

## Original Research

### Assessment of knowledge, attitude & practice about radiology among medical students

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#### **ABSTRACT:**

**Background:** Medical imaging using ionizing radiation is an accepted and fundamental part of medical practice, it is an essential tool for diagnosis. The present study was conducted to assess knowledge, attitude & practice about radiology among medical students. **Materials & Methods:** 178 medical students of both genders were provided with a structured questionnaires about the knowledge of types of imaging modalities, knowledge of ionizing and nonionizing radiation imaging modalities, interest in radiology as a subject and interest in specializing in radiology, knowledge of hazards and ways of reducing it. **Results:** Out of 178 subjects, males were 68 and females were 110.164 had done radiology posting and 14 not. 130 like radiology as a speciality in medicine and 48 not. Impression about radiology was useful in diagnosis by 98, very broad by 50, satisfactory by 23, teaching not adequate by 5 and no response by 2. 56 were interested in specializing in radiology, 30 were not, 70 undecided and 22 gave no response. 118 replied that the teaching mode adequate, 40 said no and 20 don't know. Is the period for radiology posting adequate and 106 replied yes and 72 no. Is the number of radiologist adequate, 78 said Yes, 50 no, 20 don't know, 30 gave no response. Perception of the hazards associated with radiological practice was ionizing radiation exposure in 76, hazards associated with radiation by 42, cancers from radiations by 50 and radiologists are exposed to radiations by 10. The difference was significant ( $P < 0.05$ ). **Conclusion:** Medical students were lacking knowledge, attitude & practice about radiology.

**Key words:** attitude, knowledge, practice

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#### **INTRODUCTION**

Radiology is a medical specialty that uses imaging to diagnose and treat diseases seen within the body. Radiologists use a variety of imaging techniques such as X-ray radiography, ultrasound, computed tomography (CT), nuclear medicine including positron emission tomography (PET), and magnetic resonance imaging (MRI) to diagnose and/or treat diseases.<sup>1</sup>

Medical imaging using ionizing radiation is an accepted and fundamental part of medical practice, it is an essential tool for diagnosis however, and ionizing radiation has been shown to have adverse biological effects on living organisms.<sup>2</sup> While there is controversy over the extent of cancer risk associated with exposures to radiation from medical imaging, there is broad agreement that steps can and should be

taken to reduce unnecessary radiation exposure.<sup>3</sup> The risk of adverse sequelae following medical radiation exposure increases with higher doses of radiation. It is the duty of the requesting doctor to balance the risks and benefits of imaging tests, particularly those that involve the use of ionizing radiation.<sup>4</sup>

Medical imaging also establishes a database of normal anatomy and physiology to make it possible to identify abnormalities. Although imaging of removed organs and tissues can be performed for medical reasons, such procedures are usually considered part of pathology instead of medical imaging.<sup>5</sup> The present study was conducted to assess knowledge, attitude & practice about radiology among medical students.

**MATERIALS & METHODS**

The present study comprised of 178 medical students of both genders. The consent was obtained from all enrolled students.

Data such as name, age, gender etc. was recorded. A structured questionnaires about the knowledge of types of imaging modalities, knowledge of ionizing and nonionizing radiation imaging modalities,

interest in radiology as a subject and interest in specializing in radiology, knowledge of hazards and ways of reducing it. The association between sex and age with respect to interest in radiology was used in this study and all students were asked to respond. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 178		
Gender	Males	Females
Number	68	110

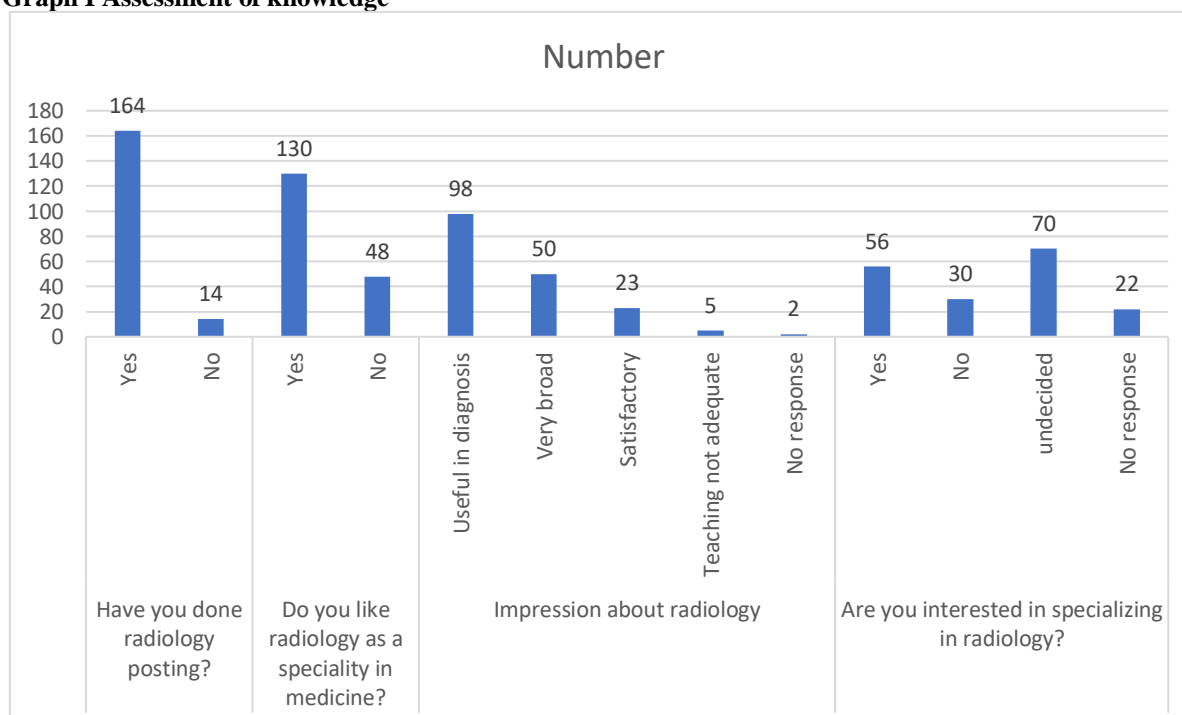
Table I shows that out of 178 subjects, males were 68 and females were 110.

**Table II Assessment of knowledge**

Parameters	Variables	Number	P value
Have you done radiology posting?	Yes	164	0.01
	No	14	
Do you like radiology as a speciality in medicine?	Yes	130	0.02
	No	48	
Impression about radiology	Useful in diagnosis	98	0.03
	Very broad	50	
	Satisfactory	23	
	Teaching not adequate	5	
	No response	2	
Are you interested in specializing in radiology?	Yes	56	0.05
	No	30	
	undecided	70	
	No response	22	

Table II, graph I shows that 164 had done radiology posting and 14 not. 130 like radiology as a speciality in medicine and 48 not. Impression about radiology was useful in diagnosis by 98, very broad by 50, satisfactory by 23, teaching not adequate by 5 and no response by 2. 56 were interested in specializing in radiology, 30 were not, 70 undecided and 22 gave no response. The difference was significant (P< 0.05).

**Graph I Assessment of knowledge**

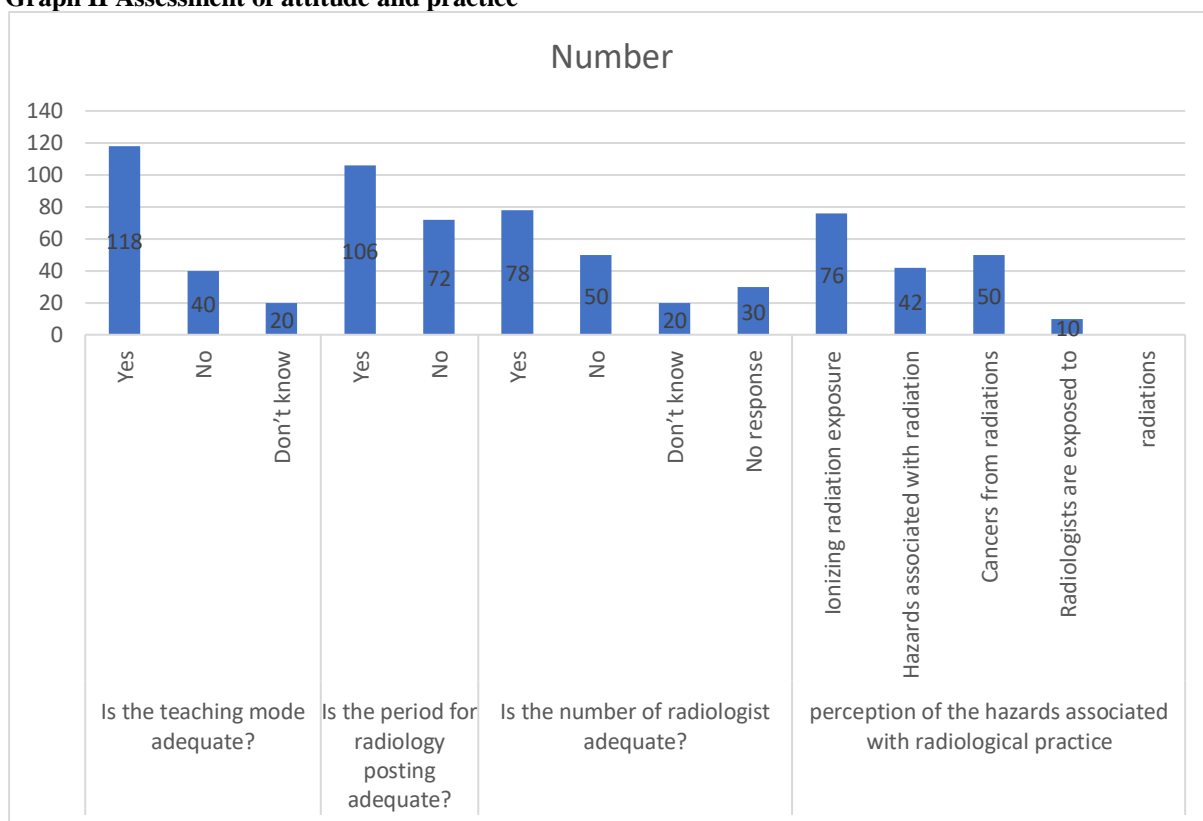


**Table II Assessment of attitude and practice**

Parameters	Variables	Number	P value
Is the teaching mode adequate?	Yes	118	0.01
	No	40	
	Don't know	20	
Is the period for radiology posting adequate?	Yes	106	0.05
	No	72	
Is the number of radiologist adequate?	Yes	78	0.05
	No	50	
	Don't know	20	
	No response	30	
perception of the hazards associated with radiological practice	Ionizing radiation exposure	76	0.03
	Hazards associated with radiation	42	
	Cancers from radiations	50	
	Radiologists are exposed to radiations	10	

Table III, graph II shows that 118 replied that the teaching mode adequate, 40 said no and 20 don't know. Is the period for radiology posting adequate and 106 replied yes and 72 no. Is the number of radiologist adequate, 78 said Yes, 50 no, 20 don't know, 30 gave no response. Perception of the hazards associated with radiological practice was ionizing radiation exposure in 76, hazards associated with radiation by 42, cancers from radiations by 50 and radiologists are exposed to radiations by 10. The difference was significant ( $P < 0.05$ ).

**Graph II Assessment of attitude and practice**



**DISCUSSION**

The curriculum for a medical student involves teaching various subjects that aims specifically at the application of knowledge and problem- solving skills during in a pre-assigned academic period.<sup>6</sup>Medical students underwent their clinical rotation in the department of radiology either in the fourth or in the final year of undergraduate training programme.<sup>7</sup> If medical students are not empowered with sufficient and precise knowledge regarding different aspects of

radiation, it would be difficult to communicate correct information to the potential radiation recipient.<sup>8</sup>The present study was conducted to assess knowledge, attitude & practice about radiology among medical students.

We found that out of 178 subjects, males were 68 and females were 110.Vinod et al<sup>9</sup> determined knowledge, attitude & practice about radiology among students. The mean age was 21.48±2.88 years. 71 students had correct knowledge of radiology,

while 49 students had incorrect knowledge of radiology. The knowledge of the imaging modalities in radiology showed that only 19 students listed 6 imaging modalities, with majority 52 listing 4 imaging modalities. Of the students liked radiology as a specialty in medicine (103) and 16 students did not. Males are seen to have more interest in radiology as a subject 79 than females that had 36 students. Overall, 70 of males have interest in radiology compared to those that don't have interest in radiology 9.

We observed that 164 had done radiology posting and 14 not. 130 like radiology as a speciality in medicine and 48 not. Impression about radiology was useful in diagnosis by 98, very broad by 50, satisfactory by 23, teaching not adequate by 5 and no response by 2. 56 were interested in specializing in radiology, 30 were not, 70 undecided and 22 gave no response. Salaam et al<sup>10</sup> in their study found that the sex distribution showed that males were 82 and females were 42. A lot of the students liked radiology as a specialty in medicine (101) and 19 students did not. The knowledge of radiology among the students were not good. Males are seen to have more interest in radiology as a subject (75) than females that had 26 students. Overall, 75 (92.6%) of males have interest in radiology compared to those that don't have interest in radiology 6(7.4%). The result is statistically significant with a  $p=0.001$ . 26 (66.7%) of the females are interested in radiology compared to 13(33.3%) that are not interested in radiology. It is only 27(21.8%) students indicated their interest in specializing in radiology. 35(28.2%) students believed that radiological practice are hazardous and 34(27.4%) of the students believed that there are adequate means in place to prevent much hazard with practice of radiology.

We found that 118 replied that the teaching mode adequate, 40 said no and 20 don't know. Is the period for radiology posting adequate and 106 replied yes and 72 no. Is the number of radiologist adequate, 78 said Yes, 50 no, 20 don't know, 30 gave no response. Perception of the hazards associated with radiological practice was ionizing radiation exposure in 76, hazards associated with radiation by 42, cancers from radiations by 50 and radiologists are exposed to radiations by 10. Adeyekun<sup>11</sup> observed that the students believed in the relevance of radiology in the medical school curriculum and its importance to future medical practice. There was acceptable level of

awareness of radiation protection. However, the rotation failed to change the misconception of Radiologist's enormous workload with resultant bias to the specialty. It is concluded that the rotation had a mixed effect on student's knowledge and perception of radiology.

## CONCLUSION

Authors found that medical students were lacking knowledge, attitude & practice about radiology.

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