



MASTER

Parent`s knowledge of their children`s oral status

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Abstract

Background: Good oral habits in early childhood is essential for the maintenance of the primary teeth. This is important to ensure a high quality of dental health throughout life. An important key to accomplish this is to make sure that parents have a sincere interest and good knowledge concerning their children's oral status as well as their preventive oral care.

Aims: Determine parents's knowledge about their child's oral status and preventive home care habits in Ankenes and Hammerfest.

Materials and methods: This study was conducted as an epidemiological pilot-study on parents to a child between the age of 5 and 8. The study was performed during the external practice in the 7th semester. The sample consisted of 63 parents, 36 from Ankenes and 27 from Hammerfest. Data were collected using a questionnaire and the children's dental records.

Results: The mean age of the total number of children was 6,1 years and the study showed that 79% of the children had no restorations. The parents' knowledge level regarding oral status was similar in the two towns. Only 63% of the parents were able to place their child in the correct "5-tooth-interval" regarding number of teeth, while the percentage of correct answers concerning the number of restorations was considerably higher (90%). The results showed that parents from both towns had a higher knowledge-level concerning the number of permanent teeth compared to the number of primary teeth. The parents' knowledge concerning oral health promoting measures seemed to be good in general, but they were not always able to accomplish that knowledge when it came to consumption of candy and soft drinks. None of the children, however, was eating candy daily, whereas four children drank soft drinks or juice every day. Comparing the two towns, it was significantly more common for the parents in Ankenes to always help their children during tooth brushing, while fluoride tablets was provided significantly more often in Hammerfest.

Conclusion: It had to be considered poor parental knowledge of the child's oral status when almost 40% answered incorrectly regarding number of teeth in spite of a "5-tooth-interval".

Key words: child, oral health status, parents knowledge, pilot-study, questionnaire

1.0 Introduction

Children's oral health is one of the most important factors to emphasize when the aim as dental professionals is to ensure a good oral health in the future. Oral health has an impact on health in general (1), and it is therefore important that parents have a high knowledge-level when it comes to how to maintain good oral health in their children.

Young individuals such as children between the age of 5 and 8 are too immature to make individual choices and to acquire information about oral health. Their parents are therefore their main information source, and the parents have the main responsibility to teach their children about oral health (2, 3). In order to help their children avoid dental disease, it is reasonable to assume that the parents should have a good understanding of dental disease (4, 5). They ought to have good knowledge not only about how to prevent dental illness but also about the general oral status of the child such as for example the number of teeth and restorations. Parents' attitude towards helping their child with tooth brushing is another factor associated with the child's risk for development of dental diseases (2, 3).

1.1 What is good oral health?

WHO's definition:

"Oral health is essential to general health and quality of life. It is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing."(6)

1.2 What is good oral hygiene?

Oral hygiene is the practice of keeping the mouth clean and healthy by brushing and flossing to prevent tooth decay and oral diseases (7).

Brushing should be performed at least twice a day with fluoridated toothpaste (1500 ppm) and flossing once a day in the mixed dentition (7).

1.3 What is good dietary habits?

To prevent dental caries and erosions, and to maintain good oral health, the diet - what you eat and how often you eat - is an important factor. Bacteria in the mouth convert sugars from the foods to acids, and it is the acids that begin to demineralize the enamel of the teeth,

starting the decay process. The more often you eat and snack, the more frequently you are exposing your teeth to the cycle of decay. (2)

1.4 What is dental erosion?

Dental erosion is the irreversible loss of tooth enamel due to chemical processes that do not involve bacterial action. Tooth erosion is a slow progressive process that leads to loss of hard tissues of the tooth caused by exposure to acids for long periods of time(8, 9). An increased consumption of soft drinks and juice is an important reason for increasing dental erosion problems in adolescents and children (9).

WHO's goal for Europe by 2020 (2015) (6):

- 6-yr-olds; 80% or more will be caries free in the permanent dentition (DMFT=0)
- 12-yr-olds; DMFT shall be no more than 1.5, of which at least 1.0 shall be FT
- 18-yr-olds; no teeth missing due to caries (MT=0)

2.0 Aim

The aim of this pilot study was to try to investigate how much parents from Ankenes and Hammerfest knew about their children's oral status and how they prevent dental illness at home.

The following questions have been asked (appendix 1):

- What did parents know about their children's dental status in terms of the number of teeth and restorations?
- How often did their child brush his/her teeth and did he/she get any help during tooth brushing, and if so, how often?
- Did they use dental floss and/or fluoride supplements?
- How often did their child eat candy and drink soft drinks/juice?

3.0 Materials and methods

3.1 Sample

This study was conducted as an epidemiological pilot study (a smaller version of a proposed research study, conducted to refine the methodology of a later one. It should be as similar to the proposed study as possible, using similar subjects, the same setting, and the same techniques of data collection and analysis. (10). The study sample included parents of in total

63 children between the age of 5 and 8 (Table 1). The authors performed oral examinations of all the children in this group. The sample was collected during the external practice (semester 7), and consisted of 27 children/parents from Hammerfest (Finnmark) and 36 children/parents from Ankenes (Nordland) (Table 1).

Table 1: Age and residents distribution of the 63 children of the parents included in the sample.

Age in years					
	5-yr-olds	6-yr-olds	7-yr-olds	8-yr-olds	Total
Ankenes	14	10	10	2	36
Hammerfest	14	1	6	6	27
Total	28	11	16	8	63

3.2 Questionnaire

During the oral examination of the children, the parents responded to a questionnaire (appendix 1). The questionnaire consisted of several questions dealing with their child's dental status, oral hygiene and dietary habits. Each question had answer options and the parent encircled their answer. The answer options for the number of teeth consisted of intervals of 5 teeth (0-5, 6-10, 11-15, 16-20, 21-25, 26-30), whilst the answer options for the number of restorations were; 0, 1, 2, 3 and more than 3 restorations. The parents' answers about the number of teeth and restorations were compared with the child's dental records from the examination performed at the same time (i.e the facit). In addition, all the parents' answers were compared between Hammerfest and Ankenes in order to see if there were any differences between the two towns.

3.3 Statistics

The Statistical Package for Social Sciences (SPSS, version 19) was used to analyze the results derived from the questionnaires. Differences between groups were assessed using Pearsons Chi-Square test (cross tabulation). A statistically significant difference were found when $p \leq 0.05$.

3.4 Ethics

Written informed consent was obtained from all the parents who attended this study. All sensitive information obtained from the dental records was handled with care and the parents were informed that this information could not be traced back to them.

4.0 Results

The mean age of the total number of children was 6,1 years (Ankenes 6,0, Hammerfest 6,1). Hammerfest, however had a higher number of 5-year-olds (52% compared to 39%) (Table1). The study showed that 79% of the children had no restorations and that the prevalence of children with restorations was slightly higher in Hammerfest than in Ankenes (Table 2).

Table 2: Percentage of the 63 children (Ankenes 36, Hammerfest 27) with and without restorations.

	Children with restorations (%)	Children with no restorations (%)
Ankenes	19	81
Hammerfest	22	78
Total	21	79

Table 3: Percentage of the 63 parents (Ankenes 36, Hammerfest 27) answering correct or incorrect regarding their childrens' number of teeth (5-tooth-interval) and number of restorations (1,2,3,>3).

	Number of teeth		Number of restorations	
	Correct (%)	Incorrect (%)	Correct (%)	Incorrect (%)
Ankenes	61	39	92	8
Hammerfest	67	33	89	11
Total	63	37	90	10

Of all the parents asked, 63% were able to place their child in the correct 5-tooth-interval regarding number of teeth. The percentage of correct answers concerning the number of restorations (1,2,3,>3) was 90% (Table 3). The parents in Hammerfest had higher percentage correct answers when it came to the number of teeth, but lower percentage concerning the number of restorations (Table 3). The difference, however, were small and of no statistical significance. The results showed that parents from both towns had a higher knowledge-level concerning the number of permanent teeth compared to the number of primary teeth. Regarding the incorrect answers concerning the number of restorations, all six parents in this group answered that their child had no restorations when actually three of these children had

one restoration and three of them had three restorations.

Table 4: Percentage distribution of the 63 parents' (Ankenes 36, Hammerfest 27) answers regarding their child's tooth brushing habits and the use of dental floss and fluoride tablets.

	Tooth brushing twice a day (%)		Always parental help with tooth brushing (%)		Fluorid tablets (%)		Dental floss (%)	
	Yes	No	Yes	No	Yes	No	Yes	No
Ankenes	75	25	44	55	56	44	36	64
Hammerfest	81	19	15	85	85	15	44	56
Total	78	22	32	68	68	32	40	69

According to their parents' answers, 78% of all the children brushed their teeth twice a day. The percentage were slightly higher in Hammerfest (81%) than in Ankenes (75%) (Table 4). All the children brushed their teeth at least once a day and none of the children brushed three times a day. Compared to Hammerfest (15%), it was significantly ($p < 0.05$) more common for the parents in Ankenes (44%) to always help their children during tooth brushing (Table 4). However, 81% of all children got help during tooth brushing at least once a day.

68% of all the parents answered that they regularly gave their children fluorid tablets. In comparison to Ankenes (56%) (Table 4), this fluoride supplement was provided significantly ($p < 0.05$) more often in Hammerfest (85%).

While 40% of the children were reported to use dental floss (Table 4), only 12% flossed daily.

Table 5: The 63 parents' (Ankenes 36, Hammerfest 27) answers regarding their child's weekly candy and soft drink/juice consumption.

	Candy		Soft drinks/juice	
	More than once a week (%)		More than once a week (%)	
	Yes	No	Yes	No
Ankenes	58	42	78	22
Hammerfest	37	63	67	33
Total	49	51	73	27

Of all the children, 49% consumed candy more than once a week and 73% consumed soft drinks/juice more than once a week (Table 5). The children from Ankenes showed the highest percentage of children consuming candy and soft drinks/juice more than once per week (Table 5). None of the children was eating candy daily, whereas four of the children drank soft drinks or juice every day. Only one child was reported to eat candy less than once a week, while six children drank soft drinks/juice less than once a week.

5.0 Discussion

Compared to WHO goals for Europe (preferably by 2015), which states that 80% or more of all 6-year-olds should be caries free in the permanent dentition (DMFT=0), the sample in this study seemed to be close to having reached this goal with 79% of the children without restorations. Furthermore, in spite of children from Hammerfest included a somewhat higher proportion 5-year-olds, there were no difference in mean age (6,1 years) between the children from Ankenes and Hammerfest. In other words, the sample participating in this pilot study seemed to be relevant from a caries experience point of view as well as allowing comparisons between the two towns.

Regarding the parents' knowledge concerning the child's number of teeth, they did not have to answer the exact number, but just put their child in a correct "5-tooth-interval". Still almost 40% were not able to give a correct answer. In contrast, the percentage of correct answers concerning the number of restorations was considerably higher (90%). A possible reason for this difference might be that parents became more aware when their child had to undergo a more advanced treatment, such as restorative therapy. Still, this awareness did apparently not include every parent as all six, who answered wrongly, did believe that their child had no restorations at all.

When comparing the two towns, Hammerfest had the highest percentage correct answers regarding the number of teeth in total, while Ankenes had the highest percentage regarding the number of primary teeth and the number of restorations. These differences, however, were small and of no statistical significance showing that knowledge-level in the two towns was similar.

The children in Ankenes got significantly more help with their tooth brushing compared to

Hammerfest (table 4), in spite of Hammerfest having a higher proportion of 5-year-olds (Table 1). On the other hand, compared to Ankenes, the statistically significant higher percentage of the children in Hammerfest were given fluorid tablets. When comparing the results with the national figures (85%) (11) Hammerfest had exactly the same percentage, whereas in Ankenes only 56% of the children received fluorid tablets. A reason for this significant difference might be that in Ankenes the threshold for handing out fluorid tablets after an oral examination was higher than in Hammerfest. The similar prevalence of restorations in the two towns might indicate that the higher fluorid supplement given to children in Hammerfest could compensate for the lower percentage of help with tooth brushing. In total, however, the oral hygiene habit seemed to be satisfying as all children in both Ankenes or Hammerfest were reported to brush their teeth daily using fluoridated tooth paste.

According to the parent's answers, 49% of all the children in this study ate candy more than once a week. This percentage might even be higher when it is taken into account that some of the parents might not answer totally honestly. This is in accordance with earlier findings where 75% of North American 5-year-olds are eating candy more than once per week (12). However, none of the children in the present study consumed candy every day, compared to 40% in the North American study (12).

The high consumption of soft drinks already in this young age was alarming. It has been shown that amongst 19 to 23-year-olds the risk of developing dental erosion is three times higher for those who drink soft drinks more than three times a week compared to those who do not (13). In the present study 73% of the parents to 5 to 8-year-olds committed to giving their children soft drinks/juice more than once a week while 4 (6%) children drank these products daily.

During the study, the examiners noticed that not all of the parents paid equally attention to the caries preventive information given during the oral examination, yet it seemed that the knowledge-level of caries prevention was quite high. When the parent was sitting in the examination room with the dental student examining their child, it might have been easier to give the expression that the child's habits was better than the reality. This especially applied to the questions about fluorid supplement, tooth brushing and candy/soft drink intake.

6.0 Conclusion

Within the limitations of a small pilot study the following conclusions could be drawn; It must be considered poor parental knowledge of the child's number of teeth when almost 40% answered incorrectly in spite of a 5-tooth-interval.

On the other hand, the parents' knowledge concerning tooth brushing habits seemed to be quite high. However, if their knowledge concerning oral health promoting measures were good in general, they were not able to accomplish that knowledge when it came to candy and soft drinks.

Parents have poor knowledge about their child's oral status, and to a certain extent poor knowledge or at least poor ability to promote good food habits. This probably means that if the "dental knowledge-level" of parents could be increased, the oral health status of young children would increase accordingly.

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Appendix 1

Questionnaire

We are two dental students who wants do a study about children's oral health, and needs som information from you as parents. We also need acces to your child's dental records. If you consent, please sign here _____

The information received during this study can not be traced back to you or your child.
Thank you for your help. Mia Holm og Camilla Celise Christensen.

Age of the child:

Circle your answer:

1. Number of teeth?

0-5 6-10 11-15 16-20 21-25 26-30

Number of descidious teeth?

0-5 6-10 11-15 16-20 21-25 26-30

Number of permanent teeth?

0-5 6-10 11-15 16-20 21-25 26-30

2. Number of daily teeth brushing?

0 1 2 3

3. How often does the child get help while brushing?

2xdaily 1xdaily 2-3x per week less

4. Use of dental floss.

Yes No If yes, how often?
2xdaily 1xdaily 2-3x per week less

5. Fluoride supplements (fluoridetables/fluoride rinse)?

Yes No

6. Number of fillings?

0 1 2 3 more than 3

7. How often does the child eat candy?

Daily 2-3x per week 1x per week less

8. How often does the child drink soda or juice?

Daily 2-3x per week 1x per week less