

Examination Anxiety and Academic Performance of Higher Secondary Students in Koraput District, Odisha: A Convergent Mixed-Method Study

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Abstract

This study examined examination anxiety and its relationship with academic performance among higher secondary students of Vigyan International Higher Secondary School, Koraput District, Odisha. A convergent mixed-method design was used: quantitative data on anxiety (a self-constructed Examination Anxiety Scale) and academic records were collected from 60 students (Class XI and XII), while qualitative data were collected concurrently from 10 teachers through a structured interview schedule. The two strands were analysed separately, using Pearson's correlation, independent samples t-tests, and one-way ANOVA (SPSS) for the quantitative data and thematic analysis for the interviews, and merged at interpretation. Results showed that 76.7% of students reported moderate to high examination anxiety, and a significant negative correlation emerged between anxiety and academic performance ($r = -.67, p < .01$). Female students reported significantly higher anxiety than male students ($p = .002$), though male students scored marginally higher on academic performance ($p = .047$); Class XII students outperformed Class XI students ($p = .001$); and students from low-income households showed the highest anxiety and lowest performance among socio-economic groups ($p < .01$ for both). Teachers most frequently observed avoidance behaviour and academic decline linked to anxiety, and reported minimal institutional counselling capacity. The findings position examination anxiety as a systemic barrier to equitable outcomes in under-resourced tribal and rural districts, pointing to a need for school-based emotional support consistent with the National Education Policy 2020's holistic development agenda.

Keywords: examination anxiety, academic performance, higher secondary students, mixed-methods study, tribal education, koraput district

Introduction

Examinations occupy a central place in Indian secondary education, functioning as gateways to higher study, scholarships, and career pathways. For higher secondary students, board and

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school examinations are high-stakes events that shape not only academic trajectories but also self-worth and family expectations. Alongside their evaluative function, examinations generate a well-documented psychological response known as examination anxiety, an emotional, cognitive, and physiological reaction to the anticipation of evaluative failure that intrudes on attention, working memory, and retrieval during testing (Sarason, 1984). Early theorists distinguished two components of this response, a cognitive component termed worry and a physiological component termed emotionality, with worry consistently the stronger predictor of impaired performance (Liebert & Morris, 1967). A large-scale meta-analysis of over 500 studies confirmed that test anxiety reliably predicts poorer academic outcomes and varies by gender and grade level (Hembree, 1988).

India's high-stakes, examination-centric schooling system has drawn growing research attention to how this anxiety plays out among adolescents. What remains comparatively unexamined is how the anxiety-performance relationship unfolds in rural, tribal-majority districts, where students contend with infrastructural gaps, first-generation learner status, and limited access to school counselling. Koraput District in southern Odisha is one such setting: tribal households there continue to report markedly lower literacy and higher school dropout than the state average (Bindhani, 2021). The National Education Policy 2020 foregrounds student well-being as part of holistic school education (Ministry of Human Resource Development, 2020), and the Ministry of Education's MANODARPAN initiative was established specifically to extend psychosocial support to students nationwide (Ministry of Education, 2020); yet little empirical data exists on how examination anxiety functions among students in districts like Koraput, where these provisions are still being operationalised. This study addresses that gap.

Review of Related Literature

Theoretical Perspectives on Examination Anxiety

Test anxiety research since Sarason's (1984) formulation has treated the construct as multidimensional. Liebert and Morris (1967) first distinguished a cognitive component, worry, from a physiological component, emotionality, a distinction later validated across hundreds of studies. Hembree's (1988) meta-analysis of 562 studies confirmed that anxiety correlates inversely with self-esteem and academic performance, and that ability, gender, and grade level all condition how strongly anxiety is experienced.

Examination Anxiety and Academic Performance: Empirical Evidence

In the Indian context, Deb, Strodl, and Sun (2015) surveyed high school students in Kolkata and found examination-related anxiety closely tied to parental pressure and psychiatric distress. More recent work on high-school and graduating students has examined anxiety alongside coping strategies, underscoring that the strength of the anxiety-performance link is not uniform and may depend on the coping resources available to students (Gaur & Gautam, 2025). At a cross-national level, King, Cai, and Elliot (2024), analysing PISA data from 51 countries, found that national income inequality is associated with both heightened test anxiety and lower achievement, situating the anxiety-performance relationship within broader structural conditions rather than treating it as a purely individual trait.

Gender and Examination Anxiety

Findings on gender are mixed. Hembree's (1988) meta-analysis and Deb et al. (2015) both associate female students with higher anxiety, consistent with the pattern reported in many Indian secondary-school studies. However, Deb, Chatterjee, and Walsh (2010), surveying 460 Kolkata adolescents, found the reverse: boys reported significantly higher anxiety than girls, with anxiety also varying by school medium and social strata. This inconsistency suggests that gender differences in examination anxiety are shaped by local schooling and cultural context rather than being a fixed effect.

Socio-Economic Status and Examination Anxiety

Socio-economic disadvantage has been repeatedly linked to heightened academic anxiety. King et al. (2024) demonstrated this at the national level, and Deb et al. (2010) found anxiety varying significantly by social strata within a single Indian city. Taken together, this literature suggests that economic constraint operates on examination anxiety both through material factors, such as access to tutoring and study resources, and through the psychological weight examinations carry as a route to upward mobility.

Examination Anxiety in Rural and Tribal Contexts of India

Research specific to Koraput's tribal population has focused primarily on access and attainment rather than psychological well-being. Bindhani (2021) documented substantially lower literacy among Koraput's tribal households compared with the state average, attributing school dropout and absenteeism to economic hardship, household labour demands, and language barriers between home and school. These structural disadvantages plausibly compound the emotional burden of high-stakes examinations, yet, to date, little published research has directly measured examination anxiety among Koraput's higher secondary students or related it to their academic outcomes.

Teachers and School-Based Support

Deb and Deb (2025) reviewed the mental health challenges facing Indian school students, including academic-stress-related anxiety, and concluded that mental health support facilities are missing in most Indian schools, arguing for school-based family counselling as a corrective. This gap is precisely what the Ministry of Education's MANODARPAN initiative was designed to address at the national level (Ministry of Education, 2020), though its reach into individual rural schools remains under-documented.

Summary and Research Gap

Across this literature, examination anxiety is consistently linked to poorer academic performance, but its distribution by gender and socio-economic status varies by setting, and almost no published work has examined it among higher secondary students in a tribal-majority district such as Koraput, or combined student-reported anxiety data with teachers' classroom-level observations. The present study addresses this gap using a convergent mixed-methods design.

Objectives of the Study

1. To assess the level of examination anxiety among higher secondary students in Koraput District.
2. To examine the relationship between examination anxiety and academic performance among these students.
3. To compare examination anxiety and academic performance across gender and class (XI/XII).
4. To identify socio-economic differences in examination anxiety and academic performance.
5. To explore, through teachers' first-hand observations, how examination anxiety manifests in the classroom and what institutional support exists for it.

Hypotheses of the Study

- H1: Examination anxiety is significantly and negatively related to academic performance.
- H2: Female students report significantly higher examination anxiety than male students.
- H3: Academic performance differs significantly between Class XI and Class XII students.
- H4: Examination anxiety and academic performance differ significantly across socio-economic groups.

Methodology

A convergent design was adopted (Creswell & Plano Clark, 2018), in which quantitative and qualitative data are collected during the same timeframe, analysed independently, and merged at the interpretation stage to develop a more complete understanding of the research problem. The quantitative strand followed a descriptive correlational design; the qualitative strand used structured teacher interviews to provide explanatory, classroom-level context for the statistical findings. The study was conducted at Vigyan International Higher Secondary School, Koraput District, Odisha. Using purposive sampling, 70 participants were selected: 60 students (30 from Class XI, 30 from Class XII) for the quantitative strand and 10 teachers for the qualitative strand. Student data were collected using a self-constructed Examination Anxiety Scale, a demographic questionnaire, and recent school academic records; teacher data were collected using a structured interview schedule covering observed anxiety symptoms, institutional support, and recommendations. Independent variables were anxiety level, gender, class, and socio-economic background; the dependent variable was academic performance (percentage marks in recent examinations). Quantitative data were analysed using descriptive statistics, Pearson's correlation, independent samples t-tests, and one-way ANOVA in SPSS. Teacher interview transcripts were analysed thematically to identify recurring patterns in observed student behaviour and institutional response; the two data strands were then compared and integrated in the Discussion.

Results

Of the 60 student participants, 26 were male and 34 were female (Table 1); nearly half came from middle-income households and 38.3% from low-income households (Table 2). Descriptive statistics for the two central variables are given in Table 3.

Table 1: Age and Gender Distribution of Student Participants (N = 60)

Age Group	Male	Female	Total
15–16 years	11	13	24
17–18 years	9	11	20
19 years & above	6	10	16
Total	26	34	60

Table 2: Socio-Economic Background of Students (N = 60)

Socio-Economic Background	No. of Students	Percentage
Low-income	23	38.3%
Middle-income	29	48.3%
High-income	8	13.4%
Total	60	100%

Table 3: Descriptive Statistics of Examination Anxiety and Academic Performance

Variable	Mean (SD)	Range
Examination Anxiety Score	62.5 (12.3)	38–89
Academic Performance (%)	65.4 (10.8)	42–88

Overall, 76.7% of students reported moderate to high examination anxiety (45.0% moderate, 31.7% high; Figure 1). Supporting H1, a Pearson correlation revealed a significant negative relationship between examination anxiety and academic performance, $r = -.67$, $p < .01$ (Table 4, Figure 2).

Figure 1: Distribution of Examination Anxiety Levels among Students (N = 60)

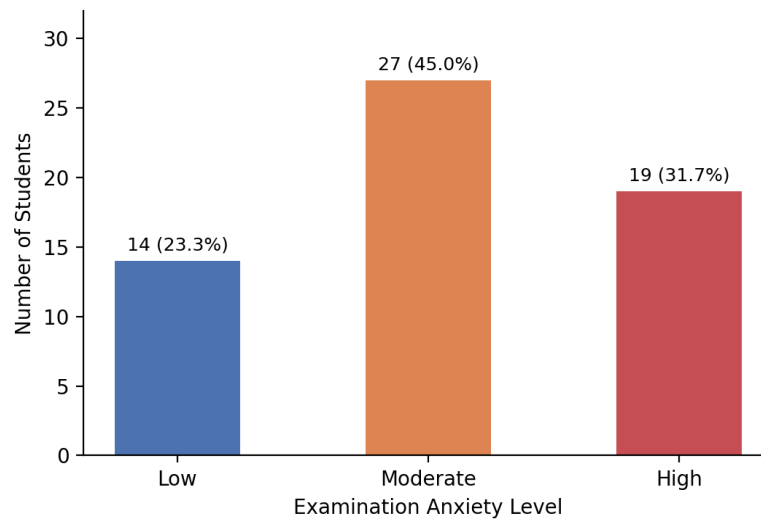
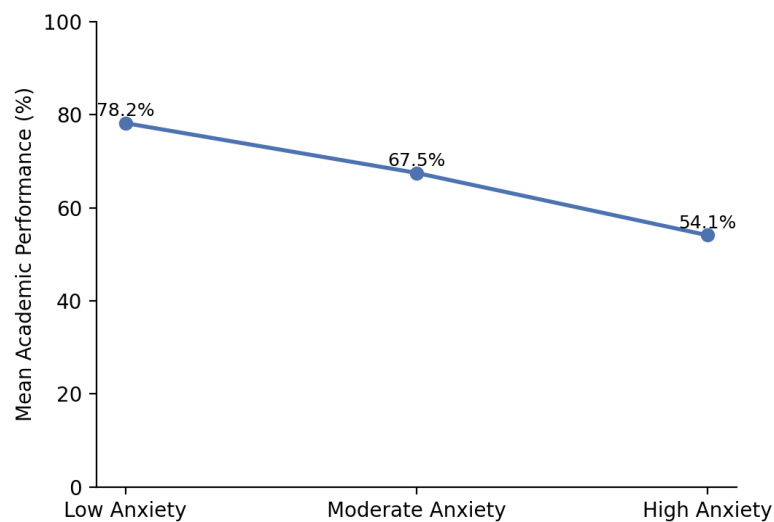


Table 4: Mean Academic Performance by Examination Anxiety Level

Anxiety Level	Mean Academic Score (%)	N
Low	78.2	14
Moderate	67.5	27
High	54.1	19

Figure 2: Mean Academic Performance (%) across Examination Anxiety Levels



Supporting H2, an independent samples t-test showed that female students ($M = 65.8$, $SD = 12.7$) reported significantly higher examination anxiety than male students ($M = 58.2$, $SD = 11.5$), $t = 3.14$, $p = .002$ (Table 5). On academic performance, male students ($M = 67.4\%$, $SD = 10.2$) scored marginally but significantly higher than female students ($M = 63.5\%$, $SD =$

11.2), $t = 2.01$, $p = .047$ (Table 6), indicating that the gender gap in anxiety was not matched by an equally large gap in outcomes.

Table 5: Independent Samples t-test - Examination Anxiety by Gender

Gender	Mean	SD	t (p)
Male (n = 26)	58.2	11.5	3.14 (p = .002)
Female (n = 34)	65.8	12.7	

Table 6: Independent Samples t-test - Academic Performance by Gender

Gender	Mean (%)	SD	t (p)
Male (n = 26)	67.4	10.2	2.01 (p = .047)
Female (n = 34)	63.5	11.2	

Supporting H3, Class XII students ($M = 69.6\%$, $SD = 10.5$) scored significantly higher than Class XI students ($M = 61.2\%$, $SD = 9.8$), $t = 3.56$, $p = .001$ (Table 7); correspondingly, a larger share of Class XI students fell in the high-anxiety category (13 of 30) than Class XII students (6 of 30) in the categorical anxiety-by-class breakdown.

Table 7: Independent Samples t-test - Academic Performance by Class

Class	Mean (%)	SD	t (p)
Class XI (n = 30)	61.2	9.8	3.56 (p = .001)
Class XII (n = 30)	69.6	10.5	

Supporting H4, one-way ANOVA showed significant differences in both anxiety and academic performance across socio-economic groups. Students from low-income households reported the highest mean anxiety (68.4) and the lowest mean academic performance (59.2%), compared with middle-income (61.0 anxiety; 66.3% performance) and high-income students (57.3 anxiety; 72.1% performance); both differences were statistically significant, $F = 5.92$, $p = .004$ for anxiety and $F = 6.48$, $p = .002$ for performance (Table 8).

Table 8: One-Way ANOVA - Examination Anxiety and Academic Performance by Socio-Economic Status

Variable	SES Group	Mean	F (p)
Anxiety Score	Low / Middle / High income	68.4 / 61.0 / 57.3	5.92 (p = .004)
Academic Performance (%)	Low / Middle / High income	59.2 / 66.3 / 72.1	6.48 (p = .002)

Thematic analysis of the ten teacher interviews identified behavioural changes such as restlessness and crying as the most frequently reported sign of student anxiety (85%), followed by avoidance behaviour such as absenteeism before examinations (75%) and a noticeable academic decline linked to anxiety (70%). Only 40% of teachers reported that anxious students sought help or counselling, and teachers repeatedly noted the absence of trained counsellors and structured pre-examination support at the school (Table 9).

Table 9: Teacher-Reported Observations of Student Examination Anxiety (N = 10)

Observation (Teachers, n = 10)	% Reporting
Behavioural changes (restlessness, crying)	85%
Avoidance behaviour (absenteeism, excuses)	75%
Noticeable academic decline	70%
Physical symptoms (headache, nausea)	65%
Students seeking help/counselling	40%

Discussion

All four hypotheses were supported. The negative correlation between examination anxiety and academic performance ($r = -.67$) is consistent with the broader literature linking anxiety to poorer academic outcomes (Sarason, 1984; Hembree, 1988; Deb et al., 2015). The gender finding, with female students reporting higher anxiety, aligns with Hembree (1988) and Deb et al. (2015), but contrasts with Deb, Chatterjee, and Walsh (2010), who found the opposite pattern in a different Kolkata sample. Read together with the present study's finding that male students scored only marginally higher academically despite reporting markedly lower anxiety, this suggests gender differences in examination anxiety are context-dependent and do not translate mechanically into performance gaps.

The clearest and most consistent pattern in this study is socio-economic: students from low-income households reported the highest anxiety and the lowest performance, echoing King, Cai, and Elliot's (2024) cross-national finding that economic disadvantage is associated with both heightened test anxiety and lower achievement. Class XI students, earlier in the two-year higher secondary cycle and with less exposure to board-level assessment, showed a heavier concentration of high anxiety than their Class XII counterparts. Set against Bindhani's (2021) documentation of the structural disadvantages facing Koraput's tribal households, these findings suggest that examination anxiety in this district cannot be separated from the wider conditions of rural and tribal schooling.

The qualitative strand reinforces this picture: teachers observed anxiety expressed behaviourally and physically in the classroom but described their school as under-equipped, with only 40% of anxious students reportedly seeking help. This converges with Deb and Deb's (2025) conclusion that mental health support facilities are missing from most Indian schools, and indicates that translating national provisions such as MANODARPAN (Ministry of

Education, 2020) and NEP 2020's holistic-education agenda (Ministry of Human Resource Development, 2020) into practice in districts like Koraput remains an unmet need.

Conclusion

Examination anxiety is prevalent and consequential among higher secondary students in Koraput District: three in four students reported moderate to high anxiety, and higher anxiety was significantly associated with lower academic performance, more strongly so among female students, Class XI students, and students from low-income households. Teachers observed these effects directly but described their school as under-equipped to respond. Strengthening school-based counselling, training teachers to recognise early signs of examination anxiety, and extending targeted support to economically disadvantaged and first-generation learners would address a barrier to equitable outcomes in this and comparable tribal districts. The study is limited by its single-school sample and self-report measures; future research should extend to multiple schools across Koraput and neighbouring tribal districts, using longitudinal designs to track anxiety over an academic cycle.

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