Original Article

Relationship between self-esteem and academic performance among medical undergraduates in Rawalpindi Medical University; A Descriptive Cross-Sectional Study

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Abstract

Introduction: Self-esteem significantly influences academic performance, yet research on its impact, especially in medical education, is limited. This study addresses this gap by examining how self-esteem affects academic outcomes among medical undergraduates, aiming to inform interventions that enhance student success and well-being.

Objective: This study was conducted to assess the relationship between self-esteem and academic performance of undergraduates.

Materials and methods: A total of 309 students, comprising 113 males and 196 females, participated in the study. To assess their self-esteem and academic performance, we administered the Rosenberg Self-esteem scale and cumulative scores of grade point average (CGPA), respectively. The data analysis involved using Pearson's correlation and t-test to determine statistical significance.

Results: Our findings revealed a significant positive relationship (r=0.124*) between self-esteem and academic performance. Additionally, we discovered significant differences between male and female students in terms of self-esteem and academic performance scores.

Conclusion: Female students outperformed their male counterparts in academic achievements and exhibited higher self-esteem levels. Moreover , significant positive relationship between self-esteem and academic performance

Keywords: Self-esteem, Academic Performance, Grades.

Introduction

Self-esteem pertains to an individual's evaluation of their worth, functioning as a simplified depiction of diverse and intricate psychological conditions associated with self-perception[1,2]. Academic performance is the presentation of a student's understanding and expertise in a particular subject or field, assessed against a predetermined standard or benchmark[3]. Since self-esteem affects both a student's emotional experiences and the methods they use for metacognitive learning, it is directly proportional to their educational progress[4]. A low sense of self-worth has a detrimental impact on academic performance, leading to a decrease in motivation to complete schoolwork and unviable academic results[5,6]. Moreover, stressful experiences greatly influence one's personality because they act as a psychological buffer against the emergence of psychological disorders[7]. Anxiety and fear cause a decline in retention, as well as sharp swings in attention span, decision- making objectives, and academic achievement [8].

Using three scales—the Rosenberg Self-Esteem Scale (RSES), the Perceived Stress Scale (PSS), and the Body Area Satisfaction Scale; 220 undergraduate students (110 males), completed surveys measuring their stress levels, body satisfaction, and self-esteem. The results of the meta-analysis showed that academic performance was found to be positively correlated with higher self-esteem ($p<0.0005$, $r=0.32$). Also, a significant inverse relationship ($p<0.05$, $r=-0.198$) was discovered between stress and self-esteem[9]. At Faisalabad's GC University, Purposive sampling was used to select 40 male and 40 female students, for a total of 80 students. The study found a direct proportionality between academic performance and self-esteem, indicating that the two are co-related[10].

While there have been previous studies on the relationship between academic performance and self-esteem, it is still unclear how medical institutions can effectively intervene to lower levels of maladaptive perfectionism and academic burnout while raising self-esteem[11]. To mitigate academic burnout among medical students and ultimately benefit their overall well-being, it is beneficial to establish a positive school environment[12].

The rationale for this research is to understand how self-esteem influences academic performance among medical undergraduates at Rawalpindi Medical University. Given the high-stress environment of medical education, identifying this relationship can inform strategies to support student well-being and improve academic outcomes. Additionally, this study will provide culturally relevant insights that can enhance existing educational practices and mental health support systems. The objectives of this study were to evaluate the level of self- esteem among medical undergraduates at Rawalpindi Medical University, assess the academic performance of medical undergraduates, and identify patterns or correlations with varying levels of self-esteem.

Materials and Methods

This cross-sectional survey was carried out among medical Undergraduates of Rawalpindi Medical University. Duration of study was approximately 4 months from June to September 2023. Our sample size is approximately 309. We calculated our sample size using the Raosoft calculator aiming for a 95% accuracy level with a 5%

marginal error rate. This approach allowed us to obtain more reliable and precise results. Data will be collected by Google Forms. All medical undergraduates from second-year MBBS to Final year MBBS are included in our research except those students who did not successfully pass their professional exams. Exclusion Criteria included students who did not pass their professional exams to ensure that the focus remained on students with academic achievement. Individuals with known psychiatric issues were also excluded from the study to maintain a more uniform participant group. While proceeding with the questionnaire, you will be asked if you are currently undergoing psychiatric treatment and whether you have passed the professional exam. Only those who meet these criteria will proceed to the next questions. We collected data through Google Forms and data was collected anonymously. Self-esteem is self-

The scale to assess self-esteem is the Rosenberg Self-Esteem Scale (RSES). Academic performance is a measurement of a student's achievements. It is the level of proficiency attained in academics. Academic achievement is measured through Cumulative Grade Point Average (CGPA), which will be calculated from marks obtained in their latest professional exams. A pilot study was conducted to validate the Google form the Cronbach's Alpha test was run on an initial 20 respondents considering them as our pilot study and the significance value was found to be greater than 0.7 which validates our scale.

The analysis includes descriptive statistics and a Pearson correlation test using SPSS version 26.0. The Pearson correlation test was used to explore the relationship between self-esteem and academic performance and the t-test was used to explore gender-based relations. The aim of using Pearson correlation was to find a relation and determine whether there is a strong or weak relation between variables whereas the t-test was used to determine the difference between the mean of both genders to understand whether the difference observed is statistically significant or occurred by chance. Rosenberg scale was used for measurement of self-esteem.

Results

The main objective of the study was to find out the relationship between Self-esteem and the GPA of medical students at Rawalpindi Medical University. The study also aimed to study the demographic variables of Self-esteem and GPA. The analyses of the data for achieving these objectives were carried out according to the details given below: Alpha coefficients for all instruments along with mean, standard deviation, actual and potential range of scores, and skewness and kurtosis of data distribution have been shown in Table 1.

Table 1 shows the descriptive statistics for all variables of the study. Skewness and kurtosis values indicate that they are normally distributed. The reliability of the instrument indicates that the scale and subscale are internally consistent to explain the association between Self- esteem and GPA in medical undergraduates at Rawalpindi Medical University. Pearson Product Moment Correlation was performed. Results are presented in Table 2. In Table 2 correlation analysis shows that there is a significant positive relationship between self-esteem and GPA means increase when GPA is high.

The effect of gender on the variables was investigated by independent samples t-test. The results are presented in Table III

Table-1 Descriptive Statistics and Alpha Reliability Coefficients of Scales (N=309)

Scales	No. of items	Cronbach alpha	*Mean*	*SD*	Range	
					Real	Potential
SE	10	*.81*	*25.0*	*5.20*	*10-40*	*13-40*
GPA			2.91	0.21	1-4	2.23-3.37

Table-II Pearson Correlation among Self Esteem and GPA

Sr. No	Variables	1	2
1	SE.	-	.124*
2	GPA.	-	-

Table-III Gender wise distribution of self-esteem scores and GPA (N=309). Male (n=113). Female (n=196)

Var	Mean	SD	Mean	SD	Tstatistics	p-value
SE	24.1	4.8	25.4	0.38	-2.1	0.03
GPA	2.85	0.221	2.95	0.01	-4	0.01

Table III demonstrates the gender differences in Self-esteem and GPA in medical undergraduates at Rawalpindi Medical University. The t-test exhibits that there is a significant difference between males and females in Self-esteem and GPA. Females' scores are higher than males which shows females have high self-esteem and score high marks or GPA.

Discussion

Our study objective was to investigate the relationship between self-esteem and the Grade Point Average (GPA) of medical students at Rawalpindi Medical University. Our study, comprising 309 participants, stands out in terms of sample size when compared to other studies. For instance, a 2015 study conducted at Faisalabad University had 80 participants[9], a 2012 Malaysian study at University Kebangsaan included 220 participants[13] and a 2009 study on Iranian undergraduates involved 153 participants[10]. This can be attributed to Rawalpindi Medical University's larger student capacity. The decision to gather data from a larger pool of students at RMU was driven by our desire to ensure a more accurate representation of the population.

The relationship between self-esteem and GPA among medical undergraduate students is shown in Table II, the results revealed a statistically significant positive correlation between self-esteem and GPA, implying that as GPA scores increase, self-esteem tends to increase as well.

Our study revealed a statistically significant but relatively modest positive correlation between self-esteem and GPA ($r=0.124^*$). When compared with three other studies, the findings vary as study conducted at Faisalabad University in 2015 showed a highly significant positive correlation[9] ($r=0.863^{**}$, $p=0.007$), surpassing our results. 2). In a 2009 study on Iranian undergraduates[10], no significant relationship was found between self-esteem and academic grades. These variations can be attributed to two plausible explanations one is that Students who excel academically may have a more accurate perception of their abilities, leading to a stronger correlation. Conversely, students with lower academic performance may boost their self-esteem as a compensatory mechanism for their academic shortcomings. A 2012 Malaysian study at the University of Kebangsaan showed a significant positive correlation ($r=0.32$, $p<0.0005$)[13].

Table III explores gender differences in self-esteem and GPA among the study participants. This was another crucial aspect of this research. Independent samples t-tests were conducted to assess these differences (Table III). The results showed significant distinctions between male and female students. Female students exhibited higher levels of self-esteem and achieved higher GPAs compared to their male counterparts. In our data analysis, it's very clear that girls have higher academic grades and also self-esteem than male students, this opens a new door to research why girls have higher self-esteem than male students, and many other factors can be studied from the literature

review it's prominent that in most other parts of the world, self-esteem of male students is higher because of their high confidence level. But the possible reasons in our underdeveloped country are, that girls are not given equal chances, and they also face difficulty in getting higher education, so as these medical students cross all those barriers and hurdles, they have higher self-confidence. This gender disparity in both self-esteem and academic performance highlights the influence of gender-related factors in the context of medical education.

In comparison to other studies, A 2015 study conducted at Faisalabad University indicated that male students exhibited higher levels of self-esteem than female students,[9] while females achieved superior academic grades. A 2012 Malaysian study at the University of Kebangsaan found no significant gender differences in either self- esteem or academic performance[13].

Some limitations of the study were that the study was conducted exclusively on students from a single university, which may not represent a broader population of different university students. The research only considered gender as a demographic variable, while factors like economic conditions and parental education levels were not considered, which could have influenced the results. Self-esteem was solely evaluated through self-reporting, and individual perspectives on self-esteem can vary. Some students might report high self-esteem despite not performing well academically. Using Google Forms for data collection may have introduced the possibility of random or inaccurate responses from participants.

Conclusion

Based on the results obtained in this study, we draw the following conclusions. There is a positive correlation between self-esteem and academic success in university students. Moreover, a higher level of self- esteem appears to be associated with better academic performance. Notably, our findings indicate that female students exhibited superior academic performance as compared to their male counterparts. Additionally, female students demonstrated higher levels of self-esteem when contrasted with male students.

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