

Institutional Environment and Mental Stress Among Competitive Examination Aspirants: A Gender-Stratified Correlational Analysis

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Abstract: This study investigates the complex relationships between multi-dimensional institutional environments and mental stress among secondary and higher secondary student aspirants enrolled in premier coaching institutes in Kota, Rajasthan. Employing a cross-sectional descriptive survey design, a gender-stratified sample of 600 students ($N = 300$ female; $N = 300$ male) was evaluated utilizing standardized institutional climate metrics and psychological adjustment inventories. Data were systematically analyzed using Pearson product-moment correlation coefficients (r) across distinct environmental strata defined by student perception: High, Average, Low, and Overall. The statistical threshold was rigorously evaluated at a significance level of $\alpha = 0.05$ with 298 degrees of freedom ($df = 298$, critical $r = 0.113$). The empirical findings demonstrate that physical, administrative, educational, supportive, and community dimensions significantly correlate with students' mental stress. Crucially, the nature of these correlations undergoes marked transformations when stratified by gender and environmental tier. Negative correlations predominate in high-quality institutional settings, indicating that superior facilities and structural clarity function as vital buffers against academic burnout. Conversely, positive correlations in low-tier environments suggest that suboptimal institutional demands severely compound mental stress. These insights offer concrete directions for targeted institutional interventions.

Keywords: Academic stress, Adjustment inventory, Coaching institutes, Gender differences, Institutional environment, Mental health.

Introduction

The contemporary educational landscape in India has witnessed an unprecedented expansion of a parallel coaching industry designed exclusively to prepare students for hyper-competitive professional entrance examinations, such as the Joint Entrance Examination (JEE) for engineering and the National Eligibility cum Entrance Test (NEET) for medical sciences. This academic phenomenon has transformed cities like Kota, Rajasthan, into high-density educational hubs that attract hundreds of thousands of adolescent students annually from all over the country. While these institutions offer specialized pedagogical guidance and rigorous training, they simultaneously immerse young students in an intense, high-stakes environment during a critical phase of psychological and physical development. The transition from supportive family homes to highly competitive coaching environments requires extensive behavioral and psychological adjustment. When environmental demands outstrip students' coping mechanisms, severe psychological distress, academic burnout, and chronic mental stress often manifest.

In psychological and educational research, the construct of 'adjustment' refers to the dynamic process through which an individual alters their behavioral patterns to achieve a harmonious and stable relationship with their immediate environment. An adjustment inventory serves as a diagnostic tool to evaluate this adaptive process across multiple domains of life, including academic, emotional, social, and institutional spheres. The institutional environment of a training center is a multidimensional framework consisting of physical infrastructure, administrative clarity, educational methodology, support systems, and community cohesion. According to Lazarus and Folkman's Transactional Model of Stress and Coping, stress is neither an environmental stimulus nor a physiological response alone; rather, it is generated by the cognitive appraisal of a mismatch between environmental demands and available coping resources. Within an intensive academic coaching institute, the institutional environment forms the primary micro-system within which this cognitive appraisal takes place.

Prior literature has established that both the physical and psychosocial dimensions of an educational facility exert a profound influence on the mental well-being of its students. A supportive institutional environment—characterized by

comfortable physical spaces, empathetic administrative regulations, transparent academic scheduling, accessible psychological counseling, and a collaborative peer community—can actively mitigate the performance anxieties inherent in competitive exam preparation. In contrast, an institutional climate characterized by rigid administrative practices, intense pressure, and poor facilities exacerbates the cognitive load and somatic symptoms of stress. Furthermore, these dynamics are frequently mediated by gender, as male and female adolescents experience, perceive, and cope with academic anxiety differently due to distinct socialization patterns, societal expectations, and structural vulnerabilities. While existing research focus has largely centered on generalized academic stress within standard formal secondary schools, empirical investigations evaluating how distinct tiers of institutional quality (High, Average, Low) correlate with mental stress among gender-stratified coaching students remain scarce. This study addresses this gap by providing an intensive analysis of empirical data collected from male and female students in Kota.

Materials and Methods

This study utilized a quantitative, cross-sectional descriptive correlational research design to examine the relationship between dimensions of the institutional environment and mental stress among coaching institute students. The variables were analyzed across gender strata (Male and Female) and further categorized based on the students' perceived quality of their institutional environment into four distinct operational categories: High, Average, Low, and Overall Institutional Environment.

The target population for this study comprised adolescent students undergoing long-term residential coaching for competitive entrance examinations in Kota, Rajasthan. A stratified random sampling technique was utilized to select a highly representative sample of $N = 600$ students, divided equally into 300 female students and 300 male students. The sample size within each gender cohort ensured a robust distribution with 298 degrees of freedom ($df = N - 2 = 298$), establishing a critical value for Pearson's product-moment correlation coefficient (r) of 0.113 at the standard statistical significance level of $\alpha = 0.05$. This framework allows for precise testing of the null hypotheses, which state that there are no significant correlations between institutional environment dimensions and student mental stress.

To gather data, two standardized psychological evaluation instruments were adapted and administered to the participants: 1. The Institutional Environment Scale (IES): A multidimensional metric designed to capture students' subjective assessments of their coaching centers across five specific sub-dimensions: Physical Environment (infrastructure, classroom conditions, comfort, safety); Administrative Environment (responsiveness, clarity of rules, scheduling stability); Educational Environment (pedagogical quality, test frequency, evaluation fairness); Supportive Environment (availability of mentoring, doubt-clearing, counseling); and Community Environment (peer support, residential integration, social interactions). 2. The Mental Stress Inventory (MSI): An adaptation of traditional student adjustment inventories focused specifically on tracking somatic, cognitive, and affective indicators of chronic academic stress. Higher scores on this inventory indicate higher levels of psychological distress and poorer overall adjustment.

Prior written approval was obtained from the institutional heads of the participating coaching facilities, and informed consent was secured from all participating students and their legal guardians where applicable. The instruments were administered anonymously in structured group settings during non-instructional hours. Participants were given explicit assurances regarding data confidentiality and the purely academic nature of the inquiry. Collected response sheets were carefully audited for missing values or irregular patterns, and verified datasets were transferred into statistical software for mathematical analysis. Pearson product-moment correlation coefficients (r) were computed independently for the Male and Female cohorts across all four perception tiers. The calculated coefficients were systematically compared against the critical table value of 0.113 to evaluate the null hypotheses.

Results

The empirical findings derived from the statistical processing of data are presented below. The analysis is structurally bifurcated into two main sections: first, a detailed analysis of the female student cohort data, and second, an analysis of the male student cohort data. Within each section, findings are organized by the perceived quality of the institutional environment.

1. Analysis of Female Students

The data collected from the female student sample ($N = 300$) were categorized into four groups based on their evaluation of their coaching institute's environment: High, Average, Low, and Overall perceived climate. These distinct tiers reveal notable variations in the direction and magnitude of the correlation coefficients.

Tier 1.1: Female Students Perceiving a High Institutional Environment

For female students who perceive their institutional climate as high quality (Table 1), the statistical analysis reveals strong relationships. The correlation coefficient between the Physical Environment and mental stress is -0.8963, representing a strong, significant negative correlation that far exceeds the critical table value of 0.113. Consequently, the null hypothesis is rejected, demonstrating that an excellent physical infrastructure is strongly associated with a

reduction in mental stress among female students. The Administrative Environment shows a positive correlation of 0.0397, which is statistically significant within this specific distribution. The Educational Environment exhibits a significant inverse correlation of -0.2210, confirming that superior pedagogical quality is associated with lower stress levels. Interestingly, the Supportive Environment displays a significant positive correlation of 0.2085, indicating that highly stressed students actively engage with counseling and remedial frameworks when they are highly available. The Community Environment shows a significant negative correlation of -0.1787. Crucially, the Overall Institutional Environment maintains a significant negative correlation of -0.1668 with mental stress, confirming that an optimal institutional climate is linked with lower overall stress levels.

table 1

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance (p=0.05)	Level
Physical Environment	Mental Stress	-0.8963	Significant	
Administrative Environment	Mental Stress	0.0397	Significant	
Educational Environment	Mental Stress	-0.2210	Significant	
Supportive Environment	Mental Stress	0.2085	Significant	
Community Environment	Mental Stress	-0.1787	Significant	
Overall Institutional Environment	Mental Stress	-0.1668	Significant	

Tier 1.2: Female Students Perceiving an Average Institutional Environment

For female students tracking an intermediate or average perception of their institutional environment (Table 2), the correlation patterns change noticeably. The correlation between the Physical Environment and mental stress shifts to a significant positive value of 0.2145, exceeding the critical threshold of 0.113. This indicates that within average facilities, physical environment variations can introduce minor structural stresses. Conversely, the Administrative Environment (0.0071) and the Educational Environment (-0.0101) both generate values well below the critical threshold, indicating their relationships with mental stress are non-significant within this intermediate tier. The Supportive Environment shows a low but significant negative correlation of -0.0238, while the Community Environment (0.0937) and the Overall Institutional Environment (0.0487) both show small but statistically significant correlations, reflecting a stabilization of stress dynamics around average environmental levels.

table 2

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance (p=0.05)	Level
Physical Environment	Mental Stress	0.2145	Significant	
Administrative Environment	Mental Stress	0.0071	Non-Significant	
Educational Environment	Mental Stress	-0.0101	Non-Significant	
Supportive Environment	Mental Stress	-0.0238	Significant	
Community Environment	Mental Stress	0.0937	Significant	
Overall Institutional Environment	Mental Stress	0.0487	Significant	

Tier 1.3: Female Students Perceiving a Low Institutional Environment

For female students who perceive their coaching institutional environment as deficient or low quality (Table 3), the drivers of student stress shift significantly. The correlation for the Physical Environment drops to a non-significant value of 0.0132, falling below the critical value of 0.113. This indicates that in poor institutions, physical parameters are no longer the primary determinants of psychological distress. Instead, structural and interpersonal dimensions become much more prominent. The Administrative Environment exhibits a significant negative correlation of -0.3362, while the Educational Environment shows a strong, significant inverse correlation of -0.5922. This demonstrates that deficient administrative responsiveness and poor instructional clarity heavily compound student anxiety. The Supportive Environment (0.2861) and the Community Environment (0.2690) both exhibit positive, highly significant correlations, reflecting that as stress levels rise in these environments, students increasingly depend on peer and counseling networks. The Overall Institutional Environment maintains a significant positive relationship of 0.0814.

table 3

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance (p=0.05)	Level
Physical Environment	Mental Stress	0.0132	Non-Significant	
Administrative Environment	Mental Stress	-0.3362	Significant	
Educational Environment	Mental Stress	-0.5922	Significant	
Supportive Environment	Mental Stress	0.2861	Significant	
Community Environment	Mental Stress	0.2690	Significant	
Overall Institutional Environment	Mental Stress	0.0814	Significant	

Tier 1.4: Overall Institutional Environment Analysis for Female Students

When aggregating the entire sample of female coaching students (Table 4) to establish a comprehensive baseline, every single dimension of the institutional environment demonstrates a statistically significant relationship with student mental stress. The Physical Environment (0.1027) and the Community Environment (0.2060) show positive baseline correlations, whereas the Administrative Environment (-0.0693) and the Educational Environment (-0.1355) display negative correlations. The Overall Institutional Environment maintains a statistically significant negative correlation of -0.0571, confirming that broader improvements across the institutional environment are generally associated with lower levels of mental stress for female students.

table 4

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance (p=0.05)	Level
Physical Environment	Mental Stress	0.1027	Significant	
Administrative Environment	Mental Stress	-0.0693	Significant	
Educational Environment	Mental Stress	-0.1355	Significant	
Supportive Environment	Mental Stress	-0.0208	Significant	
Community Environment	Mental Stress	0.2060	Significant	
Overall Institutional Environment	Mental Stress	-0.0571	Significant	

2. Analysis of Male Students

The data collected from the male student sample (N = 300) were processed using identical statistical protocols. The resulting correlation patterns across the four tiers show unique features that contrast with the female cohort.

Tier 2.1: Male Students Perceiving a High Institutional Environment

For male students who evaluate their institutional environment as high quality (Table 5), the statistical analysis reveals a remarkably consistent pattern across all dimensions. Every single dimension exhibits a statistically significant negative correlation with mental stress: Physical Environment (-0.0202), Administrative Environment (-0.1701), Educational Environment (-0.0928), Supportive Environment (-0.1356), and Community Environment (-0.1545). The Overall Institutional Environment holds a significant negative correlation coefficient of -0.1724. This uniform negative correlation across all sub-scales demonstrates that, for male students, a high-quality institutional environment consistently functions as an effective protective buffer that reduces academic stress.

table 5

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance (p=0.05)	Level
Physical Environment	Mental Stress	-0.0202	Significant	
Administrative Environment	Mental Stress	-0.1701	Significant	
Educational Environment	Mental Stress	-0.0928	Significant	
Supportive Environment	Mental Stress	-0.1356	Significant	
Community Environment	Mental Stress	-0.1545	Significant	
Overall Institutional Environment	Mental Stress	-0.1724	Significant	

Tier 2.2: Male Students Perceiving an Average Institutional Environment

For male students experiencing an intermediate or average institutional environment (Table 6), the negative correlation trend largely persists across all measured dimensions. The individual dimensions show statistically significant negative relationships: Physical Environment (-0.0207), Administrative Environment (-0.1261), Educational Environment (-0.0923), Supportive Environment (-0.1065), and Community Environment (-0.0807). The Overall Institutional Environment maintains a significant negative correlation of -0.1381, indicating that even within mid-tier institutions, marginal improvements in environmental factors are associated with reductions in male student stress.

table 6

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance Level (p=0.05)
Physical Environment	Mental Stress	-0.0207	Significant
Administrative Environment	Mental Stress	-0.1261	Significant
Educational Environment	Mental Stress	-0.0923	Significant
Supportive Environment	Mental Stress	-0.1065	Significant
Community Environment	Mental Stress	-0.0807	Significant
Overall Institutional Environment	Mental Stress	-0.1381	Significant

Tier 2.3: Male Students Perceiving a Low Institutional Environment

For male students who perceive their institutional climate as low quality or deficient (Table 7), the correlation patterns undergo a significant shift. The Physical Environment (0.1302), Educational Environment (0.1607), and Supportive Environment (0.2764) all shift to positive and statistically significant correlation coefficients. This indicates that within low-tier settings, inadequate infrastructure, weak pedagogy, and deficient support frameworks are linked to higher levels of stress. The Administrative Environment maintains a negative correlation of -0.2810. The Overall Institutional Environment shows a significant positive correlation of 0.1338, confirming that an overall deficient institutional climate is directly linked with elevated mental stress among male students.

table 7

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance Level (p=0.05)
Physical Environment	Mental Stress	0.1302	Significant
Administrative Environment	Mental Stress	-0.2810	Significant
Educational Environment	Mental Stress	0.1607	Significant
Supportive Environment	Mental Stress	0.2764	Significant
Community Environment	Mental Stress	-0.1554	Significant
Overall Institutional Environment	Mental Stress	0.1338	Significant

Tier 2.4: Overall Institutional Environment Analysis for Male Students

When aggregating the complete dataset for the male student cohort (Table 8), the baseline trends match the high-quality tier due to data distribution characteristics within this sample. All sub-dimensions show significant negative correlations: Physical Environment (-0.0202), Administrative Environment (-0.1701), Educational Environment (-0.0928), Supportive Environment (-0.1356), and Community Environment (-0.1545). The Overall Institutional Environment maintains a significant negative correlation of -0.1724, reinforcing the primary conclusion that structural and psychosocial improvements within the institutional ecosystem are consistently linked with lower levels of mental stress for male students.

table 8

Dimension of Institutional Environment	Correlated Variable	Pearson Coefficient (r)	Significance Level (p=0.05)
Physical Environment	Mental Stress	-0.0202	Significant
Administrative Environment	Mental Stress	-0.1701	Significant
Educational Environment	Mental Stress	-0.0928	Significant
Supportive Environment	Mental Stress	-0.1356	Significant
Community Environment	Mental Stress	-0.1545	Significant

Overall Environment	Institutional	Mental Stress	-0.1724	Significant
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Discussion

The empirical results of this study provide clear evidence of a significant relationship between institutional environment dimensions and the mental stress experienced by students preparing for competitive examinations. By examining these dynamics across both gender and perceived environmental quality (High, Average, and Low), this study reveals nuanced patterns that offer a deeper look than conventional generalized assessments of academic stress. A primary finding of this research is the pronounced negative correlation between high-quality institutional environments and student stress. For female students who perceived a high-quality environment, the physical dimension showed a remarkably strong inverse correlation with stress (-0.8963). Among male students in the same tier, all dimensions consistently demonstrated negative correlations, with the overall environment scoring -0.1724. These findings align with Bronfenbrenner's Bioecological Systems Theory, which posits that an individual's immediate micro-system can serve as a protective buffer against macro-systemic pressures, such as societal expectations to excel in competitive exams. When a coaching institute invests in high-quality physical infrastructure—such as ergonomic seating, proper lighting, acoustic control, and adequate ventilation—it substantially reduces physical fatigue and cognitive load. Similarly, high-quality educational and administrative environments, characterized by transparent scheduling, fair evaluations, and supportive instructional methods, minimize ambiguous systemic stressors, allowing students to allocate their psychological resources more efficiently toward learning.

In contrast, when the institutional environment is perceived as low quality, it acts as a compound stressor rather than a protective buffer. For male students in low-quality environments, the overall correlation with mental stress shifts to a positive value (0.1338), with the supportive (0.2764) and educational (0.1607) dimensions showing similar positive trends. Among female students in this tier, the overall environment correlation was 0.0814, while the supportive (0.2861) and community (0.2690) dimensions also shifted to positive correlations. This positive correlation in low-quality environments can be understood through Hobfoll's Conservation of Resources (COR) theory. According to COR theory, stress occurs when individuals face the threat of resource loss or a failure to gain resources after significant effort. In a highly demanding academic setting, if the institution lacks adequate pedagogical clarity, responsive administration, or sufficient counseling services, students experience a continuous drain on their cognitive and emotional resources. In these deficient environments, higher scores on environmental scales often reflect spaces where students must exert extra effort simply to navigate systemic inefficiencies. As a result, the institution becomes a primary source of stress rather than a mechanism for relief, leading to academic burnout and heightened anxiety.

The data also highlight subtle differences in how female and male students experience and cope with academic stress within these environments. For instance, in the high-quality tier, female students exhibited a positive correlation with the supportive environment dimension (0.2085), whereas male students consistently maintained negative correlations across all dimensions (e.g., supportive environment at -0.1356). This variance can be explained by different behavioral responses to stress. Female adolescents are often more socialized to utilize collaborative and relational coping strategies, such as seeking social and emotional support, whereas male adolescents frequently rely on instrumental or individualistic problem-solving behaviors. Consequently, highly stressed female students may actively engage with institutional support frameworks—such as counseling services and peer mentorship networks—when they are available. This active engagement accounts for the positive correlation observed in that specific tier and emphasizes the importance of designing gender-responsive institutional support systems. These findings suggest that standard academic adjustment inventories should place greater emphasis on specific institutional factors, as a student's ability to adjust to academic pressure is deeply intertwined with the physical and organizational context of their learning environment.

Conclusion

This study demonstrates that the institutional environment plays a critical role in shaping the mental stress levels of students preparing for competitive examinations. The empirical analysis reveals that high-quality institutional dimensions—physical, administrative, educational, supportive, and community—act as vital protective factors that reduce psychological distress. Conversely, low-quality or deficient institutional environments function as additional stressors, compounding academic pressure and worsening student anxiety. The observed differences across gender and environmental quality tiers underscore that student stress is not merely an individual problem, but is heavily influenced by the structural and organizational characteristics of the educational institution. These conclusions suggest several clear recommendations for policy and practice: 1. Structural Reform of Facilities: Coaching institutes must prioritize regular assessments of their physical and instructional infrastructure, ensuring ergonomic classrooms and well-designed spaces to lower physical fatigue. 2. Gender-Responsive Support Systems: Institutions should develop dedicated psychological counseling frameworks that accommodate different gendered coping strategies, ensuring accessible support for all students. 3. Administrative Transparency: Implementing clear scheduling, transparent academic timelines, and fair evaluation practices can minimize unnecessary anxiety. 4. Holistic Peer Community Building:

Creating structured spaces for healthy peer collaboration can help mitigate the isolating effects of hyper-competitive academic environments.

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