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Patient outlook on bedside teaching in a medical school

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المخلص

أهداف البحث: يعتبر التدريس السريري عنصراً مهماً في تدريب طلاب الطب وطلاب الدراسات العليا لاكتساب المهارات السريرية. وتختلف تصورات المرضى عن التدريس السريري بشكل كبير اعتماداً على فهمهم للمناخ التعليمي في المستشفيات. وتهدف هذه الدراسة لتقييم نهج المجموعات المتنوعة من المرضى تجاه التدريس السريري ودرجة مشاركة طلاب الطب في عمليات صنع القرار السريرية.

طرق البحث: أجريت هذه الدراسة المقطعية المستعرضة على المرضى الذين تم تنويمهم في مختلف الأقسام في مستشفى الرعاية الثالثية. وتمت دراسة ما مجموعه 200 مريضاً بواسطة الطلاب باستخدام استبانة تتضمن المعرفة، الآراء والتوقعات فيما يتعلق بطلاب الطب في المستشفيات والتدريس السريري.

النتائج: شعر غالبية المرضى (83.5%) الذين تمت دراستهم أن الطلاب جعلوا بيئة المستشفى أكثر راحة وودية. واختار المرضى من الذكور السماح بمشاركة الطلبة أكثر من المرضى الإناث. بين الإناث، كانت المراهقات، والشابات والنساء غير المتزوجات أكثر إيجابية تجاه مشاركة الطلاب المباشرة في فحصهم بدنياً. وكانت المخاوف الصحية والتوتر من مشاكل البالغين والمرضى الأكبر سناً، بينما تعلقت مخاوف الخصوصية والسرية بالفئة العمرية الأصغر سناً. وأظهرت المريضة اللاتي تم تنويمهن في أقسام النساء والتوليد رفض مشاركة الطلاب في إجراءات المستشفى بالمقارنة بالمرضى من الأقسام الأخرى.

الاستنتاجات: كان لدى معظم المرضى نهج إيجابي ملحوظ تجاه التدريس بجانب السرير. ويمكن تنفيذ طرق التدريس البديلة في المواقف التي يشعر فيها المرضى بعدم الارتياح تجاه مشاركة الطلاب خلال تدريبهم في المستشفى.

الكلمات المفتاحية: طلاب الطب؛ التدريس بجانب السرير؛ آراء المرضى؛ التعليم الطبي؛ التواصل بين الطلاب والمرضى

Abstract

Objective: Bedside teaching is an important element of training undergraduate and postgraduate medical students to attain clinical skills. The perceptions of patients about bedside teaching vary significantly based on their understanding of the educational climate in hospitals. This study aimed to evaluate the views of diverse groups of patients on bedside teaching and the degree of involvement of medical students in their clinical decision-making processes.

Methods: This was a cross-sectional study conducted among patients admitted to various departments of a tertiary care hospital. A total of 200 patients were surveyed by students using a questionnaire, which covered their knowledge, views, and expectations with respect to medical students in hospital settings and bedside teaching.

Results: The majority (83.5%) of patients surveyed felt that the students made the hospital environment more comfortable and friendly. Male patients chose to permit students' involvement more than female patients. Among the female patients, teens, young adults, and unmarried women were more positive towards students' direct participation in their physical examinations. Health concerns and stress were issues for adults and older patients, whereas privacy and confidentiality concerned the younger age group. Patients admitted to the obstetrics and gynaecology wards were more likely to reject student involvement in hospital procedures than patients in other departments.

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Conclusion: Most of the patients had a markedly positive attitude towards bedside teaching. Alternative methods of teaching can be implemented in situations where patients feel uncomfortable with students' involvement during their hospital stay.

Keywords: Bedside teaching; Medical education; Medical students; Patients' views; Student-patient communication

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Introduction

Medical education involves diverse aspects and imparts both knowledge and clinical skills to students. Bedside teaching is one of the most important parts of medical education. It helps to train students in taking a good medical history, examining patients, and arriving at the best approach to reach a diagnosis. It also provides students with the experience of understanding patients and their problems; clinical reasoning; performing or witnessing procedures; and, above all, professionalism. It is the mutual connection between the doctor, student, and patient that makes this system work well. Medical students at all levels find bedside teaching to be an effective way of learning professional skills.^{1,2}

Bedside teaching is a great way for students to build their clinical skills.³ According to a study conducted at the University of Washington School of Medicine, not just students but teachers too perceive a profound positive impact on their clinical skills from teaching students at the bedside.⁴ Though a range of studies have assessed the effects of bedside teaching on students and teachers, the patients' viewpoint has not yet been widely studied. Most often, patients are cooperative with students. However, this attitude is largely affected by patients' characteristics and the extent of students' involvement in patient care.⁵ Such responses might also vary across regions, based on various social and cultural factors pertaining to either patients or students. The age, gender, and literacy level of the patients, and the attire, behaviour, and gender of the students are some of the factors that can affect patients' perceptions of bedside teaching. In addition, since patients' rights and informed consent have gained greater importance over time, patients have become sensitive about whom they should consult and who should be present around them during their hospital stay. In a cross-sectional questionnaire-based study to assess patients' attitudes towards students as observers in operating theatres, it was found that patients saw prior consent as crucial and expected an elaborate consent process.⁶

Patients do not experience any increased stress during bedside teaching rounds. This was found by Hershey, who measured patients' heart rate, blood pressure, and plasma norepinephrine levels.⁷ Patients were comfortable when the students listened to them, but felt a little discomfort when they used language that the patient did not understand.⁸

The gender of the student and patient was found to be a major determinant of patients' acceptance of bedside teaching in some studies. A survey of 250 male and 250 female patients attending a genitourinary medicine (GUM) clinic found that women were less likely than men to accept students of either gender taking their sexual history or being present during their examination, but were more likely than men to accept only same-sex students.⁹ In six general practice settings in the Oxford area, patients overall felt that the gender of the student was unimportant in general practice consultations, but comparing males and females, the latter group significantly (5% versus 17%) felt that it made a difference.¹⁰ Patients' views vary across different geographical regions. In a study in Syria, only a little over half of patients were comfortable in the presence of students.¹¹

The present study focused on evaluating the attitudes of different groups of patients towards bedside teaching; their knowledge and expectations regarding students' behaviour and attire; and their opinions about the involvement of medical students in their hospital proceedings, in order to derive views and opinions representative of the general population.

Materials and Methods

This was a cross-sectional study done on patients admitted to various departments of a tertiary care hospital in South India. In-patients from different departments such as surgery, medicine, orthopaedics, paediatrics, otorhinolaryngology (ENT), obstetrics and gynaecology (ob/gyn), dermatology, and urology were surveyed. Patients from the intensive care unit and psychiatry ward were excluded from the study.

Study design and data collection

The study was conducted after obtaining approval from the Institutional Ethics Committee. Patients in a tertiary care hospital setting were enrolled in the study after obtaining their written informed consent. Patients with a mild to moderate illness admitted to the departments of surgery, medicine, orthopaedics, paediatrics, ENT, ob/gyn, dermatology, and urology in July 2018 were approached at their bedside by a research student after the daily rounds by the department faculty and residents. The research student did not have any role in patient management.

Patients were given prior information about the nature and objectives of the survey and were assured that their answers would not affect their treatment. The survey tool was in English and it was pretested on a small group of patients via a pilot study. During the study, the survey sheet was filled in by the student asking the questions to the patient in their native language. It took around 30 min for the student to interview each patient. The survey covered patient information followed by three sections. The first section involved three questions pertaining to general aspects of the patient and their knowledge of the medical system in the hospital. The second section consisted of seven questions regarding their expectations of an ideal medical system. Finally, the third section involved questions regarding their opinions about the appropriate number of students, type of students, and procedures a student must be allowed to take part in at

the hospital. Descriptive statistics were used to analyse the data. The data were presented as numbers and percentages.

Results

A total of 208 patients were approached, and 200 consented to take part in the study. Demographic characteristics of the 200 participants are shown in [Table 1](#).

Patients knowing about the hierarchy of the medical personnel

Multiple levels of people work in a medical team. By knowing the hierarchy of medical personnel, patients will be aware of the general responsibilities of each role from the top down. In total, 152 (76%) patients knew the hierarchy of the medical personnel and 149 (74.5%) could actually differentiate the various levels of health professionals with accuracy.

Patients expecting a brief explanation from the students before the history taking/examination

A total of 169 (84.5%) of the patients surveyed expected a brief explanation from the students before the history taking/examination. The percentage of males and females expecting a brief explanation was the same.

Patients' suggestions about the ideal attire of the students

As for attire, 101 (50.5%) of the patients preferred the attending students to be in lab coats, 12 (6%) preferred formal clothing (but not a suit), 6 (3%) preferred casual

clothes, and 4 (2%) preferred formal clothing (a suit); 77 (38.5%) of patients were fine with any attire on the students.

Patients' expectation of the type of conversation with students

In total, 102 (51%) of the patients surveyed preferred the students to remain formal and talk only about their medical condition, whereas the other 98 (49%) preferred the students to speak informally. As for gender, 72 males (54.54% of males) and 26 females (38.23% of females) preferred the students to speak informally and the difference was statistically significant ($p < 0.05$).

Patients' views on the effect of language differences in student-patient communication

In total, 141 (70.5%) of the patients felt that a difference in language between students and patients decreased their willingness to respond to them. Three (30%) teens, 14 (63.63%) young adults, 81 (72.9%) adults, and 43 (75.4%) patients aged 60 and above felt that a difference in language decreased their willingness to respond to students.

Patients' views on the presence of students and their influence on the hospital environment

In total, 167 (83.5%) of the patients felt that the students made the hospital environment more friendly. Nine (90%) teens, 22 (100%) young adults, 90 (81.08%) adults, and 46 (80.7%) patients aged 60 and above felt that the students made the hospital environment friendlier. On comparing males with females, both felt that the presence of students made the hospital environment significantly more cordial ($p = 0.12$).

Patients' views on students speaking amongst themselves in the hospital

As for students around them speaking amongst themselves, 167 (83.5%) patients were fine with it. The results showed that 9 (90%) teens, 21 (95.45%) young adults, 92 (82.88%) adults, and 45 (78.94%) aged 60 and above were fine with students conversing amongst themselves in the hospital.

Table 1: Patients' demographic characteristics.

Patient characteristics	Frequency	Percentage
Gender		
a) Male	132	66%
b) Female	68	34%
Age		
a) Teen (<20 years)	10	5%
b) Young adult (20–29 years)	22	11%
c) Adult (30–59 years)	111	55.5%
d) 60 years and above	57	28.5%
Education		
a) <1st grade	28	14%
b) 1st to 10th grade	111	55.5%
c) 11th and 12th grade	22	11%
d) Graduates and above	39	19.5%
Department of admission		
a) Dermatology	10	5%
b) ENT	11	5.5%
c) Medicine	85	42.5%
d) Ob/Gyn	10	5%
e) Orthopaedics	24	12%
f) Surgery	48	24%
g) Urology	12	6%
Marital status		
a) Married	168	84%
b) Unmarried	30	15%
c) Divorcee/widower	2	1%

Note: ENT = otorhinolaryngology, Ob/Gyn = obstetrics and gynaecology.

Table 2: Patients' views on the number of students allowed to be involved in non-examination aspects. All values are given in no. (%).

Non-examination aspects	Fewer than eight students allowed	Any number of students allowed	No students allowed
Read medical file	5(2.5%)	186(93%)	9(4.5%)
Be present in OPD/ward	8(4%)	172(86%)	20(10%)
Be present in OT	8(4%)	158(79%)	34(17%)
Be present in delivery room	1(4.54%)	12(54.54%)	9(40.9%)
Take medical history	9(4.5%)	185(92.5%)	6(3%)

Note: OPD = out-patient department, OT = operation theatre.

Table 3: Patients' views on the involvement of students in physical examinations and procedures.

	Students allowed No. (%)	No students allowed (with reason for denial)			
		Stress	Confidentiality	Privacy	Health concerns
General Examination	196(98.00%)	0	2(1.00%)	0	2(1.00%)
Chest Examination	183(91.50%)	0	2(1.00%)	2(1.00%)	13(6.50%)
Breast Examination	57(83.82%)	0	1(1.47%)	2(2.94%)	8(11.76%)
Abdominal Examination	181(90.50%)	1(0.50%)	2(1.00%)	2(1.00%)	14(7.00%)
Genital Examination	172(86.00%)	2(1.00%)	2(1.00%)	10(5.00%)	14(7.00%)
Urinary Catheterisation	170(85.00%)	2(1.00%)	2(1.00%)	11(5.50%)	15(7.50%)
Labour Room Procedures (Episiotomy)	26(66.67%)	2(5.13%)	1(2.56%)	5(12.82%)	5(12.82%)

Note: All values are given in no. (%).

Table 4: Patients' views on the importance of the presence of a doctor/supervisor while students perform physical examinations.

	Only allow students to observe a doctor performing No. (%)	Only allow students to perform under doctor supervision No. (%)	Allow students to perform without doctor supervision No. (%)
	General Examination	10(5.10%)	52(26.53%)
Chest Examination	9(4.92%)	71(38.80%)	103(56.28%)
Breast Examination	3(5.26%)	34(59.65%)	20(35.09%)
Abdominal Examination	10(5.52%)	68(37.57%)	103(56.91%)
Genital Examination	25(14.53%)	86(50%)	61(35.47%)
Urinary Catheterisation	35(20.59%)	78(45.88%)	57(33.53%)
Labour Room Procedures (Episiotomy)	7(26.92%)	13(50%)	6(23.08%)

Note: All values are given in no. (%), where % refers to the percentage of patients opting to allow students to be involved in the corresponding physical examination/procedure.

Table 5: Patients' views on the gender of students allowed in physical examinations and procedures.

	Only males allowed	Only females allowed	p-value
Chest Examination	6(4.76% of males)	15(26.32% of females)	<0.001
Breast Examination	—	15(26.32% of females)	
Abdominal Examination	6(4.8% of males)	11(19.64% of females)	<0.01
Genital Examination	10(8.4% of males)	14(26.42% of females)	<0.01
Urinary Catheterisation	8(6.78% of males)	13(25% of females)	<0.001
Labour Room Procedures (Episiotomy)	—	4(15.38% of females)	

Note: Everyone who opted for 'only males allowed' was male and everyone who opted for 'only females allowed' was female. *Patients' views on prescribing and administering drugs.*

Table 6: Patients' views on students being allowed to prescribe and administer drugs.

		Students can be allowed			No student must be allowed
		To perform without doctor supervision	To perform only under doctor supervision	Only to observe a doctor performing	
To prescribe drugs	Total Frequency	21(10.50%)	134(67.00%)	1(0.50%)	44(22.00%)
To administer drugs	Total Frequency	11(10.50%)	130(65.00%)	1(0.50%)	48(24.00%)

Note: All values are given in no. (%).

Patient views on students' involvement in non-examination aspects

The patients' views on the involvement of students in non-examination aspects are shown in Table 2. Health concerns was the major reason for patients to not let students be present in OT (operation theatre) and delivery rooms. Confidentiality was the major reason for them to not let

students read their medical file, be present in the OPD(out-patient department)/ward, or take their medical history

Patients' views on physical examinations and procedures by students

Patients' views on the presence and involvement of students during physical examinations and short procedures are

shown in Tables 3 and 4. Table 5 shows the preferences of patients with respect to the gender of the students involved in physical examinations. On comparing male and female patients, female patients had a significantly stronger preference for female students while undergoing chest examinations ($p < 0.001$), abdominal examinations ($p < 0.01$), genital examinations ($p < 0.01$), and urinary catheterisation ($p < 0.001$).

The views of the patients regarding students prescribing and administering drugs are shown in Table 6.

The predominant reason given by the patients for rejecting students prescribing and administering drugs was confidentiality (>90%). Health concerns, privacy, and stress were other reasons given by the patients.

Discussion

Bedside teaching provides a real-world experience to students, helping them to acquire physical examination and communication skills; it also lets them experience the nuances of doctor-patient relationships. It is of particular importance to medical students who do not feel at ease in approaching patients during their early clinical years.¹² In such a setting, the teacher acts as a coordinator between the patient and student.¹³

The present study focused on patients' perceptions of bedside teaching and students' involvement in their medical care. The majority of patients were comfortable with the involvement of medical students during their hospital stay. Two very interesting reasons for this, as stated by the patients, were as follows: i) patients understood their medical condition better by discussing it with the students, and ii) they believed that bedside teaching was a requirement for the medical students to learn and become capable doctors in the future. This finding correlates with a study done in an Australian general practice setting, where about 80% of the patients gave 'benefit to the student' as the major reason for their willingness to cooperate.¹⁴ Even in ob/gyn and neonatology departments, patients accepted bedside teaching as an important learning tool for students, and female patients saw themselves as contributing to teaching ('patient as teacher').¹⁵ It has been observed that patients participate in bedside teaching with a sense of altruism.¹⁶

The majority of the patients were aware of the hierarchy of medical personnel (76%) and were able to differentiate between them (74.5%), and most of these were young adults (20–29 years). Patients with higher educational qualifications could better differentiate the medical faculty at different levels and had a fair understanding of their roles and responsibilities. Aged patients and those with lower educational qualifications were not concerned about students' attire. One of the patients strongly stressed that a stethoscope should be mandatory for students.

Informal communication is less structured, but it allows for better interaction between patients and health professionals. Though the number of patients preferring informal conversations versus orderly (medical-related) conversations with students was almost equal, there was an increased preference for the former with the increasing age of the patients. The patients were critical about differences in

the language (some students not being well-versed in the local language of the region) used for communication between them and the students. Native languages and cultures play an important role in learning, and the use of a secondary language can sometimes lead to inaccurate history taking and even misdiagnosis.¹⁷ Studies have shown that differences in native language between patients and students may adversely affect patients' experiences of bedside teaching.¹⁸ In multilingual settings, even students felt that their interactions with patients were uncordial.¹⁹ The majority of patients surveyed (83.5%) felt that the students made the hospital environment more comfortable and friendly, and of these the majority were in younger age groups. This may be due to the presence of students in wards for longer hours and the way they listen to patients' concerns. Such opinions ought to have a positive impact on patients' perceptions of bedside teaching. However, a study done in Syria revealed that only 58.2% of patients were comfortable in the presence of students.¹¹

None of the patients preferred more than six students at a time to attend them in wards, OPD, OT, or delivery rooms; to read their medical files; or to take their medical history. Most patients felt that the optimum number of students should be fewer than or equal to four. While a huge majority of the patients opted to allow students to read their medical file (95.5%), take their medical history (97%), be present in wards (96.5%), and be present in OPD (90%), a relatively smaller number opted to allow them into the OT (83%), and a much smaller percentage opted for students in delivery rooms (61%). In general, male patients showed higher acceptance of medical students than females. The most common reason for rejection of student involvement in the above cases was confidentiality, whereas health concerns and stress led to the rejection of students in delivery rooms. These results contradict those from a study at Damascus University, where privacy was the main concern of patients rejecting the presence of students.¹¹ These differences could be reflective of the cultural and social values of the places where the studies were conducted.

A strong majority of patients chose to allow students to perform a general examination (98%), chest examination (91.5%), and abdominal examination (90.5%), whereas a relatively lower percentage did so for a genital examination (86.5%), digital rectal examination (85.5%), urinary catheterisation (85%), breast examination (83.82%), and labour room procedures (66.67%). Compared to males, a relatively lower percentage of females chose to allow student involvement, as is evident from the data on abdominal examinations, genital examinations, digital rectal examinations, and urinary catheterisation.

Of the female patients who consented to allowing students to perform a breast examination, labour room procedures, a genital examination, a digital rectal examination, and urinary catheterisation, about a quarter of them preferred only female students to be present. Such same-sex preferences among female patients more than male patients was also evident in an Oxford study¹⁰ and a GUM clinic survey.⁹ There were varied responses in different studies: some female patients felt that participating in bedside teaching made their hospital stay

better,¹⁶ whereas others had a negative attitude towards student participation in their care and treatment, compared to male patients.²⁰

Among female patients, teens, young adults, and the unmarried were more positive towards allowing students to examine their private parts, though under a doctor's supervision only. The main reason for rejection by the rest was health concerns, followed by privacy. In a systematic review of patients' attitudes towards medical students' participation in their care across different specialties, it was also observed that the most common cause for refusal by patients was concerns about privacy.²¹

In general, the rejection of medical student involvement by patients with higher educational qualifications was low compared to others, but most of them preferred students to perform examinations under a doctor's supervision or only observe the doctor. Patient characteristics like ethnicity have been found to be associated with patients' perceptions of bedside teaching: a non-white British population had lower acceptance of medical students than a white population.²²

It can be seen that in most cases, health concerns and stress are the issues bothering adults and older (60 plus) patients, whereas privacy and confidentiality are the concerns of the younger age groups. In a study done in older patients, the majority showed acceptance of participating in the education of medical students but had some reservations towards students performing invasive procedures like a venepuncture. However, once these patients started interacting with the students, they were more likely to allow them to interview and examine them on subsequent days.²³

In general, patients surveyed in urology wards showed the largest percentage of rejection of examinations by students due to health concerns. Both ob/gyn and urology in-patients surveyed showed a larger predilection for doctor supervision during examinations by students. A similar study done at Kuwait University also established that ob/gyn patients showed the highest refusal towards student involvement.²⁴ The majority of the patients opted to allow students to prescribe and administer drugs only under a doctor's supervision (67% and 65%, respectively). The rest of the patients were against it primarily due to health concerns.

This study helps us gain an insight into the factors that drive the student-patient relationship in an academic healthcare setting. With physicians not being around all the time, patients feel a sort of support and comfort from the presence of students, who are able to give more time and show concern towards the patient's condition. In situations where patients may not give consent for student involvement, alternative strategies should be used to ensure that students develop the required competencies. These could be in the form of mannequins, simulation models, and virtual teaching. Yet these can only be an alternative for certain specific situations and cannot totally replace the experience of bedside teaching. Bedside teaching has additional advantages, such as in palliative care settings, where students learn communication skills and ethical considerations, and in such settings structured guidance for students becomes imperative.²⁵ Even parents of paediatric patients supported student learning during bedside teaching sessions and wanted to be given an opportunity to provide feedback afterwards.²⁶ As

noted by other similar studies, there are a few other hurdles in bedside teaching which need to be addressed—time constraints and a lack of rooms for briefing and debriefing are some of them.²⁷ There is also a need to counsel patients about the importance of bedside teaching for budding doctors and the benefits to patients from the involvement of students during their hospital stay so that patient acceptance of bedside teaching increases further.

Limitations of the study

The study was limited to only patients admitted to the departments of surgery, medicine, orthopaedics, paediatrics, ENT, ob/gyn, dermatology, and urology. Hence, it does not capture the opinions of patients admitted to other departments. The number of patients interviewed in some of the departments was low, thus making the interpretation of the data less reliable.

Conclusion

The majority of patients were comfortable with the involvement of medical students during their hospital stay and preferred to have a maximum of six students attend them during various hospital proceedings. Among ob/gyn patients, rejection of student involvement was comparatively higher. Most of the patients were comfortable with student involvement in non-examination settings, but some reservations were expressed towards physical examinations (more so by female patients). There is thus a need to evolve high-fidelity simulation models in place of bedside teaching in certain settings where patients feel uncomfortable in the presence of students.

Recommendations

During physical examinations in departments like ob/gyn and urology, supervision by doctors is desirable.

In cases where patients do not feel comfortable in the presence of students, simulation models or dummy cases should be used so that the teaching of students is not affected.

Care should be taken about the privacy of the patient during bedside teaching.

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Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

The study was conducted after obtaining approval from the Institutional Ethics Committee (IEC 340/2018). Dated

13th June 2018). Patients were enrolled after they gave written consent to participate in the study.

Authors' contributions

PAS conceived and designed the study, conducted the research, provided the research materials, collected and interpreted the data, and wrote the initial draft. RM analysed and interpreted the data and wrote the final draft. BC organised and interpreted the data, wrote the final draft of the article, and provided logistic support. All authors critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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Appendix A. Supplementary data

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