



Awareness of 6-8-year-old children's parents referring to Isfahan's health centers regarding preventive dental services

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Abstract

Background: To increase the utilization of preventive dental care, it is essential to enhance parents' awareness about these services. This study aimed to assess the awareness of parents regarding preventive dental services for their 6-8-year-old children at health centers in Isfahan.

Materials and Methods: This cross-sectional descriptive study involved 190 parents of children aged 6 to 8 years who visited health centers in Isfahan. Participants were selected using a multi-stage sampling method. A questionnaire was developed to collect demographic information and assess parents' awareness of fluoride therapy, fissure sealants, and their children's hygiene practices. Data were analyzed using Mann-Whitney tests, Kruskal-Wallis tests, and Spearman correlation coefficients ($\alpha = 0.05$).

Result: The mean parental awareness scores for preventive dental services, fissure sealants, and fluoride therapy were 9.38 (out of 20), 4.86 (out of 11), and 4.52 (out of 9), respectively. There was no significant correlation between parents' awareness of preventive dental services and their demographic information, including age, education level, employment status, and number of children ($p > 0.05$).

Conclusion: The findings of this study suggest that parental knowledge regarding preventive dental services is generally moderate. Given the documented effectiveness of information acquired through consultations with dentists and mass media, it is essential to enhance and prioritize educational efforts in this domain.

Keywords: Parents, Awareness, Dental Care

Introduction

Dental caries is the most common chronic infectious disease and the most prevalent childhood disease, affecting the development of permanent teeth, aesthetics, and the self-esteem of children. (1) This disease is both preventable and manageable, and, except in specific cases, tends to progress gradually.

This slow progression allows individuals the opportunity to implement appropriate preventive measures to effectively control their development. Consequently, with the implementation of suitable preventive actions, dental problems in children can be prevented. To achieve this goal, parents must play their role by ensuring regular refers to the dentist. Preventive dental services include various procedures aimed at maintaining oral health. One such procedure is the application of fissure sealants, which involves covering the grooves on the chewing surfaces of teeth to protect them from decay. Another important preventive measure is fluoride therapy, which can be

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administered in two ways: topically, through gels or varnishes, or systemically, by adding fluoride to drinking water. Additionally, space maintainers in orthodontics are used to prevent incorrect occlusion in the future, and serial extraction of primary teeth is performed to prevent malocclusion later on (2-6).

Preventive dental services can significantly reduce the incidence of dental caries. The first step in expanding the implementation of this type of dental treatment is to raise parents' awareness of these methods. Increasing parents' awareness and attitudes towards preventive dental services can be crucial in encouraging them to demand and utilize these services, leading to a reduction in dental caries among children (7). Scientific evidence shows that topical fluoride therapy performed by dentists can effectively reduce the prevalence of dental caries. On the other hand, since smooth tooth surfaces are more exposed to fluoride (1), and over 50% of caries in individuals under 20 occur in the grooves of teeth, there is a need to use fissure sealants as another method to prevent dental caries. It has been well established that sealants are more effective than topical fluoride in preventing caries on occlusal surfaces (8). Pit and fissure sealant therapy has been used for a long time to protect teeth from dental caries, especially in childhood. The materials used in this method, with their various properties, play an important role in preventing dental caries, particularly among children, and their success rate increases when used at the appropriate age and time (1). However, despite numerous supporting evidence for the effectiveness and safety of this method, the use of sealants is not as widespread as expected (9, 10). One of the barriers to utilizing preventive dental care is the lack of public awareness (11). A fundamental step in encouraging the use of preventive care is to increase parents' awareness and attitudes about the importance of these services, as

they play a primary role in maintaining and promoting their child's oral health (12, 13).

Zajkani et al (14) evaluated the awareness of mothers of children aged 7 to 10 years regarding methods for preventing dental caries in Zanjan city and concluded that the awareness level of mothers about the use of fluoride and fissure sealants was low. In the study by Zakirulla et al (15), Saudi Arabian mothers had good knowledge about fissure sealants and topical fluoride therapy, with their awareness of topical fluoride therapy being greater than that of fissure sealant therapy. Blumer et al (16) found a positive attitude among parents with greater awareness of preventive oral health methods, and parents from larger families were more informed about ways to prevent caries. Additionally, mothers had a more positive attitude towards fissure sealants compared to fathers.

Since determining the level of parents' awareness is essential before any planning for education and increasing their awareness, the present study aimed to assess the level of parents' awareness regarding these preventive services.

Materials and Methods

In this descriptive-analytical study, 190 parents of children aged 6 to 8 years who visited medical centers in Isfahan were selected using a multi-stage sampling method. Taking into account a 10% additional sample to compensate for potential dropouts, a final total of 190 participants were selected for the study. The multi-stage sampling was carried out as follows: in the first stage, stratified sampling was conducted from all regions of Isfahan city. In the next stage, cluster sampling was performed within each stratum, and finally, participants were selected from each cluster using simple random sampling.

A questionnaire was developed using questions sourced from similar articles (14, 17, 18). After coordinating with the management of medical centers

in Isfahan and providing the necessary explanations to the parents of children aged 6 to 8 years visiting these centers, the questionnaire was distributed to them. To quantitatively assess the content validity of the questionnaire, opinions from 10 faculty members in the Pediatrics and Community Health departments of the Khorasgan Azad University of Dentistry were collected. The questionnaire was validated using two methods: Content Validity Index (CVI = 0.98) and Content Validity Ratio (CVR = 0.92). Reliability was calculated using the Kuder-Richardson method. The coefficient for the awareness section regarding fissure sealants was found to be 0.898, for the awareness section regarding fluoride therapy, it was 0.798, and for all questions combined, it was 0.892, indicating good internal consistency of the measurement tool.

The prepared questionnaire consisted of three sections. The first section was designed to collect demographic information from participants (age, gender, education level, employment status, and number of children). The second section included 20 multiple-choice questions regarding parents' awareness of preventive dental services. A score of one point was assigned for each correct answer in the second section, while a score of zero was given for selecting "I don't know" or providing an incorrect answer. The third section contained 12 questions titled "Background Information," aimed at gathering data on how child health care is performed, such as brushing, using dental floss and mouthwash, the frequency of dental referrals, and sources of information regarding preventive dentistry included in the questionnaire.

. After completing the questionnaire, parents received explanations about preventive dental services and the significance of utilizing them. Finally, upon collecting the questionnaires, the responses were analyzed and evaluated in terms of frequency and percentage for each question using Spearman's correlation, Mann-Whitney, and Kruskal-Wallis tests in SPSS 24

software. A significance level of 0.05 was considered acceptable for the analysis.

Results

A total of 190 parents of children aged 6 to 8 years were studied, which included 187 mothers (98.4%) and 3 fathers (1.6%). Among these parents, 74 (38.9%) had one child, 97 (51.1%) had two children, and 19 (10.0%) had three children: The ages of the fathers and mothers of children whose one parent participated in the present study are as follows 17 fathers (8.9%) were in the age group of 20 to 30 years, 110 fathers (57.9%) were in the age group of 31 to 40 years, and 63 fathers (33.2%) were over 41 years old. The age of mothers was observed as follows: 32 mothers (16.8%) were in the age group of 20 to 30 years, 136 mothers (71.6%) were in the age group of 31 to 40 years, and 22 mothers (11.6%) were over 41 years old.

Table 1 shows the parents' responses regarding their awareness of preventive dental services. Correct responses were categorized as follows: 0 to 25% indicated poor awareness, 25 to 75% indicated average awareness, and 75 to 100% indicated good awareness. In the section on awareness of fissure sealant treatment, the highest awareness among parents was about the statement "Fissure sealant prevents decay in children's and adolescents' permanent teeth," with a correct response rate of 65.8%. The lowest awareness was regarding the question "How long does fissure sealant therapy last?" with a correct response rate of 12.2%.

In the section on awareness of fluoride therapy, the highest awareness among parents was regarding the statement "Fluoride strengthens teeth against decay," with a correct response rate of 81.6%. The lowest awareness was about the question "How long after fluoride gel treatment can the child eat?" with a correct response rate of 17.9%.

Table 1. Distribution of Frequency of Parents' Responses Regarding Awareness of Preventive Dental Services

Variable	Question	Correct Answer	Wrong Answer
Fissure Sealant	What does fissure sealant treatment mean?	43.7%	56.3%
	What is the purpose of fissure sealant therapy?	53.2%	46.8%
	Does the dentist inject anesthesia for sealing the child's teeth?	35.3%	64.7%
	Does the dentist need to grind the tooth before placing the sealant?	37.4%	62.6%
	What is the best time to refer to the dentist to check the placed sealant?	37.4%	62.6%
	Sealants prevent decay in children's and adolescents' permanent teeth.	65.8%	34.2%
	Sealants can be used on permanent adult teeth at risk of decay.	38.4%	61.6%
	Sealants act as a barrier preventing bacteria and food from sticking to the teeth.	63.2%	36.8%
	Which teeth are most important for sealing?	55.3%	44.7%
	At what age group should fissure sealant therapy be used?	43.2%	56.8%
	How long does fissure sealant therapy last?	13.2%	86.8%
Fluoride Therapy	Does fluoride strengthen teeth against decay?	81.6%	18.4%
	Does fluoride reduce decay-causing bacteria in the mouth?	81.6%	18.4%
	Does the dentist numb the tooth before fluoride treatment?	64.7%	35.3%
	Can only the dentist use fluoride gel for the child?	25.8%	74.2%
	For varnish fluoride treatment, does the dentist apply it with a brush on the child's teeth?	61.6%	38.4%
	How long after fluoride gel treatment can the child eat?	17.9%	82.1%
	At what age should fluoride therapy be performed?	18.9%	81.1%
	How often should one refer to the dentist for fluoride therapy?	34.2%	65.8%
	Is it necessary for the child to use fluoride mouthwash after each brushing?	65.8%	34.2%

According to the results shown in figure 1, the level of awareness among parents regarding fissure sealant was weak in 57 parents (30.0%), moderate in 100 parents (52.6%), and good in 33 parents (17.4%). For fluoride therapy, awareness was weak in 28 parents

(14.7%), moderate in 136 parents (71.6%), and good in 26 parents (13.7%). Overall, the awareness of parents regarding preventive dental services was weak in 50 parents (26.3%), moderate in 110 parents (57.9%), and good in 30 parents (15.8%).

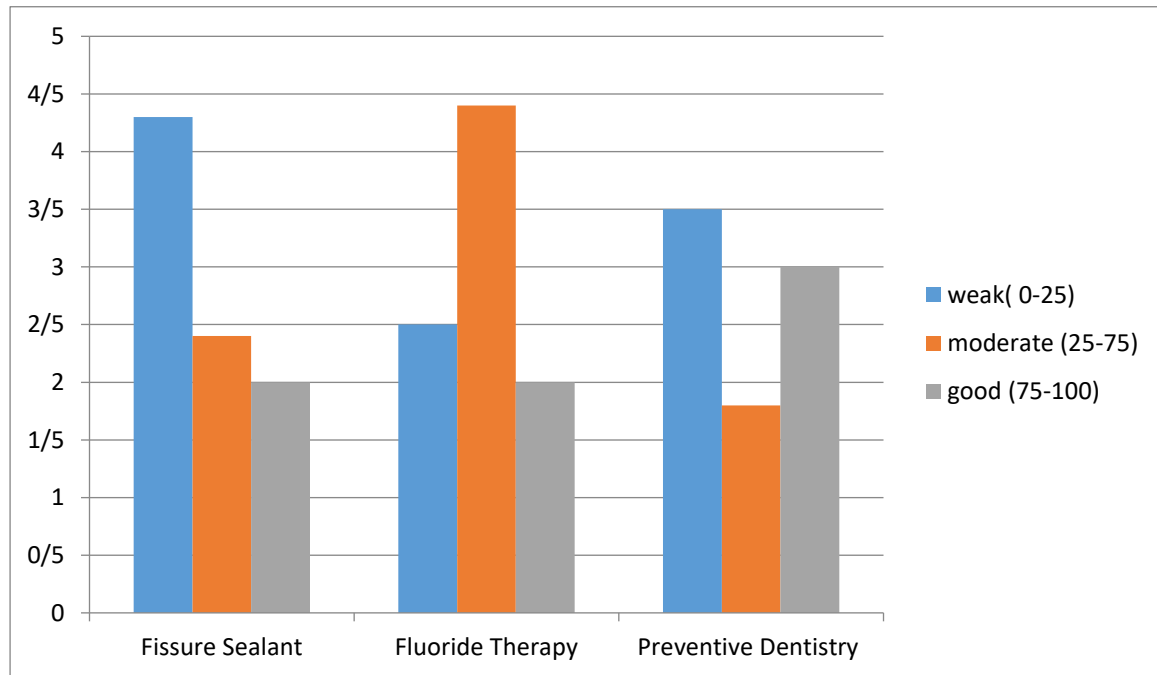


Figure 1. Parents' Awareness Levels Regarding Fissure Sealant, Fluoride Therapy, and Preventive Dentistry

Based on the results of the Spearman correlation test, there was no significant relationship between the parents' awareness scores regarding preventive dental services for children aged six to eight years and the father's age ($p = 0.730$), as well as the mother's age ($p = 0.779$). According to the Kruskal-Wallis test, no significant differences were observed in the parents' awareness scores regarding preventive dental services for children aged six to eight years based on the father's occupation ($p = 0.487$), mother's occupation ($p = 0.138$), father's education level ($p = 0.894$), mother's

education level ($p = 0.497$), and the number of children ($p = 0.280$).

According to the results of the Kruskal-Wallis test, no significant difference was observed in the parents' awareness scores regarding fissure sealant based on the frequency of dental visits ($p = 0.611$). Additionally, based on the Mann-Whitney test, no statistically significant difference was found in the parents' awareness scores regarding fissure sealant concerning the history of using fissure sealant ($p = 0.424$) (Table 2).

Table 2. Comparison of Parents' Awareness Levels Regarding Fissure Sealant Based on Frequency of Dental Referrals and History of Fissure Sealant Use

variable	Frequency of Dental Referrals	N	Mean \pm SD	P value
Frequency of Dental Visits	When a dental problem arises	118	4.71 \pm 3.42	0.611
	Every 6 months	21	5.76 \pm 3.59	
	Annually	48	4.85 \pm 3.34	
	Irregular refers	3	4.33 \pm 3.79	
History of Fissure Sealant Use	Yes	39	5.23 \pm 3.34	0.424
	No/Don't know	151	4.76 \pm 3.44	

According to the results of the Kruskal-Wallis test, no statistically significant difference was observed in the

parents' awareness scores regarding fluoride therapy based on the number of referrals to the dentist

($p = 0.695$). Additionally, the Mann-Whitney test indicated that there was no significant difference in the parents' awareness scores regarding fluoride therapy

concerning the history of using fluoride therapy ($p = 0.505$) (Table 3).

Table 3. Comparison of Parents' Awareness Levels Regarding Fluoride Therapy Based on Frequency of Dental Referrals for Children Aged 6 to 8 Years

Variable	Frequency of Dental Referrals	N	Mean \pm SD	P value
Frequency of Dental Referrals	When a dental problem arises	118	4.44 \pm 1.95	0.695
	Every 6 months	21	4.95 \pm 1.66	
	Annually	48	4.54 \pm 1.76	
	Irregular refers	3	4.33 \pm 2.89	
History of Fissure Sealant Use	Yes	76	4.42 \pm 1.78	0.505
	No/Don't know	11	4.59 \pm 1.95	
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In the present study, about one-third of parents preferred school educational sessions as their source of awareness regarding preventive dental services

(Table 4). Additionally, nearly half of the parents identified their dentist as the source of information about preventive dental services (Table 5)

Table 4. Frequency distribution of research units regarding the resources utilized for methods of preventing dental caries

Sources used	Number	Percentage
School health educator	13	6.8
Friends and relatives	34	17.89
Television, radio, newspaper	62	32.63
Family dentist or my child's dentist	90	47.37

Table 5. Frequency distribution of research units concerning preferences for the use of resources in methods of preventing dental caries.

Sources used	Number	Percentage
Radio and newspaper	2	1.05
Indifferent in source selection	31	16.32
Television	48	25.26
Educational booklet	50	26.32
Educational session at school	69	3

Discussion

The results of the present study indicated that parents have an average level of awareness regarding preventive dental services. This finding is consistent with the results of the study by Junger et al. (14) in the United States, which focused on adults regarding fissure sealants, and the study by Baradaran

Nakhjavani (19) in Tehran, which examined mothers concerning fluoride therapy. This alignment highlights the need for enhancing parents' awareness in the area of preventive dental services and the importance of necessary education in this field.

In the present study, less than twenty percent of parents were aware of the appropriate age for fluoride

therapy. In the study by Baradaran Nakhjavani (19), 50.4% of parents knew the suitable age for fluoride therapy, and one-third of parents were aware of when to refer to a dentist for fluoride therapy. This discrepancy can be attributed to the information and education provided by schools, health educators, or the media in Tehran. On the other hand, the responses to questions regarding the appropriate age for using fissure sealants and the duration of fissure sealant effectiveness were quite similar in both studies.

In the present study, no significant relationship was observed between the demographic information of parents and their awareness of preventive dental services. This finding is consistent with the results of the study by Ananda and Mythri (20) in India regarding fissure sealants, but it contradicts the findings related to fluoride therapy in the current study. Additionally, in the study by Baradaran Nakhjavani et al. (19), a significant relationship was found between parents' awareness of preventive services and their education level and employment status. In the study by Azad et al., parents' awareness was significantly and directly related to their education level, with fathers and mothers who had higher education levels showing greater awareness. Similarly, in the study by Kaur (21), parents' awareness regarding cavity prevention was associated with their education level. The study by Al-Aqili and Griffin also indicated that awareness of the benefits of fissure sealants was nearly five times greater among individuals with education beyond high school compared to those with less than high school education. A possible reason for this could be the existence of various channels for receiving information, especially with the expansion of virtual networks in recent years and their accessibility to everyone. Furthermore, considering the lack of correlation between parents' awareness and their employment status, the insufficient dissemination of

information regarding preventive dental services within various occupational support systems, including organizational insurance services, could also be a point to justify this finding.

In the study by Almalki et al. (22) examining fathers' attitudes and awareness of preventive dentistry in Saudi Arabia, it was found that nearly half of the fathers were aware of preventive dental methods. However, only 6% of the population actually utilized these preventive dentistry practices. But although awareness of preventive dentistry among Saudi parents was high, the level of utilization was directly related to their education and income.

In the study by Jadhav et al. (23), which investigated parents' awareness in one of the states in India, it was found that parents had a weak awareness of preventive dental methods. They showed poor knowledge regarding the use of fluoride toothpaste, similar to the study by Alshehri and Kujan (24), where respondents were unaware of the beneficial effects of fluoride in preventing dental issues. In the study by Lakshmanan and Gurunathan (25), 71% of participants had complete awareness of the impact of pit and fissure sealants in preventing tooth decay. However, in Jadhav's study, 94.5% were unaware of the application of fissure sealants in preventing decay. The limited awareness of preventive dentistry may be attributed to various factors, including restricted access to reliable sources of information.

According to the results of the present study, no significant relationship was observed between the history of referring to a dentist and the history of receiving fissure sealants and fluoride therapy, with the level of awareness of preventive dental services. This finding is consistent with the results of the study by Lakshmanan and Gurunathan (25) in India. One reason for this could be the insufficient time dentists allocate to explaining preventive dental services that could help to increase parents' awareness.

Additionally, the general public often tends to consult dentists only for treatment solutions rather than for preventive care, especially when dental health is already compromised. This behavior further contributes to the lack of awareness about the importance of preventive measures.

Numerous studies have shown that face-to-face education is the most effective method for health education compared to other teaching approaches (3). In the present study, about one-third of parents preferred school educational sessions as their source of awareness regarding preventive dental services. Additionally, nearly half of the parents identified their dentist as the source of information about preventive dental services. These results are consistent with the findings of the study conducted by Junger et al. (14). Ultimately, in pediatric dentistry, it is important to focus on preventive measures by educating parents about oral health. This includes ongoing education, regular check-ups, and the application of clinical preventive techniques as the child develops (26). Therefore, it is essential to implement effective and targeted preventive health methods for children. This study revealed the strengths and weaknesses of parents' awareness regarding preventive services. Therefore, by identifying these weaknesses, they can be prioritized in educational programs. It should also be noted that to achieve a more accurate understanding of awareness levels in the community, further research at the national level and over a longer time frame is recommended. This will enable more precise planning and a broader perspective in the field of community oral health education and promotion.

Parents need to be aware of preventive dental measures, as this can help maintain oral health and combat dental issues. A lack of knowledge about these preventive methods can be passed down to children, leading to poor oral habits and various dental problems. Prevention is always better than treatment,

as it is beneficial in many ways, including cost-effectiveness. To reduce the burden of oral diseases and promote oral health, there is a need to raise awareness about preventive measures among the public.

Conclusion

The findings of this study indicate that parental awareness regarding preventive dental services is at a moderate level. Considering the proven effectiveness of information obtained through consultations with dentists and mass media, it is crucial to strengthen and prioritize educational initiatives in this field. Increasing awareness among parents and the community about the importance of preventive services can contribute to improving oral health and reducing dental problems.

Conflict of Interests:

The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial, or non-financial in this article

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