

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

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Original Article

Abstract

BACKGROUND AND AIM: The first permanent molar is the first permanent tooth that erupted in 6-7-year-old and is very high risk for caries. Parent's awareness has very important role in oral and dental health of children. The aim of this study was to assess 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 the relation between parents' awareness and the decay, missing, and filled teeth (DMFT) of children's first permanent molar tooth and effect of education on level of parent's awareness.

METHODS: In this community based and interventional study, 296 students at the age of 7-8-year-old were selected randomly from public and private schools of Kerman. A questionnaire was completed by the parents that included parent's awareness about presence of first permanent molar, oral and dental hygiene principals, and preventive methods. Then, the students were examined and the DMFT of first permanent molar were recorded and educational pamphlets have distributed between parents. The same questionnaire was completed by parents after 3 weeks. The data were analyzed by paired t-test and linear regression.

RESULTS: The mean of DMFT of the first permanent molar in female students was 1.64 ± 11.43 and male students were 1.51 ± 1.54 . The mean scores of related to parent's awareness before and after education were 12.06 and 15.13, respectively, which was statistically significant ($P < 0.01$).

CONCLUSION: There were no statistical significant different between parent's awareness and DMFT of first permanent molar. The level of parent's awareness was increased significantly after education ($P < 0.05$).

KEYWORDS: Awareness, Decay, Missing, Filled Teeth, First Permanent Molar

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The first permanent molar tooth is erupted at the age of about 6-7-year-old, and is one of the most important permanent teeth in the arch. According to high caries prevalence of primary teeth in Iranian children, this tooth is also very

susceptible to caries at lower ages. This tooth due to special anatomic form at occlusal surface, strong roots and surrounding bone has an important role in chewing action and maintaining the vertical height of the face.¹

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The first permanent molar is the first tooth of the permanent dentition which has the principle role in chewing mechanism. Consequently, its effect on food digestion and general growth of the child is undeniable. The existence of this tooth is essential for establishment of a functional and balanced occlusion, also it has important role in orthodontics and maxillofacial trauma diagnosis and treatments.²

The eruption of the first permanent molar tooth is done at the age that the child is affected by caries predisposing factors, such as high consumption of carbohydrates in between meals, poor oral hygiene and parents' lack of information about this tooth eruption. Therefore, the first permanent molar has been known as the tooth susceptible to caries in school children.^{1,3}

Even in countries that have applied national programs of caries prevention, still the occlusal surface of the first permanent molars is local that is afflicted with caries a little after the eruption of tooth. The studies have indicated that most parents have a little information about the first permanent molar and susceptibility of this tooth to caries. They often refer their children to dentist when there are acute pains of primary teeth or first permanent molars. In these cases, it is possible that the dental crown of the first permanent molar has been previously damaged.³

Some studies have shown that the parent's awareness of the eruption time of the first permanent molar tooth has great effect on this tooth health of their children.¹ Luca et al. investigated the preschool children parent's awareness of the eruption time of the first permanent molar tooth in Rumania. He found that parents had little information about the eruption time and position of the first permanent molar tooth in arch.³ Also, Zouashkiani and Mirzakhan in his study in Mashhad indicated that only 13.4% of parents were aware of the existence of the first permanent molar in oral of their children and a few of the children had

appointment with dentist.¹

Parents have a very important role in controlling and preventing of oral and dental diseases in their children. Health beliefs of children are formed before the age of 11 or 12. This means that the family has a very important role in creating children health behaviors in future.⁴ A clinical trial study in China indicated that educating oral hygiene methods to parents had a significant role in elevating of their knowledge about preventive dentistry and decreasing children teeth caries.⁵

The aim of this study was to assess 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 the relation between parent's awareness and the decay, missing, and filled teeth (DMFT) of children's first permanent molar tooth and effect of education on level of parent's awareness.

Methods

In this community based and interventional study, 340 students at the age of 8-9-year-old were selected randomly from public and private schools of Kerman. The inclusion criteria of this study include children who have no systematic disease or developmental abnormalities of teeth and the first permanent molar teeth have erupted in their mouths. In this study, the sampling was multistage. In the first stage the list of all primary schools of first and second regions of education organization were provided. Noticing that the students from these two regions are different based on cultural and socio-economic status; therefore the participating students in the research were selected from both regions. In other words, these two regions were considered as stratified. Noticing that these two regions included public and private boys' and girls' schools, so in the next step these schools were considered as cluster, and randomly a number of public and private boys' and girls'

schools were selected. Then, in each school the individuals with considering the inclusion criteria were selected in each class and they entered the study.

After obtaining informed consent from parents, they were asked to fill a questionnaire. The questionnaire of this study was a researcher constructed questionnaire which was organized based on similar previous studies and the research aims. Its validity and reliability were confirmed. The validity of questions related to the awareness of the presence of the first permanent molar tooth, oral and dental hygiene, and preventive methods were 91%, 88%, and 95% respectively. The reliability of questions was calculated based on Cronbach's alpha, which the reliability of questions related to awareness of the presence of the first permanent molar tooth, oral and dental hygiene, and preventive methods were 82%, 76%, and 72% respectively.

The questionnaire included child's demographic factors such as age, sex, and child birth rate. Also, level of education and job were asked. Totally, the questionnaire included 19 questions, that six questions were about the parent's awareness of the presence of the first permanent molar tooth (existence of first permanent molar, time of eruption, position of the first permanent molar, and lack of replacement teeth); eight questions were about the awareness of principles of oral and dental hygiene (supervision on child tooth brushing, performing dental floss, times and duration of tooth brushing, time of replace tooth brush, parental oral hygiene, transmission of dental caries bacteria, and regular dental visits); and five questions were about awareness of preventive methods (child's diet, time of taking carbohydrates, use of fluoridated toothpaste, use of fluoridated mouth wash, and performing fissure sealant). The answers of questions were includes correct (score 2), incorrect (score 0), and I do not know (score 1).

After completion of the questionnaire by parents, the oral examination of children was performed by blunt ended explorer, dental mirror and flashlight, and DMFT of the first permanent molar teeth was recorded [criteria recommended by WHO (World Health Organization), 1997]. Then educational pamphlets which were designed and published based on the study aims were distributed to parents.

Three weeks later, again the same questionnaire was distributed to the parents and they were asked to fill them. Among 340 students participating in the study, 44 were omitted from the study because their parents had not completed the questionnaire. At the end, the total number of sample was 296. Finally, the data were analyzed by paired t-test and in order to consider the effect of variables on individuals' awareness, the linear regression model was used (the significant level was considered 0.05).

Results

Among 296 students participating in this study, 138 were male (46.6%), and 158 were female (53.4%). The average age of participating students was 8.34 ± 0.59 . The mean of DMFT of the first permanent molar tooth of female students was 1.64 ± 1.43 and male students were 1.51 ± 1.54 , which had no significant difference.

About the father's level of education, the most frequency was in diploma group (40.8%), while about the level of education of mother the most frequency was in bachelor group (38.9%). About 86.0% of fathers and 19.8% of mothers were employed. About the child birth rate, 33 students were single child and among others 46.3% were the first child of the family.

The comparison of the mean of scores of the investigated variables (awareness of the presence of the first permanent molar, awareness of oral and dental hygiene principles, and awareness of preventive methods) was calculated before and after

distributing educational pamphlets as following: score 2: correct answer, score 1: the answer "I do not have information", and score 0: incorrect answer. The mean scores of total questions of all three variables before education was 12.06 and after education was 15.13 which was statistically significant ($P < 0.01$). The difference of scores, before and after education indicates that the most effects of education were on awareness of oral and dental hygiene principles (score difference = 1.09), awareness of preventive methods (score difference = 1.04) and awareness of the presence of the first permanent molar (score difference = 0.93) respectively (Table 1).

The results indicate that there was no statistical significant different between parents' awareness of the presence of the first permanent molar and DMFT of this tooth

(Table 2). There was no statistical significant different between demographic variables such as father and mother educational level, father and mother employment, child birth rate and parents' awareness of the presence of the first permanent molar tooth. But, the parents whose children studied in private schools had higher awareness of the presence of the first permanent molar and this was statistically significant (Table 3).

The mean of DMFT of students of public and private schools was 1.38 ± 1.40 and 1.92 ± 1.56 , respectively. So that, the mean of DMFT of private school students was significantly higher ($P = 0.02$).

From between 105 examined students in private schools, filling = 5.7%, fissure sealant = 2.8%, and decay = 25.7% and from 187 public school students, filling = 0.5%, decay = 44.3% and fissure sealant = 0.0%.

Table 1. The comparison of the mean of scores of the investigated variables before and after education of parents in Kerman

Variables	Mean of scores before education (%)	Mean of scores after education (%)	Difference of scores before and after education (%)	P
Awareness of the presence of the first permanent molar	2.22 (26.25)	3.15 (28.50)	0.930	< 0.01
Awareness of oral and dental hygiene principles	7.03 (44.00)	8.12 (50.70)	1.090	< 0.01
Awareness of preventive methods	2.81 (28.10)	3.86 (38.60)	1.041	< 0.01

Table 2. Relation between Kerman parents' awareness with three variables and the mean of decayed, missing, and filled teeth of permanent first molar

Variables	Primary coefficients		Adjusted coefficients	
	Regression coefficient (β)	P	Regression coefficient (β)	P
Awareness of the presence of the first permanent molar	-0.16	0.78	-0.001	0.98
Awareness of oral and dental hygiene principles	-0.18	0.75	0.004	0.95
Awareness of preventive methods	-1.25	0.21	-0.070	0.25

Table 3. The effect of demographic variables on Kerman parents' awareness of the presence of the first permanent molar

Variables	Primary coefficients		Adjusted coefficients	
	Regression coefficient (β)	P	Regression coefficient (β)	P
Level of education of father	0.160	0.09	0.490	0.07
Level of education of mother	0.128	0.04	-0.092	0.40
Mother employment	0.070	0.27	0.020	0.76
Child birth rate	0.037	0.55	-0.009	0.89
Type of school	0.185	0.02	0.170	0.05

Discussion

The results of this study indicated that there was no statistical significant different between the parents' awareness and the mean of DMFT of student's first permanent molar tooth. Furthermore, the education significantly increased parents' awareness of the presence of the first permanent molar tooth, preventive methods, and oral and dental hygiene principals.

The acquaintance amount of parents about the dental caries and preventing methods of their children's teeth is different around the world.⁶ On the other hand; the role of parent's awareness in their children oral health is undeniable. The first permanent molar of the children is erupted at the age that most parents are unaware of its presence. This tooth due to its special morphologic shape is susceptible to caries.^{3,6}

In the present study, the mean of DMFT of the first permanent molar teeth of 7-8-year-old students was 1.57. These results were approximately the same as the studies of Zouashkiani and Mirzakhan in Mashhad and Sadeghi in Rafsanjan, which the mean of DMFT of the first permanent molars were 1.38 and 1.90, respectively.^{1,7} but the mean of DMFT of the first permanent molars in northern city of Iran were 0.6 that is lower than our study.² In another developing countries like Taiwan, Warren et al. shown that the mean of DMFT of the first permanent molars were 1.19.⁸

The first permanent molars are very important teeth in permanent dentition and the eruption of them is done at the age that most of parents have not awareness about it and may do not supervised tooth brushing of their children. So these teeth are high risk for dental caries.

In this study, 18.5% of parents were not aware of the presence of the first permanent molar of their children which was significantly less in comparison with Zouashkiani and Mirzakhan study (34.7%).¹ But, the results of the present study were approximately the

same as Luca et al. study in which 20.9% of mothers were aware of the presence of the first permanent molar tooth of their children.³

Furthermore, there was no statistical significant different between parents awareness of the presence of the first permanent molar tooth, oral and dental hygiene principals, caries preventive methods and the mean of DMFT of this tooth ($P = 0.98$). Unlike this study, in Zouashkiani and Mirzakhan study, there was significant different between the mean of DMFT of the first permanent molar and parent's awareness of the presence of this tooth of their children.¹ It is very important that parents be aware from preventive dentistry like the age of onset and check up intervals of dental visit, methods of tooth brushing, use of fluoride and healthy nutrition pattern.

In addition to these results, this study indicates that education affects parent's awareness of the presence of the first permanent molar tooth, oral and dental hygiene, and preventive methods significantly ($P < 0.05$). These results have been confirmed in many studies.⁹⁻¹¹

Awareness from preventive dentistry can lead to better performance and dentist and physicians, especially pediatricians are very important role in education of these factors to parents. Studies show that parents that had a dental visit, their children were more likely to have a dental visit.¹² It seems for motivate the parents to improve oral health measures in their children, we should elevating their awareness of the negative impact of first permanent molar caries on their child's face and jaw development and quality of life.

In this study, the parent's awareness of caries prevention methods was 28.1% that in comparison with Luca et al. (46.1%) and Jafari et al. (57.6%) studies was significantly less.^{3,13} But in a study in Tehran was shown that only 5.4% of mothers have acceptable awareness from caries preventive methods that was less than our study.¹⁴

In the present study, the parents'

educational level has no effect on their awareness of the presence of the first permanent molar, the oral and dental hygiene principals and preventive methods. This is while some studies had similar results with the present study.^{1,15,16} However, other studies reported direct relationship between parents' educational level and their awareness of the mentioned factors.^{3,13,14,17,18}

This study indicated that parents' employment had no effect on their awareness of the presence of the first permanent molar of their children, while mother employment status had significant role in their awareness of caries prevention methods. So that, housewife mothers in comparison with employed mothers had higher level of awareness, that these results were contradictory to the results of Zouashkiani and Mirzakhan,¹ Luca et al.³ and Rajab et al.¹⁹ studies. Also, Baradaran Nakhjavani et al. found that employed mothers have more knowledge than housewife mothers about preventive dentistry.¹⁴ These difference in results can be related to cultural differences between different communities.

This result can be justified in this way that housewife mothers due to having more opportunity can achieve more information from public media. Because, today in Iran public media has extensive activity in the field of increasing people acquaintance level with public and oral health, this factor can be effective.

In the present study, the mean of DMFT of the first permanent molar tooth of private schools students was significantly more than public school students ($P < 0.05$). The disaggregated review of DMFT index indicates that filling component is seen more in the first permanent molar of these students. This can be related to better economic status of parents of children in private schools and paying more attention to dental visit and caries treatment. In fact this

result show that always high income does not lead high awareness from preventive dentistry and only children in these families can receive more dental treatment than low come families. Also in our country, treatment rather than prevention is considered and therefore knowledge from caries preventive methods is very low.

Conclusion

The results of this study indicated that there was no statistical significant difference between parent's awareness and the mean of DMFT of children's first permanent molar tooth. Also, education increased parent's awareness about the presence of the first permanent molar tooth, preventive methods and oral and dental hygiene principals significantly.

Based on the results of this study, we can conclude that education is one of the effective methods to increase parent's awareness in the field of their children oral health. If education is accompanied with relevant pictures it will be more effective and better memorized. Also, it is important that parents receive information about the first permanent molar at their children age of before school. So, they should be acquainted with the eruption age of the first permanent molar and caries prevention methods.³ It is recommended to conduct more studies about in what time intervals these educations should be reminded to parents.

Conflict of Interests

Authors have no conflict of interest.

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