

Attitudes of Medical Students in Lahore, Pakistan towards the Doctor-Patient Relationship

Waqas Ahmad, Edward Krupat, Yumna Asmaa, Noor-E- Fatima, Rayan Attique, Umar Mahmood, Ahmed Waqas

Background. A good doctor-patient relationship is the centre stone of modern medicine. With each passing day patients are getting more and more aware about exercising their autonomy and thus modern medicine cannot deliver all its advances to the patients if a good doctor-patient relationship is not established. We initiated this study with the aim to assess the leaning of medical students, who are the healers of tomorrow, towards either a doctor-centered or a patient-centered care and explore the effects of personal attributes on it like gender, academic year etc. **Materials & Methods.** A cross-sectional study was conducted between July-Sep 2013. CMH Lahore Medical and Dental College Ethical Review Committee approved the study questionnaire. The study population consisted of 1181 medical students in years 1-5 from two medical colleges. English version of PPOS was used to assess attitudes of medical students towards doctor-patient relationship. The relationship between PPOS scores and individual characteristics like gender, academic year etc. were examined by multiple regression. **Results.** A total of 783 students formed the final sample (response rate=92%). The total PPOS score of the entire sample was 3.40 ($\pm .49$ S.D). Total *sharing* sub-scale score was 3.18 (± 0.62 S.D.) Total *caring* sub-scale score was 3.63 (± 0.56 S.D). Characteristics associated with most patient-centered attitudes were advanced academic year, having a clinical rotation, having a foreign background and studying in a private college. Gender, having doctor parents, relationship and accommodation status had no bearing on the attitudes ($p>0.05$). **Conclusion.** Despite ongoing debate and emphasis on a patient-centered curriculum, our study suggests that current curriculum and its teachings are not producing the results they are designed to achieve. Students should be adequately exposed to the patients from the beginning of their medical education in clinical settings which are more sympathetic to a patient-centered care.

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3 **“Attitudes of Medical Students in Lahore, Pakistan towards the Doctor-Patient Relationship”**

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25 **Abstract:**

26 **Background.** A good doctor-patient relationship is the centre stone of modern medicine. With each
27 passing day patients are getting more and more aware about exercising their autonomy and thus
28 modern medicine cannot deliver all its advances to the patients if a good doctor-patient relationship is
29 not established. We initiated this study with the aim to assess the leaning of medical students, who are
30 the healers of tomorrow, towards either a doctor-centered or a patient-centered care and explore the
31 effects of personal attributes on it like gender, academic year etc.

32 **Materials & Methods.** A cross-sectional study was conducted between July-Sep 2013. CMH Lahore
33 Medical and Dental College Ethical Review Committee approved the study questionnaire. The study
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35 of PPOS was used to assess attitudes of medical students towards doctor-patient relationship. The
36 relationship between PPOS scores and individual characteristics like gender, academic year etc. were
37 examined by multiple regression.


38 **Results.** A total of 783 students formed the final sample (response rate=92%). The total PPOS score of
39 the entire sample was 3.40 (\pm 0.49 S.D). Total *sharing* sub-scale score was 3.18 (\pm 0.62 S.D. Total
40 *caring* sub-scale score was 3.63 (\pm 0.56 S.D). Characteristics associated with most patient-centered
41 attitudes were advanced academic year, having a clinical rotation, having a foreign background and
42 studying in a private college. Gender, having doctor parents, relationship and accommodation status
43 had no bearing on the attitudes ($p>0.05$).

44 **Conclusion.** Despite ongoing debate and emphasis on a patient-centered curriculum, our study
45 suggests that current curriculum and its teachings are not producing the results they are designed to

46 achieve. Students should be adequately exposed to the patients from the beginning of their medical
47 education in clinical settings which are more sympathetic to a patient-centered care.

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49 **Introduction:**

50 “A chain is only as strong as its weakest link”. In today’s healthcare system, the doctor-patient
51 relationship is the weak link which bears the weight of all the advances of health care system and its
52 delivery to the patient. The stronger the relationship, the better are the patient’s *compliance to the*
53 *treatment*,(Safran et al., 1998) *disease outcomes* and *satisfaction*.(Simpson et al., 1991; Stewart, 1995)
54 Just like a weak link in a chain, the doctor-patient relationship is under most strain when kept vertical
55 (doctor-centered or paternalistic) which doesn’t allow the patient any control over the flow of
56 information or treatment. On the other hand when it is kept horizontal (patient-centered or egalitarian)
57 the patient is encouraged to play the role of a partner(Campbell & McGauley, 2005) and takes greater 
58 responsibility for his own health.(GROL et al., 1990) It benefits doctors by decreasing the incidence of
59 complaints and litigation(Beckman et al., 1994) and enables them to work at an optimum level to attain
60 the four prima facie maxims (beneficence, non-maleficence, respect for autonomy and justice)(Tor,
61 2001) of modern medicine.

62 Patients in the modern era are becoming more and more autonomous,(Shankar & Piryani, 2009)
63 a possibility never considered in prior times. But modern medicine cannot advance without
64 incorporating this essential ethical necessity. Medical education in many parts of the world is still very
65 much disease-oriented(Hafferty, 1998) with hours and hours of lectures dedicated to the management
66 of diseases instead of patients as a whole. Studies have shown that good communication skills can be
67 achieved by structured training, which runs contrary to past beliefs that good communication is an
68 intrinsic quality of a doctor and cannot be taught.(Smith et al., 2000)

69 Like clay that is cast in a mould to produce beautiful sculptures, medical students are also molded
70 in a cast, baked under intense pressures and finally come out as the healers who embody all the
71 properties that the cast, made by medical educators, has to offer. As healers of the future it is logical to
72 see what they think about the very foundation of modern medicine, doctor-patient relationship. A
73 growing body of research has demonstrated that medical students around the globe show wide
74 difference in their attitudes towards the doctor-patient relationship. Researchers have used a valid and
75 reliable scale called the Patient Practitioner Orientation Scale (PPOS)(Haidet et al., 2002) to measure
76 this attitude in countries like Nepal,(Shankar et al., 2006) Korea,(Choi, Kim & Park, 2004) and
77 Greece.(Tsimtsiou et al., 2005) Medical students in Brazil have highly positive beliefs about patient
78 centered care (PPOS score of 4.66 ± 0.44 S.D).(Ribeiro, Krupat & Amaral, 2007), followed closely by
79 American medical students (PPOS score is 4.57 ± 0.48 S.D).(Haidet et al., 2002)

80 As indicated by a study in Nepal (PPOS score of 3.71 ± 0.48 S.D), medical students in Asia
81 have a tendency towards Doctor Centered care,(Haidet et al., 2002; Shankar et al., 2006) which is
82 associated with decreased patient satisfaction(Krupat et al., 2000) in many of the countries this
83 relationship has been studied. We are conducting this study to ascertain the attitudes of medical
84 students of Pakistan, the 4th most densely populated country in Asia to see if they break the taboo of
85 “doctor knows best”.(Tor, 2001)

86

87 **Materials & Methods:**

88 **Study Sample:**

89 Descriptive, cross-sectional study design and convenience (non-probability) sampling technique was
90 employed. In Pakistan undergraduate medical education lasts 5 years. This includes 2 pre-clinical years
91 and 3 clinical years. (Waqas et al., 2015) The dominant form of teaching in the medical colleges across
92 the country is non-problem based learning. The attitudes of medical students of academic year 1 to 5

93 from two medical colleges, a Government College (Allama Iqbal Medical College) and a Private
94 College (CMH Lahore Medical College), were assessed towards doctor-patient relationship between
95 July 2013 and Sep 2013. A standardized questionnaire with English version of PPOS and a series of
96 demographic questions was used. Forms were distributed to 1274 students (858 in govt. and 416 in
97 private) out of which 1181 responded [collective response rate 92% (91% and 94.2 % respectively)].
98 Out of 1181, 398 forms were discarded due to incomplete demographics and more than 3 missing
99 responses in PPOS (final sample N=783).

100 **Instrument:**


101 The doctor-patient relationship was assessed by using a reliable instrument called Patient Practitioner
102 Orientation Scale (PPOS).(Haidet et al., 2002) The PPOS contains 18-items and uses a Likert-scale
103 format and measures the subject's leaning towards a doctor-centered or a patient-centered belief. Each
104 item has 6 possible responses ranging from 1 (strongly agree) to 6 (strongly disagree). The scale has
105 two subscales which measure two domains of doctor-patient relationship: *Sharing* and *Caring*. ***Sharing***
106 refers to an individual's belief that a patient should share the power, control and flow of information
107 equally with their doctor. ***Caring*** refers to an individual's belief that a patient should be treated as a
108 whole and treated with good emotional rapport rather than as a condition or disease. Both sub-scales
109 have 9 items each. All the scores are reported as mean of the total score ranging from 1 (doctor
110 centered) to 6 (patient centered).

111 **Statistical Analysis:**

112 SPSS 21 was used for analysis. Descriptive statistics and frequencies were calculated for Subscale
113 scores on PPOS and demographic variables respectively. Multiple regression analysis (backward
114 method) was run to predict PPOS scores, Sharing and caring subscale scores from gender, age, study
115 year, rotation (Outpatient department, Ward and not applicable) and nationality (Pakistani/overseas).

116 The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality
117 of residuals were assessed.

118 **Ethics Statement:**

119 CMH Lahore Medical and Dental College Ethical Review Committee approved the study
120 questionnaire. 

121 **Results:**


122 Students from academic year 1-5 of both colleges participated in this research (N= 783). The sample
123 distribution by gender, college, academic year etc. is shown in **Table-1**. The average total PPOS score
124 of the entire sample was 3.40 (± 0.49 S.D). Total *sharing* sub-scale score was 3.18 (± 0.62 S.D). Total
125 *caring* sub-scale score was 3.63 (± 0.56 S.D). Multiple regression analysis yielded significant models
126 for mean PPOS scores, sharing and caring scores (Table 3). *Mean PPOS scores* were positively
127 associated with students from private sector medical college and foreign background. Students rotating
128 in wards or OPDs scored higher on PPOS scale. Similar trends were observed in *sharing* and *caring*
129 domains. Sharing scores were significantly predicted by three variables: Students having a foreign
130 background, currently in higher academic year and belong to a private sector medical college were
131 associated with higher scores on *sharing sub-scale*. Caring sub-scale scores were positively associated
132 with foreign background and rotation in OPD and wards. Having doctor parents, accommodation and
133 relationship status had no bearing on doctor-patient relationship ($p>0.05$)

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136 Discussion:

137 Our findings suggest that Pakistani medical students very much believe in the taboo of “Doctor Knows
138 Best”.(Tor, 2001) They scored even lower than their Nepali counterparts,(Shankar et al., 2006) except
139 in *caring* domain, making them the most doctor-centered of those samples of medical students in
140 several studies done around the world. Female gender, which is traditionally associated with patient-
141 centered care and is shown to have leaning towards it(Haidet et al., 2002), had statistically the same
142 distribution of PPOS scores as males of this sample ($p>0.05$). This finding although contradictory to
143 the studies conducted in America and Brazil is consistent with findings in Nepal (another Asian
144 country)(Haidet et al., 2002; Shankar et al., 2006; Ribeiro, Krupat & Amaral, 2007). This consistency
145 might be due to social, religious and cultural differences present in the two continents i.e. Americas
146 and Asia.

147 No clear pattern was established in consecutive academic years in terms of total PPOS scores or
148 caring sub-scale scores. However sharing domain scores showed a clear ascending pattern which
149 suggests that students, as they go into higher academic years, become more aware about the rights of
150 the patients and are willing to share the power of treatment choices with them. This finding is similar to
151 the study done in Brazil(Ribeiro, Krupat & Amaral, 2007) but contradictory to the ones done in USA
152 where good patient-centred care is associated with early academic years.(Haidet et al., 2002) Attributes
153 associated with leaning towards patient-centred care were: studying in a private college, having a
154 foreign background and rotating in wards or opds as opposed to no clinical hours. These attributes were
155 consistent throughout the total PPOS scores and Sharing sub-scale. Private medical colleges have a
156 better teacher to student ratio with a lesser patient load in attached private hospitals as opposed to
157 government owned colleges. This might explain the higher scoring of students of private medical
158 school. Interesting finding is that students who have a clinical rotation (students in clinical years),
159 either in wards or opds, scored better than those who did not have a rotation (students in pre-clinical

160 years). These finding clearly divide our sample into the ones who just see patient on pages of books
161 while the others who interact with them and see them as a whole. It also illustrates the importance of
162 patient interactions and necessitates the student-patient interaction to begin at an early stage of medical
163 training. Students who rotated in wards showed a stronger positive association with mean scores on
164 PPOS than those who rotated in OPDs which could be due to a continuous flow of patients in opds who
165 get a very brief interaction with doctor/students as opposed to patients in wards who stay there for long
166 durations and give a better chance for students to get to know them and see them as a whole rather than
167 a disease. Better performance by foreign students might be due to not sharing the Asian culture which
168 is associated with doctor-centered care.(Haidet et al., 2002) 

169 When a cast of clay comes out of a mould it bears all the qualities of that mould. Before baking,
170 the clay is pliable and can be bent into any shape but once it is cast in the mould and is baked then it is
171 difficult to impart changes in it because it is shaped forever in the way that mould was designed. That's
172 exactly what medical education does to medical students who come to this field to heal patients(Lloyd-
173 Williams & Dogra, 2004) but instead are taught to heal the disease only. The mould they are put in has
174 no room for the development of characteristics like good communication skills etc. which are
175 necessary for a good patient-centered care. The pressures they are exposed to (Academic, Psycho-
176 social and Health related) further retard their shaping into a patient-centered practitioner (Waqas et al.,
177 2015). However this does not mean that medical students after leaving medical school cannot modify
178 their attitudes but it is much more beneficial to the patients and healthcare system if they are taught to
179 focus on the patient as a whole sooner than later in their medical career. Shaikh et al have reported the
180 prevalence of stress to be 90% in Pakistani medical students.(Shaikh et al., 2004) Further studies have
181 shown that psychological stress can cause poor attitudes towards the chronically ill, decreased empathy
182 and high levels of cynicism(Crandall, Volk & Loemker, 1993) which together amounts to a less
183 favorable patient care. Students who experience these stresses seldom seek help because of the stigma

184 revolving around psychiatric illnesses. (Waqas et al., 2014) For this reason medical educators should
185 make it mandatory to see the prevalence of such psychiatric illnesses/stressors during the course of
186 medical education and should take prompt actions to protect students from their harmful effect and
187 “nip the evil in the bud”.

188 Another reason for medical students to be more doctor-centered could be due to the teachings of
189 practicing doctors who teach them while attending to their patients. The environment they teach in is
190 contradictory to the ideal students are taught in lecture theatres.(Grilo et al., 2014) Humayun A et al.
191 have found that Pakistani doctors didn't take consent from more than 71% patients and provided
192 adequate confidentiality to less than 24% of their patients.(Humayun et al., 2008) When medical
193 students are taught in such a doctor-centered environment it is natural for them to embody such
194 practices because when a student realizes that doctors, not following the *prima facie maxims*,(Tor,
195 2001) are still able to have a very healthy practice then he wonders if formalities like consent or
196 confidentiality even matter in the real world medicine. Doctors in the government owned hospital
197 didn't take consent from more than 90% patients and provided adequate confidentiality to less than
198 11% of their patients.(Humayun et al., 2008) Teachings of such doctors could explain our finding that
199 medical students from government owned medical school scored lower on PPOS than of private
200 medical school ($p < 0.05$).



201

202 **Conclusion**

203 If we want to produce healers who treat the patient as a whole then medical educators would have to
204 incorporate much more space in the mould of medical education for the essential characteristics (like
205 good communication skills, empathy etc.) necessary to achieve the *prima facie maxims* of modern
206 medicine. Students should be adequately exposed to patients from the beginning of their graduate
207 program and in clinical settings which are more favorable to a patient-centered care. Continuous

208 monitoring of the students should be done to identify and mend the factors which push them away from
209 a patient-centered caring attitude (e.g. Stress, Burnout) and patient-centered role models should be
210 sought for students to observe and follow. Most of what is learned during the graduate program is
211 through “Hidden Curriculum” which is a set of influences functioning at the level of organizational
212 structure and culture.(Hafferty, 1998) This is mostly true for Pakistan since its biggest medical
213 university (UHS) has, in recent years, introduced Behavioral Sciences as an integral part of the
214 curriculum in 2007 which is yet to produce its effects in medical practice of Pakistan. To fight hidden
215 curriculum both the curriculum designers and college administration would have to act to mitigate its
216 toxic effects on the development of doctor-patient relationship.

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218 **Limitations and suggestions for future research:**

219 Despite our efforts to completely explore the attitude of medical students towards doctor-patient
220 relationship we strongly believe that additional factors should be incorporated into further research
221 done in the future in this domain.

- 222 I. Academic staff from the respective colleges and hospitals was not included in this study which
223 could have aided in measuring the extent of the problem.
- 224 II. We conducted our study in just one city. Further studies should include a broader sample
225 comprising of medical students from all the four provinces and all religious and ethnic groups
226 to see if these factors have any effect on Patient-Centered Care.
- 227 III. The cross-sectional design of this study limits inferences about causality and temporality.
- 228 IV. Since PPOS just measures the orientation and not the behavior of medical students towards
229 Patient-Centered care, future researchers should include means to see the behavior of medical
230 students toward this entity.

231

232 **Acknowledgement:**

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 234 undergraduate level and constantly supporting us during the process. We would also thank our
 235 statistician, Sir. Asif Hanif, for sparing us time from his busy schedule. We also commend the
 236 efforts of Haris Abbas and Fahad Ahmad Khan in the process of data collection and data entry.

237

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290 culties in medical students of a Pakistani medical school : a cross sectional survey.





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292 **Supporting Information**293 S1 File. **Dataset of the study.**294 S2 File. **Ethical review committee certificate of approval.**

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College	
AIMC	509 (65%)
CMH	274 (35%)
Gender	
Male	226 (28.9%)
Female	557 (71.1%) 
Academic Year	
1 st Year	173(22.1%)
2 nd Year	145(18.5%)
3 rd Year	177(22.6%)
4 th Year	183(23.4%)
5 th Year	105(13.4%)
Country of Origin	
Pakistan	750 (95.8)
Foreign	33 (4.2%) 
Doctor Parents	
Yes	197 (25.2%)
No	586 (74.8%)
Living Status	
Boarder	416 (53.1%)
Day Scholar	367 (46.9%)

297	Relationship	
	Single	722 (92.2%)
298	Married	21 (2.7%)
299	In a Relationship	40 (5.1%)
300	Clinical Rotation	
	OPD	63 (8.0%)
301	Ward	401 (51.2)
302	Not Applicable*	319 (40.7)
303	*Not Applicable refers to the students from 1 st and 2 nd academic year who do not have a clinical rotation in their curriculum.	



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Table-2: Multiple regression model for Total PPOS and sub-scale scores. (N= 783)				
Predictors	B	Std. Error B	Beta	P value
Mean PPOS scores (Adj. R²= .063, P < .001)				
Constant	3.1	.13		< .001
CMH vs AIMC	-.13	.04	-.12	< .001
Pakistani vs Foreign	.36	.09	.15	< .001
N/A vs OPD	.26	.07	.14	< .001
N/A vs Ward	.12	.04	.12	< .001
Boarder vs day scholar	.06	.04	.06	> .05
Mean sharing sub-scale scores (Adj. R²= .061, P < .001)				
Constant	2.9	.15		< .001
CMH vs AIMC	-.23	.05	-.18	< .001
Pakistani vs Foreign	.43	.12	.14	< .001
Study Year	.05	.02	.12	< .001
Mean Caring sub-scale scores (Adj. R²= .028, P < .001)				
Constant	3.141	.125		.000
Pakistani vs Foreign	.296	.099	.105	< .01
N/A vs OPD	.275	.077	.133	< .001
N/A vs Ward	.110	.042	.098	< .01
Boarder/day scholar	.072	.040	.064	> .05
*N/A= Student of 1 st and 2 nd academic year who do not have any clinical rotation in their curriculum. OPD= Out Patient Department.				