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Gender-based differences in perceived stress among undergraduate students at the university of Delhi

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Abstract

Aim and Background: This study investigates the variation in reported stress levels among female and male students enrolled in undergraduate programs at the Delhi University. The purpose of the study is to determine and compare stress perceptions in both genders to better understand the psychological impact of academic life across genders. Subjects were 200 undergraduate students, including 100-100 female and males each from various disciplines, were chosen using a random sampling technique. The data was gathered through the Perceived Stress Questionnaire (PSQ) designed by Levenstein *et al.* (1993), which assesses individuals' stress experiences. The gathered information was examined using SPSS software with the help of descriptive statistics and independent sample t-tests.

Results: The average score for perceived stress was greater among female students ($M = 0.50$) compared to male ($M = 0.46$), with a t-value of 2.41 and the p-value is 0.017. This demonstrates categorically things female students are going through greater stress compared to those that are male. The higher stress levels reported by female participants in this research could be the consequence of a combination of interconnected factors. These stressors are like balancing academic performance with societal expectations, safety concerns, and emotional labor especially in highly competitive academic environments like Delhi University.

Keywords: Perceived stress, undergraduate students, University of Delhi, mental health

Introduction

“Stress is not necessarily something bad - it all depends on how you take it.”
- Hans Selye, 1974 ^[16]

Stress is a natural and unavoidable part of life that every individual experiences in different forms and situations. For students, especially at the university level, stress has become a common component of daily life. University life brings many new responsibilities, as students are expected to manage academic work, attend classes, complete assignments, and prepare for examinations while also balancing social relationships and, in some cases, part-time employment. The transition from school to college requires students to become more independent, which can result in increased pressure and emotional imbalance.

According to Selye (1974) ^[16], stress refers to the body's general response to any demand or challenge and may result in either positive motivation or negative consequences depending on an individual's coping ability. Although a moderate level of stress can motivate students to perform better academically, excessive or prolonged stress can have harmful effects on both physical and psychological health, leading to anxiety, difficulty concentrating, and sleep disturbances (Cohen *et al.*, 2008) ^[3].

Students experience stress differently. Some may feel overwhelmed during examinations, while others may experience anxiety related to public speaking or meeting academic deadlines. The causes and reactions to stress vary depending on personality traits, previous life experiences, and emotional resilience (Lazarus & Folkman, 1984) ^[10]. Healthy coping strategies such as talking to friends, listening to music, engaging in physical activity, or taking adequate breaks can help reduce stress levels (Dyson & Renk, 2006) ^[5]. However, some students adopt unhealthy coping behaviors, including procrastination, overeating, social withdrawal, and irritability. Prolonged and unmanaged stress can result in serious outcomes such as loss of motivation, emotional exhaustion, and even clinical depression (Verma & Singh, 2021) ^[20].

Therefore, early identification of stress symptoms and guidance toward effective stress-management strategies are essential for students' academic success and overall well-being. Educational institutions must recognize that emotional and psychological support is as important as academic guidance (Eisenberg *et al.*, 2013)^[6].

Gender is an important factor influencing how students experience and cope with stress. Patterns of stress perception and coping strategies often differ between male and female students due to varying social, cultural, and psychological influences. Socialization plays a significant role in shaping these differences. Females are often encouraged to express emotions and seek social support, whereas males may be socialized to suppress emotions and demonstrate strength (Taylor & Johnson, 2012)^[18]. This does not imply that males experience less stress; rather, they may express or manage it differently. Research indicates that female university students often experience additional emotional stress related to body image, personal safety, and interpersonal relationships, while male students may experience stress related to societal expectations of performance and emotional restraint (Lee *et al.*, 2016)^[11]. If stress is not managed effectively, it can negatively affect academic performance and mental health, highlighting the need for gender-sensitive stress-management interventions in higher education institutions (Bayram & Bilgel, 2008)^[2].

This research aims to explore how stress levels vary between female and Bachelor male in college studying at Delhi University. With its wide range of Students from various geographical areas and social backgrounds, the university provides a suitable environment to study gender-related differences in how students experience and manage stress. A total of 200 students 100 male and 100 female were selected from different colleges of Delhi University. They voluntarily completed the PSQ- Perceived Stress Questionnaire developed by Levenstein *et al.* (1993), which helped measure their state of stress in day-to-day life. The research aims to learn whether significant gender-based differences exist in how students feel and respond to stress. The results can help college authorities, counsellors, and educators create targeted support systems such as emotional well-being programs, workshops on coping strategies, and awareness campaigns. By understanding the different ways of both gender experience stress, Universities can actively promote mental well-being and cultivate a positive learning environment for everyone.

Material and Methodology

Design of the study

This investigation used a descriptive and comparative approach. The descriptive part helped to understand the overall stress levels experienced by undergraduate students, while the comparative part focused on finding out how both gender experience stress at different levels.

Area of the Study

This research was conducted in the University of Delhi, one of India's largest and most diverse public universities. It includes various colleges offering undergraduate courses in arts, commerce, science, and other fields. Colleges from both North and South Campus were considered to ensure representation from a broad range of academic environments. The university's diversity in student

backgrounds made it a suitable area for studying stress differences.

Population and Sampling Method

The study focused on undergraduate students aged 18 to 24 years enrolled in Delhi University. These students belonged to different academic streams such as arts, science, and commerce. A total of 200 students were selected 100 males and 100 females using a random sampling technique. Students were informed consent form. The number of students selected was enough to fairly compare stress levels between both gender in this study.

Instrument for Measuring Stress

To measure perceived stress/ anxiety in students, according to this study employed the PSQ-Perceived Stress Questionnaire developed by Levenstein *et al.* (1993). This tool is a self-administered scale that helps individuals reflect on how frequently they encounter particular stress-related feelings and situations in their everyday lives. The PSQ consists of 30 statements, and responses are recorded using a 4-point Likert scale, where:

- 1 = Almost Never,
- 2 = Sometimes,
- 3 = Often,
- 4 = Usually.

There are items on the questionnaire that evaluate emotional and physical symptoms such as worry, tension, lack of energy, and feeling overwhelmed. The cumulative score provides an overall indication of how much stress the respondent perceives with higher test scores signifying higher stress levels. The PSQ has been widely applied in health psychology and student research settings, making it a reliable and relevant choice regarding this research.

Mode of Administration

Before beginning the survey, respondents received a short overview of the study's aim, along with an assurance of confidentiality. They were also asked to provide their consent at beginning of survey. The form was designed to be completed in about 10 to 15 minutes, and students were allowed to fill it out at a time that suited them best. There was no time pressure or compulsion during the submission process.

Results

The data collected descriptive stats. and inferential statistical techniques were used to evaluate data from the PSQ- Perceived Stress Questionnaire. Mean and standard deviation were calculated to observe overall patterns in stress levels among students. To examine if there was a distinction in stress based on gender, t-test is conducted. A significance level of $p < 0.05$ is accustomed to check if the gender-based differences were statistically meaningful. This analysis helped to determine if male and female students experienced stress differently in a significant way.

Table 1: Descriptive statistics of PSQ INDEX among all Female and Male students at University of Delhi

Gender	N	Mean	Std. deviation
Female	100	0.50	0.13
Male	100	0.46	0.12

Table 1 shows the values of mean score and standard deviation for males and females of PSQ percentage are exhibited in table 1. The PSQ index of females and male's

mean score and std. deviation is 0.50 ± 0.13 and 0.46 ± 0.12 respectively.

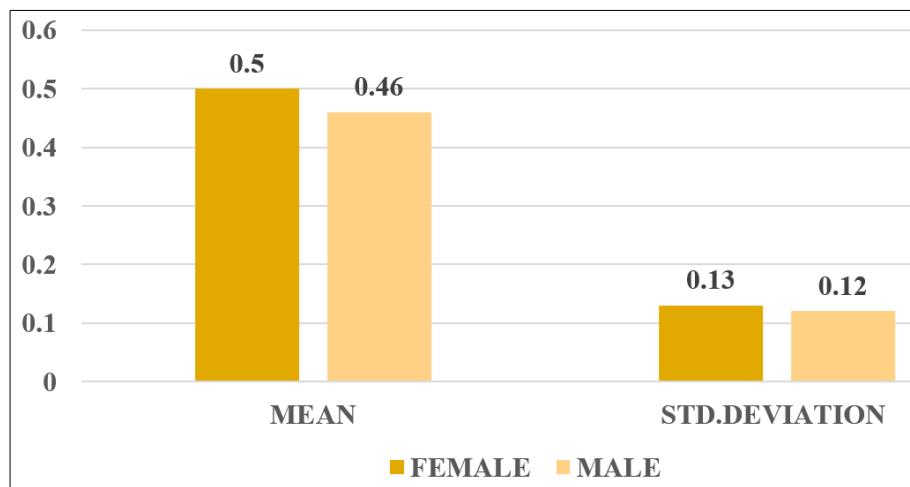


Fig 1: Graphical Presentation of PSQ Index of Females and Males of University of Delhi

Table 2: The 't'- Test for the data of Female and Male Students

Gender	N	Mean	Std. Deviation	t	Df	Sig. (2-tailed)
Female	100	0.50	0.13			
Male	100	0.46	0.12	2.41	198	0.017

Table 2 presents the findings of the t-test that was performed to look at gender-based differences in undergraduates' perceived levels of stress. The perceived stress mean score for female subjects is 0.50 ($SD = 0.13$), while for male subjects it is 0.46 ($SD = 0.12$). The t-test yielded a t-value of 2.41 with a significance level of $p = 0.017$, which shows that, difference in stress scores between genders has statistical significance. These results imply that female students experience significantly greater levels of perceived stress in contrast to their male peers, thereby supporting the hypothesis of gender variation in stress perception. This reinforces the need to address gender-sensitive stress management strategies within academic institutions.

Discussion

Stress has become an inseparable part of academic life, but how it is experienced can vary significantly based on personal, social, and cultural factors, most notably gender (Selye, 1974; Lazarus & Folkman, 1984) [16, 10]. The purpose of this study was to investigate gender variations in undergraduate students perceived levels of stress at Delhi University. The findings revealed a statistically significant difference, with female students showing a higher mean stress score ($M = 0.50$) than male students ($M = 0.46$). The obtained t-value of 2.41 and p-value of 0.017 confirm that this difference is meaningful, indicating a greater stress burden among female students, a trend consistently observed in previous research (Bayram & Bilgel, 2008; Verma & Singh, 2021) [2, 20]. University life introduces students to numerous challenges, including academic workload, performance expectations, peer competition, and social adjustment (Misra & Castillo, 2004; Dyson & Renk, 2006) [14, 5]. While these demands are common to all students, female students often encounter additional pressures stemming from gender socialization, emotional expectations, and societal roles (Taylor & Johnson, 2012; Rao & Sharma, 2018) [18, 15]. The higher stress levels

reported by female students may be influenced by social norms that encourage emotional awareness and expression among women, increasing their likelihood of recognizing and reporting stress (Cohen *et al.*, 2008; Matud, 2004) [3, 12]. In contrast, males are frequently socialized to suppress emotions and demonstrate resilience, which may lead to underreporting of psychological distress rather than an absence of stress (Eisenberg *et al.*, 2013; Addis & Mahalik, 2003) [6, 1].

Beyond academics, female students face stressors related to personal safety, family expectations, emotional labor, and societal scrutiny regarding behavior and appearance (Mehta, 2020; Gupta & Basu, 2019) [13, 9]. In metropolitan contexts such as Delhi, concerns related to commuting, public safety, and late academic hours further intensify anxiety among female students (Rao & Sharma, 2018) [15]. Emotional expectations from peers, faculty, and family place women in a continuous cycle of emotional regulation, which may accumulate into chronic stress over time (Lee *et al.*, 2016; Verma & Singh, 2021) [11, 20]. Earlier studies have consistently demonstrated that women report higher perceived stress, particularly during high-pressure academic periods such as examinations and deadlines (Cohen *et al.*, 2008; Bayram & Bilgel, 2008) [3, 2]. Gender differences are also evident in coping styles. Female students are more likely to use emotion-focused and social-support coping strategies, which, while adaptive, can also increase rumination and emotional fatigue (Tamres *et al.*, 2002; Folkman & Moskowitz, 2004) [17, 8]. Male students, on the other hand, often adopt avoidance-based coping strategies such as withdrawal or distraction, which may temporarily mask stress without resolving underlying issues (Endler & Parker, 1990; Verma & Singh, 2021) [7, 20]. Physiological research further indicates that females often exhibit stronger stress reactivity, reinforcing higher perceived stress scores (Taylor *et al.*, 2000) [19]. Institutional factors also contribute to gendered stress experiences. Many universities implement generalized mental health policies that fail to address gender-specific stressors (Eisenberg *et al.*, 2013) [6]. Additionally, social media exposure and peer comparison disproportionately affect young women, amplifying academic and appearance-related stress (Lee *et al.*, 2016)

[11]. Cultural stereotypes surrounding academic competence can further heighten stress among female students, particularly in competitive or male-dominated disciplines (Rao & Sharma, 2018; Gupta & Basu, 2019)^[15, 9].

The findings of the present study align with earlier research demonstrating higher stress levels among female undergraduates due to emotional strain, academic pressure, and societal expectations (Bayram & Bilgel, 2008; Verma & Singh, 2021)^[2, 20]. However, lower reported stress among male students should not be interpreted as reduced vulnerability, as gender norms often discourage emotional disclosure, leading to underestimation of male distress (Addis & Mahalik, 2003; Courtenay, 2000)^[1, 4]. The observed statistical significance highlights not merely numerical differences but the invisible psychological burdens carried by students, particularly women.

Therefore, universities must adopt gender-sensitive mental health strategies, including tailored counselling services, early identification of stress by faculty, and inclusive wellness programs (Eisenberg *et al.*, 2013; Mehta, 2020)^[6, 13]. Simultaneously, encouraging emotional openness among male students is essential to address hidden stress and promote holistic well-being. Overall, this study reinforces that stress is unevenly distributed among university students, with gender emerging as a critical determinant of its experience and expression (Taylor & Johnson, 2012; Rao & Sharma, 2018)^[18, 15].

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Future implications: The study highlights the importance of understanding how stress affects male and female students differently. Universities should offer mental health support that recognizes these differences, helping students cope before stress becomes overwhelming. Future research could explore students' experiences over time to better understand hidden stress, especially among men who may be less likely to speak up. Creating a supportive environment where all students feel heard and guided can foster healthier, more balanced academic lives.

Conflict of interest: In this research study the researcher guaranteed that no conflict of research is exist.

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