

Assessment of the Patient's Attitude toward Medical Imaging Students during the Clerkship Rotation in Radiology Departments

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Abstract

The Patients are considered the cornerstone of medical education, and essential for the acquisition and development of clinical skills in performing students' tasks. In this article, the authors clarify the patient's attitude toward medical Imaging students during clerkship. This study aimed to assess and explore the Patients' Attitudes toward medical Imaging students during the clerkship rotation in radiology departments. 385 patients were surveyed using a structured researcher-made questionnaire, 134 (34.9%) male and 151 (65.1%) female patients. Also, their average ages were 30.4 ± 11.2 years, ranging between 15-59 years, with different educational levels. The results show (59.1%) of the patients approved of students' existence during the various radiological exams. (63.8%) the total sample of patients prefers advanced information about the student's presence. (62.5%). Also, (59.6%) chose students of the same gender. (55%) of patients believe that they have a right to approve the existence of students during the examination. Also, (60.4%) of the patients aren't refused medical imaging students to be in the examination room. Based upon our findings in this study, the majority of the patients had a positive attitude and were receptive to the medical imaging students in the radiology departments.

Keyword: Patient's Attitude, Medical Imaging Students, Patient's Attitude clerkship rotation.

Introduction

The relationship between patients and medical science students is essential for doctors and patients. Patients are considered to be the cornerstone of the medical education process. It is necessary for the acquisition and development of clinical skills in performing their tasks, represented by history taking and clinical examination, culminating in the performance of procedures and product of management plans. [1]

The right of the patients to accept or refuse involvement in the medical students' learning process is a challenging issue that could

interfere with medical education. Addressing patients' attitudes toward medical students' participation and highlighting the factors that affect their acceptance of this involvement is critical. [2] In the Same Context, Variation in the patients' acceptance and comfort level towards medical imaging students' participation in their care is attributable to numerous factors, including patients' socio-cultural and educational stories and the kind of students' involvement [3].

A clinical learning environment that emphasizes relationship-based healthcare is essential for encouraging future healthcare professionals

to work in partnership with patients. There is also broad agreement that patients' insight should be used actively in healthcare students' clinical learning. [4]

Sometimes, patients have a high level of comfort towards involving medical students in performing less invasive examinations, and minor procedures were consistently high across different specialties; however, on the other hand, several patients refused that kind of involvement. [4]

Patients' willingness to cooperate and contribute to the education and training of medical sciences students provides better teaching opportunities for students at most levels of patient care and positive attitudes. [5]

Contact with patients remains a vital component of the education of medical science students. Patient encounters can promote contextual and clinical learning, improve communication and professional skills, and develop a future medical practitioner-patient relationship. The cooperation of patients involved in the training process of medical students in their care is vital to clinical education. However, large numbers of students, lack of experience, and loss of privacy may evoke patients' negative attitudes, which may sometimes adversely affect the clinical teaching environment.

Several studies occurred in our countries about the relationships between patients and medical imaging students during the educational and training process. In this study, we described and assessed these relationships. In this article, the authors attempt to clarify patients' attitudes toward medical imaging students during clerkships. This

study aimed to evaluate and explore patients' attitudes toward medical imaging students during clerkship rotations in radiology departments.

Material and Methods

This study adopted a cross-sectional descriptive design that involved face-to-face interviews with patients using a structured questionnaire. The sample included three hundred and eighty-five patients randomly selected from the radiology department, regardless of the radiologic examinations requested. This study was conducted between February and July 2022.

The students interviewed the patients with the questionnaire and introduced themselves before they started; after, the patients were selected sequentially and informed of the anonymous nature of the study and were given the choice of accepting or refusing to complete the questionnaire.

The questionnaire contained a brief description of the aims of the study, information on the anonymous nature of the study, and a list of contacts in case they had queries.

The researcher used a five-answer question system in this questionnaire, which is strongly agree, Agree, Neutral, Disagree, and Strongly Disagree are part of a study to know patients' opinions about the presence of medical Imaging Students in the Radiology department when they visit it, except question 12, which describes the number of students. The questionnaire contained Two Sections, including questions on demographic data and attitude toward medical imaging students during clerkship rotation. The total number of items was 16.

Table 1: Section one patient Demographic information.

Items						
Gender:	Female	Male				
Patient Age:	less than 24 year	(24-29) years	(30-34) years	(35-39) yeas	(40-49) years	More than 50 Years
Educational level:	Post Graduate	Graduate	Secondary School	Intermediate	Elementary	
Number of Radiology department visit:	1	2	3	4	5	5 more than

Table (2): Section two patient questionnaires

1.	Do you think that you have the right approve or disapprove the existence of medical imaging students during the clinical encounter?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
2.	Would you permit medical imaging students to be present in the operation room if you were having a surgery?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
3.	Would you permit medical imaging students to perform diagnostic/other procedures on you (e.g., Inserting catheter, endoscopy. etc) ?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
4.	Do you think is important to train that medical imaging s)?)s to examine patient and How for the future training of seniors?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
5.	What is your preferred number of students to exist during Routine Radiological examination?	1	2	3	4	More than 5
6.	Do you think that you have the right approve or disapprove the existence of medical imaging students during the clinical encounter?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
7.	Would you permit medical imaging students to be present in the operation room if you were having a surgery?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
8.	Would you permit medical imaging students to perform diagnostic/other procedures on you (e.g.inserting catheter,endoscopy.etc) ?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
9.	Do you think is important to training that medical imaging students to examine patient and How for the future training of seniors?	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
10.	What is your preferred number of students to exist during Routine Radiological examination?	1	2	3	4	More than 5

All data after finishing the questionnaire were submitted automatically into an Excel sheet, and statistical tests were performed using SPSS 20 Version. Statistical tests included descriptive and analytical statistics. Sample frequencies and cross-tabulations were performed. Stratification of participants' gender and educational level was performed when relevant. Statistical significance was set at $p < 0.05$.

Patient consent was obtained from the first part of the questionnaire. A full explanation of the study's purpose and nature was conveyed to

them. The potential participants were assured that their participation in this study was voluntary, any data obtained would be treated confidentially, and for the research only. No identification was required to ensure that. The data presented indicate the participants' biographical information of the participants in **Table (3)**. Their responses to the patients' attitudes toward medical imaging students during the clerkship rotation survey are shown in **Table (4)**.

Table (3): Biographical information of the patients who had participants in study KSA, 2022 (N=385).

Gender	Number	Percentage
Male	134	34.9
Female	251	65.1
Educational level		
Post graduate	23	5.8
Graduate	219	55.0
Secondary	87	21.9
Intermediate	26	6.5
Elementary	30	7.5
Radiology Visit		
1	75	18.8
2	74	18.6
3	45	11.3
4	36	9.0
5	43	10.8
More than five	112	28.1
Patient Age	Average	30.4 yrs

In our survey of patients visiting the different radiology departments the Statistical Descriptive for Participate for Genders as Table (3) three hundred and eighty-five patients, one hundred and thirty-four (34.9 %) male and one hundred fifty-one (65.1%) female patients. the increase in the response rate for females due to the researcher team 100 % were female, so the difficulty of communication with male patients may occur and verse vice.

The patient's age average was 30.4 ± 11.2 years ranging between 15-59 years with different educational levels, and the majority of participants had Graduate Educational Level (55%). Also, the Participate visits number to the radiology department (28%) of the patients visited the department more than five times.

Table 4: Summaries responses of the patient attitude toward the medical imaging student during the clerkship rotation.

No.	Items	Strong agree	Agree	Natural	Disagree	Strong disagree
1.	Do you approve the existence of medical image students during Radiological Examination?	109 (27.4%)	126 (31.7%)	55 (13.8%)	73 (18.3%)	22 (5.5 %)
2.	Do you prefer to be informed in advance that a medical imaging student will be present during your radiological examination?	105 (26.4) %	149 (37.4)%	57 (14.3)%	56 (14.1)%	18 (4.5)%
3.	Would you permit medical imaging student to take your radiological history and personal details from you?	102 (25.6%)	137 34.4%	58 (14.6%)	67 (16.8%)	21(5.3%)
4.	Do you accept the presence of students during your physical examination?	112 (28.1%)	130 (32.7%)	52 (13.1%)	67 (12.8 %)	24 (6.0%)
5.	Would you permit medical imaging students to examine you with the presence of a senior?	110 (27.6 %)	139 (34.9%)	50 (12.6%)	66 (16.6%)	20 (5.0%)
6.	Do you prefer that the student be of your gender?	111 (27.9%)	126 (31.7%)	49 (12.3%)	76 (19.1%)	23 (5.8%)
7.	Does general appearance and manner of a student affect your co-operation with them?	97 (24.4%)	130 (34.7%)	51 (12.8%)	70 (17.6 %)	29 (7.3 %)
8.	Do you think that you have the right approve or disapprove the existence of medical	101 (25.4)%	118 (29.6 %)	41 (10.3 %)	84 (21.1 %)	41 (10.3%)

	Imaging students during the clinical encounter?					
9.	Would you permit medical imaging students to be present in the operation room if you were having a surgery?	117 (29.4 %)	125 (31.4 %)	49 (12.3 %)	68 (17.1 %)	26 (6.5%)
10.	Would you permit medical imaging students to perform diagnostic/other procedures on you (e.g. inserting catheter, endoscopy.etc)?	108 (27.1%)	120 (30.2%)	50(12.6 %)	82 (20.6 %)	25 (6.3%)
11.	Do you think is important to training those medical imaging students to examine patient?	105 (26.4 %)	125 (31.4 %)	48 (12.1 %)	80 (20.1 %)	27 (6.8%)
		-1- student	-2- students	-3- students	-4- students	-more than 5 – students
12.	What is your preferred number of students to exist during Routine Radiological examination?	80 (20.1 %)	121 (30.4 %)	108 (27.1 %)	48 (12.1 %)	28 (7.0 %)

Results

This study includes Three hundred and eighty-five patients. The questionnaire was fully completed by almost all responders; only a few (0.9%) of them rejected participation (**figure 1**).

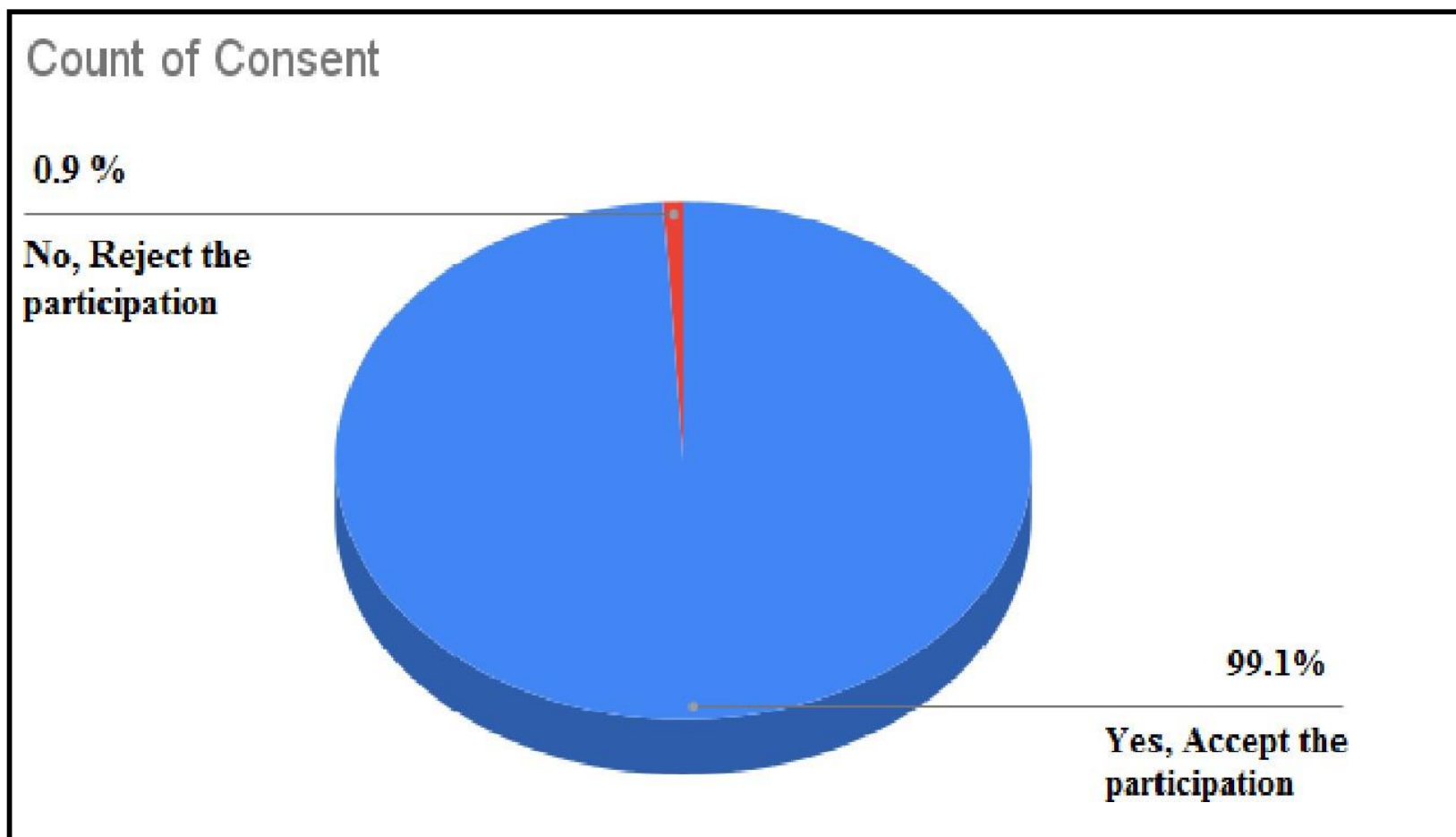


Figure 1: Pie chart Demonstrate the count of Patients who had to accept the participation

The first question asked to the patients was, "Do you approve of the existence of medical image students during Radiological Examination?" two hundred and thirty-five (59.1%) of the patients approved, ninety-five (23.8%) weren't, and (13.8%) have other opinions, as in table (4) shown.

We asked the patient for their information in advance that a medical imaging student would be present during radiological examinations. We find that two hundred and fifty-four (63.8%) of the total sample of patients prefer advanced information about the student's presence. One hundred and two (25.6%) of patients strongly agreed that the students took radiological history and medical information; twenty-

one (5.3%) were uncomfortable sharing the information with students.

According to research findings, two hundred forty-nine (62.5%) patients preferred attending the senior staff during the radiological examination, while eighty-six (21.6%) disagreed. Also, two hundred and thirty-seven (59.6%) of patients had the same idea that they prefer the students who have to take care of them from the same gender.

In our study, two hundred and twenty-seven (59.1%) of patients agreed that students' performance, general appearance, and manner affected cooperation and conduction with them.

Two hundred and nineteen (55%) of patients believed they had the right to approve the existence of medical imaging students during the radiological examination, and forty-one (10.3%) were neutral on this issue.

We asked the patients about their opinions about the medical imaging students existing in the operating room if they had surgery; the answers were two hundred and thirty-two (60.4%) of the patients didn't refuse medical imaging students to be present in the operating room while one to hundred and twenty-eight (57.3%) of them also

agreed with medical imaging students have performed invasive radiological procedures.

Additionally, we asked the patients about their opinions on the importance of training medical imaging students to examine patients and how the future training of seniors two hundred and thirty (57.8%) agreed that exercise is essential.

The study showed the preferred number of students to exist during the Routine Radiological examination and answered was 2-3 students acceptable for two hundred twenty-nine (57.5%) who had participated in this survey.

Table 5: The relation between sociodemographic data and the total patient's attitude score.

Variables	M (SD)	t	P
Gender			
Male	3.5	807	0.39
Female	3.6		
Educational level			
Post graduate	3.52	0.205	0.702
Graduate	3.6		
Secondary	3.54		
Intermediate	3.54		
Elementary	3.6		
Radiology Department Visit			
More than five	3.55	0.413	0.314

Discussion

The present study highlights patients' attitudes towards medical imaging students during the training period and the determinants of those attitudes, thus discussing possible implications applicable to clinical training and teaching.

The results showed a high degree of acceptance from patients to medical imaging students in radiology departments. This is similar to the findings in [7].

The first question in our survey asked the participants to answer our concern about students' existence during different radiological examinations. (59.1%) of the patients approved, but (23.8%) aren't, and (13.8%) have other opinions. This rejection and confusion might be due to the student patient's direct contact with some radiological procedures, as matched with [8].

The patient must be informed that a medical imaging student will be present during your radiological examinations, as mentioned in a comprehensive review of Patients' views on student participation in general practice consultations [9]. According to our findings, (63.8%) of the total sample of patients prefer advanced information about the student's presence.

The same result in [10] shows that only 3.8% and 5% wanted the doctor alone during history taking and examination, respectively. In our study (25.6%) of patients strongly agreed that the students who

took radiological history and medical information (5.3%) were uncomfortable sharing the information with students.

According to research findings, (62.5%) of patients preferred attending the senior staff during the radiological examinations, while (21.6%) didn't agree. Also, (59.6%) of patients had the same idea that they preferred the students who had to take care of them from the same gender. As noted, matching occurs with [10,11,12].

[11] results are not different from our study on medical student's attire, and (59.1%) of patients agree with students' performance; general appearance and manner affect cooperation and conduction with them.

This study demonstrates (that 55%) of patients believe that they have the right to approve the existence of medical imaging students during the radiological examinations, as reported in [13].

We asked the patients about their opinions on permission for the medical imaging students to exist in the operating room if they had surgery; (60.4%) of the patients didn't refuse medical imaging students to be in the operating room, while (57.3%) of them agreed that medical imaging students had performed invasive radiological procedures. There is a slight match when compared with [14].

In addition, regarding the patient's opinions on the importance of training medical imaging students to examine patients and the future

training of seniors (57.8%), more than half agreed that the movement is Important, as reported in [15].

This study's results show that the preferred number of students to exist during the Routine Radiological examination was 2-3, which was acceptable for (57.5%) who had participated in this survey. Other studies described this point, such as patients preferring smaller groups (1–3) compared with the students (4–8) [16].

Conclusion

Based on our findings, most patients had a positive attitude and were receptive to the medical imaging students in the radiology departments, even though we did very little to prepare our patients in advance for their encounters with them. In addition, the patients approved of students' existence during the different radiological procedures with the attendance of senior staff. The patients preferred advanced information about the student's presentation, and a few patients were uncomfortable sharing their radiological history and knowledge with medical imaging students. Other factors affecting a

patient's opinions include the student's gender, performance, and general appearance.

The patients don't refuse medical imaging students to be in the operating room, and more than half of patients agree that medical imaging students can perform invasive radiological procedures. However, many patients believe they have a right to approve the existence of student medical imaging during the radiological examination.

The majority of the patients agreed that training was necessary. On the other hand, they preferred the number of students to exist during Routine Radiological.

The examination would be a small group of students.

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