



ATTITUDE AND PRACTICE OF DENTAL PROFESSIONALS TOWARDS USING OF ADVANCE RADIOGRAPHIC TECHNIQUE: A CROSS-SECTIONAL DESCRIPTIVE STUDY

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ABSTRACT

Aim: To assess the attitude and practice of dental professionals towards using of advance Radiographic technique.

Material and Methods: It is a descriptive Cross-sectional Questionnaire study. Sample size was 375 dental professionals including BDS, MDS and post graduate students who were present at the time of study and given their informed consent were included in study. The study was conducted in Tatyasaheb Kore Dental College and Research Center New Pargaon, Distt. Kolhapur, Maharashtra.

Results: 141 (38%) of study participants strongly supports use of advance radiographic technique for the diagnosis of Dental diseases, while only 19 (5%) strongly disagrees. 55% of study participants thinks that mock drills for the demonstration of usage of advance radiographic technique in dentistry is very much needed. Majority of dental professional {202(54%)} were using both Conventional Radiographic technique and Advance Radiographic technique in combination.

Conclusions: Attitude of Dental professionals towards advance radiographic technique is positive. Need of the hour is to increase the practice of advance radiographic technique for the better understanding of this area.

KEYWORDS: advanced radiographic techniques, conventional radiographic techniques, dental professionals

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INTRODUCTION

Ever since the discovery of X-rays in the year 1895, radiographic examination is one of the principal diagnostic methods used in all fields of medical services and contributes to the

promotion of the health, both individually and nationally. Intra oral radiography is a very commonly used imaging modality in dentistry and has become an integral part in day to day dental practice¹⁻³. Though the amount of

radiation exposure encountered in dentistry is minimal, it can still bring about stochastic effects, that is, an all-or-none phenomenon⁴. So, the prevailing approach is to keep the exposure to ionizing radiation as minimal as

practically possible, which is known as, as low as reasonably achievable (ALARA) ^{5,6}.

Conventional radiographic techniques have been used in dental radiography since the discovery of the x-rays. With the revolution in electronic systems, equipment's have been produced to achieve a radiographic image in a digital format. Digital images are in numeric format and differ from conventional radiographs in terms of pixels, and the different shades of gray given to these pixels⁷.

An important technological advance in dental radiology over the past decade has been the introduction of digital image receptors to replace conventional X-ray film. The most direct impact of this technology on clinical practice is in the reduction of patient radiation dose and immediate image acquisition and display leading to greater practice efficiency. Despite the availability and advantages of such systems, a recent survey in the United States indicates that, of those dentists who purchased major equipment in 1994, only 0.5% acquired digital radiographic equipment⁸. Practitioners are not the only ones who have been hesitant to introduce this technology into clinical dental practice.

Continuous advances in dental radiography equipment have resulted in dose reduction without quality impairment. Studies have shown that many dentists do not appreciate this advancement in technology and still end up in overexposing their patients. Besides this appreciation the attitude and practice of dental professionals had not changed. Studies conducted on undergraduate students shows little knowledge and positive attitude towards digital radiography⁹. Very few studies^{10,11} till now were conducted among the

dental professionals to determine the attitude and practice of dental professionals towards using of advance Radiographic technique. Therefore the aim and objective of the present study is to assess the attitude and practice of dental professionals towards using of advance Radiographic technique.

MATERIAL AND METHODS

It is a descriptive Cross-sectional Questionnaire study conducted to assess the Attitude and Practice of Dental professionals towards using of advance Radiographic technique. The study was conducted in Tatyasaheb Kore Dental College and Research Center New Pargaon, Distt. Kolhapur, Maharashtra. Sample size was 375 dental professionals including BDS, MDS and post graduate students who were present at the time of study and given their informed consent were included in study. Ethical clearance was obtained from the Institutional review board. A pilot study was conducted on 10% of study participants to pretest the questionnaire. Reliability of the Questionnaire was assessed by using Test-Retest and the values of measured Kappa (k) = 0.82 Weighted Kappa (k_w) = 0.89. Internal consistency of questionnaires was assessed by applying Chronbachs-Alpha (α) and the value of α = 0.75 was measured. The survey was conducted during the months March to May of 2016. Question regarding the attitude and practice towards the Advance radiographic technique was asked and data was collected which was then entered on computer tabulated and Descriptive statistics was obtained.

RESULTS

Table 1 Shows that majority of study participants were male {294 (78%)} and were more than 25 years of age group

{265 (71%)}. 62% of study participants were post graduate students and belongs to Department of Endodontics {45 (13%)}

Table 2 It was determined that 141 (38%) of study participants strongly supports use of advance radiographic technique for the diagnosis of Dental diseases, while only 19 (5%) strongly disagrees. 201 (54%) through that future perspective of advance radiographic technique for the diagnosis of Dental diseases is good. The most important advantage of advance radiographic technique in Dentistry according to 132 (35%) of study participants was accurate diagnosis, and most important disadvantage was Complex technique by 172 (46%) study participants. 55% of study participants thinks that mock drills for the demonstration of usage of advance radiographic technique in dentistry is very much needed.

Table 3 shows that majority of dental professional {202(54%)} were using both Conventional Radiographic technique and Advance Radiographic technique in combination. Among the Professionals using Advance Radiographic technique most of them were using 2-D radiographic technique and most of them {159 (42%)} using the Advance Radiographic technique frequently. Most of the study participants {162(43%)} were using the Advance Radiographic technique for the diagnosis of oral lesions. Internet is the commonest way through which dental professional obtain information about Advance Radiographic technique.

DISCUSSION

In the present study about 69% of Dental professionals use advance radiographic technique including digital radiography and 25% were using conventional Radiography as compared

to the study conducted by R. Sudhakara Reddy et al¹² in which 46% of Dental professionals use advance radiographic technique including digital radiography and 54% were using conventional Radiography. While in the study by Dolekoglu et al¹³ concluded that in his study 67% of the dentists used digital radiography. Wenzel and Møystad¹⁴ found that 14% of dental practitioners had chosen to use digital radiography. In the present study 35% of dental professional states that accurate diagnosis is the main advantage of advance radiographic technique while in study conducted by R. Sudhakara Reddy

et al¹² 48.6%, of study participants prefer digital imaging due to the advantage of less radiation during the procedure when compared with conventional radiography. In the brain et al¹⁵ study, the highly rated asset for using digital radiography was time saving (87%). Berkhout and Williamson¹⁶ reported that the total number of radiographs taken by general dental practitioners using digital radiography was significantly higher than the number of radiographs taken by film users. The need for more certainty about the planned or ongoing treatment as well as better diagnosis was the most important reason for taking more

radiographs. In the present study 46 % Dental professionals told that complex technique is the most important disadvantage of advance Radiographic technique while in the study by R. Sudhakara Reddy et al¹² states that 41.2 % study participants reported that high cost is most important disadvantage of digital or advance radiographic technique. Brian and Williamson¹² in their study showed that 43.6% of dentists did not use the digital system because of high cost. Other researchers have also found that the major reason the dentists choose not to use digital radiography was the high cost associated with using this technology^{14,15}.

Table 1 Demographic detail of study participants.

Demographic variables		n	%
Age group	Less than 25 years	110	29
	More than 25 years	265	71
	Total	375	100
Gender	Male	294	78
	Female	81	22
	Total	375	100
Degree	BDS	41	11
	MDS	102	27
	Total	375	100
Specialty	Oral medicine and radiology	36	11
	Oral and maxillofacial surgery	38	11
	Periodontics	36	11
	Prosthodontics	42	13
	Endodontic	45	13
	Pedodontic	34	11
	Orthodontic	37	11
	Oral pathology	32	9
	Public health dentistry	34	10
Work experience	1-5 years	154	41
	6-10 years	132	35
	More than 10 years	89	24
	Total	375	100

Table 2. Shows attitude of dental professionals towards use of advance radiographic technique.

Questions	Options.	N	%
Q1. Do you support use of advance radiographic technique for the diagnosis of Dental diseases?	Strongly Agree	141	38%
	Agree	118	31%
	No Idea	52	14%
	Disagree	45	12%
	Strongly disagree.	19	5%
	TOTAL	375	100%
Q2. According to you how will be the Future Perspective of advance radiographic technique for the diagnosis of Dental diseases?	Excellent	32	8%
	Very good	99	26%
	Good	201	54%
	Poor	21	6%
	Very Poor	22	6%
	TOTAL	375	100%
Q3. What do you think is the most important advantage of advance radiographic technique in Dentistry?	Accurate diagnosis	132	35%
	Radiation dose is much less	112	30%
	takes a short time to perform	92	25%
	No wastage in developing process and does not cause pollution and It is easy to store images.	21	6%
	No artifacts related to developing process	18	4%
	TOTAL	375	100%
Q4. What do you think is the most important disadvantage of advance radiographic technique in Dentistry?	Complex technique.	172	46%
	Expensive	146	39%
	Poor Image quality	15	4%
	Poor knowledge of Computers.	19	5%
	Poor availability.	23	6%
	TOTAL	375	100%
Q5. What do you think about the mock drills for the demonstration of usage of advance radiographic technique in dentistry?	Very much needed	206	55%
	Needed	112	30%
	No idea	3	1%
	No need	41	11%
	Not needed at all	13	3%
	TOTAL	375	100%
Q6. Do you think there should be CDE programs for updating the knowledge regarding advance radiographic techniques in dentistry?	Definitely yes	214	57%
	Yes	68	18%
	No idea	71	20%
	No	13	3%
	Definitely no	9	2%
	TOTAL	375	100%

Table 3. Shows practice among dental professionals towards use of advance radiographic technique.

Questions	Options.	N	%
Q1. What type of Radiographic technique you are using in your daily practice in college	Conventional Radiographic technique	92	25%
	Advance Radiographic technique.	58	15%
	Both in combination.	202	54%
	None	23	6%
	TOTAL	375	100%
Q2. What type of Advance Radiographic technique you are using in your daily practice in college	2-D Radiographic technique.	110	42%
	3-D Radiographic technique.	54	21%
	Both.	80	31%
	None	16	6%
	TOTAL	260	100%
Q3. Frequency of using Advance Radiographic technique.	Not used	81	22%
	<u>Ocassionally</u>	135	36%
	Frequently.	159	42%
	TOTAL	375	100%
Q4. For what type of Dental disease, Advance Radiographic technique is used by Dental professionals in your institute?	Dental Caries	122	33%
	Periodontal Diseases	91	24%
	Diagnosis of oral lesion	162	43%
	TOTAL	375	100%
Q5. How frequent do you attend workshops/CDE programs for improving knowledge about the latest developments in the field of oral radiology?	Every month	21	6%
	Six months	43	11%
	More than a year	181	48%
	More than 5 years	130	35%
	TOTAL	375	100%
Q6. How did you obtain information regarding Advance Radiographic Technique?	Faculty lessons	98	26%
	Seminars	36	10%
	Internet	202	54%
	Others	39	3%
	TOTAL	375	100%

In the present study attitude of 90% of study participants towards advance radiographic technique was fair

as compared to the study by Vida Masserat et al¹⁷ in which attitude of 41.8 % of dental professionals was fair towards

digital radiography. In the present study 48% of dental professionals had not attended the workshop or CDE program

on advance radiographic technique for more than 1 year which is consistent with the results in the study by Vida Masserat et al¹⁷ in which 51.2% of dentist had attended workshop on advance radiographic technique sometimes. Therefore from above it has been concluded that attitude of Dental professionals towards advance radiographic technique is positive. Need of the hour is to increase the practice of advance radiographic technique for the better understanding of this area.

CONCLUSIONS

More and more attending of Workshop and CDE programs in order to gain knowledge and to practice evidence based dentistry. More studies in this area should be conducted which will give the better insight about the attitude of the dental professionals and their level of knowledge and practice of advance oral radiographic technique.

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