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## Original Research Article

# An Evaluation of the Specialists' Knowledge of Children's Oral Health Problems in Kerman

**Fatemeh Sadat Sajadi[1], Molouk Torabi[2], Somaye Baniasadi[3], Hoda Shamsadin[4]**

[1]Assistant Professor of Pediatric Dentistry, Dental and Oral Diseases Research Center, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran

[2]Associate Professor, Dental and Oral Diseases Research Center, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran

[3]Dentist, Dental and Oral Diseases Research Center, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran

[4]Assistant Professor of Pediatric Dentistry, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran

***Corresponding author**
Molouk Torabi
Email: mtorabip@gmail.com

**Abstract:** There are several oral diseases which bear significant side effects on general health. Also, most children less than three years old do not receive dentist examination, during the primary care, physicians often visit the children and their parents regularly in child health clinics. The aim of this study was to assess the level of knowledge of specialists in Kerman on children's oral and dental problems. In this descriptive-analytic cross- sectional study the population under study consisted of internal medicine specialists, pediatricians, Infectious disease specialists, and ENTs in Kerman. A questionnaire was used to collect the data. The questionnaire included demographic information and 17 questions about common children's oral problems. The data was analyzed with SPSS 18 software, T-test, one-way analysis of variance (ANOVA), and Pearson correlation coefficient. The mean and standard deviation of the specialists' knowledge score on children oral and dental problems was 67.48 ±7.36. Also The statistical analyzes showed that there were no significant statistical differences between the level of knowledge of the specialists on children's oral and dental problems and the specialists' gender, age, clinical activity experience, and number of hours they practice per week (P Value> 0.05). In addition, the knowledge score of those physicians who visited more than 15 children per day was significantly higher than those who visited less than 10 children per day(P <0.05). The results of this study showed that the specialists' level of knowledge in Kerman on children's oral problems is acceptable.
**Keywords:** knowledge, specialist, oral and dental problems, children

## INTRODUCTION

Oral health is the doorway to every individual's general health and cannot be separated from it [1]. These two are dependent to one another and have biological, psychological, emotional and developmental influences on each other [2]. There are several oral diseases which bear significant side effects on general health and some systemic conditions may show interactions with oral health, so that early manifestations of many systemic diseases occur in oral cavity [1]. On the other hand, dental caries especially in children is highly prevalent. While most children less than three years old do not receive dentist examination, during the primary care, doctors often visit the children and their parents regularly in child health clinics, as shown in this study a child visits pediatricians and general practitioners approximately 35 times during the first year of his life [3,4]. Thus, oral health, healthcare, and dealing with risk factors in children need attention with a multi- professional approach. In other words, child oral health promotion needs the healthcare provided by both physicians and nurses [5]. Children in Iran are directly in contact with their physicians and many of them initially visit a physician to treat their oral and dental problems [6]. Therefore, it is necessary that physicians have sufficient information on oral hygiene, the symptoms of periodontal diseases and the oral complications caused by systemic diseases in order to prevent damages caused by mal diagnosis and treatment to the patients.

There have been continuous discussions on the relationship between dentistry and general medicine and numerous articles have been published on the subject since 1850, some of which have defended the necessity of this relationship and some have criticized the system.

There are historical reasons for the fact that education on dental and oral diseases has been left almost entirely to dental schools [7].Patients often consult with their physician about oral lesions rather than a dentist. Those at the risk of oral cancer are more likely to visit physicians than dentists [8,9]. In addition, most of the systemic diseases have oral manifestations and these manifestations can be the first signs of the diseases [10].

Lack of courses on oral health and dentistry in medical schools and residency programs is perfectly evident. Physicians have reported lack of adequate training on oral-therapeutic and health related considerations. Therefore, improper levels of awareness of oral diseases have been reported in the studies conducted on this subject [11]. In the study conducted by Bozorgmehr *et al.* aimed to assess pediatrician's knowledge, attitude, and practice in the field of children's oral health in Kerman, the results showed that although physician's knowledge in this area was insufficient, most physicians stated that they feel an important responsibility regarding children's oral health [12].

Eslamipour concluded in his study that since general physicians, nurses, and pediatricians are more in touch with new mothers, babies and children; it is necessary that they are well informed about caries pathology and the risk factors associated with early caries in children to be able to diagnose oral problems in children and refer them to dentists [13]. Chen et al. showed that a high proportion of the physicians and medical field professions, except for dentists, don't have sufficient knowledge about the methods to prevent dental caries in children, and the relationship between oral health and general health [14]. McCann et al. showed in his research that medical students learn about the system of the entire body and its diseases during their courses of study, but it seems that they do not have sufficient knowledge onoral diseases. On the other hand, people also visit general physicians for diagnosis and treatment of oral problems. The results of this research showed that raising the awareness and knowledge of physicians and pediatricians about oral problems especially in children is of great importance [15]. Ahmadi *et al.* also stated that most the patients consult their physicians about oral lesions before consulting a dentist. As a result, the only opportunity for routine oral examination in most patients with high-risk oral cavity diseases may occur during a simple medical visit [16].

It has been observed in many cases that the parents visited internal medicine specialists, pediatricians, Infectious disease specialists, and ENTs following acute and chronic dental infections, and oral viral infections. Therefore, it is very important that this group of medical professionals have sufficient knowledge in these areas in order to be able to provide accurate diagnosis and treatment plans. Physicians should also be able to differentiate between numerous acute dental infections, oral viral infections and head and neck infections that share similar clinical symptoms in order to prevent mal diagnosis and treatments which would endanger children's systemic health. On the other hand, many parents take their children to specialists instead of dentists due to lack of awareness of children's oral and dental problems and diseases symptoms and or less accessibility of dentists. Therefore, educating physicians on this subject is of necessity. This study aims to assess the level of knowledge of internal medicine specialists, pediatricians, Infectious disease specialists, and ENTs in Kerman on children's oral and dental problems.

## METHOD

In this cross- sectional study the population under study consisted of internal medicine specialists, pediatricians, Infectious disease specialists, and ENTs in Kerman. The inclusion criteria included physicians with one of the above specialties with at least one year experience of private practice or working at a clinic, visiting at least one to five children per day. A questionnaire was used to collect data in this study. Initially a list of all the specialists was obtained from Kerman medical council, after evaluating each case and ensuring that the inclusion criteria were met, the questionnaire was distributed among 123 specialists in Kerman.

The questionnaire used in this study was made by the researcher and consisted of two parts. The first part included the demographic information including, age, clinical practice location, year of graduation, duration of clinical practice, specialty, number of working hours per week, and the number of children visited with oral problems per day. The second part of the questionnaire consisted of 17 questions about the common dental problems among children. There were two questions about the resources that the physicians used to acquire the information regarding children's dental problems, and whether education and acquiring more information on this matter is needed. The content validity index of the questionnaire was 0.89. The mean Cronbach alpha coefficient to test the reliability of the questionnaire was 0.83.

The questionnaire was scored based on the Likert scale as follows:

Strongly Agree: 5; Agree: 4;Disagree: 3; Strongly Disagree: 2; Neutral: 1

After data collection, the data was analyzed with SPSS 18 software, T-test, one-way analysis of

variance (ANOVA), and Pearson correlation coefficient.

## RESULTS

In this cross- sectional study the questionnaire was distributed among 123 specialists in Kerman. 44 of the questionnaires were excluded from the study due to not meeting the inclusion criteria and or being incomplete, and 79 questionnaires were evaluated and analyzed. 48.1 % of the participants were male and the rest were female. The mean and standard deviation of the participants' age was 45.75± 7.27 with a minimum of 32 years old and a maximum of 75 years old. The mean and standard deviation of the specialists' knowledge on children oral and dental problems was 67.48 ±7.36. Distribution of the participants based on the place of therapeutic activities and their specialty is shown in figure 1 and figure 2. The statistical analyzes showed that there were no significant statistical differences between scores obtained for the level of knowledge of the specialists in Kerman on children's oral and dental problems and the specialists' gender, age, clinical activity experience, and number of hours they practice per week . (P Value> 0.05)(Table 1).

The results showed that the knowledge score of the specialists in Kerman who worked in all the clinical sectors (Hospitals, clinics, private offices) regarding children's oral and dental problems was significantly higher compared to those who only worked at private offices or hospitals. Also, pediatricians, and infectious diseases specialists' knowledge score was significantly higher that internal medicine specialists. In addition, the knowledge score of those physicians who visited more than 15 children per day was significantly higher than those who visited less than 10 children per day (Table 1).

More than half the participants in the study (51.3%) have acquired their knowledge about children's oral and dental problems in dentistry school. Also, 78.2% of the participants felt the need to acquire more information about children's oral problems.

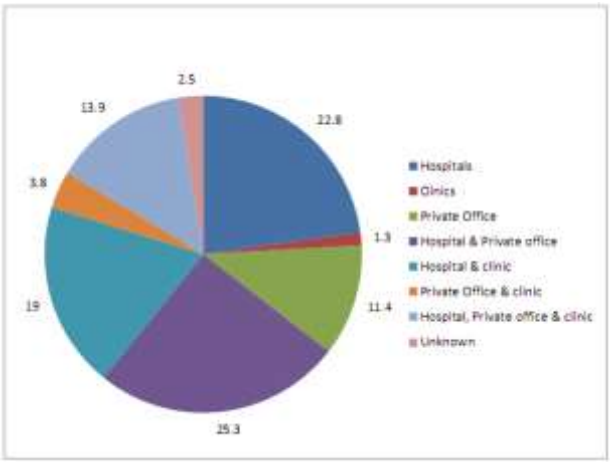


**Fig. 1: Distribution of participants based on the location of the therapeutic activity**

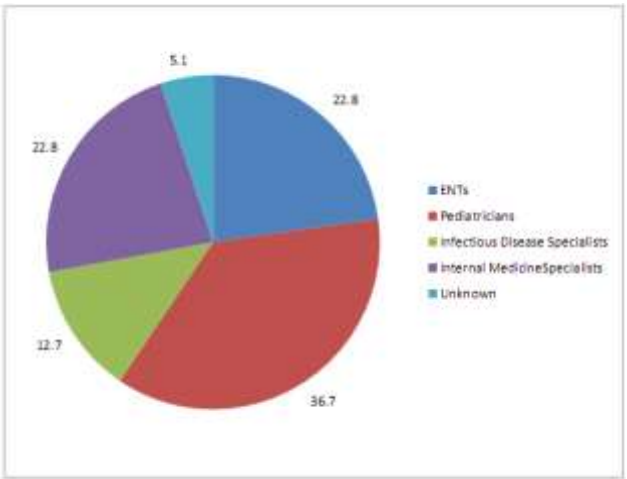


**Fig. 2: Distribution of participants based on specialty**

**Table 1: The relationship between demographic variables and the scores obtained from the questionnaires**

| Variable | Number | | Average | Standard Deviation | Significance Level |
|---|---|---|---|---|---|
| The location of practice | Hospital | 18 | 64.24 | 5.71 | 0.003 |
| | Clinic | 1 | 69 | 0 | |
| | Private Office | 9 | 64.88 | 7.55 | |
| | Hospital + Private Office | 20 | 68.63 | 7.27 | |
| | Hospital+ clinic | 15 | 68.29 | 5.78 | |
| | Clinic+ Private office | 3 | 66 | 3.46 | |
| | All | 11 | 74.85 | 5.61 | |
| Specialty | ENT | 18 | 66.46 | 9.72 | 0.019 |
| | Pediatrician | 29 | 70.05 | 6.59 | |
| | Infectious Diseases | 10 | 70.10 | 7.48 | |
| | Internal Medicine | 18 | 63.66 | 4.91 | |
| Number of Children Visited per Day | 10- 15 children | 8 | 69.67 | 7.32 | 0.016 |
| | 5- 10 children | 22 | 68.64 | 6.24 | |
| | 1- 5 children | 2 | 62.00 | 4.24 | |
| | More than 15 children | 23 | 70.75 | 6.53 | |

**Table 2: Frequency of questionnaire's answer distribution**

| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | Unknown | Total |
|---|---|---|---|---|---|---|---|
| Acute Herpetic gingivostomatitis | 7(9.0) | 9(11.5) | 12(15.4) | 29(37.2) | 21(26.9) | 1(3.1) | 79 |
| dental caries and bad breath | 0(0) | 2(2.5) | 4(5.1) | 27(34.2) | 46(58.2) | 0(0) | 79 |
| mouth breathing and malocclusion | 0(0) | 0(0) | 10(12.7) | 35(44.3) | 34(43.0) | 0(0) | 79 |
| poor oral hygiene and gingivitis | 0(0) | 0(0) | 3(3.8) | 31(39.2) | 45(57.0) | 0(0) | 79 |
| Fluoride toothpaste and mouthwash | 0(0) | 1(1.3) | 8(10.1) | 30(38.0) | 40(50.6) | 0(0) | 79 |
| Replacing avulsed teeth | 1(1.3) | 0(0) | 32(40.5) | 12(15.2) | 34(43.0) | 0(0) | 79 |
| avulsed tooth storage solution | 0(0) | 3(3.8) | 53(67.1) | 13(16.6) | 10(12.7) | 0(0) | 79 |
| acute maxillary infections, facial swelling under the eyes and around the nose | 0(0) | 1(1.3) | 5(6.3) | 39(49.4) | 34(43.0) | 0(0) | 79 |
| Acute dental infections of the lower jaw and swelling of the lower jaw and airway closure | 0(0) | 6(7.7) | 11(14.1) | 32(41.0) | 29(37.2) | 1(3.1) | 79 |
| chronic infection of primary teeth in children | 0(0) | 8(10.4) | 22(28.6) | 37(48.1) | 10(13.0) | 2(5.2) | 79 |
| prescribing antibiotics for acute dental infections | 0(0) | 6(7.7) | 11(14.1) | 36(46.2) | 25(32.1) | 1(3.1) | 79 |
| Non-prescription of antibiotics in chronic dental infections | 0(0) | 10(12.8) | 21(26.9) | 29(37.2) | 18(23.1) | 1(3.1) | 79 |
| Checking the status of tetanus vaccine in traumatized teeth | 2(2.6) | 14(17.9) | 25(32.1) | 19(24.4) | 18(23.1) | 1(3.1) | 79 |
| Long-term use of syrups and elixirs and dental caries | 0(0) | 2(2.6) | 16(20.5) | 35(44.9) | 25(32.1) | 1(3.1) | 79 |
| radiotherapy and chemotherapy, and dental caries and periodontal diseases | 0(0) | 0(0) | 7(9.0) | 30(38.5) | 41(52.6) | 1(3.1) | 79 |
| pericoronitis and trismus | 0(0) | 6(7.8) | 25(32.5) | 31(40.3) | 15(19.5) | 2(5.2) | 79 |
| antibiotic prescription for pericoronitis | 0(0) | 10(13.0) | 46(599.7) | 10(13.0) | 11(14.3) | 2(5.2) | 79 |

## DISCUSSION

In this studythe average knowledge score for the specialists in Kerman was 67.48 ± 7.36. This result showed that the specialists' knowledge score on children's oral problems in Kerman is acceptable and reasonable. The results of the study showed that half the participants (51.3%) acquired their knowledge on children's oral problems in medical school and only

6.3% of them acquired it from continuing education. Also, based on these results, 78.2% of the participants felt the need for further education on the matter and acquiring more information about children's oral problems.

In the study conducted by Bozorgmehr *et al*. it was stated that pediatricians don't get enough education on children oral health, and 31.7% of them acquired their knowledge from journals which is inconsistent with the results of this study.Specialists need to increasetheir knowledge about children's oral problems and continuing education programs, including programs related to common oral problems in children is necessary. Bozorgmehr also stated that 96.7% of study participants are interested in increased their information in the field of oral health [12]. In the study conducted by Eslamipour showed that 30% of the participants acquired their knowledge from fellow dentists and only 16% of them learned about oral health at the university.Also, 86% of the pediatricians in this study were willing to acquire more knowledge on the matter, which is more than the results of present study (78.2%) [13]. In addition, in the study conducted by Rabiei *et al.* 95% of the physicians believed that they needed training in conjunction with oral health [17].

The results of this study showed that the knowledge score of the specialists in Kerman on children's oral health is significantly higher for those who work both at a hospital and a private office compared to those who have a single activity, which is consistent with the results of the study conducted by Eslamipour. In their study reportedthat the knowledge and attitude level of the people who worked at both a private office and the public centers higher than those who only work at a private office [13]. The results of this study also showed that the knowledge score of the specialists in Kerman on children's oral problems was significantly higher in the specialists who visited more than 15 children per day compared to the specialists who visited less than 10 children per day. Eslamipour concluded in his study that a higher number of working hours in a week and the number of patients per day shows the physicians' workload, it has a positive effect on strengthening their attitude and people with a high workload and more experience as a result showed more willingness to help prevent dental problems in their patients, these results are consistent with the results of this study [13].

The more the number of the children visited per day it is more probable for the children to make a visit for their oral problems and as a result the physicians would make more efforts to acquire more knowledge on the matter from books, articles and their fellow dentists. This was also confirmed by Giuseppe et al in Italy. In this study which was conducted on pediatricians showed that those with more working hours and heavier workloads have a better attitude towards preventing oral diseases [18]. In the current study, 43% of the specialists had sufficient knowledge about the rapid replacing of the avulsed teeth from its alveoli socket, while the study conducted by Raouf *et al*. it was shown that physicians do not have enough informationdental emergencies such as extruded avulsed teeth caused by an impact[19]. Although physicians are capable of handling emergencies but do not usually receive enough training on this matter [20]. In the study conducted by Ahuja *et al.* only a small number of the physicians (17.4%) reposition the avulsed teeth back into the tooth socket and the majority of them showed low knowledge in this regard [21].

In the current study 32% of the physicians were aware of the necessity of prescribing antibiotics for acute dental infections; this level of knowledge is low due to the high prevalence of children's acute dental infections and the possibility of visitinga physician for it. Cope stated in his study that prescribing antibiotics to treat dental problems is different in various cases. Some of the physicians prescribe antibiotics for oral problems while others suffice to prescribing pain killers and giving health advices. Some physicians had disagreements about taking antibiotics for chronic oral diseases, while others believed that antibiotic is the first step in treatment, they also stated that they would prescribe antibiotics upon patients' request [22].

The results of this study showed that there is no statistically significant difference between the knowledge levels of different specialists; the reason behind this might be that all physicians receive the same basic education on dentistry during their general medical courses and there are no particular educational courses on oral problems and dentistry during their residency. Therefore, they all have the same amount of knowledge on the matter. In the study conducted by Bader et al. on the role of physicians on preventing dental diseases among children in preschool, they concluded that, given that dental caries is a preventable diseases, this prevention is best to start from the physicians' offices since at early age, people visit physicians more than dentists [23].

The inclusion of issues related to children's oral health in the curriculum of general medical schools and residency programs seems necessary with the increasing prevalence of dental caries, children's oral problems and the availability of physicians compared to dentists. This would help the specialists acquire the sufficient knowledge, skills and attitude to detect, diagnose, treat and refer clinical cases regarding children's oral health to dentists.

## CONCLUSION

The results of this study showed that the specialists' level of knowledge in Kerman on children's oral problems is sufficient. Meanwhile, it is suggested to hold regular continuing education programs to improve physicians' knowledge regarding this matter.

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