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Short communications

Knowledge and practices concerning the effects of ionizing radiation and x-ray protection methods in dental offices in Babol, 2013

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Abstract

Introduction: As the absorption of radiation in environment is increasing, the present study was performed to evaluate the knowledge and practices of Babol's dentists about x-ray protection.

Materials &Methods: This cross-sectional study was designed to assess the knowledge and practices of dentists. The questionnaires were distributed among 70 dentists in Babol city. Analysis of the collected data was done using the Pearson correlation coefficient in SPSS software version 19 (α=0.05).

Results: In this study, 70% and 30% of studied dentists had good and moderate knowledge, respectively. 96% of them were moderate in terms of practice and 70% of them had good awareness towards the use of a lead apron and thyroid collar but 78.6% and 75.7% of offices had no lead apron and thyroid collar. There was a significant relationship between experience and awareness (p=0.003).

Conclusion: According to the results, their appropriate knowledge and practice were poor. Therefore, it is necessary to control the dental radiographic centers.

Keywords: Ionizing radiation, Dental radiography, Radiation protection

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آگاهی و عملکرد دندانپزشکان در خصوص اثرات پرتوهای یونیزان و روش های حفاظت در برابر اشعه x در مطب های دندانپزشکی شهر بابل در سال ۱۳۹۲

غلامرضا عطایی، سینا حقانی فر، معصومه کریمی، فرشته عادل*

چکیده

مقدمه: با توجه به اینکه جذب اشعه در محیط در حال افزایش است، مطالعه حاضر با هدف بررسی میزان آگاهی و عملکرد دندانپزشکان شهر بابل در مورد حفاظت در برابر پرتوهای یونیزان انجام گردید.

مواد و روش ها: در این مطالعه توصیفی- تحلیلی، به منظور سنجش آگاهی و عملکرد دندانپزشکان مورد نظر، پرسشنامه ای شامل سوالاتی پیرامون اطلاعات دموگرافیک، سنجش آگاهی و عملکرد در بین ۷۰ دندانپزشک شهر بابل توزیع گردید. تجزیه و تحلیل داده های جمع آوری شده با استفاده از ضریب همبستگی پیرسون در نرم افزار spss نسخه ۱۹ انجام شد (α=0.05).

یافته ها: در مطالعه حاضر ۷۰٪ از دندانپزشکان مورد بررسی، آگاهی خوب و ۳۰٪ آگاهی متوسط داشتند. از لحاظ عملکرد نیز ۹۶٪ متوسط ارزیابی شدند. ۷۰٪ سطح آگاهی خوبی نسبت به بکارگیری پیشبند و گلوبند سربی داشتند اما ۷۸/۶٪ و ۷۵/۷٪ مطب ها فاقد پیشبند و گلوبند سربی بودند. بین سابقه فعالیت و سطح آگاهی نیز رابطه معناداری مشاهده شد (P=0.003).

نتیجه گیری: با توجه به نتایج حاضر، آگاهی دندانپزشکان مطلوب و عملکردشان ضعیف ارزیابی می شود. نظارت بر مراکزی که رادیوگرافی دندانی انجام می دهند در این زمینه ضروری است.

واژگان کلیدی: پرتوهای یونیزان، رادیوگرافی دندانی، حفاظت از اشعه

Introduction

Today, dental radiography is one of the most common diagnostic procedures in dentistry. Although the risk of the radiation is negligible compared to its benefits, modern technology suggests that the absorption of radiation in the environment is increasing. Therefore, x- ray radiation should be limited as much as possible because high doses of radiation can lead to chromosomal changes and cancer. Since Head and neck are exposed to this radiation in dental radiography, the risk of the eye lens damage or cancer of thyroid gland, salivary glands, bone marrow, and skins increases.[1]

Doctors who use dental x-ray should have knowledge of the severity of radiation exposure and its application in various areas of dental potential hazards and proper procedures for dose reduction.[2]Assessing the level of knowledge and practices to reduce patient dose is very important to correct the flaws of training and reducing negligence of safety. Therefore, it is essential to measure the knowledge and practices at different periods.

Materials & Methods

In this cross-sectional study, the prepared questionnaires included questions about demographic information, knowledge and practice were distributed among 70 dentists in Babol city. Analysis of the collected data was done using Pearson correlation coefficient in SPSS software version 19. (α=0.05).

Results

In our study, 49(70%) and 21 (30%) persons were men and women.60 (85.7%) and 10 (14.3%) of participants were general practitioners and dental specialist, respectively. 11 (15.7%) of them had experience less than 5 years, 29 (41.4%) doctors worked between 10 to 20 years, 11 (15.7%) worked between 50 to 15 years and 19 persons (27.2%) had over 20 years of experience. Descriptive indicators of participants' knowledge and practice are shown in (table 1) (figure1) (table 2). The results of this study showed that among 70 participants 49 of them (70%) received score 10 it meant that their knowledge was

good and 21(30%) of them received score between 5 to 10 that showed their knowledge was assessed medium. Fortunately, there was no score below 5. So it indicated that there was the appropriate level of knowledge of radiation protection.

Table1. Descriptive indicators of participants' knowledge scores and practice

Index	Mean	Mod	Mid	SD	Min	Max
Knowledge	11.43	12	12	1.982	6	15
Practices	13.88	13	14	3.29	6	22

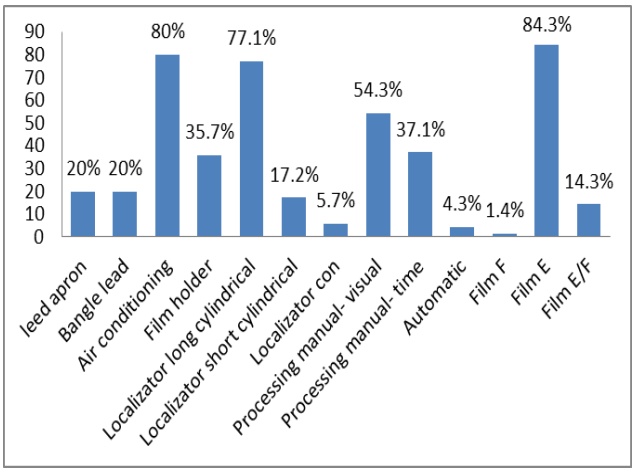


Figure1. Frequency protection principles of X- ray in 70 dental offices in Babol, 2013

Table2. The relationship between scores on knowledge, practice and experience and the Pearson correlation coefficient

	Knowledge	Practices	Experience
Know ledge			
p	1	0.229	0.216
Significant	-	0.106	0.003
Practices			
	0.229	1	0.019
Significant	0.106	-	0.651
Experience			
P	0.216	0.019	1
Significant	0.003	0.651	-

Discussion

The results of this study showed that although 70% of dentists in Babol had good knowledge of radiation protection, unfortunately many of them did not use the personal x-ray protection.[3] Some studies such as Abdinian et al.[4] in Yazd, Salti et al. in Damascus [5] and Aps in Belgium showed that the awareness and knowledge of the dentists in the field of radiation protection were low.[6] Although participants had good knowledge, their x-ray protection was average (almost 96%). This result indicated that the dentists are aware of the dangers of radiation but this is despite the important role of lead aprons and thyroid shields in safty, few centers are using this equipment. In the current study, the knowledge and experience were significantly related to each other (p=0.003) and there was no significant relationship between knowledge and practice (p=0.106), too. Unfortunately, lack of periodical control of equipment, lack of quality control tests caused some problems in most investigated dental centers. On the other hand, the lack of knowledge about x-ray led to failure in the use of radiation protection equipment.[7]

Conclusion

The results showed that the knowledge of dentists on the use of protection radiation clothing is good but their practice is poor. Therefore, it is necessary to control the practice of dentists in using thyroid collars in dental centers.

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Conflict of interest: We declare that there is no conflict of interest.

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