

## Assessment of knowledge and practice of pharmacists regarding oral health in Kerman, Iran

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### Original Article

#### Abstract

**BACKGROUND AND AIM:** Oral health is an integral part of general health. Between the different medical professions, pharmacists are one of the groups who encounter patients seeking consultation in the oral health field a lot. Therefore, this study aimed to assess the knowledge and practice of pharmacists in Kerman, Iran, toward oral health.

**METHODS:** All pharmacists were invited to participate in the study after being informed about the aims of the study. A validated questionnaire with six sections including demographic data, oral hygiene behavior of the participants, the pharmacies' specifications and products related to oral health, questions related to knowledge, questions related to practice, and questions related to the participants' assessment were filled out by the participants. The collected data were analyzed using SPSS software, and descriptive results were presented in tables and charts. The chi-square statistical tests were used to explore any association between variables.

**RESULTS:** Data were analyzed for 81 participants. Most of the participants were male and the mean age was  $38 \pm 10$ . The pharmacists' mean knowledge of oral health was 6.5 out of 10 which places them in the medium knowledge range. The performance of pharmacists when encountering oral problems was prescribing analgesics in 79% of cases for tooth aches. There was no statistically significant difference in the knowledge score between different age and gender groups ( $P = 0.500$ ).

**CONCLUSION:** The results show a medium knowledge of pharmacists on oral health topics. Considering their own desire plans to train and educate in oral health fields to promote oral health seem necessary.

**KEYWORDS:** Knowledge and Practice; Pharmacists; Oral Health

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All around the world, pharmacists are a part of the medical team who the public consult about health and hygiene and other matters related to them. They also consult other medical professions.<sup>1</sup> In dentistry references, pharmacists are mentioned as a partner who can help to promote oral health levels and standards.<sup>2</sup>

Many oral health products are sold in

most pharmacies without prescription such as toothbrush, toothpaste, mouthwash, whitening agents, breath fresheners, and painkillers. Therefore, in many cases, pharmacists are the first who encounter those seeking advice in dental and oral matters and can play an important role in preventing the occurrence or progress of illnesses.<sup>3</sup> Because pharmacies are accessible by public they are constantly encountering a high demand for

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consultation in health subjects by them; therefore, they are a suitable location to target with health promotion programs. Studies show that 94% of people visit a pharmacy at least once a year and around 1.8 million visits are made to pharmacies daily most of which are to seek consultation.<sup>4</sup> In some countries, there are even laws obliging pharmacies to promote health in society and they have been modified in ways to do so.<sup>5</sup> Because of the importance of pharmacists in general health and oral health promotion, many researchers have conducted many studies on this matter.<sup>6-10</sup> Unfortunately, this role has been neglected in Iran. Considering the importance of pharmacists in promoting oral health and the fact that they have been overlooked in this country, this study aimed to provide the necessary basis required for cooperation between different sectors to promote dental public health by analyzing the knowledge and practice of pharmacists regarding oral health in Kerman, Iran.

### Methods

This was a cross-sectional descriptive study based on the pharmacist population of Kerman city and sampling was conducted as a census. The aims of the study were explained to every pharmacist (110 people) by visiting their pharmacy or another place of work and they were invited to voluntarily participate in the study after informed consent had been acquired. The data collection tool was a questionnaire with several sections which validity 85% for Cronbach's alpha test. The different parts are as follows, demographic data, the pharmacy's specifications, products related to dental and oral health, analyzing the knowledge of pharmacist regarding oral health, analyzing the practice of pharmacists in the field of oral health and the pharmacists' evaluation of their own knowledge, and practice in relation to oral health. The collected data were analyzed in SPSS software (version 20, IBM Corporation, Armonk, NY) software. The statistical

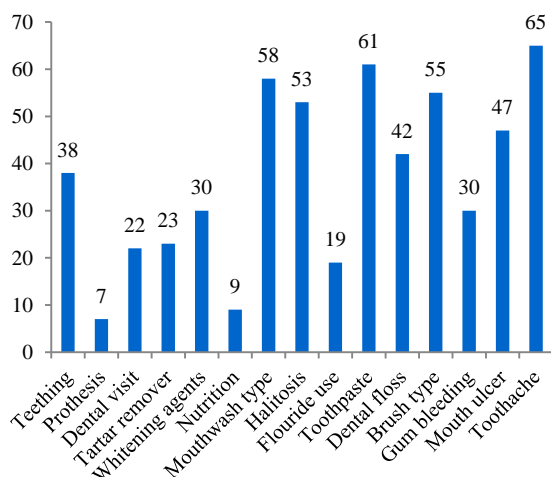
analysis was performed using chi-square test and calculating the Pearson coefficient. The statistically significant level was considered 0.05 in the study.

### Results

A total of 81 (response rate = 74%) participants including 51 men and 30 women took part in the study. The mean age of the participants was  $38 \pm 10$  years with a minimum of 22 and maximum of 65-year-old. The mean years after graduation were  $12.24 \pm 8.5$ -year-old and the maximum was 30 years. The majority of the participants were general pharmacists and only 6.5% were specialists. Most (77.8%) of the participants worked in private pharmacies and a 17.3% worked in both private and non-private pharmacies. 45 people equal to 56.8%, meaning the majority brushed their teeth twice daily or more and only 38.0% flossed once or more a day. Most of the participants, 61.0% had received dental treatment. The most common number of pharmacies in one pharmacy was one and two (74.0%). The highest number of attendance in a pharmacy was 200 people, which was reported by 17 pharmacies. Over 90.0% of the pharmacies had various kinds of foreign and Iranian made toothbrushes available, whereas brushes used for prosthetics were only available in 35.0% of the pharmacies. Fluoride containing toothpaste was available in 96.0% of pharmacies. Approximately 97.0% of the floss available in pharmacies was non-waxed. 65 of the pharmacies had fluoride containing mouthwashes. Denture cleaning tablets were available in 47.2% of the pharmacies. Super floss could be found in 78.9% of the pharmacies. Tooth whitening agents were available in almost 50.0% of the pharmacies.

In the section analyzing, the knowledge of pharmacists in regards to oral health only 2.5% answered all of the questions correctly. 50.0% of the pharmacists knew that teeth have to be brushed three times a day and 85.2% answered that medium toothbrushes

are best to use. The plaque was identified as the main cause of oral disease by 85% and 96% answered correctly that the most important way to clean the mouth is by brushing. 65 people answered correctly that the method of brushing is more important compared to the type of brush (manual or electric). About 56.8% knew that every 3-4 months the toothbrush should be changed. Daily flossing frequency was reported by 86.4%. 60.0% knew about super floss, and its use and over 90.0% had knowledge about fluorides properties in caries resistance. The different aspects of dental health in which pharmacists gave consultation were toothache with 80%, type of mouthwash with 71.0% and type of toothpaste with 85.3% (Figure 1).

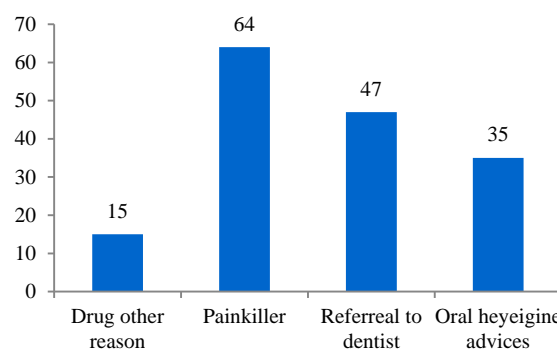


**Figure 1.** Frequency distribution of oral health advices by pharmacists

The most common response from the participants toward those seeking guidance in oral and dental health matters was prescribing painkillers for toothaches with a frequency of 79% (Figure 2).

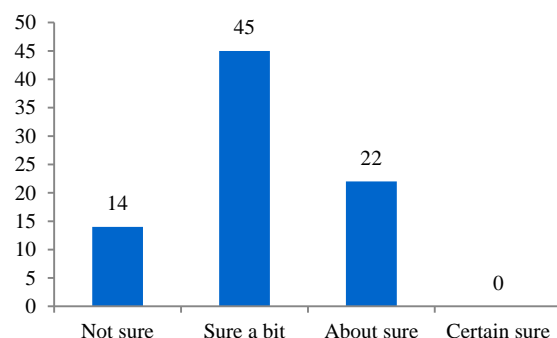
Only 27% of the pharmacists stated certainty regarding the information they were giving to the patients (Figure 3).

The majority of the pharmacists (90%) referred the patients who had toothache to dentists and 84% also prescribed painkillers (Figure 4).



**Figure 2.** Frequency distribution of pharmacists action encountering dental problems

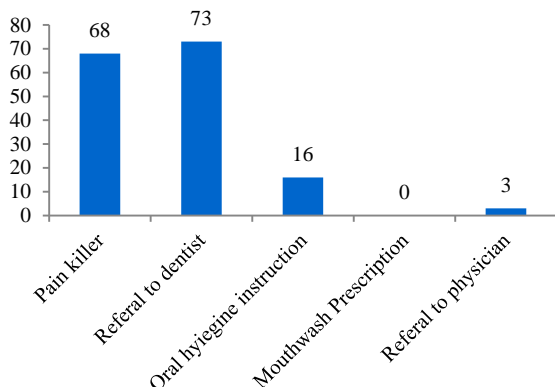
Most of the pharmacists (51.9%) evaluated their own knowledge in the oral and dental health as good, also 85.0% of were eager to take part in courses in this field especially to learn more about oral hygiene products.



**Figure 3.** Levels of certainty of pharmacist for their giving advices in oral health

The mean score of knowledge of pharmacists had no statistically significant relationship with their age and number of years after graduation ( $P = 0.100$ ). The mean score of knowledge of pharmacists also had no statistically significant relationship with the type of pharmacy ( $P = 0.500$ ). The consultation given and referrals in the field of oral health had a statistically significant relationship with the age of the pharmacist such that those aged under 35 referred patients more often ( $P = 0.002$ ). The practice of pharmacists in giving information about oral health had statistically significant difference based on the type of pharmacy, such that private pharmacies performed this

more often ( $P = 0.020$ ). Furthermore, private pharmacies claimed they prescribed painkillers more often with a statistically significant difference ( $P = 0.001$ ).



**Figure 4.** Practice of pharmacists with dental pain patients

## Discussion

Pharmacies are a place for the public to seek guidance and consultation regarding their health.<sup>11</sup> Therefore, pharmacists are one of the main references for people to get answers for the questions they have regarding their health which includes questions about their oral and dental health.

The results of the study showed that the knowledge of pharmacists in relation to oral health is at a medium level and a few number answered to all questions correctly. Most of the participants knew about fluorides role in strengthening teeth against caries which was higher than the result of Priya et al.'s study<sup>6</sup> in India which only showed a 50% awareness of this topic. This result was also higher than a study conducted in Malaysia.<sup>12</sup> The knowledge of pharmacists regarding fluorides role in preventing caries is important as they can advise people to use products which contain fluoride to prevent caries.

The awareness of pharmacists regarding the oral diseases etiologic factors of the mouth and methods of eliminating them could be very useful as they can help disseminate awareness of the benefits of brushing and flossing teeth. Most pharmacists, especially younger ones stated

referral to the dentist when encountering someone with pain, also many of them reported prescription of painkillers to help with the pain and in comparison with Priya et al.'s study<sup>6</sup> in India the results of this study was higher. However, in Maunder and Landes' study<sup>3</sup> 100% of pharmacists' prescribed painkillers but the referral to dentists was similar to that of this study. A study conducted in Riyadh in Saudi Arabia reported a lower amount of painkiller prescriptions and referrals.<sup>9</sup>

Prescribing painkillers are the most common and after that is antibiotics which are prescribed the most by pharmacists without the dentist's prescription, and the same thing was also reported by most of the other studies. However, this was reported to be less in Priya et al.<sup>6</sup> and Bawazir's studies (22.4% and 13%)<sup>9</sup> compared to this study.

In relation to the pharmacists' own oral hygiene behavior, less than half brushed twice or more a day, and only 27% used dental floss once a day. The majority of pharmacists (80%) only visited the dentist when they had problem with their teeth, and no checkup visits were made. The results from Priya et al.'s study<sup>6</sup> were similar to this study regarding dental visits. The results of Rajiah and Ving's study<sup>12</sup> showed that 96% brushed twice a day which was higher than this study but only 21% used dental floss during the week which was lower than this study.

Only one-third of the pharmacists were certain about their knowledge in the field of oral and dental health, whereas in a study in Riyadh 98% were certain about their information. Furthermore, in this study, 51.9% of the pharmacists evaluated their level of awareness in oral and dental health as good, but in similar studies this figure was 70-90%.<sup>3,9</sup> 85% of the participants were eager to take courses to learn more about oral and dental health and their related products. These results are in line with similar studies.<sup>3,6,13</sup> One of the main reasons people visits pharmacies is to purchase health and hygiene products such as toothbrush and

dental floss and it is estimated that pharmacies encounter more people with oral and dental concerns than dentists daily.<sup>7,14</sup> Therefore, it seems that pharmacies are involved in society's health needs assessment in an informal and experimental way which could affect the kind of intervention suitable for each region.<sup>3</sup>

Unfortunately, currently role of pharmacists is limited to the distribution of drugs which are prescribed by dentists and physicians, but studies emphasize their important role in the field of oral health<sup>5</sup> and that they can be part of the primary health-care teams in general and oral health. Even though prescribing painkillers by pharmacists to those in pain is a positive action, by increasing the pharmacists' knowledge the referral can prescriptions can be more efficient.

One of the important points and limitations of this study was the busy work hours that pharmacies could be visited which ultimately led to over five visits to some of the pharmacies to acquire the questionnaires handed out before, and sometimes even after multiple visits some of the pharmacists did not cooperate completely in answering the questions.

Considering the results of the study and the importance of the pharmacists' role in promoting oral health and the fact that many people visits pharmacies seeking consultation in this field, organizing meetings with pharmacists and dentists together and other

related organizations, setting up educational programs related to the target group in relation to oral dental health and fitting in oral health courses into students' curriculums is suggested. Emphasizing the pharmacists' role in promoting oral health with increased payment from insurance services for those who provide service to people in this field to encourage pharmacists in giving consultation in relation to oral health subjects.

### Conclusion

This study showed that pharmacists in Kerman city do not have enough knowledge in oral health to be able to play an efficient role in promoting oral health. It seems that their role has been overlooked in oral health and also in many other fields of health and hygiene and it is necessary to give them the required training to be able to intervene in these matters more efficiently. Continuing education program and distribution of information sheet could be useful.

### Conflict of Interests

Authors have no conflict of interest.

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