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Relationship between Perceived Stress and Self-Esteem among Pre-University Students Empirical Study

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Abstract: *This research examines the relationship between perceived stress and self-esteem among pre-university students, with a focus on adolescents undergoing academic and psychosocial transitions. Self-esteem, defined as an individual's overall evaluation of self-worth (Rosenberg, 1965), plays a crucial role in emotional adjustment and academic functioning, while perceived stress reflects the extent to which individuals appraise life situations as overwhelming or uncontrollable (Lazarus & Folkman, 1984). Increasing academic demands, competition, and future uncertainties make these psychological variables particularly relevant among students.A cross-sectional study was conducted with 121 pre-university students from different residential backgrounds. Data were collected using the Perceived Stress Scale (Cohen et al., 1983) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The collected data were analysed using descriptive statistics, Pearson's correlation, independent samples t-test, and one-way ANOVA using SPSS.The findings revealed moderate levels of perceived stress and self-esteem among participants. A statistically significant positive correlation was observed between perceived stress and self-esteem. Gender differences indicated higher self-esteem among male students, whereas perceived stress did not vary significantly by gender. Residential comparisons showed significant differences in stress levels, with rural students reporting comparatively lower stress. Overall, the findings highlight the interconnected nature of stress and self-evaluation during adolescence and emphasize the importance of supportive educational environments that promote psychological well-being.*

Keywords: *Perceived Stress, Self-Esteem, Adolescence, Pre-University Students, Psychological Well-Being.*

Introduction: Self-esteem refers to an individual's overall evaluation of their own worth and value (Rosenberg, 1965). It is a central psychological variable that influences emotions, behavior, motivation, and interpersonal functioning.

In the student population, self-esteem plays a crucial role in academic and psychosocial development. Research indicates that higher self-esteem is associated with better academic engagement, persistence, and emotional well-being (Bandura, 1997; Harter, 1999). Conversely, low self-esteem has been linked to anxiety, depression, and poor academic adjustment (Baumeister et al., 2003).

Although scholars debate whether self-esteem leads to academic success or develops as a result of it, evidence suggests a significant reciprocal relationship between the two (Orth & Robins, 2014). Given its

strong connection with motivation, resilience, and mental health, self-esteem remains a critical variable in understanding student development and educational outcomes.

Stress is defined as a psychological and physiological response that occurs when individuals perceive environmental demands as exceeding their coping resources (Richard Lazarus & Susan Folkman, 1984).

Within student populations, stress is primarily associated with academic workload, examinations, competition, parental expectations, and career uncertainty. Research suggests that while moderate stress may enhance alertness and motivation, excessive or chronic stress can negatively affect academic performance, concentration, and psychological well-being (Yerkes & Dodson, 1908; Misra & McKean, 2000). Prolonged academic stress has also been linked to anxiety, depression, sleeps disturbances, and reduced life satisfaction (Cohen et al., 1983; Pascoe et al., 2020).

Furthermore, individual differences such as coping strategies, social support, and personality traits significantly influence how students experience and manage stress (Compas et al., 2001).

Lee, Joo, and Choi examined the mediating role of perceived stress and self-esteem in the relationship between work-related stress and depression among Korean nurses. Using structural equation modelling on a sample of 284 participants, the study found that work-related stress was positively associated with depression. Perceived stress was positively related to both work-related stress and depression, while it was negatively associated with self-esteem. Additionally, self-esteem showed a negative relationship with both work-related stress and depression, indicating its protective function. Importantly, the findings revealed that perceived stress and self-esteem fully mediated the relationship between work-related stress and depression. The study highlights the significant role of psychological variables in understanding the impact of occupational stress on depressive symptoms (Lee et al., 2012).

A longitudinal study investigating stress and self-esteem among undergraduate nursing students examined changes in psychological well-being across three years of nurse education. Grounded in the theoretical perspectives of Richard Lazarus and Susan Folkman (1984) on stress appraisal and Morris Rosenberg (1965) on self-esteem, the study found significant variations in stress and general self-esteem across different stages of training. Stress levels were highest at the beginning of the third year, while self-esteem was lowest at the end of training. The findings suggest that psychological well-being fluctuates throughout academic progression and that single-time-point assessments may inadequately capture students' stress experiences. The study emphasizes the inverse relationship between stress and self-esteem and highlights the importance of monitoring psychological variables across educational timelines (Edwards et al., 2009).

A study conducted among college students examined the population- and sex-specific relationships between perceived stress, self-esteem, and physical activity. The sample consisted of 74 students who completed the Rosenberg Self-Esteem Scale, the Perceived Stress Scale, and the International Physical Activity Questionnaire. The findings revealed a significant negative correlation between perceived stress and self-esteem among both male and female students, indicating that higher self-esteem was associated with lower levels of perceived stress. However, physical activity was not significantly related to either perceived stress or self-esteem. The study highlights the consistent inverse relationship between stress and self-esteem in student populations, while suggesting that physical activity may not directly influence these psychological variables (Hubbs et al., 2012).

The literature consistently demonstrates a significant inverse relationship between self-esteem and perceived stress. Higher self-esteem is associated with better coping and lower stress levels, whereas low self-esteem is linked to greater psychological distress. Based on these findings, the present study examines the relationship between perceived stress and self-esteem among students to better understand their influence on psychological well-being and academic functioning.

Participants and Table: Distribution of participants by gender and residence

Residence	Gender		Total
	Male	Female	
Rural	34	47	81
Semi-Urban	7	13	20
Urban	9	11	20
Total	50	71	121

The total sample of research participants consisted of 121 pre-university students. The participants were categorized based on their area of residence into three groups: rural, semi-urban, and urban. The rural group comprised 81 individuals, including 34 males and 47 females. The semi-urban group consisted of 20 participants, including 7 males and 13 females. The urban group also included 20 participants, with 9 males and 11 females. Overall, the sample included 50 male and 71 female participants.

Measures and Interpretation

The Perceived Stress Scale – 10 Item Version (PSS-10), developed by Sheldon Cohen, Tom Kamarck, and Robin Mermelstein (1983), is a widely utilized instrument for evaluating perceived stress. It is a brief, self-report questionnaire designed to measure the degree to which individuals appraise situations in their lives as stressful by assessing feelings of unpredictability, uncontrollability, and overload.

The PSS-10 is developed to quantify perceived stress and is commonly employed in research, especially among adolescents and young adults, including school and university students. The questionnaire consists of a 10-item scale that examines various aspects of stress perception, such as emotional reactions, coping ability, sense of control, and difficulties faced during the past month.

Participants are required to select one of the five response options. The scoring of each item is done on a 5-point Likert scale: 0 for Never, 1 for Almost Never, 2 for Sometimes, 3 for Fairly Often, and 4 for Very Often. Positively worded items (Items 4, 5, 7, and 8) are reverse-scored. Higher total scores indicate higher levels of perceived stress. The total score ranges from 0 to 40.

The psychometric properties of the PSS-10 have demonstrated satisfactory reliability and validity across diverse populations. Its internal consistency, measured using Cronbach's alpha, typically ranges from 0.78 to 0.91, indicating good reliability. Factor analyses support its effectiveness in assessing perceived stress, and the scale has been extensively used to explore associations between stress and variables such as mental health, academic performance, coping strategies, and overall well-being**.**

The Rosenberg Self-Esteem Scale (RSES), developed by Morris Rosenberg (1965), is a widely utilized instrument for assessing global self-esteem. It is a brief, self-report questionnaire designed to measure an individual's overall evaluation of self-worth by assessing positive and negative feelings about the self.

The RSES is developed to quantify self-esteem and is commonly employed in research, especially among adolescents and young adults, including school and university students. The questionnaire comprises a 10-item scale that assesses various aspects of self-perception, including self-acceptance, confidence, self-respect, and feelings of competence.

Participants are required to choose one among the four response options provided. The scoring of each item is done on a 4-point Likert scale: 1 for Strongly Agree, 2 for Agree, 3 for Disagree, and 4 for Strongly

Disagree. Negatively worded items (Items 2, 5, 6, 8, and 9) are reverse-scored. Higher total scores indicate higher levels of self-esteem. The total score ranges from 10 to 40.

The psychometric properties of the RSES have demonstrated strong reliability and validity across diverse populations. Its internal consistency, measured using Cronbach's alpha, typically ranges between 0.77 and 0.88, indicating good reliability. Factor analyses support its effectiveness in measuring global self-esteem, and the scale has been extensively used to explore associations between self-esteem and variables such as stress, mental health, academic performance, and overall psychological well-being.

Data Analysis: The data collected from the Perceived Stress Scale (PSS-10) and the Rosenberg Self-Esteem Scale (RSES) were analysed using various statistical methods. These included frequency distribution tables and descriptive statistics to summarize the levels of perceived stress and self-esteem among pre-university students.

Pearson's correlation analysis was conducted to examine the relationship between perceived stress and self-esteem. An Independent Samples t-Test was performed to compare mean differences in stress and self-esteem based on gender. Additionally, a One-Way ANOVA was conducted to examine differences across demographic variables such as stream of study, area of residence, and other relevant group classifications. These analyses helped identify variations both within and between groups.

Results

Table-1

Residence	**Gender**		**Total**
	Male	Female	
Rural	34	47	81
Semi-Urban	7	13	20
Urban	9	11	20
Total	50	71	121

Frequency Table (Demographic Characteristics)

A frequency analysis was conducted to describe the demographic characteristics of participants. The sample consisted of 50 males (41.3%) and 71 females (58.7%), totaling 121 pre-university students. Regarding residence, 66.9% of participants were from rural areas, while 16.5% were from semi-urban areas and 16.5% from urban areas.

Table-2: Descriptive Statistics (Means & Standard Deviations)

		N	**Mean**	**Std. Deviation**	**Std. Error**
Pss	rural	81	18.0741	4.99444	.55494
	semi-urban	20	21.0000	5.58193	1.24816
	urban	20	21.2000	7.83111	1.75109
	Total	121	19.0744	5.77230	.52475

Self_Esteem	rural	81	20.1975	4.37156	.48573
	semi-urban	20	21.8500	4.79336	1.07183
	urban	20	21.5000	6.21120	1.38887
	Total	121	20.6860	4.79415	.43583

Participants reported moderate levels of perceived stress (M = 19.07, SD = 5.77) and self-esteem (M = 20.69, SD = 4.79).

Table-3: Pearson Correlation

		pss	**self_esteem**
Pss	**Pearson Correlation**	1	.378**
	Sig. (2-tailed)		.000
	N	121	121
self_esteem	**Pearson Correlation**	.378**	1
	Sig. (2-tailed)	.000	
	N	121	121
**. Correlation is significant at the 0.01 level (2-tailed).			

A Pearson product–moment correlation was conducted to examine the relationship between perceived stress and self-esteem. Results indicated a significant positive correlation, $r(119) = .378$, $p < .001$, suggesting that higher perceived stress was associated with higher self-esteem among pre-university students.

Table-4: Independent Samples t-test (Gender)

		T-Test For Equality Of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Pss	Equal variances assumed	.296	119	.768	.31634
self_esteem	Equal variances assumed	2.178	119	.031	1.89859

An independent samples t-test was conducted to examine gender differences in perceived stress. Results indicated that the difference between males (M = 19.26, SD = 6.89) and females (M = 18.94, SD = 4.88) was not statistically significant, $t(119) = 0.296$, $p = .768$.

For self-esteem, results showed a significant gender difference, with males (M = 21.80, SD = 5.25) scoring higher than females (M = 19.90, SD = 4.32), $t(119) = 2.178$, $p = .031$.

Table-5: A One-Way ANOVA (Residence)

		Sum of Squares	df	Mean Square	F	Sig.
Pss	Between Groups	245.575	2	122.788	3.861	.024
	Within Groups	3752.756	118	31.803		
	Total	3998.331	120			
self_esteem	Between Groups	59.677	2	29.838	1.305	.275
	Within Groups	2698.390	118	22.868		
	Total	2758.066	120			

A one-way ANOVA was conducted to examine differences in perceived stress across residential areas. The results indicated a significant difference, $F(2,118) = 3.861$, $p = .024$, suggesting that perceived stress varied based on residence.However, no significant differences were observed in self-esteem across residential areas, $F(2,118) = 1.305$, $p = .275$.

Discussion

Major Findings

- A majority of participants reported moderate levels of perceived stress and self-esteem, indicating that pre-university students experience noticeable academic and personal pressures while maintaining an average level of self-worth during adolescence.
- A significant difference was observed in perceived stress across residential areas, $F(2,118) = 3.861$, $p = .024$. Students from rural areas reported comparatively lower levels of perceived stress (M = 18.07) than students from semi-urban (M = 21.00) and urban areas (M = 21.20), suggesting that environmental and lifestyle factors may influence stress experiences.
- There was a significant positive correlation between perceived stress and self-esteem ($r = .378$, $p < .001$). This indicates that higher perceived stress levels were associated with higher levels of self-esteem among pre-university students.
- Gender did not have a significantly influenced perceived stress levels, $t(119) = 0.296$, $p = .768$, indicating that male and female students experienced similar levels of stress
- However, gender differences were observed in self-esteem scores. Male students reported significantly higher self-esteem (M = 21.80) compared to female students (M = 19.90), $t(119) = 2.178$, $p = .031$.
- No significant differences were found in self-esteem across residential categories, $F(2,118) = 1.305$, $p = .275$, suggesting that place of residence did not substantially influence students' self-evaluation.

A primary finding of this research is the statistically significant positive relationship between perceived stress and self-esteem. This suggests that moderate levels of stress experienced during the pre-university stage may function as motivational or performance-related pressure rather than negatively affecting students' sense of self-worth. Academic responsibilities and developmental challenges during adolescence may contribute to increased responsibility and self-perceived competence.

Gender-based analysis revealed that male students demonstrated higher levels of self-esteem, which may be influenced by socialization patterns and confidence development during adolescence. Previous research has indicated that gender differences in self-esteem may arise due to variations in societal expectations, coping styles, and self-evaluative tendencies among adolescents (Rosenberg, 1965).

Overall, the findings highlight that perceived stress and self-esteem are interconnected psychological constructs influenced by demographic factors such as gender and residential background. The results emphasize the importance of understanding contextual influences on students' psychological development and underline the need for supportive educational environments that promote both stress management and positive self-evaluation among pre-university students.

The significant positive relationship observed between perceived stress and self-esteem suggests that stress experienced during the pre-university stage may not always function as a detrimental factor but can, in certain contexts, act as a motivating force. Moderate academic stress may enhance responsibility, alertness, and goal-oriented behavior, which can strengthen students' sense of competence and self-evaluation. According to Lazarus and Folkman's (1984) cognitive appraisal theory, stress depends on how individuals interpret and manage demands; students who perceive challenges as manageable may experience stress alongside maintained or even enhanced self-esteem. Furthermore, adolescence is a period of identity formation (Erikson, 1968), during which overcoming academic and social challenges can contribute to feelings of mastery and self-worth. The finding that male students reported higher self-esteem may reflect gender-based socialization patterns that encourage confidence and assertiveness. Similarly, lower stress among rural students may be influenced by comparatively reduced academic competition or environmental pressures. Overall, the results indicate that perceived stress and self-esteem interact in complex ways, shaped by contextual and developmental factors

Conclusion: The present study examined the relationship between perceived stress and self-esteem among pre-university students. The findings revealed a statistically significant positive relationship between perceived stress and self-esteem, indicating that stress experienced during adolescence may not necessarily undermine self-worth and may, in certain contexts, function as motivational or performance-related pressure. Male students reported significantly higher levels of self-esteem, whereas perceived stress did not differ significantly across gender. Residential background showed a significant influence on stress levels, with rural students reporting comparatively lower perceived stress than their semi-urban and urban counterparts. These findings highlight the dynamic interaction between environmental factors and psychological variables during a critical developmental stage.

The results have important practical implications for educational institutions. Understanding how stress and self-esteem interact can assist educators and counselors in designing structured stress-management and self-development programs. Since adolescence is a formative period for identity development (Erikson, 1968), strengthening self-esteem may enhance resilience, academic engagement, and emotional well-being. Interventions that promote adaptive coping strategies and cognitive appraisal skills (Lazarus &Folkman, 1984; Compas et al., 2001) may help students manage academic demands more effectively.

However, certain limitations must be acknowledged. The study was limited to a relatively small sample from a specific geographical region, which may restrict generalizability. The cross-sectional design prevents causal interpretation of the relationship between stress and self-esteem. Additionally, the use of self-report measures may introduce response bias.

Future research may incorporate larger and more diverse samples, employ longitudinal designs to track psychological changes over time (Orth & Robins, 2014), and examine additional variables such as coping strategies, resilience, and social support to provide a more comprehensive understanding of adolescent mental health.

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