions (Dundas & Nygård, 2024; Putwain, 2007).

2. Curriculum and Pedagogical Adjustments: Teachers must think about using inclusive teaching strategies that reduce performance pressure and promote cooperative learning settings as opposed to competitive ones. Both genders may have less anxiety if formative evaluations and relaxation methods are used (Cassady & Johnson, 2002; Zeidner, 1998).

3. Parental and Teacher Awareness: The findings highlight the need to educate educators and parents about gender disparities in academic stress. They can identify early indicators of test anxiety and offer suitable intellectual and emotional assistance with the use of awareness programs (Deb et al., 2015; Misra & McKean, 2000).

4. Policy Formulation for Student Well-being: Using these findings, policymakers may create school health policies that require mental health education, frequent test anxiety screening, and the inclusion of stress management courses in the curriculum (Sarason, 1984).

5. Further Research and Program Evaluation: This study's findings of gender-based variations in test anxiety point to the urgent need for long-term, intervention-based research. Future research ought to assess how well anxiety-reduction initiatives work for a range of student demographics (Spielberger, 1980; Zeidner, 1998).

5.4 Recommendations for further Research

1. **Implement School-Based Anxiety Reduction Programs:** For female students who are more susceptible to test anxiety, schools should implement organised programs that emphasise stress management, mindfulness, and test-taking techniques (Dundas & Nygård, 2024; Putwain, 2007). These interventions must be culturally relevant, age-appropriate, and created in conjunction with mental health specialists.
2. **Incorporate Test Anxiety Screening in Academic Settings:** To detect high levels of test anxiety early on, educational institutions should regularly screen students and do psychological profiling of them (Cassady & Johnson, 2002). In addition to preventing emotional suffering and poor academic achievement, this can provide prompt help.
3. **Teacher Training on Emotional Intelligence and Gender Sensitivity:** According to Misra and McKean (2000), educators need to receive training on how to spot emotional distress symptoms and use emotionally intelligent teaching techniques. There should be a focus on lowering needless academic pressure and creating a welcoming environment for all students in the classroom.
4. **Broaden Research Across Regions and Educational Boards:** To improve the generalisability of the results, future research should replicate this study across a variety of curricular, linguistic, and geographic contexts, such as urban-rural divides and various educational boards (CBSE, ICSE, and State boards) (Deb et al., 2015; Dundas & Nygård, 2024).
5. **Explore Additional Psychological Variables:** To deepen understanding, subsequent studies should explore the interaction of test anxiety with other psychological variables like self-esteem, academic motivation, personality traits, and coping mechanisms (Sarason, 1984; Zeidner, 1998). Mixed-method approaches could provide richer, context-specific insights (Spielberger, 1980).

VI. ACKNOWLEDGEMENT

The researcher expresses gratitude to the principals, teachers, and students of the participating schools for their cooperation and special thanks to academic mentors and peers for their continuous support and encouragement during this research.

VII. CONFLICT OF INTEREST

The author declares no conflict of interest.

VIII. REFERENCES

[1] Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270–295. https://doi.org/10.1006/ceps.2001.1094
[2] Chapell, M. S., Blanding, Z. B., Silverstein, M. E., Takahashi, M., Newman, B., Gubi, A., & McCann, N. (2005). Test Anxiety and Academic Performance in Undergraduate and Graduate Students. *Journal of Educational Psychology*, 97(2), 268–274. https://doi.org/10.1037/0022-0663.97.2.268
[3] Deb, S., Chatterjee, P. & Walsh, K. (2010). Anxiety among high school students in India: Comparisons across gender, school type, social strata and perceptions of quality time with parents. *Australian Journal of Educational and Developmental Psychology*, 10,18-31.
[4] Deb, S., Strodl, E., & Sun, J. (2015). Academic stress, parental pressure, anxiety, and mental health among Indian high school students. *International Journal of Psychology and Behavioral Sciences*, 5(1), 26–34.
[5] Dundas, I., & Nygård, I. (2024). Mindfulness for test anxiety and negative self-evaluation in high school. *Current Psychology*, 43, 30027–30037. https://doi.org/10.1007/s12144-024-06557-6
[6] Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: attentional control theory. *Emotion (Washington, D.C.)*, 7(2), 336–353. https://doi.org/10.1037/1528-3542.7.2.336
[7] Johal, G. (2022). Academic pressure and anxiety in Indian school students: A psychological perspective. *International Journal of Applied Research*, 2 (1), 162-164.
[8] Lowe, P. A., Lee, S. W., Witteborg, K. M., Prichard, K. W., Luhr, M. E., Cullinan, C. M., Mildren, B. A., Raad, J. M., Cornelius, R. A., & Janik, M. (2008). The Test Anxiety Inventory for Children and Adolescents (TAICA): Examination of the psychometric properties of a new multidimensional measure of test anxiety among elementary and secondary school students. *Journal of Psychoeducational Assessment*, 26(3), 215–230. https://doi.org/10.1177/0734282907303760
[9] Malhotra, S., & Patra, B. N. (2014). Prevalence of child and adolescent psychiatric disorders in India: a systematic review and meta-analysis. *Child and Adolescent Psychiatry and Mental Health*, 8, 22. https://doi.org/10.1186/1753-2000-8-22
[10] Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41–51.
[11] Putwain D. W. (2007). Test anxiety in UK schoolchildren: prevalence and demographic patterns. *The British Journal of Educational Psychology*, 77, 579–593. https://doi.org/10.1348/000709906X161704\
[12] Rana, R. A., & Mahmood, N. (2010). The relationship between test anxiety and academic achievement. *Bulletin of Education and Research*, 32(2), 63–74.
[13] Sarason, I. G. (1984). Stress, anxiety, and cognitive interference: Reactions to tests. *Journal of Personality and Social Psychology*, 46(4), 929–938. https://doi.org/10.1037/0022-3514.46.4.929
[14] Song, J., Chang, L., & Zhou, R. (2021). Test anxiety impairs filtering ability in visual working memory: Evidence from event-related potentials. *Journal of Affective Disorders*, 292, 700–707. https://doi.org/10.1016/j.jad.2021.05.091
[15] Spielberger, C. D. (1980). *Test Anxiety Inventory*. Consulting Psychologists Press.
[16] Zeidner, M. (1998). *Test anxiety: The state of the art*. Springer.