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## A Study on Dental Radiographic Interpretation Skills and Knowledge among Undergraduate Students

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Abstract: Introduction: Dental radiographs play a pivotal role in oral health diagnostics and treatment planning. Competency in interpreting these images is vital for dental undergraduate students to provide effective patient care. The aim of this study is to evaluate the existing levels of perceived confidence and actual skills in radiographic interpretation among dental undergraduate students, with the ultimate goal of identifying areas for improvement in dental education.

Methods: A cross-sectional study was conducted at a private dental college in Chennai, involving 101 dental undergraduate students. A structured questionnaire comprising 20 questions, divided into confidence and knowledge assessment sections, was administered to the participants. The data collected were analysed using statistical software.

Results: The majority of participants were female (71.3%) and in their early twenties (mean age 22.5 years). While 37.6% felt moderately comfortable identifying anatomical structures on radiographs, 45.5% expressed moderate confidence in diagnosing dental pathologies.

Conclusion: This study highlights the need for continuous improvement in dental education, specifically in radiographic interpretation. Discrepancies between perceived confidence and actual skills suggest the necessity for enhanced curriculum and standardized evaluation methods.

Keywords: dental radiographs, radiographic interpretation, dental education, confidence, knowledge, dental students.

#### I. INTRODUCTION

Dental radiographs, including intraoral and extraoral X-ray images, are indispensable tools in the field of dentistry, serving as an essential component of diagnostic and treatment planning processes.<sup>1</sup>Radiographs constitute a critical diagnostic tool in the field of dentistry, playing an essential role in the identification and treatment of a wide range of oral conditions. These images are instrumental in diagnosing dental caries, periodontal conditions, bone texture evaluations, post-periodontal surgery changes in bone length, and a spectrum of benign and malignant craniofacial anomalies. Dental students must become proficient in recognizing various radiographic projections and principles to ensure accurate diagnoses. Proficiency in radiographic interpretation serves as the cornerstone for effective diagnosis and treatment planning, not only enhancing diagnostic capabilities but also fortifying patient safety by reducing the risk of missed diagnoses or erroneous treatment decisions. As students strive to evaluate various pathologies and distinguish normal from pathological conditions, they must not merely rely on classroom lectures and demonstrations but delve deep into the fundamental knowledge of human anatomy, physiology, and pathologies, complemented by a thorough grasp of radiology principles. The accurate interpretation of dental radiographs is a fundamental skill for dental undergraduate students, as it directly impacts their ability to provide comprehensive oral health care and make informed clinical decisions. As part of their education and training, dental students must develop competence in interpreting dental radiographs to diagnose a wide range of oral conditions, from caries and periodontal diseases to impacted teeth and oral pathologies.<sup>2</sup> Proficiency in this skill not only enhances their diagnostic abilities but also contributes to patient safety by reducing the chances of missed diagnoses or incorrect treatment plans.<sup>3</sup> However, the acquisition of radiographic interpretation skills in dental education is a multifaceted challenge. Furthermore, the self-perceived confidence of dental students in their radiographic interpretation skills may not always align with their actual competence, which could lead to discrepancies in clinical practice.<sup>4</sup>



The development of radiological interpretation skills follows a specific schedule outlined by the Dental Council of India, with training in various radiographic projections and diagnosis for dental diseases occurring during the third professional year. However, before embarking on clinical training in the final year and during internship, it is essential to possess the knowledge to differentiate normal structures from pathological ones. Previous studies have shown that freshly taught curriculum content tends to be better retained by students, while others have indicated that interpretation skills improve as clinical exposure increases. Thus, this study aims to assess the interpretation skills related to radiographic projections, principles, and pathologies by means of a questionnaire, comparing final year students with interns. This study aims to assess the knowledge and confidence levels of dental undergraduate students in interpreting dental radiographs. By examining the extent of their expertise, the study seeks to identify areas where educational interventions may be needed to bridge the gap between perceived confidence and actual radiographic interpretation skills. This research is essential for enhancing the education and training of dental students, ultimately contributing to improved patient care and the overall quality of dental practice.

#### II. MATERIALS AND METHODS

This research employed a cross-sectional research design to evaluate the competence and self-assurance of dental undergraduate students in the interpretation of dental radiographs. The study was conducted at a private dental college in Chennai, with the participation of dental students from different academic years. A structured questionnaire was developed to gather information regarding the students' aptitude and confidence in interpreting dental radiographs, alongside recording their demographic details. For evaluating confidence, five questions were utilized, and for assessing knowledge, 15 image-based questions were included in the questionnaire. The questionnaire underwent scrutiny and approval by the department of oral medicine and radiology within the private dental college. Additionally, the research received ethical clearance from the Institutional Review Board (IRB), and all participants provided informed consent, signifying their willingness to partake in the study, emphasizing the voluntary nature of their involvement. Throughout the study, participant anonymity and data confidentiality were strictly maintained, with no personally identifiable information collected. To gather data, the questionnaire was distributed via Google Forms through various social media platforms. A total of 101 dental students actively participated in this study. The collected data were coded and analysed using IBM SPSS Version 26 software. Descriptive statistics were calculated for demographic variables and the responses provided by the participants, including frequency, percentage, mean, and standard deviation. Statistical significance was assessed using Pearson's chi-square test. The statistical significance in the present study was kept at p<0.05.

#### III. RESULTS

A total of 101 undergraduate dental students took part in this study. The majority, 71.3%, were female, while 28.7% were male. On average, the participants were 22.5 years old, with the youngest being 20 and the oldest 27. In terms of their academic standing, 46.5% were in their house-surgeon (CRRI) year, 34.7% were fourth-year dental students, and the remaining 18.8% were in their third year.

When it came to their comfort level in identifying anatomical structures on dental radiographs, 37.6% were moderately comfortable, and 28.7% were somewhat comfortable. About 45.5% expressed moderate confidence in diagnosing dental pathologies from radiographic images, while 5% had no confidence at all. In their study habits, 57.4% occasionally referred to textbooks or reference materials when interpreting dental radiographs, while 55.4% occasionally practiced this skill outside of scheduled coursework or clinical rotations. Interestingly, 10.9% never practiced outside of their coursework. When faced with difficulties in interpreting dental radiographs, 74.3% typically sought help or clarification from faculty, and 64.4% referred to textbooks or online resources. Regarding their performance on image-based questions, 51.5% correctly identified the lateral fossa [image 1] in a maxillary anterior periapical radiograph, 68.3% identified the nasal septum [image 2], and 65.3% correctly identified gutta-percha [image 3] as the radiopaque structure.

Furthermore, 72.3% correctly identified dilacerations [image 4], 65.3% identified Dens Invaginatus,[image 5] and 63.5% named a given radiograph as a peri-apical radiograph. [Image 6] When it came to identifying anatomical features, 72.3% correctly identified the mental ridge, [image 7] while 43.6% correctly identified the mental foramen [image 8] and 40.6% confused it with a periapical cyst. A majority of 58.6% correctly identified a well-defined oval radiolucent lesion as a lateral periodontal cyst.[image 9] Only 35.6% correctly identified the cause of radiolucency as one of the three options: root fracture, periodontal pocket, or chronic periodontitis.[image 10] Additionally, 57.4% correctly identified a given radiograph as panoramic,[image 11] and 38.6% correctly identified errors in the radiograph as film bending and a rectangular BID cone cut.[image 12] Most impressively, 76.2% correctly identified the artifact in the radiograph as a cone cut,[image 13] and 70.3% correctly identified a large multi-locular lesion with a



honeycomb or soap bubble appearance as an ameloblastoma.[ image 14] In terms of improving their skills in interpreting dental radiographs, 39% of the participants expressed a desire for more webinars, and 57% were interested in additional clinical training.

Table 1: Distribution of participants based on gender						
Gender	%					
Females	71.3%					
Males	28.7%					





Figure 1

#### Table 2: Distribution of participants based on year of study

CRRI	46.50%
4 <sup>TH</sup> YEAR	18.80%
3 <sup>RD</sup> YEAR	34.70%





1) Q.1. How comfortable are you in identifying anatomical structures on dental radiographs (e.g., teeth, bone, roots)?



Figure 3.Pie chart representation of percentage distribution of response to question 1

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
How	Not	0	0	62.24	<.0001	Statistically
comfortable	comfortable					significant
are you in	at all					
identifying						
anatomical	Somewhat	29	28.7			
structures	comfortable					
on dental						
radiographs	Moderately	38	37.6			
(e.g., teeth,	comfortable					
bone,						
roots)?	Very	28	27.8			
	comfortable					
	Extremely	6	5.9			
	comfortable					

Table 3. Distribution of response to question 1

2) Q.2. Rate your confidence level in diagnosing dental pathologies (e.g., caries, periodontal disease) based on radiographic images.



Figure 4. Pie chart representation of percentage distribution of response to question 2



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Question	Options	[n] 101	[%]	Chi-	p-	Significance
				square	value	
Rate your	Not	5	5	62.24	<.0001	Statistically
confidence	comfortable					significant
level in	at all					
diagnosing						
dental	Somewhat	25	24.6			
pathologies	comfortable					
(e.g., caries,						
periodontal	Moderately	48	47.5			
disease)	comfortable					
based on						
radiographic	Very	17	16.8			
images	comfortable					
	Extremely	6	5.9			
	comfortable					

Table 4. Distribution of response to question 2

3) Q.3. How often do you refer to textbooks or reference materials when interpreting dental radiographs?



Figure 5. Pie chart representation of percentage distribution of response to question 3

Question	Options	[n] 101	[%] 100	Chi- square	p-value	Significance
How often	Never	3	3	62.24	<.0001	Statistically
to textbooks or reference	Rarely	23	22.8			significant
materials when	Occasionally	58	57.4			
interpreting dental	Often	14	13.9			
radiographs?	Always	3	2.9			

Table 5. Distribution of response to question 3



4) Q4. How frequently do you practice interpreting dental radiographs outside of scheduled coursework or clinical rotations?



Figure 6. Pie cha	rt representation	of percentage	distribution of	response to	auestion 4
		r			1

Question	Options	[n] 101	[%]	Chi-	p-value	Significance
			100	square		
How	Never	11	10.9	62.24	<.0001	Statistically
frequently do						significant
you practice	Rarely	21	20.8			
dental	Occasionally	56	55.4			
outside of	Often	12	11.9			
scheduled coursework	Always	1	1			
rotations?						

Table 6. Distribution of response to question 4

5) Q5. How do you typically seek help or clarification when racing difficulties in interpreting dental radiographs? (Select all that apply)



Figure 7: Pie chart representation of percentage distribution of response to question 5



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Question	Options	[n] 101	Chi-	p-	Significance
			square	value	
How do you	Consult	75	62.24	<.0001	Statistically
typically	with				significant
seek help or	faculty or				
clarification	instructors.				
when facing					
difficulties	Refer to				
in	textbooks	65			
interpreting	or online				
dental	resources				
radiographs?					
	Seek	40			
	guidance				
	from peers				
	Attend	10			
	additional				
	training or				
	workshops				

 Table 7. Distribution of response to question 5

6) 6.Structure seen in maxillary anterior periapical radiograph.





Image1

Figure 8. Pie chart representation of percentage distribution of response to question 6

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
Structure	Lateral	52	51.5	62.24	<.0001	Statistically
seen in	fossa					significant
maxillary						
anterior	Genial	15	14.9			
periapical	tubercles					
radiograph.						
	Zygomatic	7	6.9			
	arch/					
	zygomatic					
	process of					
	maxilla					
	Maxillary	27	26.7			
	sinus					

Table 8. Distribution of response to question 6



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7) 7. Which part is the arrow pointing to?





Image 2



Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
Which part	Midline	18	17.8	62.24	<.0001	Statistically
is the arrow	palatine					significant
pointing to?						
	Nasal	69	68.3			
	septum					
	Osteogenesis	12	11.9			
	Granuloma	2	2			

Table 9. Distribution of response to question 7

8) 8. What is the radiopaque line, the arrow is pointing at?





Image3

Figure 10. Pie chart representation of percentage distribution of response to question 8

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
What is the	Root canal	11	10.9	62.24	<.0001	Statistically
radiopaque						significant
line, the	Ossified	16	15.8			
arrow is	canal					
pointing at?						
	Gettapercha	66	65.4			
	-					
	Restorative					
	material	8	7.9			
	<b>—</b> • • • • •	<u></u>	2			

Table 10. Distribution of response to question 8



9) 9. Select the most appropriate term for the anomaly associated with the 1st (most mesial) molar





Image4

Figure 11. Pie chart representation of percentage distribution of response to question 9

Dilaceration
Conation
Dens invaginatus
None of the above

Question	Options	[n] 101	[%]	Chi-	p-value	Significance
			100	square		
Select the	Concrescence	8	7.9	62.24	<.0001	Statistically
most						significant
appropriate	Dilaceration	73	72.3			
term for the						
anomaly	Dens	18	17.8			
associated	invaginatus					
with the 1 <sup>st</sup>						
(most	Diastema	2	2			
mesial)						
molar						

Table 11. Distribution of response to question 9

10) 10. The rare development anomaly shown in radiograph is called:





Image 5

Figure 12. Pie chart representation of percentage distribution of response to question 10

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
The rare	Dilaceration	2	2	62.24	<.0001	Statistically
development						significant
anomaly	Conation	19	18.8			
shown in						
radiograph	Dens	66	65.3			
is called:	invaginatus					
	None of the	14	13.9			
	above					
-	Table 12 Die		<b>f</b>	to arreatio		•

Table 12. Distribution of response to question 10



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11) 11. Name the following intraoral radiograph:





Image 6

Figure 13. Pie chart representation of percentage distribution of response to question 11

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
Name the	Periapical	64	63.4	65.98	<.0001	Statistically
following	Bitewing	16	6.9			significant
intraoral	Occlusal	12	11.9			
radiograph:	Biteblock	7	15.8			
	Pricoronal	2	2			

Table 13. Distribution of response to question 11

*12)* 12. Identify the arrow pointed landmark in the above radiograph





Image 7

Figure 14. Pie chart representation of percentage distribution of response to question 12

Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
Identify the	Nasal	7	6.9	73.45	<.0001	Statistically
arrow	spine					significant
pointed						
landmark in	Mental	18	17.8			
the above	foramen					
radiograph						
	Mental	73	72.4			
	ridge					
	Nasal	3	2.9			
	ridge					

Table 14. Distribution of response to question 12



13) 13. The  $2^{nd}$  premolar is vital and asymptomatic, and the patient is a black female. Identify the radiolucency to which the arrow is pointing.







Figure 15. Pie chart representation of percentage distribution of response to question 13

<u> </u>	<u> </u>		5-13	~ .		aa
Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
				1		
The 2nd	Periapical	9	8.9	52.35	<.0001	Statistically
premolar is	cemental					significant
vital and	dysplasia					
asymptomatic,						
and the patient	Periapical					
is a black	cyst or	41	40.6			
female.	granuloma					
Identify the						
radiolucency	Mental	44	43.6			
to which the	foramen					
arrow is						
pointing.	Lateral	7	6.9			
	periapical					
	cyst					

Table 15. Distribution of response to question 13.

14) 14. What is this well-defined oval radiolucent lesion likely to be?





Image 9

Figure 16. Pie chart representation of percentage distribution of response to question 14



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Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
What is this well- defined oval	Lateral canal	7	6.9	56.76	<.0001	Statistically significant
radiolucent lesion						
likely to be?	Mental foramen	14	13.9			
	Lateral periodontal cyst	59	58.4			
	Periapical granuloma	15	14.9			
	None of the above	6	5.9			

Table 16. Distribution of response to question 14

15) 15. What is the best answer to describe the cause of the appearance of the mesially to LL6?





Image 10

Figure 17. Pie chart representation of percentage distribution of response to question 15

Question	Options	[n] 101	[%] 100	Chi- square	p- value	Significance
****	5		-	<0. <b>5</b> 4	0001	<b>G 11</b>
What is the	Root	3	3	60.54	<.0001	Statistically
best answer	fracture					significant
to describe						
the cause of	Periodontal	33	32.7			
the	pocket					
appearance						
of the	chronic	29	28.7			
mesially to	periodontitis					
LL6?						
	All the	36	35.6			
	above					

Table 17. Distribution of response to question 1



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#### 16) 16. The radiograph shown is:





Figure 18. Pie chart representation of percentage distribution of response to question 16

Question	Ontions	[n] 101	F0/, 1	Chi	n	Significance
Question	Options		[%]	CIII-	p-	Significance
			100	square	value	
The	Occlusal	2	2	58.75	<.0001	Statistically
radiograph						significant
shown is:	Lateral	10	9.9			
	oblique					
	P-A view	18	17.8			
	of skull					
	Panaromic	58	57.4			
	None of	13	12.9			
	the above					

Table 18. Distribution of response to question 16

#### *17*) 17. Identify the errors in radiograph



Image12 Figure 19. Pie chart representation of percentage distribution of response to question 17



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Question	Options	[n]	[%]	Chi-	p-	Significance
		101	100	square	value	
Identify the	rectangular	28	27.7	46.73	<.0001	Statistically
errors in	BID cone cut					significant
radiograph	film bending					
	static	23				
	electricity		22.8			
	both a and b					
		11				
			10.9			
		39	38.6			

Table 19. Distribution of response to question 17

18) 18. The given radiograph shows which of the following radiograph





Image13 Figure 20. Pie chart representation of percentage distribution of response to question 18

Question	Options	[n] 101	[%]	Chi-	р-	Significance
			100	square	value	
The given	Double	7	6.9	74.38	<.0001	Statistically
radiograph	exposure					significant
shows						
which of	Elongation	11	10.9			
the						
following	Phalangioma	6	5.9			
radiograph						
	Conecut	77	76.3			

Table 20. Distribution of response to question 18

19. What is this large, multiloclular lesion that has a honeycomb/soap bubble appearance likely to be? It is a firm, painless lesion that can be very aggressive. It is more frequent in the mandible.





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Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
What is this large,	Dentigerous	5	5	68.72	<.0001	Statistically
multiloclular lesion	cyst					significant
that has a						
honeycomb/soap	Osteosarcoma	10	9.9			
bubble appearance						
likely to be? It is a	Ameloblastoma	71	70.3			
firm, painless lesion						
that can be very	Osteomyelitis	6	6			
aggressive. It is more						
frequent in the	None of the	9	8.8			
mandible.	above					

Table 21. Distribution of response to question 19

19) 20 In your opinion, do you feel the need for more webinars or additional clinical training to enhance your skills in the interpretation of dental radiographs?





Figure 22. Pie chart representation of percentage distribution of response to question 20.

o		F 1 101	F0/ 1	<b>C1</b> ·		a: :c
Question	Options	[n] 101	[%]	Chi-	p-	Significance
			100	square	value	
In your	Yes, I would	39	38.9	65.23	<.0001	Statistically
opinion, do	benefit from					significant
you feel the	more					
need for	webinars.					
more						
webinars or	Yes, I would	57	56.2			
additional	benefit from					
clinical	additional					
training to	clinical					
enhance your	training.					
skills in the						
interpretation	No, I	5	4.9			
of dental	currently feel					
radiographs?	adequately					
	trained in					
	dental					
	radiography					
	interpretation.					

Table 22.	Distribution	of resp	ponse to	question	2



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#### IV. DISCUSSION

The primary aim of this study is to comprehensively assess and understand the variations in comfort, confidence, study habits, and proficiency levels among dental undergraduate students in radiographic interpretation. With these insights, the study aims to inform the development and implementation of targeted educational interventions, encompassing enhanced curriculum design, additional clinical training, and the creation of online resources like webinars. By addressing these disparities, the overarching goal is to improve the radiographic interpretation skills of dental students, ensuring they are well-equipped to provide high-quality oral health care in their future professional practice. A notable proportion of students reported being moderately comfortable identifying anatomical structures and moderately confident in diagnosing dental pathologies from radiographs. However, a small percentage expressed a lack of confidence, emphasizing the need for targeted educational interventions. Study habits were also diverse, with a significant number of students occasionally referring to textbooks or reference materials when interpreting dental radiographs. Interestingly, a portion of students did not practice outside of scheduled coursework. This highlights the importance of encouraging regular practice and self-directed learning in radiographic interpretation. When faced with difficulties in interpreting dental radiographs, a substantial majority of students sought help from faculty or referred to textbooks and online resources. This proactive approach to addressing challenges is commendable and indicative of a desire to improve their skills.<sup>5</sup>The study assessed the students' ability to identify various radiographic features, and the results showed varying levels of success. While some students correctly identified certain structures, there were instances where confusion or incorrect identifications occurred. In SomayyehAzimi's research, it was found that the participants demonstrated a commendable level of knowledge, with 70% displaying acceptable understanding of the characteristics of radiographic images pertaining to bony lesions in the jaw.<sup>6</sup> In our own study, a similarly high percentage of 70.3% accurately identified the presence of ameloblastoma from a radiograph, indicating a substantial level of proficiency in recognizing specific pathological conditions in dental radiographs among our participants. In our study, 43.6% of participants accurately identified the mental foramen. In contrast, a study conducted by AsaadJavaidMirza et al found that a lower percentage, specifically 27%, correctly recognized the mental foramen.<sup>7</sup>Conversely, a comparable study conducted with dental undergraduate students in Saudi Arabia, specifically at Qassim University, indicated that the students who participated in that study exhibited stronger performance in identifying radiographic landmarks associated with the anatomy of the head and neck when compared to our study.<sup>4</sup> These findings underscore the need for targeted training in specific areas of radiographic interpretation. Notably, a significant proportion of students expressed interest in enhancing their radiographic interpretation skills. A substantial percentage indicated a desire for webinars, suggesting an appetite for online learning resources. The majority of students in our study expressed a strong interest in additional clinical training, which emphasizes the potential benefits of hands-on experience and mentorship in enhancing their radiographic interpretation skills. This aligns with the findings of Lanning et al., who demonstrated that the implementation of targeted training programs could significantly increase awareness of radiographic interpretation by up to 72%.<sup>8</sup> Furthermore, their research also highlighted that effective follow-up instructions and well-designed training initiatives had the capacity to substantially improve knowledge levels in radiographic interpretation, achieving an improvement of up to 85%.<sup>9</sup> This convergence of our study's findings with Lanning et al.'s research suggests that focused training and mentorship opportunities could be a promising approach to address the existing disparities in radiographic interpretation skills among dental students. The findings indicate variations in confidence, study habits, and performance on imagebased questions. To address these disparities, it is imperative for dental education programs to consider targeted interventions, such as improved curriculum design, additional clinical training, and the development of online resources like webinars. By addressing these areas, dental colleges can better prepare their students for the challenges of radiographic interpretation and ultimately ensure that they are well-equipped to provide quality or a health care in their future professional endeavors.<sup>10</sup>

#### V. CONCLUSION

In summary, this research underscores the significance of ongoing enhancements in dental education, with a specific focus on the domain of radiographic interpretation. It highlights the need for rectifying these discrepancies to provide dental institutions with the means to better prepare their students, ensuring the delivery of top-tier patient care and enriching their impact on the field of dentistry. This study lays the groundwork for future progress in dental education, paving the way for the creation of more potent training initiatives aimed at strengthening the radiographic interpretation abilities of dental undergraduate students.

#### REFERENCES

 Taheri JB, Moshfeghi M, Anbari F, Namazi Z, Bakhtiari S. Knowledge, Opinions and Practice of Last Year Dentistry Students of ShahidBeheshti University Regarding Diagnosis and Differentiation of Malignant Lesions. Res. J. Med. Sci. 2010; 4 (3): 238-242



ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538

Volume 11 Issue XI Nov 2023- Available at www.ijraset.com

- [2] Abdullah A, Abdullah A. Evaluation of Undergraduate Dental Student Radiographic Interpretation. Int J Dent Med Res 2014; 1(4): 1-5
- [3] Aneja et al. Evaluation of radiographic interpretation skills of undergraduate dental studentsstudying in a dental college of Punjab, India A comparative study / International Journal of Oral Health Dentistry 2022;8(2):163–169
- [4] Alolayan, Abdulrahman&Almogbel, Abdulmajeed. (2014). Evaluation of Undergraduate Dental Student Radiographic Interpretation in Qassim University ( QU).
- [5] Mirza, Asaad&Nazir, Mohsin& Khan, Zahid&Asad, Maaz&Shafiq, Muhammad. (2018). Radiographic Interpretation Skills of Clinical Dental Undergraduates Studying in Karachi, Pakistan. 10.12691/ijdsr-6-4-5.
- [6] Azimi, Somayyeh&Tofangchiha, Maryam &Shapoori, Mohammad &Rafieian, Nasrin. (2016). Iranian Dental Students' Level of Knowledge Regarding the Interpretation of Radiographic Images of Oral Lesions: Is the Standard Training Sufficient?. Journal of Dentomaxillofacial Radiology, Pathology and Surgery. 5. 1-5. 10.18869/acadpub.3dj.5.2.1.
- [7] deAzevedo-Vaz SL, Karla de Faria V, Karla Rovaris K, Naiara de Paula F, Neto FH. A survey on dental undergraduates' knowledge of oral radiology. Braz. J. Oral Sci. 2013; 12(2): 109-113.
- [8] Lanning SK, Best AM, Temple HJ, Richards PS, Carey A, McCauley LK. Accuracy and consistency of radiographic interpretation among clinical instructors using two viewing systems. J Dent Educ. 2006;70(2):149-159
- [9] Lanning SK, Best AM, Temple HJ, Richards PS, Carey A, McCauley LK. Accuracy and consistency of radiographic interpretation among clinical instructors in conjunction with a training program. J Dent Educ. 2006;70(5):545-57.
- [10] Perschbacher S. Interpretation of panoramic radiographs. Aust Dent J. 2012;57:40-5.











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