

Dental caries knowledge and perceptions among mothers attending Reproductive and Child Health clinics, Kinondoni, Tanzania

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Abstract

Aim: To assess the knowledge and perceptions on dental caries among mothers attending the Reproductive and Child Health (RCH) Clinics in Kinondoni Municipality. **Study design:** cross-sectional. **Subjects and methods:** Three hundred eighty five mothers who attended three RCH clinics in Kinondoni Municipality in August 2005 filled questionnaires on knowledge and perceptions on dental caries. Using SPSS version 10, differences in knowledge and perceptions between mothers of different education levels were tested by chi-square statistics at significant level of 0.05. **Results:** The proportion of mothers who knew the detrimental effects of comforters, sugary snacks, and prolonged use of medicinal syrups on children dental health were 84%, 77.4%, and 57.4% respectively. Less than a third of mothers knew that breast/bottle-feeding all time and children sleeping with breast nipple could cause dental caries in children. Seventy eight percent knew that tooth brushing twice a day with fluoridated toothpaste prevent dental caries. Majority of mothers either disagreed or were not sure that breast/bottle feeding at will or sleeping with breast nipple, and prolonged use of medicinal syrups could cause dental caries in children. **Conclusion:** Majority of mothers knew the detrimental effects of comforters, sugary snacks, and prolonged use of medicinal syrups on children dental health, and the beneficial effects of supervised tooth brushing twice a day using fluoridated toothpaste in preventing dental caries in children. Few knew that breast/bottle feeding at will and or children sleeping with breast nipple could cause dental caries in children.

Key words: dental caries, knowledge, perceptions, childbearing mothers

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Introduction

Most children seen at the Pedodontic clinic, School of Dentistry in Dar es Salaam, have the chief complaint of toothache due to dental caries. Clinical examination often reveals carious lesions on both deciduous and permanent dentitions. Most of these children with dental caries are brought to the clinic at very late stage of the disease when the pulp has already been involved and extraction is usually the treatment of choice. For example, 2006 of 2183 children who were diagnosed as having caries as the major cause of attendance had their teeth extracted (1). It is most likely that these children have not benefited from the available knowledge on prevention of dental caries.

Several studies have shown a positive relationship between level of oral health knowledge of mothers and oral health status of their children (2-4) and between knowledge and attitude towards oral health of their children (5-6). In his study on oral health of Polish three-years-old children and their mothers' oral health related knowledge, Szatko and his colleagues found that the lower the level of oral health related knowledge, the higher the level of dental

caries among their children (2). In UK, home visits by trained dental health educators to mothers with infants commencing at or soon after time of eruption of first deciduous teeth was effective in preventing the occurrence of nursing caries (3). In Moscow, dental health education program to mothers was shown to be very effective in controlling dental caries in permanent dentition of their children (4).

A study on effectiveness of dental health education in general dental practice showed that mothers who were more knowledgeable had better attitudes towards the dental health of their off springs and better tooth brushing skills than those who were not knowledgeable (5). This may indicate that they are likely to take care of the oral health of their children better than those who are not knowledgeable with poor skills on brushing their children teeth. Hispanic parents in families with early childhood caries (ECC) were more likely to sleep while feeding their children compared to parent in families without ECC (6). This indicates that parents in families with ECC were either not knowledgeable on causes of ECC or had negative attitudes towards refraining from

sleeping while feeding their children as a preventive measure for ECC.

Mothers are expected to be in forefront to undertake the preventive methods in their children provided that they are empowered to do so. This requires that mothers are knowledgeable about the causes and prevention of dental caries, with favorable perceptions on oral health practices conducive to oral health. In the same thinking, a thorough understanding of the level of knowledge on causes and prevention of dental caries and perceptions towards oral health practices conducive to oral health among mothers of the childbearing age in Dar es Salaam is required if one wants to prevent dental caries in children coming to the paedodontic clinic at School of Dentistry in Dar es Salaam.

The available published reports on knowledge and perceptions of childbearing mothers on dental caries in Tanzania are few (7-8), and indicate varied proportion of mothers with knowledge on etiology of dental caries. A study conducted in Bagamoyo district in 1987 revealed that only 9.8% knew that sugary snacks cause dental caries (7). Recently a study conducted in Ilala district in 2005, indicated that 59.1% of mothers knew that frequent consumption of sugary foods cause early childhood caries (8). There is a need for more studies to document the level of knowledge and perceptions of mothers in childbearing age in Tanzania. Therefore the aim of this study was to assess the knowledge and perceptions on the etiology and prevention of dental caries among mothers attending the RCH clinics in Kinondoni municipality, Dar es Salaam, Tanzania.

Subjects and methods

Three Reproductive and Child Health clinics namely Mwananyamala, Magomeni, and Manzese in Kinondoni municipality were conveniently picked for this study. A total of 385 mothers who attended these during the month of September 2005 participated in the study. Data was collected using closed ended questionnaire that included six knowledge questions on practices that may predispose children to developing dental caries, and one knowledge

question on the practice of brushing teeth with fluoridated tooth paste as a preventive practice. Six other questions required a respondent to agree or disagree on whether a particular practice could predispose her child to developing dental caries. Practices that were tested for knowledge and perceptions were: Breast feeding at will; use of comforters; prolonged use of medicinal syrups; bottle feeding at will; use of sugary foods; and a child sleeping with breast nipple in the mouth. The demographic characteristic recorded was level of education. A verbal consent was sought before mothers were requested to fill in the questionnaires in the presence of the investigator. It was pre-agreed that mothers who could not read and write would be interviewed. However, all mothers could read and write without requiring any assistance.

Data was analyzed using SPSS version 10. Frequency distributions were generated, and cross tabulations for knowledge of mothers by level of education were performed. Differences between levels of education were tested by Chi-square statistics with significance set at 5% level.

Results

Mothers' responses to different knowledge statements on causes and prevention of dental caries showed that 84%, 77.4%, and 57.4% of mothers respectively knew the detrimental effects of comforters, sugary snacks, and prolonged use of medicinal syrups on children dental health (Table 1). Only 23.9%, 28.3% and 26.7% respectively knew that breast and bottle-feeding all time and children sleeping with breast nipple could cause dental caries in children. Seventy eight percent knew the dental caries preventive effects of supervised tooth brushing twice a day with fluoridated toothpaste. Mothers of primary education were more knowledgeable on the relationship between use of comforters and development of dental caries than those with higher education ($\chi^2 = 10.868$; $p = 0.004$). Mothers with secondary education were more knowledgeable on the beneficial preventive effects of supervised brushing of teeth twice a day with fluoridated toothpaste than other mothers with primary education and those with higher education ($\chi^2 = 9.628$; $p = 0.008$).

Dental caries knowledge and perceptions

Table 1: Proportions (%) of mothers responding to different knowledge statements on causes and prevention of dental caries by level of education

Oral health related practice	Response	Level of education			Total n=385	χ^2	p-value
		Primary education n=297	Secondary education n=84	Higher education n=4			
Breast feeding all the time causes teeth decay in children than breast feeding at specified moments	Yes	25.3	19.0	25	23.9	1.389	0.499
	No	74.7	81.0	75	76.1		
Use of comforters with sugary sweeteners for long time in children causes teeth decay in children	Yes	85.2	84.5	25	84.4	10.868	0.004**
	No	14.8	15.5	75	15.6		
Bottle-feeding whenever a child cries or needs for a prolonged time causes teeth decay.	Yes	29.0	25.0	50	28.3	1.442	0.486
	No	71.0	75.0	50	71.7		
Children who are given sweets, biscuits, and chocolates for longer time are likely to get teeth decay.	Yes	77.1	78.6	75	77.4	0.094	0.954
	No	22.9	21.4	25.0	22.6		
Prolonged use of medicinal syrup to a child causes teeth decay.	Yes	55.2	66.7	50.0	57.7	3.612	0.164
	No	44.8	33.3	50.0	42.3		
Children who sleep with breast nipple in the mouth are likely to get teeth decay than children who are not.	Yes	27.6	23.8	0.0	26.5	1.942	0.379
	No	72.4	76.2	100	73.5		
Supervised brushing of teeth twice a day with fluoridated toothpaste prevents teeth decay.	Yes	77.4	85.7	25	78.7	9.628	0.008**
	No	22.6	14.3	75	21.3		

** = significant at 0.01 level

In relation to causes and prevention of dental caries, 76% and 72.5% respectively agreed that use of comforters sweetened by sugar for long time, and giving children sweet, biscuits and chocolates for longer time can cause dental caries (Table 2). Only 17.9%; 21.8%; 21.3% and 44.7% respectively agreed that breast feeding all time, bottle feeding all time, children sleeping with breast nipple and prolonged use of medicinal syrups may cause dental caries in children. Seventy six percent of mothers agreed that supervised brushing of teeth twice a day with fluoridated toothpaste prevents tooth decay. Proportionately more mothers with secondary

education than others disagreed to the statements that children who sleep with breast nipple in the mouth are more likely to develop dental caries than those who don't ($\chi^2 = 16.374$; $p = 0.003$), that breast feeding all time causes dental caries than breast feeding at specified times ($\chi^2 = 14.173$; $p = 0.007$), and that bottle feeding whenever the child cries or needs may cause dental caries ($\chi^2 = 18.903$; $p = 0.001$). Proportionately more mothers with higher education neither agreed or disagreed to the statement that supervised brushing of teeth with fluoridated toothpaste prevents dental caries in children ($\chi^2 = 15.816$; $p = 0.003$).

Table 2: Proportions (%) of mothers responding to different statements on the relationship of specific oral health practices and development or prevention of dental caries

Oral health related practice	Response	Level of education			Total	χ^2	<i>p-value</i>
		Primary education	Secondary education	Higher education			
Breast feeding all the time causes teeth decay in children than breast feeding at specified moments	Agree	20.9	8.3	0	17.9	14.173	0.007**
	Neither/nor	27.9	23.8	75.0	27.5		
	Disagree	51.2	67.9	25.0	54.5		
Use of comforters with sugary sweeteners for long time in children causes teeth decay in children	Agree	75.4	81.0	25.0	76.1	8.594	0.072
	Neither/nor	15.2	8.3	50.0	14.0		
	Disagree	9.4	10.7	25.0	9.9		
Bottle-feeding whenever a child cries or needs for a prolonged time causes teeth decay.	Agree	25.3	9.5	25.0	21.8	18.903	0.001**
	Neither/nor	25.6	21.4	75.0	25.2		
	Disagree	48.2	69.0	0.0	53.0		
Children who are given sweets, biscuits, and chocolates for longer time are likely to get teeth decay.	Agree	72.4	75.0	25.0	72.5	5.652	0.227
	Neither/nor	14.5	11.9	50.0	14.3		
	Disagree	13.1	13.1	25.0	13.2		
Prolonged use of medicinal syrup to a child causes teeth decay.	Agree	45.1	44.0	25.0	44.7	18.903	0.001**
	Neither/nor	26.9	20.2	50.0	25.7		
	Disagree	27.9	35.7	25.0	29.6		
Children who sleep with breast nipple in the mouth are likely to get teeth decay than children who are not.	Agree	22.9	16.7	0.0	21.3	16.374	0.003**
	Neither/nor	24.6	19.0	100.0	24.2		
	Disagree	52.5	64.3	0.0	54.5		
Supervised brushing of teeth twice a day with fluoridated toothpaste prevents teeth decay.	Agree	74.7	83.3	25.0	76.1	15.816	0.003**
	Neither/nor	14.1	11.9	75.0	14.3		
	Disagree	11.1	4.8	0.0	9.6		

** = significant at 0.01 level

Discussion

This study assessed the knowledge and perceptions of 385 mothers attending Reproductive and Child Health clinics towards causes and prevention of dental caries. Majority of mothers knew the detrimental effects of comforters, sugary snacks, and prolonged use of medicinal syrups on children dental health, as well as the beneficial effects of supervised tooth brushing twice a day with fluoridated tooth paste. Nevertheless, few knew that bottle-feeding or breast-feeding most of the time and children sleeping with breast nipple in the mouth may lead to tooth decay in children. These findings indicate that health education should focus more on safe methods of bottle and breast-feeding.

These findings were similar to those reported by al-Tamimi et al 1998 in Saudi Arabia who found that the level of dental knowledge of the mothers on aetiology and prevention of dental caries was low whereas the attitudes towards prevention were positive (9). The findings differ from those reported from Haryana, India; Cardiff Wales, UK; and Puerto Rica (10-11). In Haryana, India, majority of mothers (72%) were reported to have correct knowledge on prolonged breast-feeding or bottle-feeding as a cause of nursing bottle caries (10). In Cardiff Wales, UK, mothers and carers of infants and toddlers had overall poor understanding on the effects of sugared drinks (11). In Puerto Rica, women of childbearing age believed that tooth decay was caused by prolonged bottle use (12).

It is hereby concluded that majority of mothers knew and perceived the detrimental effects of comforters, sugary snacks, and prolonged use of medicinal syrups on children dental health, as well as the beneficial effects of supervised tooth brushing twice a day with fluoridated tooth paste. Nevertheless, few knew or perceived that bottle-feeding or breast-feeding most of the time and children sleeping with breast nipple in the mouth may lead to tooth decay in children. It is recommended that interventions aimed at controlling dental caries in children in this population should concentrate on safe ways of bottle and breast-feeding.

Acknowledgements

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Son to mother: I wish to stop studying.
'Why so?' asked the mother.
'I heard the news that someone was shot dead, because he knew too much