RESEARCH ARTICLE

The impact of psychological well-being on academic performance among undergraduate dental students

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Abstract

Objective: To assess the relationship between psychological wellbeing and academic performance among undergraduate dental students.

Method: The analytical, cross-sectional study was done at a dental college in Rawalpindi, Pakistan, from January to July 2023, and comprised dental students after getting approval from Ethical Review Committee. Data on psychological wellbeing was collected using a short version of the Psychological Wellbeing Scale, assessing autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Academic performance data was obtained from the academic records. Data was analysed using SPSS 26.

Results: Of the 210 students with mean age 23.8 ± 7.4 years, 158(75.2%) were females and 52(24.8%) were males. There were 151(71.9%) subjects who were second-generation medical students, while 59(28.1%) were first-generation students. There was a significant positive correlation between psychological wellbeing and academic performance (r= 0.55, p<0.05). Females outperformed the male students (p<0.05). Students who reported higher levels of satisfaction with the institution exhibited improved academic performance (p<0.05).

Conclusion: Promoting wellbeing and providing support for students' emotional and psychological needs should be integral components of dental education.

Key Words: Academic performance, Psychological wellbeing, Undergraduate dental students.

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Introduction

Healthcare professionals consistently face elevated levels of stress, which inherently accompanies their occupation due to the high societal expectations placed upon them. Dentistry, in particular, is recognised as one of the most demanding professions, and the stressors begin early in their dental education. These stressful experiences can subsequently impact an individual's mental and physical health, thereby affecting both their personal and professional lives and disrupting their overall wellbeing, distinguishing them from their counterparts in various other healthcare fields.[1] Numerous studies globally have highlighted that dental education is notably more stress-inducing compared to medical and other healthcare programmes, sparking concerns within the academic and healthcare communities.[2,3]

Given these characteristics, it is reasonable to anticipate that medical school would serve as a phase of individual growth, contentment and total welfare, notwithstanding its acknowledged difficulties. Unfortunately, empirical evidence suggests that the existing educational system may unintentionally exert an adverse influence on the psychological wellbeing of students, resulting in a significant prevalence of mental health disorders, such as depression, anxiety and stress, among medical students. The subject has been extensively researched and published.[4–6] Furthermore, there is evidence to suggest that burnout, a recognised manifestation of distress commonly observed among residents and practicing physicians[7–9] may originate from the medical school experience.[10,11] Several factors have been suggested as potential contributors to the decline in students' mental wellbeing. These factors include academic pressures, heavy workloads, financial stressors, sleep deprivation, exposure to patient suffering and mortality, student mistreatment, and an implicit "hidden curriculum" that promotes cynicism. Moreover, scholarly discourse suggests that the presence of psychological distress among students may have detrimental implications for their academic achievements and could potentially be

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associated with occurrences of academic misconduct.[12,13]

The pursuit of higher education, particularly in demanding fields like dentistry, places significant cognitive and emotional demands on students. Within this context, the psychological wellbeing of undergraduate dental students plays a pivotal role in shaping their academic journey. The current study was planned to assess the relationship between psychological wellbeing and academic performance among undergraduate dental students.

Subjects and Methods

The analytical, cross-sectional study was done at a dental college in Rawalpindi, Pakistan, from January to July 2023 after obtaining approval from the Ethical Review Committee of the institution, no Riphah/IRC/23/3035. The sample size was determined using online Raosoft calculator[14] with 99% confidence level and 5% margin of error in the light of a study in Lahore, Pakistan, which reported 13% prevalence of psychological distress among dental students.[15] Alpha (α) value was set at 0.05 and power at 0.8. The sample size was inflated to account for a potential withdrawal rate of 20%. The sample was raised using purposive sampling technique through a combination of in-person requests and Google Forms disseminated through various social media platforms. Those included were undergraduate dental students regardless of gender and academic year. House officers and postgraduate students were excluded. Data was collected after taking informed consent from the subjects.

For the measurement of psychological wellbeing, a shortened version of the Psychological Wellbeing Scale (PWB-S) was employed.[16] The scale featured 18 items that gauged autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance, with each of the 6 domains consisting of 3 items. Participants rated their responses on a 5-point Likert scale, ranging from 1 = not at all to 5 = extremely. The Achievement Emotion scale employed a reverse order, ranging from 1 = extremely to 5 = not at all. Scores ranged 18-90, with higher scores indicating elevated levels of psychological wellbeing.

Academic performance data were retrieved from the Student Office database of the college, encompassing examinations held from September 2022 to January 2023. Students' performance was classified into two groups: those scoring 0-320 marks were categorised as fail, and those scoring 321-640 marks as pass.

The study questionnaire demonstrated good reliability and validity after a pilot study on 20 undergraduate dental students, with Cronbach's alpha coefficient 0.85 for internal consistency reliability, and correlations of 0.70 and above with established measures.

Data was analysed using SPSS 26. To explore the relationships between psychological wellbeing and academic performance, Pearson correlation analysis was conducted. Multiple linear regression analysis was employed to identify significant predictors of academic performance among the dental students. $P<0.05$ was considered significant.

Results

Of the 210 students with mean age 23.8 years ± 7.4 years, 158(75.2%) were females and 52(24.8%) were males. There were 151(71.9%) subjects who were second-generation medical students, while 59(28.1%) were first-generation students. In terms of accommodation, 108(51.4%) participants were hostelites, while 102(48.6%) were day scholars. The majority of the respondents reported average satisfaction levels 170(81.0%), while a 16(7.6%) expressed high satisfaction (Table 1).

Table-1: Demographic characteristics

Variables	N	%
Gender		
Male	52	24.8
Female	158	75.2
Generational status		
1st Generation	59	28.1
2nd Generation	151	71.9
Hostel/ Day scholar Distribution		
Day Scholar	102	48.6
Hostelite	108	51.4
Academic Year		
1st year	51	24.3
2nd Year	50	23.8
3rd year	54	25.7
Final year	55	26.2
Satisfaction with the institution		
Low	24	11.4
Average	170	81.0
High	16	7.6

*Generational status: A first-gen student means that his parent(s) did not complete a 4-year college or university degree, regardless of other family member's level of education.

There existed a positive correlation between academic performance and psychological wellbeing ($r=0.212$; $p<0.05$).

PWB-S score exhibited strong positive correlation with self-acceptance domain ($r=0.555$, $p<0.05$), purpose in life ($r=0.563$, $p<0.05$), environmental mastery ($r=0.617$,

Table-2: Correlations of dimensions of psychological wellbeing with academic achievement.

	Self-Acceptance	Purpose in Life	Environmental Mastery	Personal Growth	Positive Relations	Autonomy	Psychological Wellbeing Score	Academic performance
Self-Acceptance	1							
Purpose of Life	.250**	1						
Environmental Mastery	.391**	.375**	1					
Personal Growth	.418**	.367**	.424**	1				
The Positive Relations	.339**	.494**	.434**	.381**	1			
Autonomy	.428**	.387**	.464**	.360**	.368**	1		
Psychological Wellbeing Score	.555**	.563**	.617**	.640**	.609**	.576**	1	
Academic performance	.063	-.084	-.015	.125	-.049	-.052	.212**	1

*= P<0.05
**= P<0.001

Table-3: Impact of students' academic characteristics and psychological wellbeing on academic performance.

Predictors	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	161.020	110.268		1.460	.146
Psychological wellbeing	1.586	.485	.215	3.267	.001
Academic Year	-.269	5.596	-.003	-.048	.962
Age	2.783	3.707	.050	.751	.454
Student Gender (Male)	-39.249	14.804	-.179	-2.651	.009
Generational status	2.006	13.742	.010	.146	.884
Satisfaction with institute	55.147	14.279	.254	3.862	.000
Being Hostelite	-11.468	12.608	-.061	-.910	.364

p<0.05), personal growth (r=0.640, p<0.05), positive relations (r=0.609, p<0.05), and autonomy (r=0.576, p<0.05) (Table 2).

PWB-S score exhibited a significant positive relationship with academic performance (β=1.586, p=0.001). The male gender was associated with lower academic performance compared to female students (β=39.249, p=0.009). Students' satisfaction with the institute had a positive relationship with academic performance (β=55.147, p=0.001) (Table 3).

Discussion

The current study indicated a significant and positive correlation between psychological wellbeing and academic achievement among undergraduate dental students, mirroring earlier findings.[17] A meta-analysis also reported positive correlation in college students, strengthening the evidence that psychological wellbeing plays a pivotal role in academic performance across educational settings.[18]

Moreover, the current study identified a longitudinal relationship between psychological wellbeing and academic performance, which was in line with a 2018 which reported similar findings in high school students.[19] The longitudinal aspect adds to the existing literature, emphasising the enduring influence of wellbeing on academic outcomes. Additionally, a study examining the impact of psychological wellbeing on academic performance in university students found a positive correlation, aligning with the current core findings.[20] A local correlational study also discovered a strong positive correlation between medical students' psychological wellbeing and their overall academic performance in two institutions.[21]

A longitudinal study concluded that there was a significant relationship between psychological wellbeing and academic performance, with higher wellbeing levels associated with better academic achievement.[22]

It is crucial to recognize that the association between wellbeing and academic performance is complex and can be influenced by various factors, necessitating further exploration for a comprehensive understanding of student success in dental education. Studies have shown that psychological wellbeing is positively associated with greater resilience, enabling students to bounce back from academic setbacks and challenges, while also reducing levels of psychological distress, thereby improving cognitive load and concentration on academic tasks.[23]

The present study revealed that psychological wellbeing, gender and satisfaction with the institution served as robust predictors of favourable academic performance among the students. However, the analysis did not unveil any significant distinctions concerning psychological wellbeing, encompassing its constituent factors, in relation to advancing age, generational status, and other demographic attributes. This outcome appears to be at

odds with earlier findings to the effect that both age and gender wield substantial predictive influence over academic performance, alongside psychological wellbeing.[24]

The variance observed in the academic performance of female participants in this study, and typically within higher education, underscores the significant strides made by females in surpassing their male counterparts in this academic context. This phenomenon likely reflects the outcomes of government initiatives aimed at creating equitable educational opportunities, particularly since the inclusion of females in the educational landscape. Consequently, this has led to a narrowing gender gap in accessing various career opportunities by females.

Additionally, the current study finding deviates from earlier studies that have demonstrated the potential moderating or mediating role of generational status in the nexus between students' accomplishments and their academic achievements.[25–27] This divergence may be explained by variations in the sample demographics, cultural contexts, or methodologies employed across the studies, necessitating further exploration to elucidate the complex interplay of factors impacting academic performance among students across different settings.

The current study has limitations because of its cross-sectional design, which precluded the establishment of causality or long-term effects of psychological wellbeing on academic performance. Also, data was collected from a single centre in one city, potentially limiting the generalisability of the findings. Studies employing longitudinal approach and diverse samples are needed to valide the current findings.

Conclusion

A significant and positive correlation between psychological wellbeing and academic performance was noted, reaffirming that students with higher levels of psychological wellbeing tended to excel academically. Additionally, students' satisfaction with their institution exhibited a significant positive relationship with academic performance, underscoring the importance of a supportive and gratifying academic environment. It is crucial to acknowledge, however, that the relationship is multifaceted and can be influenced by various factors. Hence, further research is essential to unravel the complexities surrounding students' success in dental education.

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Authors' Contribution:
MOS: Writing and agreed to be accountable for all aspects of the work.
SA: Supervision and study design.
RY: Supervision, aligning and getting permission from study center.
ES: Study conduction, writing, aligning and formatting.
SS, MFH: Statistical analysis.