

Research

Knowledge about the Dental Care in Children in the Community

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Abstract

Objective

To determine the level of knowledge of parents, both health care professionals and non-health care professionals, about the dental care of children.

Methodology

One hundred and sixty four parents and twenty-eight healthcare professionals, in a regional hospital setting, were asked to fill in a self-administered questionnaire over a 4-month period.

Results

Majority of responders believed that dental care in a child is the parent's responsibility. The majority of parents (93.3%) believed that infant oral health is important and know a little to nothing about it. Most parents (93.3%) did not know that dental caries are due to bacterial infection. Most parents and healthcare professionals did not know the appropriate initial dental care procedures, the optimal time to introduce a child to a toothbrush or toothpaste, the amount of toothpaste that should be used for a child and the appropriateness of fluoride supplement in their children.

Conclusion

There is a significant lack of knowledge among parents and health care professionals about dental care in children. Several public educational measures are recommended to improve the knowledge and therefore the dental health in children.

Key words: Dental Health; Paediatric; Questionnaire Survey; Dentrifrice; Fluoride Supplement

Introduction

Dental care and oral health has been in the spot light time and again in most countries. There has been considerable improvement in the oral health of children in industrialized countries over the past few decades. According to large studies, the average dental caries rate has declined in the United Kingdom [1] and Australia [2] over the past decades. It is, however, still quite common to find children with extensive oral diseases during their dental visits. The traditional approach to manage the problem is to treat the destructive effect of the disease. However, recently the American Academy of Paediatric Dentistry has published contemporary guidelines, emphasising early professional primary prevention to reduce the incidence of oral diseases [3,4].

One part of the American Academy of Paediatric Dentistry guidelines focuses on the role of age-specific instructions on home oral hygiene for children [3,4]. Since children were not able to

control many of the factors mentioned in the guideline, the dental health of the children relies on the knowledge of their parents in this area. Many parents, in turn rely on the healthcare professionals, especially nursing and allied health staffs, to provide information and recommendations [5,6,7]. There is little information is known about the knowledge of parents and healthcare professionals about this topic.

In view of the importance of this information and the effects of these early preventative measures, and paucity of information about the early dental care knowledge of parents and healthcare professionals, we designed and administered a questionnaire survey. The aim of the survey is to establish the level of knowledge among parents and healthcare professionals about early dental health of children, in order to implement appropriate level of educational measures in this area.

Methods

Approvals were obtained from the appropriate hospital administration authorities to conduct the study. The study population for non-healthcare professionals includes parents who accompanied their child to the outpatient clinics run by one of us (RKK), parents who accompanied their child during their medical admission to the hospital and parents who had just given birth at the maternity unit of the hospital, over a 4 month period. The study population for healthcare professionals included all physiotherapists, occupational therapists, nursing staffs and midwives who have children.

A brief explanation of the aim of the study, with a particular emphasis on the voluntary participation, was given and verbal consent for participation of the study was obtained. Parents were then given the questionnaire and allowed to complete it in their own time. No additional explanation or information was given in order to avoid influencing their responses.

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The data was then analyzed using Microsoft Excel package. Questions with more than one response were deemed invalid and therefore excluded from the analysis. Responses provided by healthcare professionals and non-healthcare professionals are separately analyzed. To ensure reliability of the data input and analysis process, every questionnaire was quoted and 10% of the questionnaire was randomly selected for checking by an independent person.

Results

There were a total of one hundred and ninety two completed questionnaires. Healthcare professionals accounted for twenty-eight (14.9%) of them. One hundred and sixty four (85.42%) were non-healthcare professionals.

Fourteen healthcare professionals (50%) believed that dental care of a child should begin at birth. Seven (25%) believed that dental care should begin when the child is six months old whilst five (17.9%) and two (7.14%) thought that it should start at the age of two and school age respectively. None of the healthcare professionals thought that dental care should begin at the age of four.

In comparison, sixty-three non-healthcare professionals (39.4%) thought that dental care should begin at the age of six months and sixty (37.5%) thought that it should begin when the child is two years of age. Twenty-seven (16.88%) of them thought that the dental care of a child should begin at birth. Five (3.1%) thought that it should begin at four years and the remaining five (3.1%) thought that it should begin at school age (Table 1).

Table 1: Timing of the beginning of dental care.

Time	Healthcare professionals	Non-healthcare professionals
At birth	14 (50.0%)	27 (16.9%)
6 months	5 (17.9%)	63 (39.4%)
2 years	7 (25%)	60 (37.5%)
4 years	0 (0%)	5 (3.1%)
School age	2 (7.1%)	5 (3.1%)

Fourteen healthcare professionals (50%) felt that initial dental care should incorporate the cleaning and brushing of gums and teeth. Nine (32.1%) felt that it should only involve cleaning the gums alone. Three (10.7%) felt that it should only involve cleaning of the teeth. One healthcare professional believed that it should involve brushing the gums the remaining healthcare professional thought that it should only involve brushing the teeth. Correspondingly, the majority of non-healthcare professionals (55.35%) also felt that initial dental care should incorporate the cleaning and brushing of gums and teeth. Forty nine (30.8%) of them felt that it should only involve cleaning the gums. Fifteen (9.4%) felt that it should involve cleaning the teeth and remaining four (2.5%) and two (1.9%) parents felt that it should involve brushing the gums and brushing the teeth respectively.

Twenty three healthcare professionals (92%) felt that the parents should be responsible for the dental care of a child. There was only one (4%) healthcare professional who believed that the child and the dentist should be the person responsible. None of the healthcare professionals thought that it should be the responsibility of doctors

or family and child health nurses. Likewise, a vast majority of non-healthcare professionals (75.7%) also felt that parents should be the one responsible for the dental care of a child. Twenty two (16.2%) of them felt that it should be the responsibility of the dentist while six of them (4.4%) thought it to be the doctor’s responsibility. There were three (2.2%) and two (1.5%) parents thought that it should be the responsibility of the family and child health nurses and the child himself/herself respectively.

Eighteen (64.3%) healthcare professionals felt that the child should be introduced to a toothbrush at the age of one. Six of them (21.4%) felt that he or she should be introduced to a toothbrush at the age of two and the remaining four (14.3%) did not know when to introduce a child to a toothbrush. None of the healthcare professionals chose to introduce the toothbrush to a child at age four and six respectively. Correspondingly, one hundred and eight non-healthcare professionals (67.5%) would introduce a child to the toothbrush at the age of one. Thirty four (21.3%) parents would do so at the age of two while fourteen (8.75%) non-healthcare professionals indicated that they did not know and none would introduce a child to the toothbrush only at the age of six (Table 2).

Table 2: Timing for the introduction of toothbrush

Time	Healthcare professionals	Non-healthcare professionals
1 year old	18 (64.3%)	108 (67.5%)
2 years old	6 (21.4%)	34 (21.3%)
4 years old	0 (0%)	4 (2.5%)
6 years old	0 (0%)	0 (0%)
Don’t know	4 (14.3%)	14 (8.8%)

Seventeen (60.7%) of the healthcare professionals did not know when a child should start using dentifrice. Seven (25%) of them indicated that a child should start using dentifrice at one year. Three (10.7%) and one (3.6%) healthcare professionals indicated that a child should start using dentifrice at two years and four years respectively. None of the health care professionals felt that a child should start using dentifrice at the age of six.

Similarly, eight nine non-healthcare professionals (55.6%) did not know when a child should start using dentifrice. Thirty (18.8%) and twenty nine (18.1%) non-healthcare professionals indicated that the child should start using dentifrice at the age of two and one respectively. Seven non-healthcare professionals (4.4%) indicated that a child should start at the age of four and the remaining five (3.1%) indicated that a child should start at the age of six (Table 3).

Table 3: Timing for the initiation of dentifrice

Time	Healthcare professionals	Non-healthcare professionals
1 year old	7 (25.0%)	29 (18.3%)
2 years old	3 (10.7%)	30 (28.8%)
4 years old	1 (3.6%)	7 (4.4%)
6 years old	0 (0%)	5 (3.1%)
Don’t know	17 (60.7%)	89 (55.6%)

The vast majority of health care professionals (57.1%) felt that only half a length of toothbrush of toothpaste should be used for the child. This is followed by eight (28.6%) of them indicating that only a pea size of toothpaste should be used for the child. None of them indicated that no toothpaste should be used in children. Likewise, seventy five (46.9%) non-healthcare professionals indicated that the amount of toothpaste used should only cover half the length of the toothbrush. Forty nine of them (30.6%) indicated that only a pea size of toothpaste should be used. Sixteen of them (10%) indicated that they did not know how much toothpaste should be used. Fourteen non health professionals (8.8%) indicated that the toothpaste should cover the whole length of the toothbrush and the remaining six of them (3.8%) indicated that no toothpaste should be used in children.

Discussion

This survey is the first study of its kind to provide very important information about the level of knowledge of dental health in children among healthcare professionals and non-healthcare professionals in Australian community. The results of the study are not only important for future public health education campaigns among parents, but also essential for future training among healthcare professionals. The overall impression obtained from the results of this study is that parents had very little knowledge about the dental care of children, irrespective of their involvement in healthcare professions [8,9].

The study showed that more healthcare professionals believed that dental care of a child should start at birth rather than at a later age than non-healthcare professionals (50% vs. 16.9%) [10]. A particularly worrying result is that a significant proportion of non-healthcare professionals believed that the dental care of a child should only begin at the age of 2 years (37.5%). It has been shown in previous research that the acquisition the bacteria associated with dental caries developments, mutans streptococci, occurred at a particular age range known, as the window of infectivity, which is estimated at around 19-30 months of age [6,7,8,11]. Therefore, starting dental care at the age of 2 would put a lot of children at risk of early development of dental caries [12]. It is therefore, in the authors' opinion that the idea of starting dental care of a child at birth should be greatly re-enforced to the parents.

Our study showed that the majority of healthcare and non-healthcare professionals believed that the initial dental care should be carried out by cleaning and brushing both the teeth and gums. These results show a lack of knowledge about the dental health and the dental development among parents in the community. With some exceptions, most babies were born without an erupted tooth. Therefore, it was recommended that parents should clean the gum of the infants daily until the eruption of the first tooth. Only about 30% of healthcare and non-healthcare professionals indicated this option as the initial dental care of a child in our study.

Many parents, both healthcare professionals (64.3%) and non-healthcare professionals (67.5%) thought that toothbrush should be introduced to a child at the age of 1 year. This is the correct age to introduce a toothbrush according to the guideline. It is important to emphasise that toothbrush could be introduced as early as the eruption of the first tooth and no later than first year of age.

Nearly half of the healthcare professionals and a third of the non-healthcare professionals believed that children should receive fluoride supplements to improve their dental health [12,13,14,15]. The incidence of dental caries could be greatly reduced by fluoride supplements. Topical fluoride is particularly useful in paediatric population. Parents should be given information about fluoride supplement so that they could introduce dentrifice with fluoride supplement for their child to improve dental health [15,16,17].

Majority of the respondents in our survey did not know the optimal time to start using dentrifice in children. It is recommended that children should start using dentrifice at the age of 2 [18,19,20].

The majority of the respondents in our survey in both the healthcare professionals and non-healthcare professionals group thought that toothpaste in the amount of half of the length of the tooth brush should be used in children. Excess amount of toothpaste used, especially those with fluoride supplements, might increase the risk of developing fluorosis, which might be detrimental to the health of the child.

An overwhelming majority of the healthcare professionals (92%) believed that parents should be responsible for the dental care of a child. In the non-healthcare professionals group, although some believed that the responsibility lies in the hand of the dentists, many (75.7%) believed that parents should be the one responsible. The encouraging aspect, however, is that any public health educational measures targeted towards the parents would be beneficial and well received.

The authors believed certain measure could help to improve the knowledge about dental care in children among parents. They believed that educational seminars in the form of in service sessions, grand round presentations and continual medical education sessions could be delivered, particularly to midwives, in order to address the deficiency among healthcare professionals in this area. Written information, in the form of pamphlets and posters should be readily available in the hospitals, particularly in the paediatric and maternity departments to emphasise the importance of dental care in children.

Education of the non-healthcare professionals could be delivered through pamphlet distributions through paediatric department, obstetrics department, antenatal classes and general practices around the area. The pamphlets should contain a simplified version of the recommended guideline with the aids of attractive illustrations. The particular emphasis should be put on the fact that dental care should begin at birth and the age-specific home dental care program, including cleaning gum at birth, the use of dentrifice, toothbrush and fluoride supplements in children²¹.

Although it requires a great combined effort by different parties to introduce new education campaigns to improve the knowledge of parents on the dental care of childhood, we believe that the effects of good dental hygiene practices justify the emphasis placed on the issue.

Conclusion

The main finding of this present study is that there is a deficiency in the knowledge of dental care in childhood among parents and healthcare professionals. The majority of parents and healthcare

professionals did not have the appropriate knowledge to manage the dental care of children in respect to the initial dental care, the use of toothbrush, the use of toothpaste and the use of fluoride supplements. Since parents were, suitably, indicated in this survey as the person who should be primarily responsible for the dental care of a child, they should possess appropriate information and knowledge in this area. We therefore, recommended a few public health education measures, which could be implemented to improve the level of knowledge among parents and healthcare professionals.

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