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

Gholamreza Ataei (MSc)¹, Sina Haghanifar (DDS)², Masomeh Karimi (MD)³, Fereshteh Adel (MSc)⁴

¹Instructor, Department of Medical Physics, Faculty of Paramedicine, Babol University of Medical Sciences, Babol, Iran.
²Associate Professor, Department of Oral & Maxillofacial Radiology, Faculty of Dentistry, Babol University of Medical Sciences, Babol, Iran.
³Assistant Professor, Department of Medical Physics, Faculty of Paramedicine, Babol University of Medical Sciences, Babol, Iran.
⁴Instructor, Department of Medical Physics, Faculty of Paramedicine, Babol University of Medical Sciences, Babol, Iran.

Corresponding Author: Fereshteh Adel, Faculty of Paramedicine, Babol University of Medical Sciences, Babol, Iran.
Email: Fe.adel@yahoo.com
Tel: +989112120921

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

پژوهشگران ممکن است 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 مطب‌های دندانپزشکی شهر بابل در سال 1392 انجام داده‌اند.

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 مطب‌های دندانپزشکی شهر بابل انجام داده شد.

مواد و روش‌ها: در این مطالعه توصیفی-تحلیلی، به منظور سنجش آگاهی و عملکرد دندانپزشکان مورد نظر، روش‌شناسی ای شامل سوالاتی بود که اطلاعات این بخش از آگاهی و عملکرد دندانپزشکان شهر بابل پایان توزیع گردید. تجزیه و تحلیل داده‌های جمع‌آوری شده با استفاده از ضریب همبستگی پیرسون در نرم‌افزار spss نسخه 19 انجام شد (α=0.05).

یافته‌ها: در مطالعه حاضر 70 دندانپزشک از جمله 49 (70%) مرد و 21 (30%) زن، که 60 (85.7%) آنها متخصص کلینیک و 10 (14.3%) متخصص دندانپزشکی بودند، از لحاظ عملکرد نرمال 92% (3/78%) از آنها از اشعه خوب، 29 (41.4%) دندانپزشک بین 10 و 20 سال با توجه به پارامترهای بیولوژیکی و پزشکی بودند. نسبت 20 (28.6%) دندانپزشک بین 5 و 10 سال و 19 (27.2%) دندانپزشک بیش از 20 سال تجربه داشتند. دندانپزشکان مبتنی بر نگرش مراکز نهادینه و نگرش استانداردی شاهد (3/003) نمودند. نتایج گیری: با توجه به نتایج حاضر، آگاهی دندانپزشکان مطب‌های دندانپزشکی شهر بابل در مطب‌های دندانپزشکی شهر بابل در سال 1392 انجام می‌گردد.

واژگان کلیدی: پرتوهای X، دندانپزشکان، مطب‌های دندانپزشکی

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...

Table 1. Descriptive indicators of participants’ knowledge scores and practice

<table>
<thead>
<tr>
<th>Index</th>
<th>Mean</th>
<th>Mod</th>
<th>Mid</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>11.43</td>
<td>12</td>
<td>12</td>
<td>1.982</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Practices</td>
<td>13.88</td>
<td>13</td>
<td>14</td>
<td>3.29</td>
<td>6</td>
<td>22</td>
</tr>
</tbody>
</table>

Figure 1. Frequency protection principles of X-ray in 70 dental offices in Babol, 2013

Table 2. The relationship between scores on knowledge, practice and experience and the Pearson correlation coefficient

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Practices</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>P = 1</td>
<td>0.229</td>
</tr>
<tr>
<td>Significant</td>
<td>-</td>
<td>0.106</td>
</tr>
<tr>
<td>Practices</td>
<td>0.229</td>
<td>1</td>
</tr>
<tr>
<td>Significant</td>
<td>0.106</td>
<td>-</td>
</tr>
</tbody>
</table>

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. Some studies such as Abdinian et al.4 in Yazd, Salti et al. in Damascus5 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 safety, 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.

Acknowledgments

The authors thank Research Center of Babol University of Medical Sciences for supporting this research.

Funding: This study was a part of research project (Grant No: 9135015) supported and funded by Babol University of Medical Sciences.

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

References


