

Knowledge on the first permanent molar - audit on 215 Romanian mothers

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Summary

Many epidemiological studies prove the high vulnerability to caries of the first permanent molar, even shortly after its emergence. **Aim:** to assess the knowledge of preschool children's parents on the matter of the first permanent molar. **Material and method:** the mothers of 215 children aged 1 to 7 years old were asked to fill in a questionnaire containing closed questions about the moment of the eruption of the first permanent molar and its position in the arch relative to the deciduous molars, about caries prevention means for this tooth, as well as about the source of information on this subject. The mothers were aged 20 to 48 years (mean age = 31.16 ± 0.29 years). 26.51% of them had a university degree, 55.81% were high school graduates and 16.28% had 10 classes or less. 22.79% were unemployed and 75.81% were employed. **Results:** Concerning the moment of the first permanent molar's emergence, 20.93% of the answers were correct, while the question on the place of this tooth in the arch was correctly answered by 21.39%. The mother's level of education significantly influences the answers on the moment of the emergence of the first permanent molar and does not influence the accuracy of the answers on the position of this tooth. Mother's occupation does not influence the level of knowledge ($p=0.05$). Regarding the preventive means applicable for the first permanent molar, tooth brushing was most commonly mentioned (79.53%), while sealing was familiar to only 7.91% of the mothers. Half of the questioned women admitted not to have got any information on this tooth, while 17.67% stated that they got information from the dentist. **Conclusions:** 1. Parents have little knowledge on the moment of eruption and position in the arch of the first permanent molar. 2. There is a certain discrepancy between theoretic knowledge on oral health and actual oral habits. 3. Further caries prevention programs need to target the first permanent molar. For an increased efficiency, such programs should involve dentists, parents and teachers at the same time.

Introduction

It is generally admitted that the first permanent molar is particularly vulnerable to caries in schoolchildren, representing the location of most carious lesions [4, 11, 12, 16]. This is due to its morphologic and functional characteristics, as well as to the surrounding conditions the newly erupted permanent molars have to face (e.g. immediate proximity of carious primary molars). Even in countries that traditionally apply general and local caries prevention programs, the occlusal surface of the first permanent molar remains the choice location for caries shortly after its emergence. Thus, McDonald (1992) points out the high frequency of occlusal caries on the first permanent molar for all age groups

[9]. Anne Norblad (1986) states that the "high risk" dental surfaces in children under 10 years of age are the occlusal surfaces of the first molars [10], while Hescot and Roland (1993) report that by the age of six 4.9% of the children already have caries on the first permanent molar [3].

Epidemiological studies conducted in Romania show similar results. Grivu (1982) reports for Timisoara high caries prevalence in first permanent molars – 33.33% at the age of 7, 72.52% at the age of 8 and 91.66% at the age of 9 [1]. Luca et al. (1998) report a 77.67% frequency of occlusal caries on the first permanent molar in children aged 6 to 9 years old living in a rural area and a similar figure, of about 70%, for groups of children aged 6 to 12 years old examined and treated in the Clinic of Pedodontics in Bucharest [7, 8].

Due to the high caries prevalence on the first permanent molar, Romania claimed for the implementation of caries preventive programs, comprising dental health education of children and parents besides the local and general means of prevention. Experience shows that parents know little about the first permanent molar, frequently considering it to be a deciduous tooth. Parents usually bring young children to the dentist's for acute pain, either in the temporary teeth or in the first permanent molars. In either case, first permanent molars may already bear massive crown destruction by caries. The lack of regular dental check-ups is a serious restraint to the application of local preventive means, like pit and fissure sealing, as well as to minimally invasive therapy.

Therefore, the aim of this study was to assess the knowledge of a group of mothers of

preschool children concerning the first permanent molar and the caries prevention means.

Material and method

The study group comprised 215 preschool children and their mothers. The children were aged between 1 and 7 years (mean age = 4.21 ± 0.15 years). 104 of children were examined in the Pedodontics Department – Bucharest, between 2001 and 2003 and diagnosed with early childhood caries, while the other 111 were attending a kindergarten in Bucharest and were examined in 2001.

The mothers were aged 20 to 48 years (mean age = 31.16 ± 0.29 years). More than half of the mothers were high school graduates (55.81%), approximately a quarter (26.54%) had a university degree and few (16.28%) had 10 classes or less (*Table 1*).

Table 1. Mothers' education (n = 215 answers)

| < 10 classes | | High school | | University | | No answer | |
|------------------------|-------|--------------------|-------|-------------------|-------|------------------|------|
| n | % | n | % | n | % | n | % |
| 35 | 16.28 | 120 | 55.81 | 57 | 26.51 | 3 | 1.40 |

Regarding the mothers' occupation, 75.81% were employed and 22.79% were unem-

ployed (*Table 2*).

Table 2. Mothers' occupation (n = 215 answers)

| Employed | | Unemployed | | No answer | |
|-----------------|-------|-------------------|-------|------------------|------|
| n | % | n | % | n | % |
| 163 | 75.81 | 49 | 22.79 | 3 | 1.40 |

The study was based upon a questionnaire with closed questions about the first permanent molar: the age of eruption, its position on the arch relative to the primary teeth, the caries prevention means at this level and the sources of information on this tooth.

The mothers of the children examined in the Pedodontics Department filled the questionnaire during their first visit to our clinic, before getting any further information from the dental staff. Most of the children were brought into the clinic for acute conditions related to the primary teeth rather than to the first permanent molar.

The mothers of the children in kindergarten completed the questionnaire before the dental health education meeting.

The answers to the questionnaires were centralized and processed using Microsoft Excel 2000. Mean values were calculated for the studied variables and the level of significance of the differences between mean values was appreciated using the t-Student test ($p = 0.05$).

Results

1. Parents' knowledge concerning the age of eruption of the first permanent molar

Data obtained from the analysis of the answers to the question on the age of eruption of the first permanent molar show that 20.93% of the mothers knew the moment of appearance of

the first molar in the oral cavity, 26.50% gave a wrong answer, 47.90% admitted that they didn't know and 4.65% did not answer.

Regarding the mothers' education, the results show that the age of eruption of the first permanent molar was known by 29.82% of the mothers with a university degree, by 20.83% of those with an average education level and by 8.57% of the mothers who had 10 classes or less, differences being statistically significant ($p = 0.05$).

Concerning the mothers' occupation, the correct answer on the moment of the emergence of the first permanent molar was given by 24.48% of the unemployed mothers and by 20.25% of the employed ones, differences being statistically non-significant ($p = 0.05$).

2. Mothers' knowledge about the position of the first permanent molar

21.39% of interviewed mothers gave the correct answer to the question about the position of the first permanent molar, 24.65% answered

that the first permanent molar replaces a primary tooth, 48.37% admitted that they didn't know, and 5.58% gave no answer.

Regarding the mothers' education, the correct answer on the position of the first permanent molar was given by 14.03% of the mothers with a university degree, by 27.50% of those with an average level of education and by 14.28% of the mothers who had 10 classes or less, differences being statistically non-significant ($p = 0.05$). The correct answer was also indicated by 22.45% of the unemployed mothers and by 21.47% of the employed ones, differences being again statistically non-significant ($p = 0.05$).

3. Mothers' knowledge on the caries prevention means for the first permanent molar

Concerning the caries prevention means for the first permanent molar, most of the mothers indicated daily tooth brushing (79.53%), while pit and fissure sealing was mentioned by 7.91% of them (Table 3).

Table 3. Caries prevention means for the first permanent molar mentioned by the mothers ($n = 215$ answers)

| Method | n | % |
|--|----------|----------|
| Daily tooth brushing | 171 | 79.53 |
| Decrease of sweets consumption as dessert | 82 | 38.14 |
| Decrease of sweets consumption between meals | 65 | 30.23 |
| Using of fluoride tablets | 81 | 37.67 |
| Regular dental check-ups | 97 | 45.17 |
| Pit and fissure sealing | 17 | 7.91 |

4. Source of information on the first permanent molar

The analysis of the data about the source of information on the first permanent molar shows that 17.67% of the mothers stated that they received information from the dentist, 7.44% from other doctors while 16.74% received it from mass-media (radio/TV broadcasts, books, magazines). 50.70% of mothers stated that they had no information on the first permanent molar.

Discussion

Previous studies assessed parents' knowledge on oral health, correlating their attitude to the oral health of their children [13-15, 17].

Given that previous epidemiological studies conducted in Romania have reported a relatively high frequency of caries located on the first permanent molars of schoolchildren [1, 2, 6-8] and that the status of this tooth can be considered a prediction factor for the health of the other permanent teeth [5, 11], the present study assesses parents' knowledge on the first permanent molar in order to implement caries prevention programs.

The results of the study show that parents have little knowledge on the first permanent molar. Concerning the moment of the eruption, about half of the mothers admitted they did not know the correct answer and more than a quarter (26.50%) gave a wrong answer. Only one fifth of the mothers knew the age when the first permanent molar erupts.

Concerning the position of this tooth in the arch, the results were similar. Thus, 48.37% of the mothers admitted they did not have an answer. It needs to be emphasized that about 25% of the mothers thought that the first permanent molar replaces a deciduous tooth, therefore not noticing its emergence and taking it for a temporary tooth, giving it little attention and concern as it “will exfoliate anyway”. Only 21.39% of the mothers proved to know the correct answer to this matter.

It needs to be pointed out that only 7.44% of the mothers answered correctly both questions. Two correct answers were given by 10.53% of the mothers with a university degree, by 7.50% of the ones having an average level of education and by 2.86% of those with 10 classes or less.

It can also be noticed that, only 18.42% of the mothers that stated they had information on the subject from the dentist knew both the moment of eruption and the position of the first permanent molar. This means that either the mothers did not pay enough attention to the doctors’ advice or that the dentist did not stress enough the information on the first permanent molar.

Analyzing the mothers’ knowledge in correlation with their level of education, the results show that the higher the education level, the better the knowledge on the moment of emergence of the first permanent molar. In exchange, the level of education does not influence the knowledge on the position of this tooth in the arch, differences being statistically non-significant although most of the correct answers were given by mothers with average education (27.50%), compared to those with a university degree (14.03%) or with 10 classes or less (14.28%). The mother’s employed/unemployed status does not influence their knowledge on the moment of

eruption and position of the first permanent molar. This statement is consistent with that of Rajab et al. (1999) who found that the occupational status of the mother has little consequence upon the oral health behavior of their children.

Analyzing the mothers’ knowledge on caries preventive means applicable to the first permanent molar, it was noticed that these come rather from general knowledge than from particular information on this tooth. This statement is sustained by the fact that most of the mothers (79.53%) indicated daily tooth brushing as a caries preventive means, while only 7.91% indicated pit and fissure sealing.

52.09% of the mothers indicated sweets intake reduction as a caries prevention means, but their knowledge is not very specific in this area, as there is no statistically significant difference between the mothers that would reduce sweets intake as a desert after a meal (38.14%) and the ones that would limit sweet snacks between meals (30.23%).

Regular dental check-ups, although mentioned by about 45% of the mothers interviewed, seem to have been seldom put into practice, most of the children being brought to the dentist’s for acute pain due to complicated caries.

Administration of fluoride supplements is recognized as a preventive method by 37.67% of the subjects.

It needs to be pointed out that about 1/10 of the mothers did not mention any caries preventive means for the first permanent molar.

The results of the present study are comparable to those reported by Petersen et al. in studies on parents’ oral health knowledge, behavior and attitudes conducted in various countries [13-15, 17] (*Table 4*).

Table 4. Parents’ knowledge on caries prevention means – comparative results

| | Petersen P.E. <i>et al.</i>, Romania (1993) | Rajab L.D. <i>et al.</i>, Jordan (1999) | Petersen P.E., Denmark (1988) | Petersen P.E. <i>et al.</i>, Zanzibar (1997) | Present study (2003) |
|--------------------------|--|--|--|---|-------------------------------------|
| Daily toothbrushing | 87% | 79% | 83% | 65% | 79.53% |
| Low sweets intake | 26% | 42% | 27% | 49% | 52.09% |
| Fluoride tablets | 46% | 11% | 72% | 36% | 37.67% |
| Regular dental check-ups | 76% | 36% | - | 41% | 45.11% |
| Pit and fissure sealing | - | 2% | - | - | 7.91% |
| None of the above | - | - | - | 12% | 9.30% |

The analysis of these studies shows that in Denmark there is a close correlation between good knowledge of the parents and the oral health and dental habits of their children, while in Romania there was an important discrepancy in 1993 as well as in present, as parents tend not to apply their theoretic knowledge in practice.

Concerning the source of information on the matter of the first permanent molar, an important percentage, of about 50% of the mothers, had not yet got any information at all by the time of the study. The other half had information from the dentist (about 18%), from mass media (about 18%) or from other doctors (about 8%). *Table 5* makes a comparison between the results of different studies concerning mothers' answers about the source of their information on oral health.

It can be noticed that between the two studies conducted in Romania (Petersen et al., 1993 and the present study) there are differences concerning regular dental check-ups as caries-preventive means (76% and 45.11% respectively) and also concerning the obtaining of information on dental health from the dentist (67% versus 17,67%). These differences could be explained by the fact that the 1993 study group consisted of 7 years old children that had probably been taken to the dentist before, so that the parents could have had the opportunity to get information from the dentist, while the children in the present study were pre-school children, with a mean age of 4.21 years.

To children, their parents or families represent the first source of information on dental health. Thus, parents' proper information and

Table 5. Mothers' answers about the source of their information on oral health – comparison between the present study and former ones

| Authors, country, year | No. of subjects | Age of children | Source of information on dental health | | | |
|---------------------------------------|-----------------|-----------------|--|--------------|------------|--------|
| | | | Dentist | Other doctor | Mass-media | None |
| Petersen P. E. et al., Romania, 1993 | 322 | 7 yrs | 67% | 6% | 55% | - |
| Rajab L. D. et al., Jordan, 1999 | 1556 | 6-16 yrs | 49% | 5% | 12% | - |
| Petersen P. E., Denmark, 1998 | 212 | 6 yrs | 81% | - | 26% | - |
| Petersen P. E. et al., Zanzibar, 1997 | 259 226 | 6 yrs 12 yrs | 31% | 22% | 48% | 12% |
| Present study | 215 | 1-7 yrs | 17.67% | 7.44% | 16.74% | 50.70% |

education is one of the ways to a good oral status of the children. It is important that the parents get information on the first permanent molar while their child is under school age, so that they become aware in due time that this tooth is the first permanent tooth to erupt, it emerges at the age of 6 and does not replace any deciduous tooth. Parents also need to be informed on caries prevention means applicable to this tooth. Moreover, teachers can have great influence in the oral health education process.

Conclusions

1. Parents have little knowledge on the moment of eruption and position in the arch of the first permanent molar.

2. There is a certain discrepancy between theoretic knowledge on oral health and actual oral habits.

3. Further caries prevention programs need to target the first permanent molar. For an increased efficiency, such programs should involve dentists, parents and teachers at the same time.

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