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Evaluation of mothers' awareness about the presence of first permanent molar teeth among the 6-8 year old children in Yasuj, Iran, 2016

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Original Article

Abstract

BACKGROUND AND AIM: First permanent molar teeth (FPMT) erupt slowly and without any side effects among the 6-8 year old children. Sweet snacks consumption, parents' unawareness about existence of these teeth and lack of attention to oral health care cause early caries among children in these ages. First permanent molars (FPMs) have a very important role in oral cavity among children. Therefore, missing of these teeth causes serious mastication and dental problems. In the present study, mothers' knowledge on the presence of FPMs in their children's mouth and its effect on health of these teeth were evaluated.

METHODS: In this cross sectional study, 350 elementary school students of the 1st and 2nd grades and their mothers from Yasuj, Iran, were evaluated in 2015-2016. After sampling, questionnaires were used for data collection and were filled out by mothers. Then, each student was visited separately and the decayed, missing, and filled teeth (DMFT) index of FPMs was registered. Data were analyzed statistically using independent samples t-test, Mann-Whitney test and Spearman's rank correlation coefficient.

RESULTS: The results showed that the difference between mothers' knowledge score about the presence of FPMs in their children's mouth was not significant regarding their education level, occupation and age. The same result was obtained after evaluation of DMFT index of children's FPMT.

CONCLUSION: Mothers' education about methods of dental caries prevention and protective oral health care is essential.

KEYWORDS: Decayed, Missing, and Filled Teeth Index; Permanent Molar; Tooth Eruption

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First permanent molar teeth (FPMT) erupt slowly without any important complication at the ages of 6-8.

These teeth are located normally posterior to the second deciduous molar teeth. First permanent molars (FPMs) have the largest size among the teeth in the oral cavity and also play the most important role in mastication, occlusion, correct positioning of other teeth, esthetics and preservation of vertical orientation.^{1,2}

Decayed, missing, and filled teeth (DMFT) index of FPMs among individuals above 12 years old consists about 29% of DMFT index

of all teeth in oral cavity. It shows that caries of FPMT and its complications include the largest part of total DMFT index in mouth.³

FPM tooth is an appropriate place for retention of food and sweet snacks due to the fissures and deep pits on its surface. This makes the tooth predisposed to early caries very soon after eruption and reserves the larger proportion of caries in oral cavity. Other factors that make this tooth prone to caries and early extraction include use of sweet snacks and sticky candies, lack of skill and attention to oral health care among children of this age.^{4,5}

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Some parents believe that permanent teeth start eruption after exfoliation of all deciduous teeth, however, in fact FPMs erupt when deciduous teeth are present in the oral cavity. Unawareness of existence of permanent teeth is one of the most common reasons for early extraction of them. Unfortunately, extensive caries and pulp exposure happen in early years of eruption due to the parents' unawareness of the permanent nature of these teeth. Decayed FPMT may not be restorable or may have poor prognosis if their dental treatment is postponed.⁶

One of the goals of World Health Organization (WHO) was achieving DMFT index lower than 1 for 12 year old children by the year 2010, however, studies performed in different cities of Iran show that the fact is far from this goal.⁷

According to the key role of FPMs in children's mouth, it is necessary for parents to be aware of the existence of these teeth in order for more care on them. Therefore, the researchers decided to evaluate the mothers' awareness about the presence of these teeth in their children's oral cavity.

Methods

This cross-sectional study has been performed on 350 students of 1st and 2nd grades of 17 elementary schools and their mothers in Yasuj and the suburbs, Iran, in 2016. The study protocol was approved by the Ethics Committee of Yasuj University of Medical Sciences with the code number 93.12.25.57. The sample size was estimated according to a similar study conducted in Mashhad, Iran ($P = 0.35$, $d = 0.05$) using the formula $N = z^2 \cdot p(1-p)/d^2$.⁸ Then, a list of public and private elementary schools for both girls and boys was obtained from Yasuj department of training and education.

The sample size was accounted considering the ratio of students in state and private schools and also according to the girl to boy ratio. 17 schools were selected by simple randomization, then the researchers attended the schools and performed

sampling systematically according to the lists of students' names. Every student included in the study was given a questionnaire. The questionnaires consisted of questions about eruption process of FPMs, mothers' knowledge about existence of these teeth in their children's mouth and mothers' demographic characteristics. The validity and reliability of the questionnaire were confirmed according to the study by Sadat-Sajadi et al.⁹ The validity and reliability of questions were 91% and 82%, respectively.⁹ Questionnaires were filled by mothers at home and returned to school. Students who did not take the questionnaire back were excluded. The questionnaires were collected, then, the students' oral cavities were examined for presence of FPMT and DMFT index of these teeth.

Questionnaires included 8 questions related to mothers' knowledge on FPMT eruption process including location, timing and replacement. Mothers' awareness about presence of FPMT in their children oral cavity was another question of the questionnaire. Correct and incorrect answers were given a score of 2 and 0, respectively, in addition, if parents did not know the answer of a question, it was scored 1.

After collecting the questionnaires and scoring them, data were entered in SPSS software (version 21, IBM Corporation, Armonk, NY, USA) and statistically analyzed using Independent Samples t-test, Mann-Whitney test and Spearman's rank correlation coefficient. The significance level (α) was considered as 0.05 in this study.

Results

In this study, 350 students and their mothers were studied. Children were within the age range of 6-8 years with the mean and standard deviation (SD) of 7.25 ± 0.69 years. The mean and SD of mothers' age was 34.08 ± 5.44 years. Minimum and maximum ages of mothers were 22 and 49 years, respectively. Demographic characteristics of children and mothers are listed in table 1.

Table 1. Demographic indices of children and their mothers

Variant	n (%)
Sex	
Boy	179 (51.1)
Girl	171 (48.9)
Mothers' occupation	
Unemployed	285 (81.4)
Employed	65 (18.6)
Number of children in family	
2 and less	184 (52.6)
3 and more	166 (47.4)
Mothers' education	
Diploma and lower	251 (71.7)
Higher than diploma	99 (28.3)

The mean and SD of score of parents' awareness related to existence of FPMT in their children's mouth was 8.28 ± 3.03 . The minimum and maximum scores were 3 and 17, respectively.

Table 2 shows the rate of children with or without FPMs in their mouth and their mothers' awareness of it.

According to the results, mothers' knowledge score about the presence of FPMT in their children's mouth did not differ statistically regarding their education level ($P = 0.21$), occupation ($P = 0.06$) and age ($P = 0.20$).

The mean and SD of DMFT index of FPMT was 1.35 ± 1.34 . The results indicated that the difference between DMFT index of FPMT in children's mouth was not significant regarding their mothers' education level ($P = 0.63$), occupation ($P = 0.60$) and age ($P = 0.12$).

Discussion

According to the results of this study, DMFT index of FPMT is estimated to be 1.35 ± 1.34 . Unfortunately, there was not significant

correlation between DMFT index of FPMs among 6-8 year old children and their mothers' demographic characteristics like age, occupation and education level. The study by Vejdani and Simaei also showed that the level of parents' education has no positive effect on prevention of FPMT caries.¹⁰ A similar study by Vanobbergen et al. showed that none of the parents' demographic and behavioral indices cannot predict susceptibility of their children to dental caries.¹¹ This may be due to the mothers' unawareness of importance of these teeth, their permanent nature, caries preventive methods like fissure sealant and dental protective methods. Therefore, enhancing the knowledge of mothers on the importance of FPMT in their children's mouth and education about caries preventive methods are urgent needs.

In the present study, only 30.0% of mothers knew that eruption time of FPMT in children's mouth is 6-7 years of age, 30.6% of them did not have any information and 39.4% gave wrong answers, respectively. Luca et al. studied 215 mothers of pre-school children in 2013; 20.9%, 26.5%, and 47.9% of the mothers knew the precise time of FPMT eruption, gave wrong answers to the question, and did not have any information, respectively.¹² Another study by Jaradat et al. showed that 82.0% of parents were not aware of the exact time of the FPMT eruption.¹³ Compared to similar studies, mothers participating in the present study had slightly more information about the time of FPMT eruption, however generally, their knowledge was not significant in this regard.

Table 2. Rate of children with or without first permanent molar teeth (FPMT) in their mouth and their mothers' awareness about it

	Rate of children whose mothers indicated the lack of FPMT in their children's mouth	Rate of children whose mothers indicated the presence of FPMT in their children's mouth
Rate of children with FPMT in clinical examination	295	1
Rate of children without FPMT in clinical examination	45	9

FPMT: First permanent molar teeth

In the present study, 40.0% of mothers knew the correct position of FPMT in their children's mouth (exactly posterior to second deciduous molar teeth), and 20.9% and 39.1% gave wrong answers and did not have any information about it, respectively. Only 20.9% of mothers knew that FPMT erupt approximately at the same time of anterior permanent teeth eruption. In the study by Luca et al., only 21.39% of mothers gave the correct answer to the question regarding the position of FPMT eruption.¹² This indicates that the level of awareness about the location of FPMT was higher among participants in the present study compared to the study by Luca et al.¹²

In the present study, more than half as 53.1%, 26.0%, and only 20.3% of mothers did not know whether FPMT in their children's mouth would be replaced, believed that it would be replaced, and knew that it would not be replaced after extraction, respectively. In the study by Luca et al., 24.7% of mothers stated that FPMT replaced in their children's mouth after extraction.¹² Hence, the results of this study are similar to those in the present study. The importance of FPMT may remain unknown for most of mothers due their incorrect information about replacement of these teeth in their children's mouth after extraction.

The mean score of mothers' knowledge about eruption process of FPMT in areas including existence, timing, positioning and replacement after extraction in their children's mouth was 8.28 ± 3.03 with a total score of 18. There was not significant correlation between score of mothers' knowledge and their demographic characteristics like age ($P = 0.20$), occupation ($P = 0.06$) and education ($P = 0.21$). The study by Luca et al. in Romania showed that the mothers' education had positive effect on their knowledge about eruption process of FPMT, however, their occupation was not effective.¹² Another study by Jaradat et al. showed that the level of parents' education do not affect their knowledge about FPMT

eruption.¹³ This indicates that even educated parents need to learn more about eruption process of FPMT.

In the present study, 16.2% of mothers were exactly aware of the presence or lack of FPMT in their children's mouth, i.e., 11.7% of children had FPMT in their mouth and their mothers could find it out and 4.5% of mothers were aware of the lack of FPMT in their children's mouth. A study by Zouashkiani and Mirzakhan showed that 34.7% of parents were aware of the presence of FPMT in their children's mouth.⁸ In a study carried out in Kerman, Iran, 82.5% of parents were aware of eruption of the FPM tooth in their children's mouth.⁹ The higher level of knowledge among parents in this study may be due to the oral health education during the study.

Mothers' knowledge about the existence of FPMT in their children's mouth did not have significant correlation with DMFT index of these teeth. In other words, DMFT index of FPMs were equal for both children whose mothers were and were not aware of eruption of these teeth in their children's mouth. This is similar to the results of the studies by Sadat-Sajadi et al.⁹ and in contrast with Zouashkiani and Mirzakhan,⁸ which indicated that the DMFT index was lower for children whose mothers were aware of the presence of FPMT in their children's mouth.^{8,9}

Conclusion

According to this study, mothers' awareness about the existence of FPMT in their children's mouth and also DMFT index of these teeth are not affected by their education, occupation and age. Therefore, training mothers about the presence of these teeth in mouths of the 6-8 year old children is essential. In order to reduce caries level and DMFT index in children oral cavity, mothers' should be trained about methods of protective oral health care.

Conflict of Interests

Authors have no conflict of interest.

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References

1. Pinkham JR, Casamassimo PS. Pediatric dentistry: Infancy through adolescence. 3rd ed. Philadelphia, PA: W.B. Saunders; 1999.
2. Chandra S, Chandra S. Textbook of pedodontics. 1st ed. New Delhi, India: Jaypee; 2003. p. 243.
3. Aghahosseini F, Enshaei M. DMFT evaluation of upper and lower first permanent molars in patients examined in oral medicine & diagnosis department at Faculty of Dentistry, Tehran University of Medical Sciences (1997). *Journal of Dental Medicine* 2001; 14(4): 50-9. [In Persian].
4. McDonald RE, Avery DF, Dean JA. Dentistry for the child and adolescent. 8th ed. Philadelphia, PA: Mosby; 2004.
5. Mortazavi M, Ebrahimi Z. Caries prevalence of first permanent molar tooth in 6-9 year old children in Shiraz. *Journal of Islamic Dental Association of Iran* 1997; 9(3-4): 69-81. [In Persian].
6. Fallahinejad Ghajari M, Razavi S. Treatment of severely decayed first permanent molars with poor long term prognosis in children: To extract or to restore? *J Dent Sch* 2006; 23(4): 628-35. [In Persian].
7. Khodadadi E, Khafri S. Epidemiological evaluation of DMFT of first permanent molar in 12 year old students of Babol city; Iran (2011-2012). *J Babol Univ Med Sci* 2013; 15(5): 102-6. [In Persian].
8. Zouashkiani T, Mirzakhani T. Parental knowledge about presence of the first permanent molar and its effect on health of the tooth in 7-8 years-old children (2006). *J Mashad Dent Sch* 2007; 30(3-4): 225-32. [In Persian].
9. Sadat-Sajadi F, Malek-Mohammadi T, Nabavizadeh SA, Ghanbari S, Montajab F. The awareness of parents of 7-8-year-old children in Kerman about presence of the first permanent molar and concepts of preventive dentistry and effect of education on level of parent's awareness. *J Oral Health Oral Epidemiol* 2014; 3(1): 30-6.
10. Vejdani J, Simaei L. The associated factors of permanent first molar caries in 7-9 years old children. *Journal of Dentomaxillofacial Radiology, Pathology and Surgery* 2014; 3(1): 23-8.
11. Vanobbergen J, Martens L, Lesaffre E, Bogaerts K, Declerck D. The value of a baseline caries risk assessment model in the primary dentition for the prediction of caries incidence in the permanent dentition. *Caries Res* 2001; 35(6): 442-50.
12. Luca R, Stanciu I, Ivan A, Vinereanu A. Knowledge on the first permanent molar-audit on 215 Romanian mothers. *Oral Health Dent Manag* 2003; 2(4): 27-32.
13. Jaradat T, Ghazlan M, Showeiter M, Otom A, Kana'an N. The awareness of parents of the time of eruption of first permanent molar and caries prevalence in this tooth in children in the south of Jordan. *Pakistan Oral & Dental Journal* 2013; 33(3): 498-501.