

# EVALUATION OF QUALITY OF LIFE AMONG STUDENTS AT REHMAN MEDICAL INSTITUTE USING THE WHOQOL-BREF TOOL

Maria Khan<sup>1</sup>, Brekhna Jamil<sup>2</sup>, Fatima Muhammad<sup>3</sup>, Shifa Basharat<sup>4</sup>, Amina Gul<sup>5</sup>, Muhammad Ihtesham Khan<sup>5</sup>

<sup>1</sup>Department of Microbiology, Pathology Laboratory, Peshawar Institute of Cardiology, Peshawar - Pakistan

<sup>2</sup>Institute of Health Profession Education & Research, Khyber Medical University, Peshawar - Pakistan

<sup>3</sup>Department of Medical Education, North West School of Medicine, Peshawar - Pakistan

<sup>4</sup>Department of Histopathology, Rehman Medical College, Peshawar - Pakistan

<sup>5</sup>Department of Pathology (Microbiology), Khyber Medical College, Peshawar - Pakistan

<sup>1</sup>Department of Pathology (Hematology), Khyber Medical College, Peshawar - Pakistan

## ABSTRACT

**Objective:** This study aimed to evaluate the quality of life (QoL) of medical and dental students across four major domains and investigate the impact of age, gender, and academic level on QoL.

**Material & Methods:** In February 2020, a cross-sectional study was carried out at the Rehman Medical Institute, where 620 medical and dental students in years 1 through 5 at Rehman Medical College (RMC) and years 1 through 4 at Rehman College of Dentistry (RCD) made up the study population. The World Health Organization Quality of Life questionnaire (WHOQOL-BREF), which has 26 items, was used as a sample collection tool.

**Results:** The WHOQOL-BREF questionnaire's overall Cronbach's alpha coefficient was 0.81. Students' overall satisfaction with health was  $3.81 \pm 0.85$  (satisfied), and their self-reported QoL mean score was  $4.07 \pm 0.78$  (good). The social domain had the lowest quality of life (QoL), while the environmental domain had the highest mean score ( $67.81 \pm 17.39$ ). Compared to male students, female students' impairment in the physical health domain of QoL was significantly greater ( $p=0.005$ ).

**Conclusions:** Medical schools should implement innovative curricula and provide medical students with the required support to enable them to manage the influencing factors of quality of life. Medical schools must create tailored policies and ensure better learning environments for all of their students, but especially for female students.

**Keywords:** Medical students, Dental Students, Quality of life

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## INTRODUCTION

Quality of life is defined by the World Health Organization (WHO) as an individual's evaluation of their position in life concerning their goals, standards, expectations, and concerns, as well as the culture and value systems they live in.<sup>1</sup> Emotions, social interaction, and well-being are all connected to quality of life (QOL). As a result, the idea of QOL is always regarded as multifaceted and multicultural, lacking a consensus definition at this time.<sup>2</sup> The number of medical students has increased significantly over the past ten years in Pakistan in tandem with

the growing enrollment of medical colleges. In contrast, there is a lot of pressure on medical students during their education because of exams, a busy schedule, a rigorous curriculum, less free time, a large number of assignments, deadlines, and novel ethical dilemmas.<sup>3,4</sup> Additional factors include the demanding patients, the peer pressure to achieve academic excellence, the demanding transition from basic to clinical years, the overwhelming amount of new material to learn, and, of course, the difficulty of balancing daily responsibilities with academic obligations.<sup>5</sup> There is mounting worry about the welfare of medical students.<sup>6</sup> Several observations suggest that, in contrast to the broader populace, medical students are more vulnerable to psychological and emotional disturbance.<sup>7,8</sup> Compared to the general population, medical students are more likely to experience burnout, suicidal thoughts, and depression as a result of this intense academic pressure.<sup>9</sup> The World Health Organization Quality of Life-Brief (WHOQOL-BREF), a condensed version of the WHOQOL-100 questionnaire, is a QOL assessment tool that is

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Correspondence

**Dr Amina Gul**

Associate Professor

Department of Pathology, Khyber Medical College, Peshawar - Pakistan

**Email:** dr.aminagul@gmail.com

**Cell:** +92-333-1971474

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comparable across national borders and cultures. Health professionals receive training in various aspects of quality of life (QoL) during their medical education. However, during their time in medical college, their personal QoL tends to decline. These aspects include psychological health, physical well-being, environmental conditions, and social relationships.<sup>10</sup> Despite research utilizing WHOQOL-BREF to evaluate medical students' quality of life, few studies have been conducted on Pakistani medical students.<sup>11-12</sup> Good physical and mental health, however, makes medical students more resilient to the demands of the classroom.<sup>10</sup> Monitoring QoL is a comprehensive valuation of health in the milieu of an individual's insight into well-being. Rather, it is an expansive assessment paralleled by the recognition of a specific problem or condition in a stratified population.<sup>13</sup>

Medical education affects students' health, as permanent stress can lead to permanent personality changes that will lead to clinicians with undesirable personality traits, which have an impact on patient care quality and communication. Several studies have been conducted over the last three decades to assess the QoL in the healthcare sector. Research on the quality of life (QoL) of medical students is relatively well-established in the West, but in developing nations such as Pakistan, it is lacking. This study aims to evaluate undergraduate medical students' quality of life (QoL) during their medical education by looking at four main domains and comparing them to sociodemographic variables.

## MATERIALS AND METHODS

The institutional board granted the ethical approval (RMI/ RMI-REC/Approval/67) for a cross-sectional study that was conducted in one month from 1<sup>st</sup> to 28<sup>th</sup> February, 2020. All the students of Rehman Medical College (RMC) and Rehman College of Dentistry (RCD) were selected, including students from both pre-clinical years and Clinical years. The questionnaire was discussed among four teaching faculty members of RMC and RCD. To eliminate any doubt in the questionnaire, a pilot study involving twenty medical students was carried out; the results of this study were excluded from the final analysis. Following the completion of the pilot study, the questionnaire remained unchanged. To gather data, census or complete enumeration type sampling was employed. Copies of the questionnaires were sent to teaching faculty members who received thorough training on the research process and the questionnaire. They distributed the questionnaires to all students in individual years in the last 15 minutes of the teaching session. Ten minutes were given to the students to finish the questionnaire on their own. Students were free to ask the faculty member any questions they had at any moment about the questionnaire. The sample included 700 medical students from five classes of years 1 to 5 at RMC and four classes of years 1 to 4 at RCD. Six

hundred twenty completed and valid questionnaires were returned. The questionnaire was removed from the study if it contained more than four missing items.

A simplified version of the World Health Organization Quality of Life Instrument, the WHOQOL-BREF questionnaire, was the instrument used to collect data (World Health Organisation, 1998) and sociodemographic details of the respondents to obtain information on medical school year, sex, marital status as well as known illness/problem status were also included. WHOQOL-BREF questionnaire is accessible for both developed and developing nations in a variety of languages and it is a general QOL tool created by WHO and is composed of a pre-validate questionnaire comprising 26 items in total, 8 covering the environmental domain, seven the physical health domain, six the psychological health domain, and three the social relationship domain. 14, 15 Two additional stand-alone questions on overall quality of life and satisfaction with health were included in the WHOQOL-BREF. Higher ratings on the Likert scale (1–5) indicate a higher quality of life for each item in the WHOQOLBREF. The options for responding are 1 (extremely poor or dissatisfied) to 5 (very good or very satisfied). The questionnaire was piloted, and it showed more emphasis on the subjective responses than the objective living conditions. Four domains were included in the questionnaire: environment, social relations, psychological health, and physical health. 16

Medical students' QOL was evaluated using the WHOQOL-BREF instrument. The correlations between QOL and the variables like gender and academic year level were examined using the t-test or one-way ANOVA. For each variable, both qualitative and quantitative, descriptive statistics were computed. SPSS version 22.0 (SPSS Inc., Chicago, IL, USA) for Windows was used to analyze the data. A p-value of 0.05 was found to be statistically significant. Every participant was fully aware of the purpose and content of the questionnaire. The survey was anonymous, and the answers were kept private. There was no identifying information about the individual subjects in the questionnaire. The study was entirely voluntary, and participants could choose not to participate by checking the box next to any questions or by not answering any questions at all. The RMI Institution Ethical Committee approved the protocol (RMI/ RMI-REC/Approval/67), which adhered to the ethical guidelines established by the Declaration of Helsinki and required consent from each subject before they could participate in the study. All phases of the study complied with data protection regulations. To maintain their anonymity, students were asked to place their completed questionnaires in a sealed box rather than giving them to the faculty members.

## RESULTS

Among a total of seven hundred students at RMC and RCD, sixty-three subjects could not be included for

the following reasons: attending exams (12), not being available (16), and refusing to participate without providing a reason (35). Of the 637 questionnaires distributed, 620(88.57%) qualified for analysis. The remaining 17 responses were discarded because they were incomplete. Throughout the entire study group, the average age of the students was 21.46 years (range=18-27 years). See Figure 1 for details. The sample (620 students) consisted of 321 (51.8 %) male and 299 (48.2%) female students. Among all respondents, 434 (70%) were medical students and 186 (30%) were dental students. Only 67 students self-reported some form of illness/problem, like depression (34), stress (15), anxiety (12), obsessive-compulsive disorder (2), migraine, stress, gastrointestinal problems, and neck pain. According to the medical students' self-assessment, their overall self-reported quality of life had a mean score of  $4.07 \pm 0.78$ . Overall, students rated their quality of life as "very good" in 28.9% of cases, "good" in 53.1%, and "very poor" in 1.5% of cases (Fig. 2). Conversely, their self-rated satisfaction with their current state of health had a mean score of  $3.81 \pm 0.85$ . Just 1.8% of respondents said they were "very dissatisfied" with their health, compared to 17.4% who were "very satisfied" and 55.8% who were "satisfied" (Fig. 3). The majority felt content with their health.

According to the various years of MBBS and BDS, we discovered significant differences in the environmental ( $F = 3.53, p 0.01$ ), social relations ( $F = 3.53, p = 0.01$ ), and psychological ( $F = 2.88, p = 0.04$ ) domains. The scores among different domains, out of a total of 100, are shown in Figure 4. Second-year BDS and final-year BDS students had the lowest scores in the psychological and environmental domains, respectively.

In the physical domain, the 4th-year MBBS scored higher (Mean = 63.5), and the 3rd-year MBBS scored lower (Mean = 56.2) among all academic years. Next, in the psychological domain, the 4th-year MBBS scored higher (Mean = 63.22), and the 2nd-year BDS scored lower (Mean = 50.41). The 1st-year BDS scored higher (Mean = 56.14), while the final-year BDS scored lower (Mean = 44.94) in the social domain. In the environmental domain, the 1st-year BDS scored higher (Mean = 69.6), and the final-year BDS scored lower (Mean = 56.3). Gender and academic year comparisons of medical students revealed no statistically significant differences in the mean score across all domains, as shown in Table 1.

About the items, the degree of internal uniformity was expressed by Cronbach's coefficient. The overall Cronbach's  $\alpha$  coefficient of the WHOQOL-BREF questionnaire was 0.81, while the Cronbach's  $\alpha$  coefficients for the

**Table No 1: QoL Domain scores of medical/dental students in different academic years**

Variable	N (%)	Physical Domain Mean $\pm$ S.D		Psychological Domain Mean $\pm$ S.D		Social Domain Mean $\pm$ S.D		Environmental Domain Mean $\pm$ S.D	
Male	321/620 (51.8%)	63.04 $\pm$ 10.3	p-value 0.005	56.37 $\pm$ 10.95	p-value 0.131	50.8 $\pm$ 12.28	p-value 0.217	63.60 $\pm$ 10.64	p-value 0.02
Female	299/620 (48.2%)	56.12 $\pm$ 10.14		56.88 $\pm$ 11.44		50.64 $\pm$ 13.18		63.48 $\pm$ 11.01	
First Year MBBS	83 (13.4%)	56.76 $\pm$ 8.8	p-value 0.092	56.93 $\pm$ 10.2	p-value 0.04	56.93 $\pm$ 10.2	p-value 0.017	63.01 $\pm$ 11.19	p-value 0.01
Second Year MBBS	84 (13.5%)	56.52 $\pm$ 1.43		56.27 $\pm$ 10.54		56.27 $\pm$ 10.54		63.81 $\pm$ 11.2	
Third Year MBBS	91 (14.7%)	56.20 $\pm$ 9.78		56.07 $\pm$ 11.81		56.07 $\pm$ 11.81		63.15 $\pm$ 9.87	
Fourth Year MBBS	96 (15.5%)	63.54 $\pm$ 10.40		63.22 $\pm$ 9.47		63.22 $\pm$ 9.47		69.06 $\pm$ 9.98	
Final Year MBBS	80 (12.9%)	56.86 $\pm$ 11.10		56.94 $\pm$ 10.84		56.94 $\pm$ 10.84		63.04 $\pm$ 11.01	
First Year BDS	43 (6.9%)	63.0 $\pm$ 7.21		56.70 $\pm$ 11.31		56.70 $\pm$ 11.31		69.6 $\pm$ 8.93	
Second Year BDS	46 (7.4%)	56.52 $\pm$ 11.04	50.41 $\pm$ 12.26	50.41 $\pm$ 12.26	56.7 $\pm$ 12.31				
Third Year BDS	47 (7.6%)	56.62 $\pm$ 7.6	56.83 $\pm$ 11.83	56.83 $\pm$ 11.83	69.4 $\pm$ 9.67				
Final Year BDS	50 (8.1%)	56.54 $\pm$ 11.03	56.24 $\pm$ 13.3	56.24 $\pm$ 13.3	56.3 $\pm$ 10.84				
	Total=620								

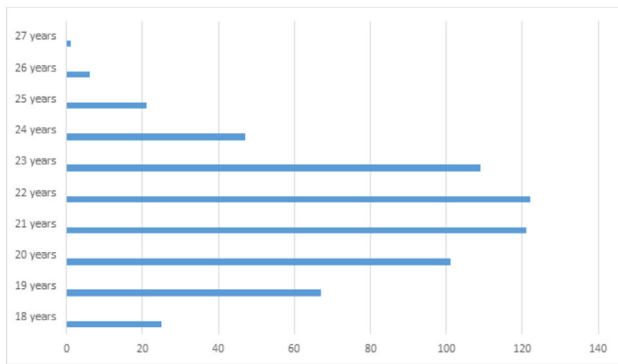


Figure 1: Number of Students in each Age group

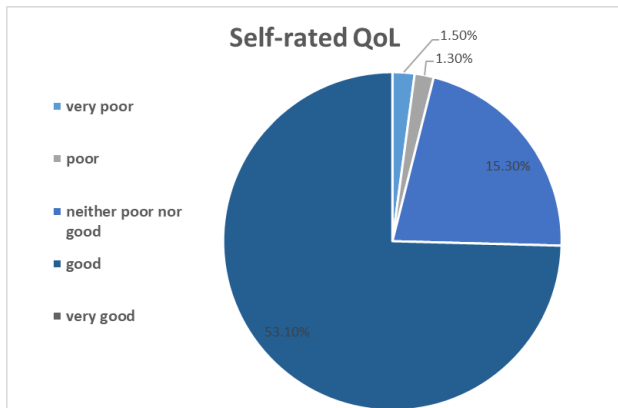


Figure 2: Self-reported QoL among students

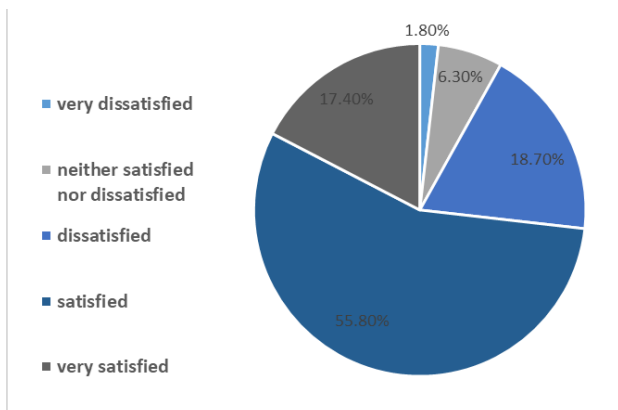


Figure 3: Self-reported Health satisfaction among students

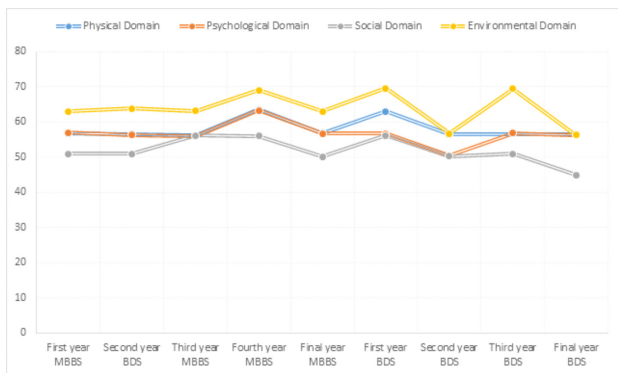


Figure 4: Quality of Life among all domains in academic years

physical health, psychological health, social relations, and environment domains were 0.66, 0.69, 0.36, and 0.74, respectively. There was no significant difference ( $p < 0.05$ ) in all four domains among different academic years. The male gender had a significantly higher score ( $p < 0.05$ ) in the Physical Health domain than females.

### DISCUSSION

The study's response rate, which stands out at 88.57%, indicates that the data gathered is suitably representative of the target population and also shows how eager students are to engage in studies that are being done on them, particularly those that aim to determine their health status. Depression and stress were more frequently detected among Brazilian medical students, similar to the findings in our study. <sup>17</sup> Dahlin et al. have shown that students experience depressive symptoms more frequently than people in the general population and that female students are more likely than male students to experience these symptoms. <sup>18</sup> With a mean age of 21.46 years, the participants demonstrated that the students were comparatively younger than those on whom prior research has been conducted. <sup>19</sup>

Overall, in the physical domain, females scored (Mean=56.12) less than males (Mean=63.04); in the other three domains, there was no significant difference between genders. Furthermore, a Brazilian study found that female students performed worse across the board. <sup>19</sup> On the other hand, female students outperformed male students in the social relations domain, according to Naseem S et al. <sup>12</sup> Another study in China reported in the psychological health domains, male students outperformed female students by a significant margin, contrary to our study, where there was no difference between the psychological domains of both genders. The quality of life (QOL) of medical students is influenced by numerous factors across multiple domains. According to some researchers, it's because women are more emotional and pressure-sensitive. <sup>21</sup> Studies indicate that women are more adept than men at navigating a variety of social relationships. <sup>20</sup>

Students in years 3 and 4 of RMC and RCD, like those in all other medical colleges in Pakistan, had lower QOL scores and made their first patient contacts before entering clinical years. In this study, 3rd-year MBBS students showed the lowest in physical and psychological domains among all MBBS years. While fourth-year MBSB, QoL scores were highest among all four domains, contrary to an Indian study, students in the second and third year had higher scores compared to other years. <sup>22</sup> In a study at Shifa College of Medicine, Islamabad, in every domain, third-year students scored the highest, while first- and final-year students had the lowest scores. <sup>12</sup> Female students had significantly more impairment in the physical health domain of QoL than male students ( $p = 0.005$ ), similar to another study in Peshawar. <sup>23</sup> In one study, the ap-

proach of integrated courses and Early clinical internship exposure gave students a chance to decompress from the stress and anxiety of practicing medicine and increased interaction between the theoretical and practical fields.<sup>24</sup> Amongst dental students, first-year BDS had higher QoL scores in physical, social, and environmental domains, while final-year BDS had the lowest in social and environmental domains.

Medical colleges in the US and Canada have started health promotion programs and are working to lessen the detrimental effects of mental stress on their students' academic performance and general health.<sup>7</sup> Our findings indicated that despite cultural and societal norms, which enforce disparities in modes of living between males and females in Pakistan, there is no definite qualitative variance in terms of their QoL. Medical colleges need to improve reforms in medical education to relieve some of the burden of courses in medical training, and offer students all the basic support to improve. WHOQOL-BREF is a valuable tool for health policy research and will be a significant component of regular health and social service audits. Frequent counseling sessions may aid students in adjusting to the new environment more successfully. Healthier accommodation conditions and opportunities for greater physical activity must be provided. The information in this study will benefit academic performance management and will help in delivering affirmative action. Due to the cross-sectional nature of our study, there are a few limitations: we were unable to determine the cause-and-effect relationship. All the students were part of the same educational curriculum provided by the same university. It also involved students from one city; hence, generalizability cannot be applied in every context.

## CONCLUSION

Medical education affects students' health in multiple ways. Therefore, timely identification is very important. Gender or level of education did not affect the quality of life of medical students. Overall, fourth-year MBBS and 1st year BDS scored a little higher than in other years. Social relationships, environmental domain, and physical and psychological progress were satisfactory in the Rehman Medical Institute.

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**Authors Contribution:**

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Khan M	✓	✗	✓	✗	✓	✗
Jamil B	✓	✓	✗	✓	✓	✗
Muhammad F	✗	✓	✗	✗	✓	✗
Basharat S	✓	✓	✓	✗	✓	✓
Gul A	✓	✓	✗	✓	✓	✗
Khan MI	✗	✓	✗	✗	✓	✗

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

**Ethical Approval:**

**This Manuscript was approved by the Ethical Review Board of Rehman Medical Institute, Peshawar. Vide No.RMI/RMI-REC/Approval/67. Dated: 07 02 2020**



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