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Academic Performance and Perceived Stress among College-going Undergraduate Students: A Comparative Study Based on Demographic Variable

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ABSTRACT

The present study aims to compare differences in academic performance and perceived stress among college-going undergraduate students across various demographic variables. The study adopts a quantitative, descriptive, and comparative research design to analyse differences in perceived stress and academic performance across various demographic variables. For the current study, a sample of 199 college-going undergraduate students were selected from college of Ranchi using purposive sampling. Data was collected through a structured Google Form consisting of three sections: a Personal Data Questionnaire sheet to gather background details of participants, self-reported academic performance measured through recent examination scores and the Perceived Stress Scale (PSS-10) to assess stress levels. Descriptive statistics, mean and standard deviation, were used to summarize the data, while inferential statistics such as independent samples t-test used to compare academic performance and level of perceived stress across demographic groups. Result showed a significant difference in the academic performance of undergraduate college students based on gender, nature of residence, and tribal status. Also, significant difference has been reported in the level of perceived stress of undergraduate college students based on gender, family system, and area of residence. The findings of the study provide insights into how academic performance and perceived stress varies among college-going undergraduate students from different demographic backgrounds. This study contributes to a better understanding of student well-being and inform interventions aimed at improving academic outcomes.

Keywords: Perceived Stress, Academic Performance, Undergraduate Students, Demographic Variables,

INTRODUCTION

Stress is an unavoidable aspect of life and is now considered to be a significant problem in educational settings, especially for undergraduate students. Students face various kinds of academic, social, and personal problems as they adjust to college life, which tends to increase their perceived stress levels. The degree to which people consider circumstances in their life to be stressful, unexpected, and overpowering is known as perceived stress. It is subjective and differs from person to person based on their own circumstances and surroundings.

On the other hand, grades, percentage scores, or cumulative grade point average (CGPA) are frequently used to quantify academic performance, which is an important indication of student's success. It displays student's psychological health, drive, and capacity to handle academic challenges in addition to their cognitive talents.

Stress has a significant impact on psychological and physical health (Lovell, Moss, & Wetherell, 2011). The mental and emotional state of student directly influences their academic performance While extreme stress might harm academic performance and cognitive functioning, moderate stress may increase motivation and productivity (Khan et al., 2013).

Research has demonstrated that student stress is multifaceted and results from both academic and non-academic factors, including interpersonal relationships, financial issues, and environmental adjustments. High perceived stress levels have been associated with adverse psychological consequences, such as anxiety and decreased academic performance (Brand and Schoonheim-Klein, 2009). Student's stress level and academic performance are significantly influenced by various demographic factors such gender, family history, place of residence, and sociocultural standing. A gender

disparity in the perception of stress has been reported, with female students frequently reporting higher levels of perceived stress than male students (Graves et al., 2021).

Academic performance is a crucial measure of student's learning outcomes and is closely related to possibilities for growth like internships or jobs, graduate school admissions, and scholarship assessments. This study examines the influence of various demographic factors on academic performance and perceived stress among undergraduate students. Understanding the role of socio-demographic factors in determining academic success as well as factors contributing to perceived stress is crucial. This study aid in developing targeted interventions to enhance student well-being and academic success.

REVIEW OF LITERATURE

The college life is an important period of development characterised by role change, identity formation, increased personal responsibilities, social changes, and higher academic demands. Students are expected to adjust to these changing educational environments in addition to handling rigorous academic workloads, fulfilling performance requirements, and overcoming social and economic challenges. Perceived stress and academic performance are significantly negatively correlated (Soren, 2024). Demographic variables such as age, gender, race and ethnicity, occupation geographic location, family system, and socio-cultural background play a crucial role in shaping student's academic outcomes and their stress level.

Family background and social support systems play a crucial role in shaping student's stress levels and academic outcomes. Students from supportive family environments tend to experience lower levels of stress and better academic performance (Cohen & Wills, 1985; Malecki & Demaray, 2006). Adler et al. (1994) reported that students who experience financial problems or lack of support are more likely to report higher stress levels, which may negatively affect their academic performance. Verma et al. (2002) reported that the interaction between demographic variables, perceived stress, and academic performance is complex and multidimensional. Demographic factors such as gender, socioeconomic status, and family background influence how students perceive stress and how effectively they manage academic demands.

Behavioral and environmental factors such as study habits, peer influence, and lifestyle patterns interact with demographic variables to influence academic performance. Studies among Indian college students indicate that poor time management, unhealthy coping strategies, and competitive academic environments further exacerbate stress and hinder academic achievement (Misra & McKean, 2000; Reddy et al., 2018).

Research in the Indian context suggests that stress acts as a mediating factor between demographic variables and academic performance. Students from high-pressure environments, particularly those experiencing strong parental expectations or limited social support, tend to report higher levels of stress, which in turn negatively affects their academic outcomes (Deb et al., 2015; Kumar & Bhukar, 2013).

Sinha (2014) also reported that family structure (joint vs. nuclear) may influence stress levels, as joint families often provide greater emotional and social support, acting as a buffer against stress. Similarly, Deb et al. (2015) have reported that variations in lifestyle, competitiveness, and academic expectations contribute to differences in stress levels based on environmental contexts such as urban and rural settings. In addition, social support acts as a protective or buffering factor against academic stress.

Research conducted among Indian college students indicates that perceived social support contributes positively to psychological well-being and helps students manage both academic and personal challenges effectively (Kamble, 2021). Empirical findings suggest that social support mediates the relationship between academic stress and psychological strain, reducing its adverse effects on students' well-being (Zhang et al., 2022).

Furthermore, family-related, and environmental stressors such as parental expectations, financial constraints, and lack of emotional support significantly contribute to student's perceived stress levels. Studies have shown that increased academic and family stress is associated with higher levels of depression and poorer academic performance among students (Deng et al., 2022). Financial difficulties and inadequate support systems further intensify stress, thereby negatively impacting student's academic outcomes.

In India, socio-cultural factors such as parental expectations, financial constraints, and family dynamics are major contributors to perceived stress among students. Studies have consistently shown that academic pressure combined with family expectations significantly elevates stress levels, which in turn negatively affects student's mental health and academic performance (Sethia et al., 2019; Reddy, 2023). Additionally, environmental, and interpersonal factors such as peer relationships, academic competition, and lack of emotional support contribute significantly to stress among Indian college students. Research also suggests that students experiencing inadequate support systems are more vulnerable to higher stress levels and related psychological difficulties (Subasreebala, 2024).

Aim

The present study aims to compare differences in academic performance and perceived stress among college-going undergraduate students across demographic variables.

Objectives of the Study

1. To compare the academic performance across selected demographic categories such as gender, family system, nature of residence area of residence and tribal status among college-going undergraduate students.
2. To compare the level of perceived stress across selected demographic categories such as gender, family system, nature of residence area of residence and tribal status among college-going undergraduate students.

Hypotheses

H1: There would be no significant difference in academic performance between male and female college-going undergraduate students.
H2: There would be no significant difference in academic performance between college-going undergraduate students from joint and nuclear families.
H3: There would be no significant difference in academic performance between hosteller and day-scholar college-going undergraduate students.
H4: There would be no significant difference in academic performance between college-going undergraduate students from urban and rural areas.
H5: There would be no significant difference in academic performance between tribal and non-tribal college-going undergraduate students.
H6: There would be no significant difference in the level of perceived stress between male and female college-going undergraduate students.
H7: There would be no significant difference in the level of perceived stress between college-going undergraduate students from joint and nuclear families.
H8: There would be no significant difference in the level of perceived stress between hosteller and day-scholar college-going undergraduate students.
H9: There would be no significant difference in the level of perceived stress between college-going undergraduate students from urban and rural areas.
H10: There would be no significant difference in the level of perceived stress between tribal and non-tribal college-going undergraduate students.

METHODOLOGY

Research Design

The study adopts a quantitative, descriptive, and comparative research design to analyse differences in perceived stress and academic performance across various demographic variables.

Sample

For the present study, a sample of 199 college-going undergraduate students from college of Ranchi, Jharkhand were selected using purposive sampling technique. The age group of participants was between 18 years to 22 years. Since the data collection was done via online platforms, access to mobiles platforms was a must.

Tools Used

Data was collected through a structured Google Form consisting of three sections:

Socio-demographic Data Sheet: It was prepared to collect socio-demographic details of participants like gender, area of residence, religion, nature of residence, family type, and tribal status.

Academic Performance: Academic performance was assessed using self-reported percentage/CGPA obtained by the participants in their recent university examination.

Perceived Stress Scale (PSS-10; Cohen & Williamson, 1988): It is a widely used self-report questionnaire designed to measure the degree to which individuals perceive situations in their lives as stressful which was originally developed by Sheldon Cohen et al. in 1983. The scale consists of a series of 10-items that inquire about feelings and thoughts related to stressful experiences over the past month. Items are measured on a 5-point Likert scale. Four statements are reversely scored, the rest six remain as it is. The total is obtained by summation of scores on all items. Scores range from 0 to 40, the higher the score, the more elevated is the perception of stress.

Procedure

For the present study, data were collected through a structured Google Form. Confidentiality and anonymity were ensured. The participants were explained the purpose and significance of the study and eligibility criteria for participation, and were also provided with a note on insurance of confidentiality and voluntary nature of participation.

Consent was taken and they filled the questionnaire. Participants were approached via WhatsApp and by e-mail. After collecting the data, statistical analysis was done using IBM Statistical Package for the Social Sciences software (SPSS v. 23.0). Descriptive statistics; mean and standard deviation, were used to summarize the data, while inferential statistics, independent samples t-test used to compare perceived stress and academic performance across demographic groups.

RESULTS

Table 1: ***Demographic Profile of the Sample*** **(n=199)**

Variable		Frequency	Percentage
Gender	Male	95	47.70%
	Female	104	52.30%
Area of Residence	Urban	96	48.20%
	Rural	103	51.80%
Religion	Hindu	80	40.20%
	Muslim	08	4.00%
	Christian	63	31.70%
	Sarna	40	21.1%
	Santhal	08	4.00%
Nature of Residence	Day Scholar	167	83.90%
	Hosteller	32	16.10%
Family Type	Joint	48	24.10%
	Nuclear	151	75.90%
Tribal Status	Tribal	127	63.80%
	Non-tribal	72	36.20%

Table 1 presents the demographic characteristics of the sample (N = 199), indicating a balanced representation across key variables. The sample comprised slightly more female (52.30%) than male (47.70%) participants, allowing for meaningful gender-based comparisons. The distribution across area of residence was also nearly equal, with 51.80% of participants from rural backgrounds and 48.20% from urban areas, ensuring adequate representation of both contexts. The religious composition reflected diversity, with Hindu (40.20%) participants forming the largest group, followed by Christian (31.70%), Sarna (21.10%), and smaller proportions of Muslim (4.00%) and Santhal (4.00%) students.

In terms of residential status, most of the participants were day scholars (83.90%), while only 16.10% were hostellers. Additionally, most participants belonged to nuclear families (75.90%), compared to 24.10% from joint families. A notable proportion of the sample consisted of tribal students (63.80%), highlighting the relevance of examining tribal status in the present study.

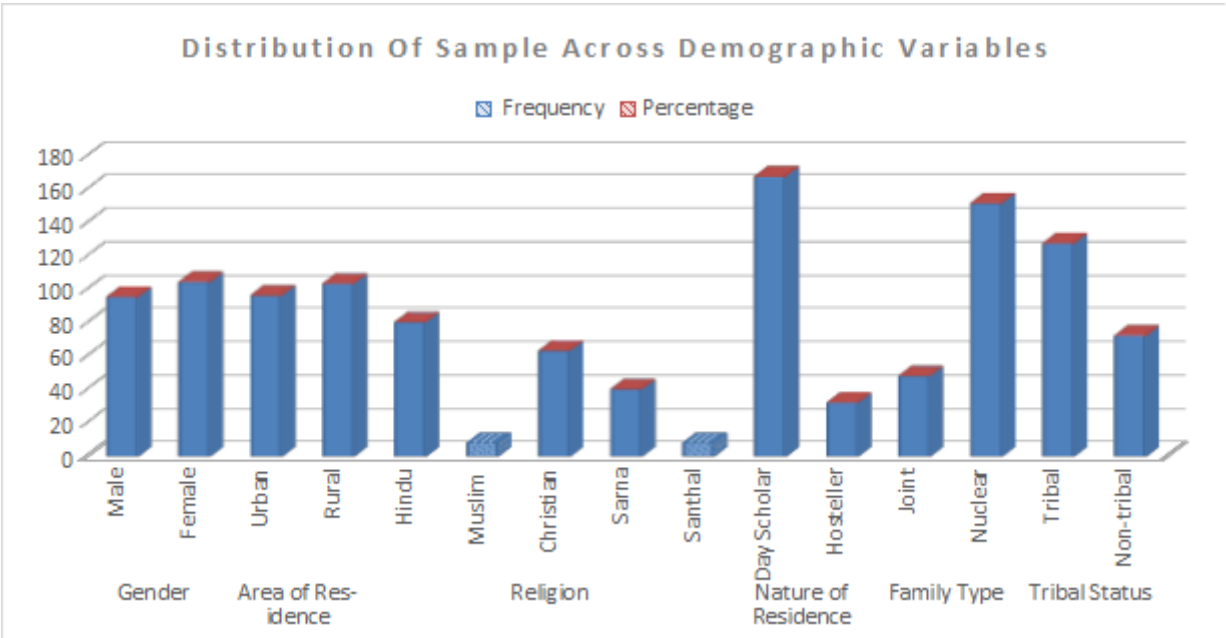

Fig. 1- Distribution Of Sample Across Demographic Variables

Table 2: Showing Independent Samples t-test Comparing Study Groups on Academic Performance Across Demographic Variables

Gender						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Female	104	71.31	7.65	4.73	197	0.00**
Male	95	66.95	4.91			
Family System						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Joint	151	68.93	7.15	-1.095	196	0.26
Nuclear	48	70.17	5.66			
Nature of Residence						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Hosteller	32	72.25	3.32	2.77	197	0.00**
Day-scholar	167	68.65	7.18			
Area of Residence						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Urban	96	69.58	7.53	.711	197	0.478
Rural	103	68.89	6.12			
Tribal Status						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Tribal	72	71.78	6.52	4.12	197	0.00**
Non-Tribal	127	67.78	6.60			

****= P≤0.01**

Table 2 shows mean difference on academic performance across various demographic variables of college-going undergraduate students.

On the variable of gender, a significant difference was observed, with female students demonstrating higher academic performance than male students. This finding is consistent with previous research indicating that female students often outperform male students in academic settings due to greater academic engagement, discipline, and effective study habits (Parajuli & Thapa, 2017). Similarly, Duckworth and Seligman (2006) in their study also found that girls tend to exhibit higher self-discipline, which contributes significantly to their academic success. These findings suggest that gender-based differences in motivation and learning strategies may influence academic outcomes. Hence the formulated hypothesis (H1) is rejected.

On the variable of family system, no significant difference was found between students from joint and nuclear families. This indicates that family structure alone may not be a determining factor of academic performance. This finding aligns with previous studies suggesting that while family support is important, academic performance is more directly influenced by individual effort, institutional support, and educational resources rather than family type alone (Kumaraswamy, 2013). Hence the formulated hypothesis (H2) is accepted.

On the variable of nature of residence, the results revealed a significant difference in academic performance between hostellers and day scholars with hostellers performing better academically than day scholars. This finding may be attributed to structured environments, peer learning opportunities, and greater academic focus among hostel students. Previous research supports this observation, suggesting that residential academic environments can enhance study habits and academic engagement (Tinto, 1993). Hence the formulated hypothesis (H3) is rejected.

On the variable of area of residence, no significant difference was found between urban and rural students in terms of academic performance. This suggests that despite differences in access to resources, students from both backgrounds may achieve comparable academic outcomes. This finding is supported by studies indicating that with increasing access to educational resources and technology, the gap between urban and rural academic performance is gradually narrowing (Sirin, 2005). Hence the formulated hypothesis (H4) is accepted.

On the variable of tribal status, a significant difference was observed based on, with tribal students showing higher academic performance compared to non-tribal students. This is an interesting finding and may reflect the impact of targeted educational policies, reservation systems, and support programs aimed at improving educational outcomes among tribal populations. Previous research has highlighted the role of inclusive educational policies and institutional support in enhancing academic achievement among marginalized groups (Ministry of Tribal Affairs, 2014). Hence the formulated hypothesis (H5) is rejected.

Table 3: Showing Independent Samples t-test Comparing Study Groups on Perceived Stress Across Demographic Variables

Gender						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Female	104	25.23	2.97	6.122	197	0.00**
Male	95	22.17	4.01			
Family System						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Joint	151	23.11	3.43	-4.48	197	0.00**
Nuclear	48	25.83	4.26			
Nature of Residence						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Hosteller	32	23.75	2.99	-0.038	197	0.96
Day-scholar	167	23.77	3.96			
Area of Residence						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Urban	96	25.25	3.37	5.65	197	0.00**
Rural	103	22.39	3.76			
Tribal Status						
Group	**N**	**Mean**	**S.D.**	**t**	**df**	**p value**
Tribal	72	23.44	5.02	-0.91	197	0.36
Non-Tribal	127	23.96	2.93			

****= P≤0.01**

Table 3- shows mean difference in level of perceived stress across various demographic variables of college-going undergraduate students.

On the variable of gender, it has been indicated that female students reported significantly higher levels of perceived stress compared to male students. This finding is strongly supported by previous research (Grave et al., 2021) in which female undergraduate students consistently exhibit higher perceived stress levels than males, particularly during academic periods. Similarly, research conducted by Batabyal et al. (2021) in the Indian context also found that female students tend to maintain higher stress levels over time compared to male students. These differences may be attributed to emotional, social, and academic pressures, as well as gender-based expectations. Hence the proposed hypothesis (H6) is rejected.

On the variable of family system, it has been found that students belonging to nuclear families experience significantly higher level of perceived stress in comparison to those belonging to joint families. Joint family systems often provide emotional, financial, and social support, which may buffer stress. This aligns with broader psychological literature suggesting that stronger social support systems reduce perceived stress levels (Cohen & Wills, 1985; Sinha, 2014). Hence the proposed hypothesis (H7) is rejected.

On the variable of nature of residence, the findings showed no significant difference in in the level of perceived stress between hostellers and day scholars. This suggests that the nature of residence may not be a determining factor in stress levels. According to Reddy et al. (2018), it is possible that both groups face comparable academic expectations that outweigh living arrangement variations. Hence the proposed hypothesis (H8) is accepted.

On the variable of area of residence, a significant difference was observed between urban and rural students, with urban students reporting higher stress levels. This may be due to increased academic competition, exposure to higher expectations, and fast-paced lifestyles in urban settings. Previous research has highlighted that academic stress is a major stressor among college students regardless of background, but environmental demands can intensify stress levels (Verma et al., 2002; Deb et al., 2015). Hence the proposed hypothesis (H9) is rejected.

Also, no significant difference was found in perceived stress between tribal and non-tribal students. This indicates that stress levels may be more influenced by academic and situational factors rather than socio-cultural background alone. Hence the proposed hypothesis (H10) is accepted.

CONCLUSION

The present study examined differences in academic performance and level of perceived stress among college-going undergraduate students across various demographic variables, including gender, family system, nature of residence, area of residence, and tribal status. The findings revealed that academic performance significantly differed based on gender, nature of residence, and tribal status, while no significant differences were observed for family system and area of residence. The finding also reveals that perceived stress differed based on gender, family system, and area of residence, whereas no significant differences were observed for nature of residence and tribal status.

Limitations, Implication and Future Direction of the Study

The present study has some limitations in terms of use of a cross-sectional research design restricting the ability to establish causal relationships between stress and academic outcomes. Also, the use of self-reported data collected through Google Forms may introduce response bias, particularly in reporting academic performance and perceived stress levels.

Despite these limitations, the study holds important implications for educational institutions and policymakers by highlighting the need for targeted academic support and stress management interventions, especially for vulnerable student groups identified through demographic differences. The findings also underscore the importance of creating supportive academic environments and strengthening institutional mental health services to enhance student well-being and performance.

Future studies should broaden the scope to include other variables including socioeconomic status, personality characteristics, and institutional factors, use longitudinal designs to investigate causal correlations, and use more objective measures of academic success. The findings' generalizability and application would be further strengthened by studies with larger and more representative samples from a variety of geographical areas.

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