

# Patients' Perspectives towards Bedside Teaching of Medical Students: an Analytical Cross Sectional Study in Tertiary Care Hospitals

Samreen Misbah, Maryam Shakeel, Aleena Mazhar, Hamza Jamshaid, Asad Tariq, Sagheer Ahmad

## ABSTRACT:

**Objective:** To determine patients' perspectives about medical students' involvement in bedside teachings and its effect on the quality of consultation.

**Study Design and setting:** An analytical cross-sectional study conducted in Combined Military and Pak Emirates Military Hospital Rawalpindi from 1-September-2019, to 1-April-2020.

**Methodology:** Data were collected by convenience sampling using self-structured questionnaire. With a response rate of 91%, sample of 294 from medicine and surgery departments were included who had or not consultations in presence of students, excluding patients with decreased mental functioning. Kruskal-wallis and Mann-Whitney-U tests were applied to compare mean scores considering statistically significant difference at  $<0.05$ .

**Results:** Among participants (mean age  $30.8 \pm 8.51$ ) almost 138(47%) patients thought benefitted interaction with students, 191(65%) expressed disagreement to discomfort during history, which decreased towards discussing sensitive information and examination in absence of senior. Among seven domains of questionnaire, positive attitude towards students and preference of local language received the highest mean score, discomfort during the examination and students' acceptability received the lowest. A significant difference was found among participants with higher education regarding permission for students' presence (p-value 0.009).

**Conclusion:** Majority of participants considered students' interaction beneficial, but shared discomfort feeling during examination. Students' involvement was considered imperative for their training, thinking that they are serving the community. Participants with high education reflected upon permission prior to encounter and those with less education shared that all discussion in their presence must be in understandable language.

**Keywords:** Cross-Sectional Studies, hospitals, humans, medical, students, surveys and questionnaires

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## INTRODUCTION:

After preclinical phase, undergraduate medical students go through the most relevant part of the curriculum of teaching in the presence of patients which helps shaping medical students into medical professionals.<sup>1</sup> Patient's role in this teaching has been explained by Sir William Osler as "it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself."<sup>2</sup> Bedside teaching (BST) is considered as an essential teaching tool by medical students themselves as well as medical teachers, provided patients are fully involved.<sup>3</sup> The evolving role of medical students is the need of the time in busy places of teaching hospitals as they are the future health care professionals. Mostly medical students are accepted by the patients where they accompany and observe senior doctors performing examination or procedures but are not in direct contact. Hence it is important to take benefit of such patients for teaching students, especially in conflicting situations where patients resist medical students' encounter.<sup>4</sup> Students' involvement with patients during history taking and physical examination is time consuming as well as stress causing resulting in gradual increase of refusal from history

taking to examination to performing procedures, which however decrease in the presence of senior clinicians. Nevertheless, female patients show less acceptance towards both gender but a better response towards female medical students.<sup>5</sup> The active encounter of patients with students under supervision is essential to develop skills of students and also increasing patients' perception of lively contribution in improving their own health condition. Despite, that there is no replacement of this first-hand experience with patient, studies have shown a decline in BST, resulting in poor clinical skills.<sup>6,7</sup> Many factors are considered accountable for this insufficient training including time constraints by teachers, students and patients. As teaching hospitals are becoming more specialized they have become less appropriate for medical education. For clinical teaching, patients with more physical signs are selected and patients with less attractive signs and symptom are excluded. Increased awareness of rights among patients had made them hesitant to be discussed about their illness among a large group of students or in front of other patients.<sup>4</sup>

Albeit, evidence based literature highlights the perspectives of students and consultants considering BST as an important instructional tool one must not overlook the central importance of patients around which all activities go.<sup>8</sup> Patients' judgment is crucial for the continuation of this essential tool of teaching and learning.<sup>9</sup> This study intended to evaluate insights of patients and their understanding towards the involvement of students in their health care, since limited data are available in our setup. Hence, this study aim to obtain principled view of patients about effect of students' presence on the quality of consultation.

#### **METHODOLOGY:**

In this institution, undergraduate medical students during their five years of education receive clinical training from third year where they come encounter with patients during BST. This project was conducted by fourth year medical students in supervision of principal investigator to assess the perspective of patients. An analytical cross sectional, questionnaire based study was conducted from 1-September-2019, to 1-April-2020 in Combined Military Hospital (CMH) and Pak Emirates Military Hospital (PEMH) Rawalpindi. The ethical approval was obtained from institutional review board of Army Medical College (ERC/ID/56). The non-probability convenience sampling technique was used to calculate a sample of 323 according to World Health Organization (WHO) table of minimum sample size, at anticipated population proportion (P) of 30% (0.30)<sup>9</sup>, absolute precision (d) at 15% to 25% (0.05) and confidence level of 95%. Finally from sample of 294, with response rate 91%, data were collected after informed consent. Patients form both genders, from 20 to 60 years of age were included from outpatient and indoor of medicine and surgery departments to share their perspectives. Indoor patients admitted for more

than one day, who had or no such consultations in presence of students were included. However, patients waiting for their turn in outpatient departments (OPD), reluctant to participate, and those with decreased mental functioning were excluded. Data were self-reported where patients were educated, but for less educated participants, questionnaire was filled by the researcher during face-to-face interview. It took almost ten to fifteen minutes to fill one questionnaire. It was not a funded project and confidentiality of the data was assured and maintained throughout the project.

Using a self-structured questionnaire based on literature with items adapted from a Sri Lankan research after author's permission, data were collected.<sup>9</sup> Questionnaire was modified and translated into Urdu to obtain perspectives of patients, based on 19 questions in seven different domains. The items were rated on three-point Likert scale, ranging from 1 (Disagree) to 3 (Agree) with a neutral (no decision) option. Neutral option was added to avoid reduction of number of respondents as participants have to give opinion about a complex subject. Ratings were considered after reverse coding for negatively worded items.

To explore the questionnaire and to cluster items meaningfully, principle component analysis (PCA) was conducted on SPSS. Kaiser-Meyer-Olkin (KMO) value of 0.642 confirmed sampling adequacy. By exploratory factor analysis (EFA) and rotated component matrix, seven components and related questions identified; benefit from interaction with students (2 items), discomfort feeling with students during history taking (5 items), discomfort feeling with students during examination (2 items), unacceptability for students (3 items), patients' preference of language for discussing illness (2 items), positive attitude towards students (3 items), information about students' presence and its permission (2 items).

IBM SPSS Statistics version 26 was used for data analysis. Univariate statistical analysis done for continuous variables and summarized as mean value, standard deviation (S.D), median, interquartile range (IQR), frequency and percentages for positive responses. Normality of data was checked, Mann Whitney U and Kruskal Wallis tests were applied to compare means between different categories, considering statistically significant difference at <0.05.

#### **RESULTS**

Out of total 323 participants, about 294 patients completed the survey with a response rate of 91%. With mean age of 30.8±8.5, almost 182(61.9%) were male and 112(38.1%) were female. Mostly participants were educated with secondary education 166(56.5%), mostly were married, 232(78.9%), and most of the participants 171(58.2%) were government employee. Mostly patients, 192(65%) who were included in study were in hospital due to some medical reason. Demographic characteristics of patients are presented in Table 1. Participants' frequency according to reason of

admission in different age groups and gender is given, Table 2. About 139(47%) of patients talked about benefit from interaction, 193(65%) expressed disagreement for discomfort feeling during history taking. This disagreement score decreased towards discussing family problems and sensitive information, and only 84(28%) disagreed that consultation time was increased. Almost 120(40%) participants shared disagreement towards discomfort during examination in students' presence, which even decrease to 100(34%) in absence of senior doctor. Regarding acceptability for the students, almost 129(43%) disagreed about privacy with senior doctor while 138(47%) shared their inconvenience for students performing clinical procedures. For discussing illness, about 237(80%) preferred Urdu or local language. Almost 269(91.5%) of participants shared that students' presence is imperative and they are providing service to community by training them. About 167(58%) of the participants shared their viewpoint about informed students' presence. Independent of survey domains 204(69%) of patients shared preference of interaction with students of same gender, (Table 3). Among seven domains, positive attitude towards students and preference of language received the highest mean and discomfort with students during the examination and acceptability for students received the lowest Fig.1. Mann Whitney U test compared means between both genders and their perceptions about benefit from interaction with students. A significant difference was found where males had the high mean rank (U-value 8738; p-value 0.03). Also a significant difference among both genders was found for their perception about discomfort with students during examination where male participants show more disagreement (females showing low mean rank; U-value 8608; p-value 0.018). For different educational groups, a significant difference was found among participants with primary education (with higher mean ranks) and graduation in their perspectives about preferred use of language for discussing illness (test statistics 49.34; p-value 0.006; adjusted statistic by Bonferroni correction for multiple test). A significant difference was also found among participants with graduation (with higher mean ranks) and primary and secondary education regarding their perspectives about permission and information about students' presence during consultation (test statistics 43.63, p-value 0.03; test statistics 34.58 p-value 0.009 respectively).

**DISCUSSION:**

Perspective of patients and their involvement during bedside teachings is of paramount importance for continuation of this important learning tool for undergraduate medical students. The present study was conducted to understand patients' reassurance and limitations in this aspect. A majority of male participants in this study considered the students' interaction beneficial, yet a large number of them was indecisive; as compared to studies where very few participants

Table 1: Demographic characteristics of the patients in the survey

Variables		N (%)
Gender	Male	182(61.9)
	Female	112(38.1)
Education	Uneducated	12(4.1)
	Primary	37(12.6)
	Secondary	166(56.4)
	Graduation	79(26.9)
Marital status	Married	232(78.9)
	Unmarried	62(21.1)
Employment status	Unemployed	111(37.7)
	Government	171(58.2)
	Private	12(4.1)
Reason for Admission (Department)	Surgery	103(35)
	Medicine	191(65)
Number of consultations in the presence of students	None	117(39.9)
	1-3	126(42.8)
	>3	51(17.3)
Number of students present during the consultation	0	116(39.5)
	1-5	99(33.7)
	6-10	65(22.1)
	>10	14(4.7)

Table 2: Age groups and Gender wise distribution of patients as per reason of admission

Age Groups	Reason of Admission		Gender		
			Male	Female	Total
20-30 years (167; 56.8%)	Reason of Admission	Medicine	86	19	105
		Surgical	12	50	62
	Total		98	69	167
31-40 years (83; 28.2%)	Reason of Admission	Medicine	49	12	61
		Surgical	6	16	22
	Total		55	28	83
41-50 years (36; 12.2%)	Reason of Admission	Medicine	19	3	22
		Surgical	5	9	14
	Total		24	12	36
51-60 years (8; 2.72%)	Reason of Admission	Medicine	3	1	4
		Surgical	2	2	4
	Total		5	3	8
Grand Total	Reason of Admission	Medicine	157	35	192
		Surgical	25	77	102
	Total		182	112	294

expressed positive feelings to the presence of medical students.<sup>9</sup> Similarly, data from a study highlighted patients' perceptions of perceived benefits of having more information about their illness, at the same time they were not able to share with their consultants what they want to say.<sup>10</sup>

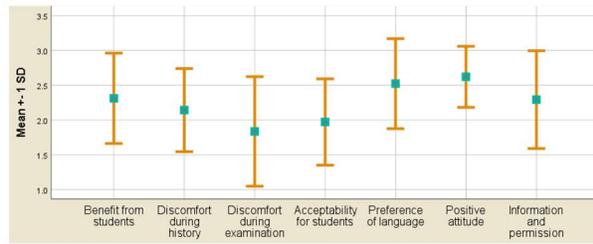
Majority of participants in this study expressed discomfort feeling during history taking, which was increased while

Table 3: Patients' perceptions towards bedside teaching of undergraduate medical students

Domain	Item	Mean (SD)	Median (IQR)	Positive responses n(%)
Benefit from interaction with students	I benefit from interacting with students	2.3 (0.73)	2 (1)	139 (47.3)
	Students are able to understand my health needs	2.3 (0.74)	2 (1)	140 (47.6)
Discomfort feeling with students during history taking	*I felt discomfort in explaining health problems to senior doctor in the presence of students	2.39 (0.87)	3 (2)	193 (65.6)
	*I felt discomfort in discussing physical illness with students	2.3 (0.91)	3 (2)	181 (61.6)
	*I felt discomfort in discussing family problems with students	2.1 (0.94)	3 (2)	158 (53.7)
	*I felt discomfort in discussing sensitive information with students	2 (0.95)	2 (2)	143 (48.6)
	*Consultation's duration was prolonged in student presence	1.7 (0.86)	1 (2)	84 (28.6)
	*I felt inconvenience while examination by senior doctor in the presence of students with taking off clothes	1.89 (0.95)	1 (2)	120 (40.8)
Discomfort feeling with students during examination	*I felt inconvenience while examination by students in the absence of senior doctor with taking off clothes	1.77 (0.92)	1 (2)	100 (34)
	*I would prefer privacy with specialist/ senior doctor	1.89 (0.97)	1 (2)	126 (42.9)
Acceptability for students	*I felt inconvenience with increase in examination duration	2 (0.93)	2 (2)	131 (44.6)
	*I felt discomfort when students perform clinical procedures	2 (0.97)	2 (2)	138 (46.9)
Patients' preference of language for discussing illness	*I would prefer doctor discussing about my problem in English	2.35 (0.88)	3 (2)	186 (63.3)
	I would prefer discussion of my illness in Urdu or local language	2.68 (0.67)	3 (0)	237 (80.6)
Positive attitude towards students	I think students' presence is important for their training	2.7 (0.66)	3 (0)	247 (84)
	I think I provide a service to community by training students	2.8 (0.47)	3 (0)	269 (91.5)
Information about students' presence and its permission	I think student's presence has positive effect on quality of consultation	2.2 (0.82)	3 (1)	151 (51.4)
	It would be better if I was informed about the presence of students	2.27 (0.88)	3 (2)	167 (56.8)
	It would be better if option was given whether to have students or not	2.3 (0.88)	3 (2)	172 (58.5)
I would prefer interaction with students of same gender		2.4 (0.87)	3 (2)	204 (69.4)

Score 1 (Disagree) to 3 (Agree); Positive responses (Agree)  
 \*Reverse Coding; Score 3 (Disagree) to 1 (Agree); Positive responses (Disagree)

Figure 1: Mean Scores of participants for all domains with Standard Deviation Error Bars



sharing sensitive information or even more during examination by students in the absence of senior. Same findings were revealed where participants show willingness for history, examination and less invasive procedures but not for more invasive procedures by medical students.<sup>9-11</sup> The participants were doubtful for clinical examination with proper exposure in the students' presence which even increased with students alone. It is similar to a study where more patients preferred only the senior doctor to examine suggesting acceptance of students during history as compared to during examination.<sup>11,12</sup>

Majority of educated participants in this study believe that they are providing service to the community and students' presence during senior's consultation is important for their training. Nevertheless, they insisted upon prior permission and informed students' presence. Similar findings were shared by a study, where participants asserted upon information and permission.<sup>13,14</sup> These results are in contrast to a study conducted in Saudi Arabia where patients were confident about their right to refuse medical students.<sup>15,16</sup> Majority of the participants disagree with the need of privacy stating that they gain more information due to students' interaction. Similar researches have highlighted positive attitude and suggested collaboration with patients to make them better teaching opportunity.<sup>17</sup> There is a need of procedure for informed consent from patients and to educate them to have quality teaching experience for both stakeholders.<sup>8,18</sup>

Most of our study participants preferred interaction with students of same gender, confirming similarity with other studies showing more acceptance by female patients and old age participants.<sup>9,19,20</sup> Many participants from primary educational group suggested Urdu or local language for discussion as they want to know more about their illness, which is masked when there is use of medical language.<sup>21</sup> Majority of study participants thought that duration of consultation was prolonged and they felt inconvenience, similarly indicated by other researchers that it is the responsibility of consultant to supervise the patients' comfort in context of desirable number of students examining them.<sup>22,23</sup> Long term outcome needs further exploration of factors in addition to perceptions of students, clinicians and patients.<sup>24</sup>

Main strength of the study was that involvement of medical students during BST was evaluated with a special emphasis on patients' perspective. Few limitations of the study include that data were obtained from tertiary/ teaching hospitals therefore generalizability of results will be with caution. For a detailed analysis of the concept future researchers can conduct qualitative research. Patients' involvement is considered an important factor in sustainable continuation of BST demanding collaboration with patients to make them better opportunity for teaching and training. There must also be a procedure for informed consent from patients for a quality teaching experience for both stakeholders. Patients' comfort must be considered to avoid their inconvenience due to increase in time during examination. Further exploration of factors for continuation of this valuable tool of learning while evaluating medical education need of students is required.

## CONCLUSION

Majority of participants considered the students' presence and their interaction beneficial for them. Both genders shared that they felt discomfort while examination by students. They considered students' involvement in BST imperative for their training and believed that they are serving the community by training students. Highly educated participants reflected that they should have an adequate information and permission should be taken prior to encounter. Patients want to know about their illness in detail so participants especially less educated shared that all discussion in front of them must be in local or understandable language.

### Authors Contribution:

**Samreen Misbah:** Concept and design, literature search  
**Maryam Shakeel:** Concept and design, literature search  
**Aleena Mazhar:** Designing of questionnaire, data analysis and interpretation  
**Hamza Jamshaid:** Designing of questionnaire, data analysis and interpretation  
**Asad Tariq:** Drafting the manuscript and critical revisions for publication  
**Sagheer Ahmad:** Drafting the manuscript and critical revisions for publication

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