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Original Research Article

Evaluating the Knowledge and Attitude of dentists in Zahedan toward Digital Intra-oral Radiography Techniques in 2014- 2015

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Abstract: Today, with the development of technology, digital radiography has been as a choice against conventional radiography, and its use in dentistry has being increased continuously. This work was aimed to assess the knowledge and attitudes of general dentists about intraoral digital systems in Zahedan. In this cross-sectional study, the data of statistical population was collected by distributing standard questionnaires which were completed by 127 general dentists. To analyze the data, SPSS 19 software, statistical t-test, ANOVA and Pearson correlation coefficient were used. In results the awareness level of 52% of dentists in Zahedan was good, 29.9% of them had fair awareness level and the awareness level of 18.1% of them was poor. The attitude of 53.5 % of dentists was good, 41.8 %fair, and the attitude of4.7 % of general dentists was poor. In conclusion the results of this work showed that the knowledge and attitude of half of general dentists in Zahedan about intraoral digital radiography techniques were good. No significant relationship was found between demographic variables and knowledge and attitudes of dentists ($p > 0.05$).
Keywords: The knowledge and attitude, general dentists, intra oral digital radiography.

INTRODUCTION:

The advent of digital imaging has led to a revolution in the science of radiology [1]. This advance is resulted from technological innovations in the process of imaging and also development of computer systems in recovery and transferring of images [2].

Digital imaging has caused to remove the chemical exposure and printing and its hazardous materials. Intraoral digital image sensors require less radiation than conventional X-ray films. Therefore, they reduce the observed radiation dose for patient. The possibility of proper storage of the image, changes in the density and contrast, and sending of images to other centers through a digital imaging network are other advantages [1]. Today, although there have been many developments in the use of this technique, many dentists still are not interested in using this technology. However, digital radiography is viable alternative to radiography based on the film (film-based) because of numerous advantages [3]. Conventional radiography has been used for many years and during this time, significant improvements have been made, however, some limitations have been existed, such as processing and exposure time of film, as well as artifacts (artifact) which most likely occur during the process cause to delays or mistakes in the diagnosis. After preparing the images their derived information cannot be changed in order to better observation. In addition, archive and storage of taken images on radiography films is another limitation of this technique [4].

Some of these problems and limitations will be solved accompanying with the computer technology in diagnostic x-rays imaging. Using computer technology, analog images have been converted to digital form conversion, the data has been processes and thus they are displayed similar to conventional X-ray images (conventional), while this would not be possible without progressing in the computers fields [5]. Today, digital imaging using PSP, CCD or CMOS sensors increasingly has become popular for intraoral and extra oral radiographs [6]. Due to the increased interest in the use of digital imaging and computer systems in most dental offices over the country, the aim of this work was to evaluate the knowledge and attitude of dentists in Zahedan toward intra- oral digital systems.

METHODS:

This analytical survey was conducted on 127 general dentists through questionnaire sampling in Zahedan. The method of this work was based on designing a questionnaire and on informed agreement of dentists, the questionnaires were distributed among all of them. Validity of the questionnaires was evaluated by experts in this field. As well as the questionnaires were available for 10 other general practitioners who were not included in the study in order to evaluate the reliability. The questionnaire was designed in two parts: The first part included questions about demographic information of dentists (age- gender- working experience years and relevant retraining years).

The second part of questions was related to knowledge and attitude of dentists about the digital intra-oral dental radiographic techniques. A score was considered for questions about awareness. So that for each True answer 2 Points were considered, and for I do not know and False answers1 and 0 point was given respectively. For the attitude questions, answers were five options in which for Strongly Agree 5 points, for Agree 4 points, for No Idea 3 points, and 2 points for disagree were considered, and 1 point was given to strongly disagree as well.

RESULTS:

In this work, a number of 127 patients participated, the majority of them was men (57.5 %) and those with the ages of 30-39 years with 53.5 % were in the highest age level. As well as the work experience years were 6-10 years in that 16-32 years were in the highest level (40.9 %).Furthermore, this work showed that the majority of people (2/51%) participate in training workshops arranged by the authorities to promote the knowledge, attitude and practice of dentists. (Table 1). Studies showed that 52% and 53.5% of evaluated people had good awareness and attitudes (Table 2).

Table 1: Demographic characteristics of the participants

Factors		Number	Percent	Awareness Score	Attitude Score	P value
				Mean ± SD	Mean ± SD	
Gender	Male	73	57.5	15.35±3.55	40.2±5.64	P > 0.05
	Female	54	42.5	14.40±4.11	39.55±5.72	
Work experience	1-5 years	49	38.6	14.7± 3.5	39.67± 6.37	
	6-10 years	40	31.5	15.35± 4.4	40.9± 5.51	
	15-11 years	20	22	14.6± 3.8	38.57± 4.54	
	16- 32 years	10	7.9	15.6± 2.59	40.9± 5.23	
Age	Less than 30 years	30	23.6	15.5± 3.54	40.4± 6.41	
	30- 39 years	68	53.5	14.4± 4.1	39.3± 5.71	
	40- 49 years	24	18.9	15.25± 3.37	40.66± 4.84	
	More than 50 years	5	4	16.8± 1.64	41.6± 3.97	
Participating in Workshop	Regular	16	12.6	14.25± 3.08	38.81± 4.36	
	Sometimes	65	51.2	15.2± 3.97	39.12± 5.93	
	never	46	36.2	16±3.64	41.41± 5.45	

Table 2: The level of awareness and attitude of the participants

Criteria	Awareness		Attitude	
	Number	Percent	Number	Percent
Poor	23	18.1	6	4.7
Fair	38	29.9	53	41.8
Good	66	52	68	53.5
Total	127	100	127	100

DISCUSSION:

Today, with the advances in technology and with regard to the pre-mentioned points, digital radiography has been selected as an alternative method to conventional radiography (typical) and its use in dentistry is growing increasingly. The ability of digital systems compared to film-based methods has been studied by many researchers [7, 8].

This cross-sectional study was conducted to assess the knowledge and attitudes of dentists in Zahedan in the digital intra-oral radiographs field in 2015,in that questionnaires were completed by 127 general practitioners. According to the results of this work, the awareness of 18.1 dentists of study was poor, 29.9% of them were fair and 52% of dentist had good knowledge. The attitude of 4.7 % of dentists the attitude was poor, 41.8% was fair and 5.53 % of them had good attitude.

No study was performed to assess the knowledge and attitudes of general dentists toward the intra-oral digital radiography techniques similar to this work. Hence, some studies were based on the evaluation of the knowledge and attitudes of general dentists about other ideas of maxillofacial radiology with the same method and they were investigated.

In the study of Dolekoglluet.al with the aim of using digital radiography and CBCT among the dentists in Turkey, about 67 % of dentists used digital radiography which can show good awareness and attitude of dentist's toward Digital Radiography and their results are consistent with the results of present work [9].

In the study of Svenson et.al the knowledge of dentists with 5 to 25 years work experience was in the highest level [10]. Their results are not consistent with the results of this present work. In this work, no significant difference was found between the level of knowledge and attitude of dentists based on years of employment (P> 0.05). In the present study no significant difference was observed between the knowledge and attitude of dentists based on age and their gender which is corresponded to the results of Yalcinkaya *et al.;* [11].

In the present study in investigating the knowledge and attitude of dentists on re-education sessions no significant difference was found (P> 0.05).This could be resulted from being busy of dentist and no devoting sufficient attention and time while answering the questions in the questionnaire. As well as the lack of relevance and no focusing on the content of educational reeducation sessions with the subject of this work can be another reason. On the other hand insufficient attention of dentists to educational materials in these sessions even related to the subject of this research can also be another reason for obtained result.

CONCLUSION:

The results of this study show that the awareness and attitude of half of dentists in Zahedan toward Intraoral Digital Radiography techniques are in good level. There is a significant relationship between knowledge and attitude of dentists. There is no significant relationship between the knowledge and attitude of dentists and demographic variables (age, gender, work experience and participating in related training workshops).

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