

Willingness of Patients and Their Companions Participating in Clinical Teaching: A Cross-Sectional Study

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Abstract

Objective: To investigate the characteristics of active patients and their involvement in medical education; learn about their motivations, needs, and experiences in participating in medical teaching; and explore the reasons for the differences in their attitudes toward medical education. **Method:** Patients who were hospitalized in our institution from July 2019 to June 2022 and their companions were recruited, and they participated in a medical lesson in which they were taken a medical history and physical examination. Information on their willingness during the lesson was collected through self-designed questionnaires. The questionnaire results were then analyzed by SPSS software. **Results:** Valid questionnaires from 349 patients and their companions were collected for analysis. There are differences in the motivation and participation in clinical teaching of patients and their companions. In general, companions have a more negative attitude toward clinical teaching. Patients participating in clinical teaching generally enjoy communication with interns. In addition, the level of education is also an influencing factor for patients and their companions to participate in clinical teaching activities. **Discussion:** Patients and their families choose teaching hospitals for more standard and advanced care but not for clinical teaching. Nonetheless, clinical teaching engagement and effectiveness could be significantly improved by improving trainee behavioral patterns to screen patients for specific characteristics.

Keywords

Patients, Companions, Medical Education, Participation

1. Introduction

The lack of qualified general physicians has become apparent with growing

medical and health needs (Zhu & Tan, 2019). As a result, medical schools have started training physicians in how to obtain a complete medical history and perform a comprehensive physical exam, which are basic medical skills. This training process includes learning in class, with standardized patients (Yang et al., 2019) and through early clinical exposure (Bokken et al., 2009; Wenrich et al., 2013).

Clinical training has been used in medical schools to help students form a preliminary understanding of the work in hospitals and provide a platform for medical students to turn their theoretical knowledge into clinical skills (Ong et al., 1995). During their practice, students can communicate with patients, take a medical history and perform a physical exam so they can more effectively build their clinical proficiency (Golden et al., 2018).

By completing clinical training, students can build their clinical skillsets, such as in clinical reasoning, diagnosis, communication skills, professionalism, empathy, and patient management (Golden et al., 2018; Ong et al., 1995). Such communication can provide patients with emotional and material benefits, such as an increased positive attitude, or receiving a gift (Dijk et al., 2020; Hatem et al., 2003). In addition, it allows a deeper understanding of patients' needs. Furthermore, good interactions make patients share more detailed clinical information, so doctors are able to adjust their treatment if necessary to lead to a better outcome (Park et al., 2017). Patients may also feel they have received more attention from health management when they are engaged in teaching (Rees et al., 2007).

Although clinical teaching is important for training medical students and has many benefits, it also has limitations. Students usually start learning in a relatively passive way, and some of them cannot build a good relationship with patients by just listening during teaching (Park et al., 2017). In addition, clinical teaching introduces the possibility for patient concerns that refusing to participate could affect their treatment (O'Flynn et al., 1999), and some patients may feel embarrassed when they are treated in a teaching hospital (Coleman & Murray, 2002). There are also many factors, such as education levels, that influence patients' attitudes toward students' participation in asking private questions, taking notes such as those on medical history and performing a physical exam (Park et al., 2017; Ramanayake et al., 2012; Temesgen, 2013). Patients who are worried that students are not as professional as doctors tend to allow students to do so only when doctors are present, and they prefer less body contact as well (Bukhari et al., 2008; Iqbal et al., 2020; Park et al., 2017). Some patients and companions consider participation in clinical teaching to be tiresome and time-consuming and prefer less disturbance and more rest, so such participation becomes a burden for them (Aquilina et al., 2018).

Many studies have previously investigated the attitudes of patients toward students' participation (Aquilina et al., 2018; Bukhari et al., 2008; Iqbal et al., 2020; Ramanayake et al., 2012; Temesgen, 2013). However, we need to perform further research to explore the attitudes and feelings of both patients and their

companions toward clinical teaching and determine whether they are willing to participate in clinical teaching again so that we can guide our teaching work and give patients more respect and better healthcare. Therefore, our study aims to understand the participation, motivations and experiences of patients and their companions during hospitalization.

2. Materials and Methods

2.1. Participants

The participants included perioperative patients aged 18 and above and their companions who were in our institution from July 2019 to June 2022. These participants were selected to complete a survey about their experience. Patients with impaired judgment were excluded from this study.

2.2. Medical Student Teaching Session

Inpatients received a physical examination, and their medical history was taken by the medical students under the guidance of their teachers, who were typically senior physicians. The teaching session was separated from the normal inpatient medical procedures. Bedside teaching sessions with patients and their companion usually take from 30 min - 1 h per student.

2.3. Institutional Review Board Statement

All procedures were performed in accordance with the Declaration of Helsinki, and this study was approved by the research ethics committee of First Affiliated Hospital of Xi'an Jiaotong University (No. XJTU1AF2022LSK-437).

2.4. Data Collection and Analysis

Questionnaires designed by the researchers and face-to-face interviews were conducted with the inpatients and their companions in the Department of Surgical Oncology. The inpatients and their companions were asked to complete the questionnaires within 24 h after the teaching session. Among all 357 patient and companion questionnaires that were collected, 349 pairs of questionnaires were retained for analysis (loss rate 2.2%). The data were analyzed by SPSS statistics 25.0 (IBM Inc., Chicago, USA). The chi-squared test and rank sum test were used to establish the difference in each socio-demographic characteristic and attitude between the patients and their companions. A difference was considered significant when the P value was less than 0.05.

3. Results

3.1. Characteristics of the Participants

The full demographic characteristics of all the included patients and their companions are shown in **Table 1**. The mean age of the patients was 61.66 ± 10.628 years old. In total, 233 (66.8%) were males, and 116 (33.2%) were females. The mean age of the patients' companions was 43.05 ± 10.404 years old. There were

Table 1. The characteristics of all the included inpatients and companions.

	Inpatient (N/%)	Companion (N/%)	P value
Age			
<40	13 (3.7%)	119 (34.1%)	
40 - 60	128 (36.7%)	217 (62.2%)	
>60	208 (59.6%)	13 (3.7%)	0.000*
Gender			
Male	233 (66.8%)	233 (66.8%)	
Female	116 (33.2%)	116 (33.2%)	1.000
Education Level			
No Formal educated	11 (3.2%)	0 (0%)	
Primary Educated	228 (65.3%)	77 (22.1%)	
High Educated	110 (31.5%)	272 (77.9%)	0.000*
Medical History taking			
Yes	340 (97.4%)		
No	9 (2.6%)		
Physical examination			
Yes	292 (83.7%)		
No	57 (16.3%)		
Clinical operation			
Yes	135 (38.7%)		
No	214 (61.3%)		

significant differences in the age and education level of the patients and companions, with the companions being younger and more highly educated.

3.2. Patients' and Their Companions' Attitudes toward the Medical Students

The results regarding attitudes toward student attendance for both the patients and their companions are shown in **Table 2**. Of the 12 questions answered by both the patients and the companions, there were significant differences in 10 questions. Generally, the companions showed more negative attitudes toward clinical teaching than the patients.

3.3. The Relationship between Patients' Participation in Medical Activities with Medical Students and Their Attitudes toward Medical Teaching

A further analysis is shown in **Table 3**. The results showed that the patients who participated in the physical examination preferred to re-enroll in medical teaching

Table 2. The attitudes towards students attending of all the inpatients and companions.

Questions	Attitude	Inpatient (N/%)	Companion (N/%)	P value
1. It's part of hospital care.	Overall agree	338 (96.9%)	215 (61.6%)	0.000*
	Neutral	7 (2%)	93 (26.6%)	
	Overall disagree	4 (1.2%)	41 (11.8%)	
2. Participation in teaching has no effect on treatment.	Overall agree	232 (66.5%)	226 (64.8%)	0.000*
	Neutral	89 (25.5%)	58 (16.6%)	
	Overall disagree	28 (8%)	65 (18.6%)	
3. Unable to refuse the medical treatment of the students.	Overall agree	278 (79.7%)	186 (53.2%)	0.000*
	Neutral	54 (15.5%)	81 (23.2%)	
	Overall disagree	17 (4.8%)	82 (23.5%)	
4. Better to understand the reasons and the extent of the disease.	Overall agree	179 (51.3%)	176 (50.5%)	0.036*
	Neutral	106 (30.4%)	84 (24.1%)	
	Overall disagree	64 (18.3%)	89 (25.5%)	
5. Students will not progress without engaging in teaching work.	Overall agree	307 (88%)	289 (82.8%)	0.005*
	Neutral	32 (9.2%)	30 (8.6%)	
	Overall disagree	10 (2.9%)	30 (8.6%)	
6. Cooperating with teaching work is an obligation.	Overall agree	219 (62.8%)	225 (64.5%)	0.189
	Neutral	99 (28.4%)	82 (23.5%)	
	Overall disagree	31 (8.9%)	42 (12.0%)	
7. Received enough respect from the interns.	Overall agree	238 (68.2%)	155 (44.4%)	0.000*
	Neutral	77 (22.1%)	126 (36.1%)	
	Overall disagree	34 (9.7%)	68 (19.5%)	
8. It's worth it to communicate with interns.	Overall agree	204 (58.5)	173 (49.5%)	0.000*
	Neutral	60 (17.2%)	139 (39.8%)	
	Overall disagree	85 (24.3%)	37 (10.6%)	
9. Get more medical information through communication.	Overall agree	194 (54.6%)	202 (57.9%)	0.570
	Neutral	97 (27.8%)	99 (28.4%)	
	Overall disagree	58 (16.6%)	48 (13.8%)	
10. Communication makes the patients happier.	Overall agree	168 (48.1%)	207 (59.4%)	0.000*
	Neutral	154 (44.1%)	71 (20.3%)	
	Overall disagree	27 (7.7%)	71 (20.3%)	
11. Willing to participate in teaching if possible.	Overall agree	169 (48.5%)	146 (41.8%)	0.000*
	Neutral	115 (33.0%)	56 (16.0%)	
	Overall disagree	65 (18.8%)	147 (42.1%)	
12. Teaching work delays the treatment.	Overall agree	55 (16.4%)	138 (39.5%)	0.000*
	Neutral	125 (35.8%)	133 (38.1%)	
	Overall disagree	167 (47.8%)	78 (22.4%)	

Table 3. The relationship between the medical student-patient participation of medical activities and patients' attitudes towards medical teaching

Questions	Attitude	PE (N/%)		Clinical operation (N/%)	
		Yes	No	Yes	No
1. It's part of hospital care.	Agree	281 (96.2%)	57 (100%)	130 (96.3%)	201 (93.9%)
	Neutral	7 (2.4%)	0 (0%)	5 (3.7%)	2 (0.9%)
	Disagree	4 (1.4%)	0 (0%)	0 (0%)	11 (5.1%)
2. Participation in teaching has no effect on treatment.	Agree	204 (69.9%)	28 (49.1%)	71 (52.6%)	161 (75.2%)
	Neutral	67 (22.9%)	22 (38.6%)	46 (34.1%)	43 (20.1%)
	Disagree	21 (7.2%)	7 (12.3%)*	18 (13.3%)	10 (4.7%)**
3. It's worth it to communicate with interns.	Agree	263 (90.1%)	45 (79.0%)	54 (40.0%)	34 (14.5%)
	Neutral	20 (6.8%)	10 (17.5%)	26 (19.3%)	150 (63.8%)
	Disagree	9 (3.1%)	2 (3.5%)	55 (40.7%)	30 (12.8%)**
4. Communication makes the patients happier.	Agree	209 (71.6%)	19 (33.3%)	92 (68.1%)	76 (35.5%)
	Neutral	56 (19.2%)	22 (38.6%)	33 (24.4%)	121 (56.5%)
	Disagree	27 (9.2%)	16 (28.1%)*	10 (7.4%)	17 (7.9%)**
5. Willing to participate in teaching if possible.	Agree	152 (50.1%)	17 (29.8%)	120 (88.9%)	181 (84.6%)
	Neutral	96 (32.9%)	19 (33.3%)	15 (11.1%)	22 (10.3%)
	Disagree	44 (15.1%)	21 (36.8%)**	0 (0%)	11 (5.1%)

activities if possible. In addition, the patients who participated in clinical operations teaching believed that communication with interns made them happier than those who did not participate in such teaching.

3.4. Education Level Affected the Motivation and Participation of the Patients and Companions Regarding Medical Teaching

The level of education affected the attitudes of the patients and their companions toward medical education (Table 4). Although the companions were generally not enthusiastic about clinical teaching, compared with the patients, they showed more patience and interest in medical teaching when they received higher education.

4. Discussion

Our study investigated both patients' and companions' participation and motivations towards clinical training, their feelings and the factors influencing them. And we further compared the differences between these two groups. Overall, the results showed differences between the patients and companions in participation and motivation toward clinical teaching, and the companions showed a more negative attitude toward clinical teaching. There are various reasons that influence patients' and companions' willingness in participating in clinical training,

Table 4. The education level affected the motivation and participation of the patients and companions in medical teaching.

Questions	Attitude	Patients (N/%)			P Value	Companions (N/%)		
		No formal educated	Primary educated	Higher educated		Primary educated	Higher educated	P Value
1. It's part of hospital care.	Agree	11 (100%)	228 (100%)	99 (90%)	0.805	0 (0%)	215 (79.0%)	0.000**
	Neutral	0 (0%)	0 (0%)	7 (6.4%)		36 (46.8%)	57 (21.0%)	
	Disagree	0 (0%)	0 (0%)	4 (3.6%)		41 (53.2%)	0 (0%)	
2. Unable to refuse the medical treatment of the students.	Agree	10 (90.9%)	191 (83.8%)	77 (70.0%)	0.049*	0 (0%)	186 (68.4%)	0.000**
	Neutral	0 (0%)	30 (13.2%)	24 (21.8%)		0 (0%)	81 (29.8%)	
	Disagree	1 (9.1%)	7 (3.0%)	9 (8.2%)		77 (100%)	5 (1.8%)	
3. Get more medical information through communication	Agree	8 (72.7%)	109 (47.8%)	62 (56.4%)	0.229	0 (0%)	176 (46.7%)	0.000**
	Neutral	1 (9.1%)	68 (29.8%)	37 (33.6%)		0 (0%)	84 (30.9%)	
	Disagree	2 (18.2%)	51 (22.4%)	11 (10.0%)		77 (100%)	12 (4.4%)	
4. Students will not progress without engaging in teaching work	Agree	9 (81.8%)	196 (86.0%)	102 (92.7%)	0.000**	54 (70.1%)	234 (86.0%)	0.007**
	Neutral	2 (18.2%)	28 (12.3%)	2 (1.8%)		16 (20.8%)	14 (5.1%)	
	Disagree	0 (0%)	4 (1.7%)	6 (5.5%)		6 (7.8%)	24 (8.8%)	
5. Cooperating with teaching work is an obligation	Agree	0 (0%)	109 (47.8%)	110 (100%)	0.000**	0 (0%)	225 (82.7%)	0.000**
	Neutral	0 (0%)	99 (43.4%)	0 (0%)		35 (45.5%)	47 (17.3%)	
	Disagree	11 (100%)	20 (8.8%)	0 (0%)		42 (54.5%)	0 (0%)	

*means $P < 0.05$, **means $P < 0.01$.

including education level, their treatment method, and students' attitude.

As other research discovered (Iqbal et al., 2020), we found that whether the teaching process could interfere with their treatment could influence whether patients and companions were willing to participate in obtaining a medical history, performing a physical exam and carrying out other clinical operations. The patient's willingness to participate in a physical examination was affected by whether the examination is part of hospital treatment and whether clinical teaching has an effect on their treatment. This difference is mainly because that patients don't trust students as much as senior doctors due to students' lack of professional skills or because they do not want to let students perform examinations or treatment only for teaching purposes. Other studies have also reported this (Abdulghani et al., 2008). Hence, some patients might reconsider whether they would participate again, thereby decreasing direct interactions between students and patients as well as the value of practice in such teaching. Therefore, we need to focus on training students in more ways so they can develop more professional clinical skills and let students perform under the supervision of senior doctors if necessary.

The attitudes of patients who participated in taking a medical history varied in terms of whether this kind of communication was pleasant and whether it made

it easier to spend time in the hospital. Those who took part in clinical operations teaching reported that communicating with interns was pleasant and worthwhile, making it easier to spend time in the hospital, especially if students showed enough respect. Under this circumstance, patients could receive more clinical information and said they would participate again. Compared with other research in which some patients experienced a positive influence from clinical teaching (Jeyaraj et al., 2019), our study found that not all the patients considered clinical teaching to be attractive and fascinating, which indicated that our attention should focus on factors leading to such disagreement and make efforts to address them (Rockey et al., 2020).

We studied how education level could affect patients' motivations and participation in clinical teaching. The results showed differences in many ways. Patients with different education levels had different opinions about whether they were in favor of teaching, with some patients considering clinical teaching to be a part of clinical treatment and indicating that they could not refuse treatments and diagnosis from students. Some patients with a sense of responsibility thought that students could not make progress if they refused to participate teaching and that it was their duty to cooperate in clinical teaching. Additionally, such patients thought that they would learn more about the prevalence of their disease and reasons for hospitalization. Some research had found that patients can learn more about their condition through clinical teaching (Stacy & Spencer, 1999). Patients with a higher level of education are more likely to understand and cooperate with clinical teaching. Since students' respect could influence patients' feeling differently and increase their burden, it is important that teaching hospitals start training students in professionalism and patient-student relationship so that patients may feel more comfortable during teaching.

We also investigated factors that may affect the participation and motivation of companions in clinical teaching. Similar to the patients, we found that whether students showed enough respect and the education level of the companions could influence the participation and motivation of them as well. Companions often care about patients not only in terms of their medical treatment but also in physical and mental conditions, so when clinical teaching bothers patients, companions would also be unsatisfied. Due to the importance of companions during hospitalization, we need to consider how companions would participate and support clinical teaching, not just focus on patients.

In all, we found that patients' and companions' willingness in participating in clinical teaching varied due to many reasons. It is worth noting clinical teaching engagement and effectiveness could be significantly improved by improving trainee behavioral patterns to screen patients for specific characteristics.

The study has several limitations. Patients and companions participating in the study were recruited from a single department of a single center, and therefore, some selection bias may exist. The analysis of some stratification factors was also not sufficiently comprehensive. The content of this study may need to

be supported by data from more centers and departments.

5. Conclusion

Clinical teaching with patients participating should be considered an important part in clinical teaching for medical students, for the experience students would gain during the communication with different people. However, the kind of teaching was influenced in various factors from patients and their companions, making it difficult to implementation. Improving trainee behavioral patterns to screen patients for specific characteristics should be helpful for clinical teaching engagement. While choosing patients wisely, education to medical students for how to make progress professionally with respect should be brought, as well as supervision by senior physician if necessary.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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