

ORIGINAL ARTICLE

Assessment of medical students' attitude toward the doctor-patient relationship.Adnan Khan¹, Noor Fatima², Mehran Ullah Bani³, Nosheen Mehsood⁴, Iqra Zia⁵, Saima Bashir⁶

ABSTRACT... **Objective:** To evaluate the attitudes of medical students in Khyber Pakhtunkhwa (KPK), Pakistan, toward the doctor-patient relationship. **Study Design:** Descriptive Cross Sectional study. **Setting:** Department of Community Medicine, Gomal Medical College Dera Ismail Khan. **Period:** 10th February to 10th May 2025. **Methods:** Using non probability convenient sampling approach. 400 MBBS students from 17 medical colleges in Khyber Pakhtunkhwa (KPK), Pakistan, made up the sample. Data were collected using a validated, structured questionnaire that included the 18-item Patient-Practitioner Orientation Scale (PPOS) measured the "sharing" and "caring" domains. In order to investigate demographic correlations, statistical analysis was conducted with SPSS 27 trial version software, utilizing descriptive statistics, independent t-tests, and ANOVA with Post Hoc test. **Results:** A moderate patient-centered orientation was indicated by the overall mean PPOS score of (3.62 ± 0.45) . Higher empathy than collaborative decision-making was suggested by subscale analysis, which showed higher scores in the caring subscale (3.95 ± 0.57) than the sharing subscale (3.30 ± 0.61) . Students in the public sector performed better in the sharing domain ($p = 0.044$), while female students performed significantly better in the caring domain ($p = 0.020$). **Conclusion:** This study revealed that medical students in Khyber Pakhtunkhwa (KPK), Pakistan generally have moderately patient-centered attitudes. They are more inclined to provide empathetic care than to share decision-making. These results demonstrate the necessity of enhancing instructional approaches that foster empathy and teamwork in medical education.

Key words: Physician-patient Relationship, Patient-practitioner Orientation Scale, Patient-centered Care, Pakistan, Students Medical.

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INTRODUCTION

The strong rapport that develops between a doctor and a patient during clinical encounters is a vital aspect of the art of medical treatment and clinical practice. The approach where the physician tries to enter the patient's world, to see the illness through the patient eyes so that the doctor can understand the patients ideas, expectations, and feelings about the illness, is gaining increasing popularity.¹ Patient-centered communication provides patients with greater knowledge, influence, and involvement in decision-making processes.² Strong doctor-patient relationships are linked to improved disease outcomes, better treatment compliance, and greater trust on the physician.³ The today medical students will become healthcare professionals in the future.⁴ Since medical students represent the future of the medical profession, it is important to understand their perceptions of the doctor-patient relationship

in order to assess their beliefs and attitudes.³ Evaluating their viewpoints on this relationship is essential. While inappropriate attitudes can be addressed during medical education through institutional programs, extracurricular activities, and curricular interventions, positive attitudes can be reinforced and promoted.⁵ To assess these attitudes, researchers have employed the Patient-Practitioner Orientation Scale (PPOS), a valid and reliable tool.⁶ Brazilian medical students demonstrated highly favorable views toward patient-centered care, with a mean PPOS score of (4.66 ± 0.44) ,⁷ while American students showed nearly identical results, with a mean score of (4.57 ± 0.48) .⁶ Chinese students, using a revised version of the PPOS, scored (3.63 ± 0.54) , indicating a moderate tendency toward patient-centeredness.⁸ In contrast, Egyptian students had a lower mean score of (2.71 ± 0.66) , reflecting a less patient-centered attitude.⁹

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Given that no study has been carried out to evaluate medical students' attitudes toward the doctor-patient relationship in our province, a significant knowledge gap exists. Therefore, the aim of this study is to assess the attitudes of medical students from both public and private sector medical colleges across Khyber Pakhtunkhwa (KPK) Pakistan towards the doctor-patient relationship.

METHODS

This descriptive, cross-sectional study was conducted at the Department of Community Medicine, Gomal Medical College Dera Ismail Khan, Khyber Pakhtunkhwa (KPK), Pakistan from 10th February 2025 to 10th May 2025. The target population included all MBBS students enrolled in public and private sector medical colleges across Khyber Pakhtunkhwa (KPK), a total population of 9,171 students. A non-probability convenient sampling technique was used to select participants. All MBBS students were included in this study, except those who declined or did not provide informed consent. The sample size was calculated using the Raosoft sample size calculator with a 95% confidence level, 5% margin of error, and an assumed 50% response rate, which yield a required sample of 369. However, data were collected from 400 students to enhance the study validity and reliability.

Data were collected online by mean of Google Form that incorporated a pretested, structured and close-ended scale which had previously been developed and standardized. The tool contained two subscales that assessed central domains in doctor-patient relationships: the Sharing subscale and the Caring subscale. The Sharing domain assessed the belief that patients should equally share power, control, and the flow of information with their doctors. The Caring domain reflected the belief that patients should be treated as complete human beings with an emotional bond, not as cases or diseases.¹⁰ Each subscale had 9 items. The complete questionnaire contained 23 questions. The first five items gathered demographic details including gender, age, year of study, having a family health worker, and being married. These were followed by an 18-questions tool called the Patient Practitioner Orientation Scale (PPOS), which used a 6-point Likert scale ranging

from strongly agree (1 point) to strongly disagree (6 points). It gave a mean score of 1 to 6, where higher scores (towards 6) were more patient-centered, while lower scores (towards 1) were more physician-centered.¹⁰ The scale had good internal consistency with an estimated Cronbach's alpha of 0.73.¹¹

Statistical analysis was done with the SPSS 27 trial version software. The demographic variables were analyzed by using descriptive statistics technique that yielded frequency and percentages. The same descriptive statistics technique was utilized to determine the mean and standard deviation for all 18 items in the Patient-Practitioner Orientation Scale (PPOS). 18 items of PPOS was equally distributed in sharing subscale (n = 9) and caring subscale (n = 9). Items 1-9 were under the sharing domain, while items 10-18 were in the caring domain. Every item was rated on a six-point Likert scale, namely (1) strongly agree, (2) agree, (3) slightly agree, (4) slightly disagree, (5) disagree, and (6) strongly disagree, for statement 3, 5, 8, 9 and 11 the Likert scale was score reversed (Table-III). An independent samples t-test were conducted to compare mean differences between individual demographic variable and overall PPOS scores, as well as scores of caring and sharing subscale, normality and homogeneity were confirmed via Shapiro Wilk test. Furthermore, one-way analysis of variance (ANOVA), with Post Hoc test was utilized to test mean differences between years of study for both overall PPOS and its subscales. This study employed a p-value ≤ 0.05 as statistically significant.

Ethical approval for this study was obtained from the Ethical Review Committee of Gomal Medical College" (242/GJMS/JC) and permission for data collection with informed consent was granted.

RESULTS

Students from 1st to final years of 17 medical colleges, both Public and Private sector was included in this study. (Table-I & II) show the demographic distribution of study participants. The sample included nearly equal gender distribution (51.4% male, 48.6% female). Most students resided in urban areas (60.3%), had no family health worker background (56.4%), and were unmarried (98%). Students were predominantly from public-sector

institutions (72.0%, n=288).

TABLE-I	
Socio Demographics distribution of all participants (n=400)	
Gender	N%
Male	205(51.4)
Female	195 (48.6)
Academic Year	
1st year	36 (9)
2nd year	60 (15)
3rd year	84 (20.9)
4th year	147 (36.7)
Residence	
Rural	159 (39.7)
Urban	242 (60.3)
Family Health Worker	
Yes	175 (43.6)
No	226 (56.4)
Marital Status	
Married	8 (2)
Unmarried	393 (98)
Category	
Public sector	288 (72)
Private sector	112 (28)

Table-III Shows the mean score of each PPOS statement based on the responses of all the Students (n=400). The participant mean scores on the PPOS statements largely indicated patient-Centered attitudes, that is, the average scores are higher than "3" on each sharing and caring subscale.

Table-IV shows the mean scores of the sharing subscale, caring subscale, and overall PPOS for all participants (n=400). The mean score for overall PPOS was 3.62 ± 0.45 , whereas the mean scores for the sharing and caring domains were 3.30 ± 0.611 and 3.95 ± 0.57 , respectively.

Table-V shows correlations between the demographics (gender, residence, family health worker and marital status and public and private sector categories) of all students (n=400) and their mean scores for the sharing domain, caring

domain, and overall PPOS. Statistically significant differences were identified in caring domain for gender ($p = 0.020$) and in sharing domain for public and private categories (0.040).

The 95% confidence intervals indicate that the population mean PPOS score will fall between 3.58 and 3.66, with significantly lower scores for the sharing sub-scale (3.24–3.36) compared to the caring sub-scale (3.89–4.01), (Table-VI).

TABLE-II	
Distribution of study participants across medical colleges	
Colleges	n%
Gomal Medical College	92 (22.9)
Khyber Medical College	26 (6.5)
Ayub Medical College	17 (4.2)
Women Medical College	25 (6.2)
Nowshehra Medical College	20 (5)
Bacha Khan Medical College	22 (5.5)
Khyber Girls Medical College	26 (6.5)
Bannu Medical College	12 (3)
Saidu Medical College	17 (4.2)
Swat Medical College	13 (3.2)
North west medical School	12 (3)
Abbottabad International Medical College	14 (3.5)
Peshawar Medical College	19 (4.7)
Frontier Medical College	9 (2.2)
Jinnah Medical College	21 (5.2)
Gajju khan Medical College	20 (5)
KMU-Institute of Medical Sciences	36 (9)

DISCUSSION

This study explores the attitudes of medical students in Khyber Pakhtunkhwa (KPK) province of Pakistan, toward the doctor-patient relationship by using the Patient-Practitioner Orientation Scale (PPOS). The results provide a useful understanding of how the future health professionals conceptualize patient-centered care. The participants mean PPOS score was (3.62 ± 0.45), showing a moderate level of patient-centered attitudes. This finding supports an earlier studies that reported an average score of (3.60 ± 0.47) in 322 students (55.3% male and 44.7% female).¹²

TABLE-III

Mean scores of the Patient-Practitioner Orientation Scale (PPOS) statements of all participants (n=400).

Statements	Mean ± SD
1. The doctor is the one who should decide what gets talked about during a visit.	3.63 ± 1.65
2. It is often best for patients if they do not have a full explanation of their Medical condition.	4.73 ± 1.43
3. Patients should rely on their doctors' knowledge and should not try to find out about Their conditions on their own.	3.00 ± 1.77
4. Many patients continue asking questions even though they are not learning anything new.	3.25 ± 1.33
5. Patients should be treated as if they were partners with the doctor, equal in power and status.	2.59 ± 1.69
6. Patients generally want reassurance rather than information about their health.	4.41 ± 1.28
7. When patients disagree with their doctor, this is a sign that the doctor does not have the patient's respect and trust.	3.68 ± 1.46
8. The patient must always be aware that the doctor is in charge.	2.72 ± 1.32
9. When patients look up medical information on their own, this usually confuses more than it helps.	2.40 ± 1.30
10. Although healthcare is less personal these days, this is a small price to pay for medical advances.	3.33 ± 1.33
11. The most important part of the standard medical visit is the physical exam.	2.48 ± 1.44
12. When doctors ask a lot of questions about a patient's background, they are prying too much into personal matters.	4.40 ± 1.51
13. If doctors are truly good at diagnosis and treatment, then the way they relate to patients is not that important.	4.55 ± 1.45
14. If a doctor's primary tools are being open and warm, the doctor will not have a lot of success.	4.13 ± 1.36
15. A treatment plan cannot succeed if it conflicts with a patient's lifestyle or values.	4.45 ± 1.41
16. Most patients want to get in and out of the doctor's office as quickly as possible.	3.32 ± 1.58
17. It is not that important to know a patient's culture and background in order to treat the person's illness.	4.52 ± 1.61
18. Humor is a major ingredient in the doctor's treatment of the patient.	4.37 ± 1.34

TABLE-IV

Mean scores for the sharing subscale, the caring subscale and overall Patient-Practitioner Orientation Scale (PPOS) of all students (n=400).

Patient-Practitioner Orientation Scale (PPOS) Component Mean ± standard deviation

Sharing subscale 3.30 ± 0.411

Caring subscale 3.95 ± 0.657

Overall Patient-Practitioner Orientation Scale (PPOS) 3.62 ± 0.45

TABLE-V

Correlation between the demographics of all students (n=400) and their mean scores for the sharing subscale, the caring subscale, and overall Patient- Practitioner Orientation Scale (PPOS).

	Sharing Subscale Mean ± SD	Caring Subscale Mean ± SD	Overall PPOS Mean ± SD
Gender			
Male	3.28 ± 0.61	3.88 ± 0.60	3.58 ± 0.47
Female	3.31 ± 0.60	4.01 ± 0.53	3.67 ± 0.43
p-value	0.511	0.020	0.051
Residence			
Rural	3.33 ± 0.65	3.93 ± 0.59	3.63 ± 0.48
Urban	3.23 ± 0.61	3.96 ± 0.65	3.62 ± 0.43
p- value	0.394	0.603	0.831
Family Health			
Worker			
Yes	3.29 ± 0.61	3.97 ± 0.57	3.63 ± 0.45
No	3.30 ± 0.61	3.93 ± 0.58	3.62 ± 0.45
p-value	0.774	0.480	0.831
Marital Status			
Married	2.96 ± 0.41	3.87 ± 0.49	3.41 ± 0.38
Unmarried	3.30 ± 0.61	3.95 ± 0.58	3.62 ± 0.45
p-value	0.114	0.712	0.190
Category			
Public sector	3.34 ± 0.59	3.95 ± 0.55	3.64 ± 0.44
Private sector	3.20 ± 0.66	3.94 ± 0.63	3.57 ± 0.48
p-value	0.044	0.792	0.125

TABLE-VI

Confidence interval with 95% confidence level

Category	Confidence Interval
Mean PPOS score	3.576 --3.664
Mean sharing sub-scale score	3.240 – 3.360
Mean caring sub-scale score	3.894 – 4.006

In contrast to this study, higher scores were found in a study conducted at the University of Khartoum, Sudan (4.08 ± 0.53)¹³, Saudi Arabia (4.0 ± 1.5)¹⁴ and in China (4.68 ± 1.56)¹⁵ which may reflect regional differences affected by cultural and educational background. Analysis of the subscales showed that the caring domain (3.95 ± 0.57) was rated higher than the sharing domain (3.30 ± 0.61); thus, while students have empathy and sympathy with the patient, they are less prepared to cooperate in taking decisions of a mutualistic type and for developing egalitarian and balanced negotiations in consultations. These results are consistent with a study in China, which found the same subscale scores—caring (3.95 ± 0.57) and sharing (3.30 ± 0.61).¹⁵ Likewise, the previous study reported similar subscale results: caring (3.99 ± 0.52) and sharing (3.23 ± 0.66).¹² Gender differences were approached and there was a statistically significant difference in the caring subscale ($p = 0.020$) for female students who scored higher, implying higher involvement or sensibility towards patient needs. This finding is widely known, since several studies have found that female medical students have more patient-centered orientations than their male colleagues.^{13,16,17} Other studies, however, have found no or little gender differences in this area³, indicating the need for further research. Furthermore, students from public sector medical colleges surpassed those from private medical colleges in the sharing domain ($p = 0.044$), suggesting that institutional variations might have an impact on how students view shared medical care. The mean PPOS scores of our sample were lower than those reported in Brazil (4.66)⁷ and the U.S. (4.57)⁶ but higher than those in Egypt (2.71).⁹ In comparison to their international peers, Pakistani students exhibit a moderate degree of patient-centeredness.

A relatively low sharing domain score points to a possible weakness in medical students' education regarding active patient involvement in their own treatment. Shared decision-making and patient empowerment have been linked to better clinical outcomes, treatment adherence, and patient satisfaction. This study supports the need for a more patient-centered curriculum.¹⁸ The following perspective is in line with earlier study that

demonstrate Pakistani medical students frequently retain a more doctor-centered orientation towards the doctor-patient relationship.¹⁸ These results highlight the value of planned curriculum and extracurricular changes that improve ethical awareness, cultural competency, and doctor-patient communication, all of which are critical components of developing a cooperative, patient-centered clinical practice. This study has a number of shortcomings despite its contributions. Non-probability convenience sampling limits the extent to which the findings can be applied, social desirability bias in data collection process using online questionnaires.

The cross-sectional study design records attitudes at a single moment in time. Some colleges contributed fewer participants than others, indicating unequal institutional representation. To assess how student attitudes change over the course of medical education, conduct longitudinal studies. Investigate the causes of lower sharing subscale scores using qualitative techniques (such as focus groups and interviews). Carry out a national survey for wider applicability. Examine how particular educational interventions, like workshops on communication skills or patient simulations, affect PPOS results. Incorporate curriculum analysis and faculty viewpoints to determine how institutions affect students' attitudes.

CONCLUSION

This study revealed that medical students in Khyber Pakhtunkhwa (KPK), Pakistan generally have moderately patient-centered attitudes. They are more inclined to provide empathetic care than to share decision-making. These results demonstrate the necessity of enhancing instructional approaches that foster empathy and teamwork in medical education.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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1	Adnan Khan: Conceptualize, initial draft, methods.
2	Noor Fatima: Data analysis, data collection.
3	Mehran Ullah Bani: Data entry.
4	Nosheen Mehsood: Results.
5	Iqra Zia: Data collection.
6	Saima Bashir: Final manuscript.