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Psychological Well-Being and Academic Stress: A Study of Secondary School Students in Patna

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Abstract

Adolescence is a period marked by developmental transitions, academic challenges, and heightened psychological vulnerabilities. The present study investigated the relationship between psychological well-being and academic stress among secondary school students in Patna, with special focus on gender and rural–urban differences. A total of 111 students from classes IX and X were selected through random sampling. Standardized tools, including Ryff's Psychological Well-Being Scale and the Academic Stress Scale, were administered, supplemented by in-person and online interviews. Descriptive statistics (mean, SD, frequency, percentage) were computed, and independent samples t-tests were conducted to compare psychological distress and coping strategies between male and female students, as well as rural and urban groups. Findings revealed moderate levels of psychological distress overall, with female students reporting significantly higher distress than males ($p < 0.05$). Urban students also demonstrated higher distress scores, whereas rural students reported stronger social support and greater reliance on active coping strategies. These patterns suggest that both gender and socio-cultural context play crucial roles in shaping stress experiences. The implications extend to school mental health initiatives, which should incorporate gender-sensitive counseling and context-specific support programs. Moreover, the study highlights how perceived stigma in academic settings mirrors stigma processes observed in health psychology, including tuberculosis management, where social judgments impede help-seeking. Addressing stress through integrated school and community interventions may enhance resilience and well-being among adolescents in transitional educational environments.

Keywords: *Psychological well-being; Academic stress; Adolescents; Coping strategies; Gender differences*

Introduction

Psychological well-being has emerged as a vital area of concern in adolescent research, particularly in educational settings where academic expectations intersect with developmental challenges. Adolescence is characterized by identity formation, heightened sensitivity to peer and parental influences, and preparation for critical examinations, all of which contribute to stress. In the Indian context, the pressure of board examinations, coaching culture, and family expectations amplify these challenges, often leading to anxiety, depressive symptoms, and diminished well-being.

Academic stress, defined as the body's response to academic-related demands exceeding perceived coping capacity, is now recognized as a significant risk factor for psychological distress in students. Existing studies (Misra & McKean, 2000; Deb, Strodl & Sun, 2015) confirm that adolescents in highly competitive contexts report elevated stress levels, which adversely affect emotional health and performance. Theories such as Lazarus and Folkman's (1984) transactional model of stress and coping and Ryff's (1989) multidimensional framework of psychological well-being provide conceptual foundations to examine this interplay.

Despite a growing body of research, limited studies have explored psychological well-being and academic stress in Bihar, particularly in Patna, an emerging educational hub. Furthermore, differences based on gender and rural–urban backgrounds remain underexplored in this context. This study aims to fill this gap by investigating stress and coping patterns among secondary school students in Patna, employing quantitative tools and t-test analyses to highlight group differences. The findings are expected to inform school-based mental health practices and contribute to broader discussions on adolescent well-being in India.

Review of Literature

The relationship between psychological well-being and academic stress has been the subject of extensive empirical inquiry across diverse educational contexts. Early research by Lazarus and Folkman (1984) established that stress arises from a mismatch between environmental demands and an individual's coping resources, an idea particularly relevant to adolescents who face multiple academic and social challenges simultaneously. In India, Misra and McKean (2000) noted that academic stress is one of the most pervasive stressors among secondary and higher secondary school students, influencing not only scholastic performance but also psychological health. Stress among adolescents has been shown to manifest in symptoms such as anxiety, depression, irritability, and psychosomatic complaints (Deb, Strodl & Sun, 2015).

The construct of psychological well-being, as conceptualized by Ryff (1989), encompasses six core dimensions: autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance. Studies consistently demonstrate that high levels of academic stress inversely correlate with overall well-being, leading to diminished self-esteem and impaired emotional balance (Sinha & Singh, 2013). Secondary school students, particularly in highly competitive environments such as Indian urban centers, report higher levels of pressure due to board examinations, parental expectations, and peer competition (Verma & Gupta, 2016).

Comparative studies provide further insight into group-level differences. Research by Gadzella (1994) indicated that male and female students tend to report different stress experiences, with female students often reporting higher emotional distress while male students frequently demonstrate avoidant coping mechanisms. Similarly, urban students generally report greater exposure to academic pressure due to competitive environments, whereas rural students may face stress arising from lack of educational resources (Kumar & Ghosh, 2018).

Coping strategies also play a mediating role. Research by Carver, Scheier, and Weintraub (1989) introduced the COPE inventory, highlighting that active coping and problem-solving are associated with better well-being outcomes, while avoidance strategies exacerbate psychological distress. Indian studies, such as those by Deb and Walsh (2010), found that students with effective coping skills exhibit resilience against stress-induced psychological disturbances.

More recent empirical work suggests the need for localized studies focusing on specific regions, as cultural, socio-economic, and systemic differences influence both stress levels and coping outcomes. For instance, Patna, as an emerging educational hub in Eastern India, presents a unique combination of high parental aspirations, limited infrastructural resources, and transitional socio-economic conditions that warrant context-specific research. This study therefore seeks to examine psychological well-being and academic stress among secondary school students in Patna, with a focus on gender and residential background as comparative variables.

Methodology

Research Design

The present study employed a quantitative, empirical research design with a cross-sectional survey

approach, supplemented by in-person and online semi-structured interviews. This mixed-mode data collection was intended to maximize accessibility and ensure inclusivity across varying socio-economic and geographic contexts within Patna. The primary objective was to investigate the relationship between academic stress and psychological well-being, while also examining differences in stress levels and coping mechanisms between groups, namely male versus female students and rural versus urban students. A t-test analysis framework was adopted to compare mean scores across these groups to ascertain statistically significant differences in psychological distress and coping levels.

Participants

The sample comprised 111 secondary school students drawn from both government and private institutions in Patna. The sample size was determined based on feasibility, representativeness, and statistical adequacy for t-test analysis. The participants were selected using a random sampling technique to ensure that the sample was not biased towards any particular demographic subgroup. The inclusion criteria were: students enrolled in classes IX and X, residing in Patna district, and willing to provide informed consent (with parental permission where required). The sample included an approximately equal representation of male and female students, as well as students from both rural and urban residential backgrounds, thereby facilitating group comparisons. The age range of participants was between 14 to 16 years, a period identified as particularly sensitive to academic pressures due to the significance of board examinations.

Tools

Two standardized instruments were utilized for data collection in addition to a brief demographic questionnaire. The first tool was the Ryff's Psychological Well-Being Scale (PWB, 1989), adapted for adolescent populations, which measures six dimensions of well-being: autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance. This scale has demonstrated high reliability in Indian adolescent samples, with Cronbach's alpha values consistently above 0.80. The second instrument was the Academic Stress Scale (ASS) developed by Bisht (1987), which assesses stress arising from academic workload, examinations, parental expectations, and peer pressure. The reliability of this scale has been established across Indian contexts, making it appropriate for use in Patna.

Additionally, for the qualitative component, semi-structured interview guides were developed to elicit narratives about students' stress experiences, coping strategies, and perceived support systems. These interviews were conducted both in person at school premises and online through secure video-conferencing platforms to accommodate accessibility needs.

Procedure

Following institutional ethical clearance, permissions were obtained from school authorities for student participation. Informed consent was sought from parents, and assent was obtained from the students. Data collection was carried out in two phases. In the first phase, participants completed the Psychological Well-Being Scale and the Academic Stress Scale under researcher supervision, ensuring that clarifications could be provided if required. In the second phase, semi-structured interviews were conducted with a subset of students, balanced across gender and rural-urban categories, to gather deeper insights into coping strategies.

Randomization was ensured by generating a list of eligible students from selected schools and using random number tables to select participants. To mitigate any bias arising from voluntary participation, students were reassured of confidentiality and anonymity, and it was emphasized that there were no right or wrong answers. Data collection spanned over a period of six weeks, with approximately 15–20 students assessed per week. Both in-person and online modalities were adopted to ensure comprehensive coverage, especially considering infrastructural limitations in some rural areas.

Data Analysis

Quantitative data from the standardized instruments were coded and entered into SPSS for statistical analysis. Descriptive statistics, including means, standard deviations, and frequency distributions, were first computed to provide an overview of psychological well-being and academic stress levels. Inferential analysis was conducted using independent samples t-tests to compare mean scores of psychological well-being and academic stress between male and female students, as well as between rural and urban students. The level of significance was set at $p < 0.05$.

This design enabled the testing of hypotheses concerning group-level differences, for example, whether female students report higher levels of academic stress than their male counterparts, or whether urban students demonstrate different coping mechanisms compared to rural students. Effect sizes were also calculated to assess the magnitude of observed differences.

Qualitative data from interviews were transcribed and thematically analyzed. The thematic analysis involved coding student responses for recurring themes such as parental expectations, peer pressure, examination fear, and coping strategies like time management or avoidance. These qualitative insights were triangulated with quantitative findings to enrich the interpretation of results.

Ethical Considerations

Ethical standards were strictly adhered to throughout the research process. Confidentiality of participant information was maintained by anonymizing data during analysis and reporting. Participation was voluntary, and students were informed of their right to withdraw at any stage without penalty. Given the sensitivity of psychological issues, counseling support was made available in collaboration with school authorities for any student who reported severe distress during the study.

Limitations

Although the study employed a robust methodology, certain limitations were acknowledged. The cross-sectional design restricts the ability to draw causal inferences between stress and well-being. The reliance on self-report measures introduces the possibility of response biases. Furthermore, while random sampling was employed, the sample size of 111 may limit the generalizability of findings to the wider adolescent population of Patna. Nevertheless, the study provides valuable empirical insights into a critical developmental issue within a specific socio-cultural context.

Results and Discussion

The present section provides a detailed account of the findings obtained from the study on psychological well-being and academic stress among secondary school students in Patna. Results are presented in sequential order, beginning with the demographic distribution of participants, followed by descriptive statistics of psychological and psychosocial variables, group comparisons across gender and residential background, and finally independent samples t-test results. After each table, interpretive commentary is offered, linking the results to existing psychological frameworks and empirical literature.

Demographic Profile of Participants

Table 1. Demographic Profile of Participants (N = 111)

Variable	Category	Frequency (n)	Percentage (%)
Age	14 years	37	33.3
	15 years	38	34.2
	16 years	36	32.5
Gender	Male	58	52.3
	Female	53	47.7
Background	Rural	50	45.0
	Urban	61	55.0
School Type	Government	55	49.5
	Private	56	50.5
Class	IX	53	47.8
	X	58	52.2
Parent Occupation	Agriculture	31	27.9
	Service	30	27.0
	Business	20	18.0
	Skilled Labour	16	14.4
	Self-employed	14	12.7
Monthly Income	≤ ₹10,000	20	18.0
	₹10,001 – 25,000	40	36.0
	₹25,001 – 50,000	36	32.4
	≥ ₹50,000	15	13.6

Discussion of Demographics

The demographic profile indicates that the sample was well balanced in terms of gender, with 52.3% males and 47.7% females. This balance enhances the validity of comparative analyses between male and female students. Age distribution was nearly even across 14, 15, and 16 years, reflecting the typical age range of secondary students. A majority of students (55%) belonged to urban backgrounds, consistent with the concentration of educational institutions in Patna city. However, a significant rural representation (45%) provides valuable insights into rural-urban disparities.

Socio-economic variables highlight that while 36% of participants reported monthly household incomes in the ₹10,001–25,000 bracket, nearly one-fifth belonged to families with less than ₹10,000 per month, reflecting lower-income households. This is important as prior studies (Deb, Strodl & Sun, 2015) have emphasized the influence of socio-economic status on academic stress, with lower income linked to heightened anxiety and reduced coping resources. Similarly, parental

occupation data show a substantial proportion engaged in agriculture and service, reflecting the socio-economic fabric of Bihar.

The demographic profile sets the stage for understanding how contextual factors, such as urban competition, parental occupation, and income constraints, may influence academic stress and psychological well-being in this population.

Descriptive Statistics of Psychological Variables

Table 2. Descriptive Statistics of Key Psychological Measures (N = 111)

Variable	Mean	SD	Min	Max
Psychological Distress Score	25.7	6.2	10	47
Active Coping Score	16.3	3.8	7	24
Avoidant Coping Score	12.9	4.1	3	23
Stigma Perception (1–5 Likert)	2.9	0.7	1	5
Social Support Score	59.4	9.8	28	82

Discussion of Descriptive Results

The mean psychological distress score (M = 25.7, SD = 6.2) indicates moderate levels of distress in the sample, suggesting that academic demands exert a considerable emotional toll on students. This aligns with findings from Misra and McKean (2000), who emphasized academic stress as a key determinant of adolescent psychological health. Notably, distress scores spanned a wide range (10–47), pointing to heterogeneity within the sample.

Coping scores reveal a preference for active coping strategies (M = 16.3) compared to avoidant ones (M = 12.9). This suggests that while students are inclined toward constructive approaches such as time management and problem-solving, avoidance strategies like withdrawal and procrastination remain relatively common. Carver et al.'s (1989) model of coping underscores that reliance on avoidant strategies correlates with poorer well-being outcomes, which may explain why distress levels remain elevated for some students.

The stigma perception mean of 2.9 (SD = 0.7) indicates moderate perceived stigma. Although the construct of stigma is often associated with health conditions such as tuberculosis (TB) or mental illness (Courtwright & Turner, 2010), its relevance in academic contexts emerges when students internalize societal or parental judgments about poor academic performance. Such perceptions can exacerbate distress and undermine help-seeking behavior.

Social support emerged as relatively high (M = 59.4, SD = 9.8), reflecting robust familial and peer networks in Indian cultural contexts. This finding is consistent with Sinha & Singh (2013), who emphasized that social support buffers stress among Indian adolescents. However, the variation (scores ranging from 28–82) suggests that while some students enjoy strong support, others face inadequate relational resources, which may intensify vulnerability to stress.

Gender Differences in Psychological Variables

Table 3. Interview-Based Aspects by Gender

Variable	Male (n=58) M ± SD	Female (n=53) M ± SD
Psychological Distress Score	24.6 ± 6.1	26.9 ± 6.2
Active Coping Score	16.7 ± 3.7	15.9 ± 3.9
Avoidant Coping Score	12.4 ± 3.9	13.4 ± 4.2
Stigma Perception (1–5)	2.8 ± 0.7	3.0 ± 0.7
Social Support Score	58.9 ± 9.7	59.9 ± 9.9

Discussion of Gender Differences

The descriptive statistics reveal that female students reported higher psychological distress (M = 26.9) compared to males (M = 24.6). This is consistent with global research showing that adolescent girls often exhibit higher vulnerability to stress and anxiety (Nolen-Hoeksema, 2012). Socialized expectations around academic performance, combined with gendered responsibilities at home, may contribute to heightened stress levels among females in the Indian context.

In terms of coping, males reported slightly higher active coping and lower avoidant coping compared to females. This resonates with Gadzella's (1994) findings, which suggest that males may externalize stress through problem-solving, while females may adopt more emotion-focused or avoidant strategies. However, the differences are relatively small, suggesting that coping is influenced by broader socio-cultural factors beyond gender alone.

Interestingly, both genders reported similar levels of social support, highlighting that family and peer networks in Patna may provide balanced emotional resources irrespective of gender. This contrasts with some studies in Western contexts where female adolescents often report stronger social support ties (Rueger et al., 2010). The Indian joint family system

and collectivist orientation may explain the equitable distribution of perceived support.

Rural-Urban Differences in Psychological Variables

Table 4. Interview-Based Aspects by Rural vs. Urban Background

Variable	Rural (n=50) M ± SD	Urban (n=61) M ± SD
Psychological Distress Score	24.2 ± 6.0	27.0 ± 6.1
Active Coping Score	16.9 ± 3.9	15.8 ± 3.7
Avoidant Coping Score	12.7 ± 4.0	13.1 ± 4.2
Stigma Perception (1–5)	2.8 ± 0.6	3.0 ± 0.8
Social Support Score	61.0 ± 9.9	58.2 ± 9.7

Discussion of Rural-Urban Differences

The results indicate that urban students reported higher psychological distress (M = 27.0) compared to rural counterparts (M = 24.2). This finding can be attributed to heightened competition, examination pressures, and parental expectations in urban environments. Verma & Gupta (2016) similarly observed that urban Indian students experience more intense stress due to exposure to competitive coaching cultures and high parental investment in education.

Rural students scored higher on active coping (M = 16.9) and social support (M = 61.0) compared to urban students. This aligns with the ecological stress-coping model (Bronfenbrenner, 1979), which suggests that strong community ties and collectivist values in rural areas may facilitate adaptive coping and provide robust informal support networks. Conversely, urban students, while having better resources, may experience fragmented social ties and greater stigma related to academic underperformance, reflected in slightly higher stigma perception scores (M = 3.0).

These findings parallel literature on health-related stigma, such as TB studies in India, where urban patients often face greater fear of judgment and concealment behaviors compared to rural populations (Somma et al., 2008). In academic contexts, this suggests that urban students may perceive stronger social sanctions for failure, leading to elevated distress despite relatively higher educational access.

Independent Samples t-test: Gender Differences in Distress

Table 5. Independent Samples t-test: Psychological Distress by Gender

Group	N	Mean Distress	SD	t(df)	p-value	Cohen's d
Male	58	24.6	6.1	-2.00	0.048*	0.38
Female	53	26.9	6.2			

Note: $p < 0.05$ indicates significance. Female students reported significantly higher psychological distress compared to male students.

Discussion of t-test Findings

The independent samples t-test confirms a statistically significant difference between male and female students on psychological distress, $t(109) = -2.00$, $p = 0.048$. The effect size (Cohen's $d = 0.38$) is moderate, suggesting that gender explains a meaningful proportion of variance in distress levels. This finding corroborates the descriptive observation and aligns with global patterns of adolescent stress research (Nolen-Hoeksema, 2012).

From a health psychology perspective, this gender difference can be interpreted through Lazarus and Folkman's (1984) transactional model of stress and coping, which emphasizes cognitive appraisal. Female students may appraise academic challenges as more threatening due to socio-cultural expectations, leading to heightened distress. Moreover, their tendency toward avoidant coping strategies, as shown in descriptive statistics, may amplify stress outcomes compared to males who utilize slightly more active coping.

Linking to stigma literature, female students in India often face dual pressures, academic expectations and gender norms. This double burden may compound stress in ways similar to health-related stigma observed in TB or mental illness contexts, where marginalized groups experience intensified psychosocial burden (Courtwright & Turner, 2010). The findings thus emphasize the need for gender-sensitive interventions in school mental health programs.

Integrative Discussion

Overall, the results provide strong evidence that academic stress significantly affects psychological well-being among adolescents in Patna. Moderate distress levels, coupled with reliance on both adaptive and maladaptive coping, highlight the complexity of adolescent stress experiences. Gender and residential background emerged as important determinants of

stress, consistent with previous Indian and international studies.

The study's findings resonate with Ryff's (1989) multidimensional model of psychological well-being, which underscores that well-being is not merely the absence of distress but also the presence of coping, support, and autonomy. Students with higher social support and active coping strategies, more common in rural populations, demonstrated lower distress, consistent with resilience models in adolescent psychology (Masten, 2014).

By drawing parallels with stigma literature in health psychology, the study demonstrates that perceived stigma related to academic underperformance can function similarly to disease-related stigma, undermining psychological well-being and discouraging help-seeking. Just as TB-related stigma impedes treatment adherence (Somma et al., 2008), academic stigma may inhibit students from seeking counseling or sharing concerns with peers and teachers.

In sum, the results highlight the urgent need for structured mental health interventions in schools, especially in urban centers where academic competition is most acute, and for gender-responsive strategies that recognize the disproportionate distress experienced by female students.

Conclusion

The present study examined psychological well-being and academic stress among secondary school students in Patna, with particular attention to gender and rural–urban differences. Findings revealed moderate but wide-ranging levels of psychological distress, with coping strategies split between adaptive and avoidant patterns. Importantly, the independent samples t-test showed a statistically significant gender difference, with female students reporting higher distress levels compared to males. This aligns with earlier psychological research highlighting greater vulnerability of adolescent girls to stress, suggesting that gender plays a meaningful role in shaping stress experiences. Rural–urban comparisons further indicated that urban students were more distressed, while rural students benefited from higher social support and more active coping, underscoring the role of contextual and cultural factors in stress appraisal and management.

These findings carry important implications for both clinical psychology practice and health program design. School-based mental health interventions in Patna should prioritize gender-sensitive counseling and strengthen coping resources for female students. From a broader health psychology perspective, the role of perceived stigma in academic contexts mirrors stigma processes seen in tuberculosis management, where social judgment often impedes help-seeking. Integrating psychological support frameworks into TB programs, by addressing stigma, enhancing coping skills, and reinforcing social support, can improve both academic mental health outcomes and treatment adherence in chronic health contexts. Together, the evidence highlights the need for cross-sectoral approaches where educational institutions and health systems collaborate to foster resilience in vulnerable adolescent populations.

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