



Exploring Quality of Life across Academic Years among MBBS Students: An Online Cross-Sectional Survey

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ABSTRACT

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Background: Medical education is demanding and often detrimental to students' quality of life (QoL), especially in developing countries like Pakistan. Medical students frequently report elevated stress levels, disrupted sleep, and reduced physical and mental well-being, particularly in the initial years of training.

Objective: To assess the QoL of medical students across all five years of MBBS education and to identify key trends and challenges in their well-being.

Methods: A cross-sectional study was conducted over three months (April–July 2024) at Fatima Jinnah Medical University, Lahore, Pakistan. A total of 283 students (1st to 5th year) participated through purposive sampling. Data was collected using the WHOQOL-BREF questionnaire distributed via Google Forms. QoL was evaluated across six domains: demographic data, general QoL, physical health, psychological well-being, social relationships, and physical activity/mental health.

Results: First-year students reported the lowest satisfaction in health status (33.7%), sleep (24.3%), and physical fitness (20.3%), compared to higher satisfaction levels in final-year students (47.5%, 50%, and 32.5% respectively). Extreme academic stress was most prevalent in 2nd (42.6%) and 4th years (44.6%), with 3rd-year students showing the least stress (19.6%). Final-year students demonstrated greater energy, self-satisfaction, and fewer negative emotions, while the 2nd year showed notably low satisfaction with living conditions.

Conclusion: QoL generally improves from the first to the final year of medical education. Early-year students face the most significant challenges, indicating a need for targeted institutional support to mitigate stress and enhance well-being throughout the academic journey.

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Introduction

One of the biggest issues in public health of the 21st Medicine is one of the most selected careers in Pakistan. Out of 150,000 students who appear for the Medical College Admission Tests (MDCAT), only 10% (15,000 applicants) get accepted into medical colleges of Pakistan [1]. However, despite all the struggles to secure a seat in medical college, life does not seem to get much better during medical school.

Medical education can have adverse effects on students' health and well-being. Studies show that medical students experience higher stress levels compared to their peers in other fields of study [2]. Intense workload, lack of balance between academics and personal life, and peer pressure are a few of the stressors faced by medical students [3]. All of this can also often lead to poor sleep quality and excessive daytime drowsiness [4]. Furthermore, medical students,

especially those who live away from their homes, develop unhealthy dietary habits, with breakfast being the most skipped meal of the day, coupled with insufficient consumption of fruits and vegetables [5]. Tough learning environment, inadequate sleep, loneliness, and limited social interaction are a few causes of depression, stress, and suicidal thoughts in medical students [6].

WHO defines Quality of Life (QoL) as an individual's perception of their position in life in the context of the culture and value systems they grew up in and about their goals, expectations, standards, and concerns. In general, QoL covers aspects like physical health, psychological well-being, social relationships, and environmental conditions. Measuring QoL is essential for estimating the overall well-being of individuals. Students who enjoy a higher QoL are better equipped to conquer life's challenges and are more motivated to strive for success. Medical education's demanding nature can severely impact the physical and mental well-being of medical students, resulting in a diminished QoL [2]. Additionally, medical students consistently report a lower QoL compared to their peers in other academic disciplines. According to the study "Comparison of QoL between medical students and young general populations" by Pagnin and De Queiroz [8], medical students exhibit poorer psychological well-being and social relationships than the normative young population [7].

However, researchers have also identified certain coping strategies to help medical students improve their QoL. Support of the institution, improving curricula, extracurricular activities, social networking, and maintaining a balance between personal life and academic life are key factors for improving QoL [6][9]. Since academic workload and stress greatly hamper the patient care provided by medical health professionals, it is important to assess the health status and QoL of future physicians to avoid burnout and exhaustion. The main aim of this study is to assess the QoL of medical students at Fatima Jinnah Medical University and help the stakeholders make necessary improvements to enhance the students' QoL.

Methods

A cross-sectional survey was conducted at Fatima Jinnah Medical University, Lahore for a duration of 3 months (April 2024 - July 2024). A total of 283 students of all five years of MBBS from private and public medical universities of Punjab participated in the study. The sampling technique for this study was a non-probability purposive sampling. Participants who were enrolled as 1st-

5th year MBBS students at medical schools of Punjab were included in the study. Participants who did not give informed consent for the study and did not have access to smartphones or devices were excluded.

Data was collected from medical students using a Google Forms questionnaire. The WHOQOL-BREF questionnaire was used to assess the QoL of medical students. This questionnaire consisted of 6 domains: Demographic Information, General QoL, Physical Health, Psychological Well-Being, Social Relationships and Physical Activity, and Mental Health.

Results

Total 283 students filled out the online questionnaire out of which 96.1% were female students and 3.9% were male. [Figure 1](#) shows that the highest proportion of students belonged to the age group 21-24 (51.2%), followed by students aged 17-20 (46.6%). The majority of responses were filled by students in the 1st year of med school (26.1%), followed by 2nd and 3rd year (21.6%), with final year students having the lowest participation rate (14.1%). In the first year, only 33.7% of students regarded their health status as good, compared with 47.5% of the final year students. First-year students reported lower satisfaction with sleep (24.32%) and physical fitness (20.27%) compared with 50% and 32.5% of the final year students, respectively. Students in all years faced severe academic workload, with 28.37% of the first year, 42.6% of the 2nd year, 44.6% of the 4th year, and 37.5% of final year students reporting extreme workload and stress, whereas only 19.6% of 3rd year students reported extreme academic burden. All five years expressed having moderate energy for everyday life, with the 3rd year (36.06%) and the 4th year (40.42%) reporting the highest percentages. The first year reported the highest percentage of students (22.94%) having little energy, while the final year had the lowest percentage (10%). Only 39.1% of first-year students were satisfied with themselves compared with 45.9% of 2nd-year, 49.1% of 3rd-year, 44.68% and 55% of final-year students. First-year and third-year students reported the highest percentages of experiencing negative feelings of worry and anxiety (27.02 & 29.50%) compared with only 13% of fourth-year and 8% of final-year students. An average of 52.17% students in all the years showed satisfaction with their living conditions, except the 2nd year, which showed a lower satisfaction rate, with only 36.06% people satisfied and 22.95% dissatisfied.

The first year had the highest percentage of students dissatisfied with sleep, physical fitness, and health, while the majority of final year students were satisfied. This

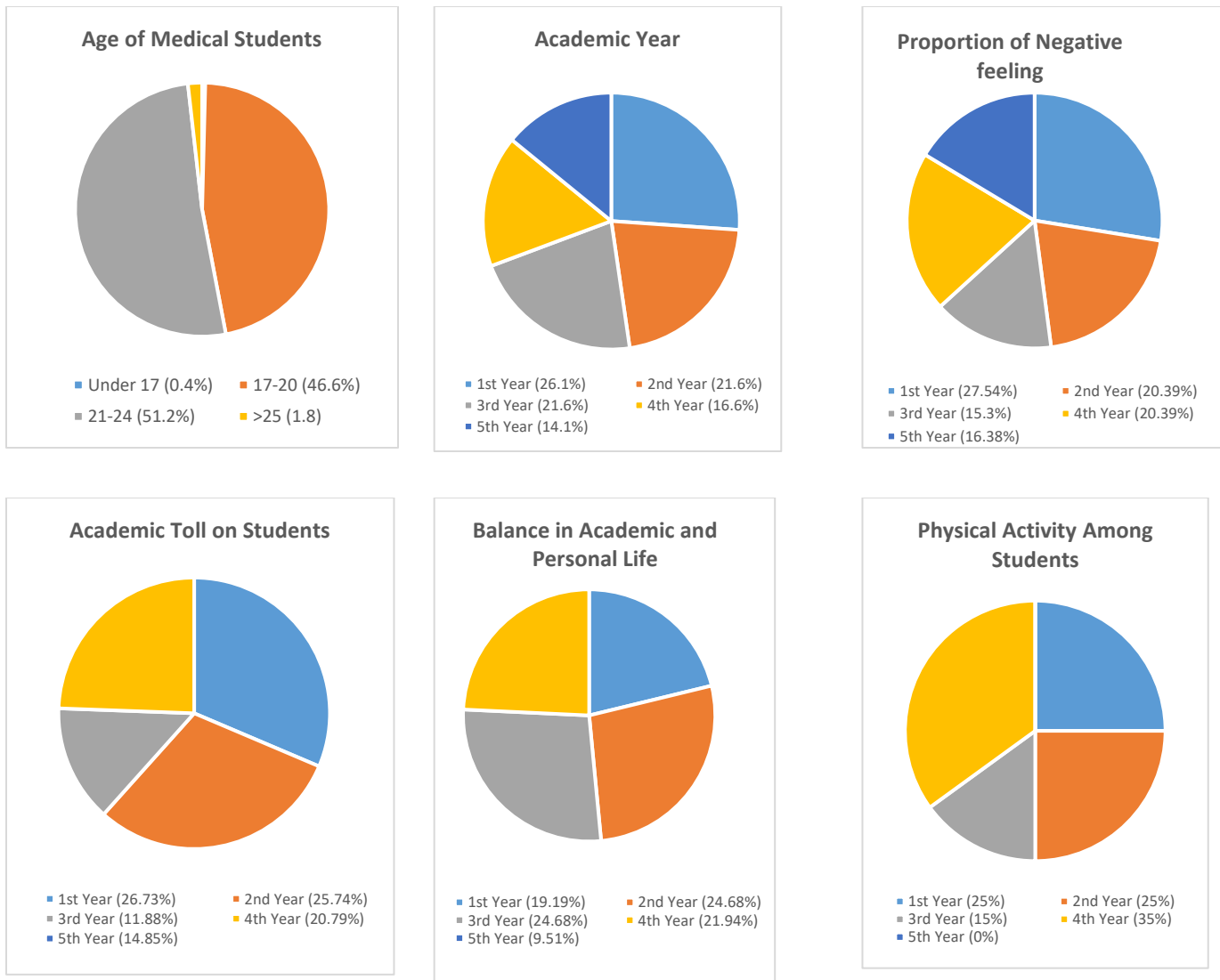


Figure 1 (a to f): Demographics and QoL status in medical students

shows that sleep and physical fitness tend to improve as one advances in studies. While the academic workload and stress may remain consistent across all the years, self-satisfaction and energy levels tend to improve, with the first year having the lowest value and the final year having the highest value. Health status also tends to improve over the years, with the final year reporting the highest percentage of students considering their health status good. All the years express satisfaction with their living conditions except the second year. These results lead to the conclusion that the first year faces significant challenges owing to their inexperience in the medical field, so they tend to have the lowest QoL, whereas the final year generally has the highest QoL.

Discussion

In our study, medical students reported lower satisfaction with sleep, diet, and work-life balance, and face an enormous academic burden. Previous studies have assessed QoL among medical students both across developed and developing countries. Students in developed countries generally have better access to mental health resources, counseling services, and wellness programs [8]. These resources can help mitigate some of the negative impacts on their QoL. Moreover, UNESCO's report on education quality emphasizes that a supportive academic environment can improve student outcomes and overall QoL. On the other hand, in developing countries, medical students often face resource limitations, insufficient access to learning materials, inadequate facilities, and limited mental health

support, which negatively impact their QoL. Students frequently report higher levels of psychosocial distress due to financial constraints, family pressures, and socio-political instability. These factors all contribute to lower QoL. The BMC Medical Education study also notes that in developing countries, financial and familial pressures add to the academic stress, leading to higher psychosocial distress [10]. Furthermore, cultural differences play a significant role in how students cope with stress. In many developing countries, students may rely more on family support and community networks, which can be both a source of comfort and additional pressure. The UNESCO report discusses how cultural and social dynamics influence coping mechanisms among students in developing countries [11]. In developed countries, despite higher stress levels, better access to mental health resources and supportive learning environments can help improve QoL. Conversely, in developing countries, limited resources and higher psychosocial stressors tend to lower students' QoL, although strong family and community ties provide crucial support.

The low QoL of medical students reported in China [11] was mainly due to heavy academic workload, bad sleep habits, tense relationships with roommates and family, and poor physical exercise status. Medical students have a poor QoL in Saudi Arabia as well due to high rates of psychological stress and depression, particularly more in female students than male students [12]. Another study in Saudi Arabia showed that poor psychological health was associated with higher academic scores [9]. Similar studies in Korea reported poor QoL in medical students, particularly in the early years of med school, in the physical health, environment, and social relationship domains [13].

However, research in Germany showed that medical students have a near-normal QoL due to their better interest in physical training and a healthy diet [14]. Physical exercise is found to be positively correlated with a high QoL and reduced burnout [6]. Polish medical students also regarded their QoL as good due to intrinsic motivation and an autonomous approach in learning [15].

These results show that developed countries show both low and high QoL. Those students who have better diets, exercise regularly, and are passionate about their studies tend to have a good QoL. In contrast, those with higher academic burden, lack physical activity, and poor sleep quality have low QoL scores. Poor QoL of life has been reported in developing countries as well. A study conducted in Brazil showed that the medical students frequently faced insomnia and burnout, which was associated with low QoL. However, students in the 5th year of med school showed better QoL scores due to personal satisfaction and sense of accomplishment achieved by

medical training [16]. Another study in the Philippines indicated that medical students had average to above-average QoL scores. The lowest scores were recorded in the mental health domain, and the highest scores in the physical health domain. Depression and anxiety were most commonly associated with lower scores in most of the domains of QoL [17].

Conclusion

The purpose of this research is to conduct a comparative analysis of the change in QoL of medical students over the five years of their medical school education in Pakistan. It is important to assess QoL as it helps to identify challenges and difficulties faced by medical students during their five-year journey in medical school. Understanding how QoL evolves and varies across different stages of medical training can help in the development of interventions aimed at enhancing overall student experience and academic performance. It helps to provide critical data to make changes in policy and curricula, making it more student-friendly and less stressful. This research aims to contribute to the well-being and success of medical students, reduce their burnout, help them to become better doctors, and potentially improve patient care outcomes in the long run. Establishing benchmarks for QoL guides future research, attracts funding, and contributes to long-term improvements in healthcare outcomes. Ultimately, this research raises public awareness and promotes societal support for medical students, ensuring a sustainable and effective healthcare workforce.

Authors' contributions

| ICMJE criteria | Details | Author(s) |
|------------------------------|------------------------------------------------------|-----------|
| 1. Substantial contributions | Conception, OR | 3,4 |
| | Design of the work, OR | 1,4 |
| | Data acquisition, analysis, or interpretation | 1,2,3 |
| 2. Drafting or reviewing | Draft the work, OR | 1,2,3 |
| | Review critically for important intellectual content | 1,4 |
| 3. Final approval | Approve the version to be published | 1,2,3,4 |
| 4. Accountable | Agree to be accountable for all aspects of the work | 1,2,3,4 |

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The Ethics Review Committee of Fatima Jinnah Medical University, Lahore approved the study. Informed consent obtained from all volunteer participants.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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