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Knowledge and attitude of Saudi mothers towards health of primary teeth

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The aim of this study was to assess Saudi mothers' knowledge and attitude towards primary teeth health and dental caries and the impact of level of education on their knowledge and attitude. Four hundred, self-reported questionnaires were distributed to mothers of children aged 1 to 6 years. They contained questions expressing knowledge and attitudes towards the health of primary teeth and the effect of educational level on knowledge and attitude of oral health. Data were processed and analysed by means of the Statistical Package for Social Sciences (SPSS) using Chi-square test. The significance was taken for P-value ≤ 0.05. Mothers had good knowledge about dietary practices and oral hygiene practices. While more than half of them do not know when to start child mouth cleaning, first visit to dentist and transmissibility of caries. Half of the respondents do not know the contribution of frequent sweet consumption to dental caries. Our study showed a strong correlation between level of education and oral health knowledge (P-value = 0.00) whereas effect of knowledge on mothers' attitude was insignificant (P-value ≤ 0.6). Mothers showed some degree of knowledge about certain aspects of primary teeth health and caries, while poor knowledge is shown in other aspects. We recommended broadening prevention concept.

Key words: Early childhood caries (ECC), oral health knowledge, oral health attitude.

INTRODUCTION

Caries prevalence among Saudi Arabian children and adolescent in Jazan Region, Kingdom of Saudi Arabia is high (Al-Malik and Rehbini, 2006). Oral health knowledge is an essential pre-requisite for health related behaviour (Ashley, 1996). Children under the age of 5 years spend most of their time with mothers, so their oral hygiene and dietary habits are influenced by their care takers and level of education (Jain et al., 2014). In addition to the level of education, behavioural, cultural and social factors influence caries risk (Acs et al., 1992). These include sleeping with a bottle and frequent consumption of sugar-containing snacks or drinks (Hallett and O'Rourke, 2006). Dental caries with its consequences including pain, and diminished quality of life is a common health problem

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among children (Casamassimo et al., 2009). Since caries is a transmissible infectious disease, salivary contact is responsible for its transmission (Berkowitz, 2006). The organisms responsible for caries are mutans streptococci (MS) (Sakai et al., 2008). Children of mothers with high levels of mutans streptococci, are at greater risk and elimination of saliva-sharing activities (e.g. sharing utensils) reduces transmission of caries (Berkowitz, 2006). Although, early childhood caries (ECC) is preventable, most parents often think it is not (Acs et al., 1992). Consequences of ECC include a higher risk of new carious lesions in both the primary and permanent dentitions (Al-Shalan et al., 1997). Severe early childhood caries (S-ECC) interferes both with the quality of life of the child and the family. It affects child's school performance, and social behaviour. Treatment of S-ECC is expensive, invasive and very stressful (Filstrup et al., 2003). Young children with high caries activity may develop caries even during tooth eruption so it is essential to reach the preschool child and its caregivers as early as possible (Plutzer and Spencer, 2008). Oral hygiene measures should be implemented to infants no later than the time of eruption of the 1st primary tooth and tooth brushing should be performed by parents twice daily (American Academy on Pediatric Dentistry [AAPD], 2011).

The first dental visit is important and should be before completion of 12 months of age. The age at which a child visits the dentist for the first time, reflects the quality of the preventive dental care and the future of his oral health (Widmer, 2003). Many studies showed a low awareness level in the population, as the commonest reason for seeking dental care is pain and dental caries (Meera et al., 2008). Basic knowledge of caries risk factors, importance of the deciduous teeth and oral health maintenance are important to employ effective disease preventive strategies (Finlayson et al., 2007). There is little information on the awareness and attitude of Saudi mothers towards the health of the primary teeth.

The aims of this study were to assess the Saudi mothers' knowledge and attitude towards the primary teeth health and dental caries and the impact of level of education on primary teeth health and dental caries in Jazan Region, Kingdom of Saudi Arabia.

MATERIALS AND METHODS

A questionnaire based cross-sectional study was conducted in Kingdom of Saudi Arabia, Jazan area during the period of June to August, 2012. Trained interviewers (dental students) distributed 400 questionnaires to mothers of children aged 1 to 6 years from different cities and villages in Jazan area (the participating students' residential areas). 91% (365) of distributed questionnaires were collected. Some questionnaires were with few missing data (18%). The questionnaire was reviewed by expert staff members for refining and criticism then approved by the ethical committee. A simple, short and direct questionnaire written in Arabic language (participants' mother tongue) was designed to provide an overall view of the subject's socio-demographic characteristics, oral hygiene practices, dietary practices and degree of awareness of the importance of primary teeth. The questions were constructed with closed alternative answer in order to be simple and easily understood by the subjects regardless of their educational status. The mothers were asked to respond to the knowledge questions by agree, disagree or not sure for most questions. The questionnaire reflected subjects' knowledge and attitudes towards oral health and ECC. Oral health educational pamphlets were distributed to the respondents after collection of questionnaires. We used Cronbach's alpha statistics to measure internal consistency for assessing reliability. The value of Cronbach's alpha was 0.79 which indicates acceptable reliability.

Ethical considerations

The study proposal was submitted to the College of Dentistry Jazan University, Research and Publication Office for ethical clearance and written informed consent was obtained from the participants prior to study commencement. In this concern, it has been stated to the participants that there is no direct benefit of their participation in the study, however knowledge gained from the study may lead to the prevention and treatment of primary teeth (general population benefits) and that no information about the participants, or information provided by them during the research will be disclosed to others without their written permission.

Construction of scales for analysis

A total of 8 questions were gotten for oral health knowledge and 3 questions for oral health attitude. Concerning responses for oral health knowledge questions, positive statement (agree) scores 1 whereas both don't agree and don't know score 0. The sum of the 8 responses represents oral health knowledge score for each respondent. For further analysis, the sum scores were sub-grouped into 3 groups: poor, adequate and good knowledge (0 to 3, 4 to 5 and 6 to 8, respectively). Concerning mothers' attitudes towards oral health, we had three questions (Table 3) with 3 different choices of answers. A positive statements scores 3, an average statement scores 2 and a negative statement scores 1. The sum of the three attitude questions served as the final oral health attitude score for each respondent. For further analyses, the sum scores were sub-grouped into 3 groups: poor, average and good attitude (<4, 4 to 6 and 7 to 9, respectively).

Statistical analysis

All data were analysed using the Statistical Package for the Social Sciences (SPSS version 19) program. For frequency, Chi-square test was used to find out if mothers' educational level affects their oral health knowledge and attitude. The significance was taken for P-value ≤ 0.05.

RESULTS

61.6% of respondents had university level of education, 25.6% had secondary school level, while only 12.8% had primary school level of education or illiterate. Mothers had a good knowledge about diet, dietary practices and oral hygiene practices. Nevertheless, more than half of them had poor knowledge about child mouth cleaning starting, child first visit to dentist and transmissibility of caries. Around half of them did not know that frequency of sweet consumption predispose to dental caries

Table 1. Oral health knowledge questions, number and percentage distribution of the study participants.

Question	I don't agree (%)	I don't know (%)	I agree (%)
Sweets and soft drinks contribute to dental caries	7 (1.9)	7 (1.9)	351(96.2)
Eating sweets between meals contributes to dental caries	125 (34.4)	48 (13.2)	190 (52.3)
The contribution of sharing spoons, tooth brushes, etc., in caries transmission	95 (26.2)	111 (30.7)	156 (43.1)
Night time bottle feeding with sugar contributes to dental caries	14 (3.9)	49 (13.5)	300 (82.6)
The general health of mothers during pregnancy affects deciduous teeth health of their children	38 (10.5)	99 (2.7)	224 (62.0)
Primary teeth caries can affect permanent teeth	61 (17)	77 (21.4)	221 (61.6)
Primary teeth caries is preventable	43 (11.8)	44 (12.1)	276 (76)
Child mouth cleaning start after birth	93 (26)	90 (25.1)	175 (43.9)

Table 2. Level of knowledge and frequency distributions of the participants.

Level of knowledge		Frequency	%	Valid percent
Valid	Poor	58	15.9	15.9
	Adequate	132	36.2	36.2
	Good	175	47.9	47.9

regardless of its amount. There was a significant correlation between respondents' level of education and oral health knowledge (P-value = 0.00), whereas the impact of the level of education on oral health attitude of the participants was insignificant (P-value ≤ 0.6).

The frequency and percentage of the participants' answers to questions of knowledge are shown in Table 1. Level of oral health knowledge of the participants is shown in Table 2. The frequency and percentage of mothers' answers for the dental health attitude questions are shown in Table 3.

Level of dental health attitude of the participants is as shown in Table 4. Oral health knowledge and attitude level among the participants is as shown in Figure 1. Impact of education on mothers' health knowledge is shown in Figure 2.

DISCUSSION

Many studies suggest that mother's education influences dental health of their children. Shamta et al. (2009) found a strong interdependence on the mother's level of knowledge with that of their educational level which influenced the child's oral health. This was found to be true in the present study as well. The higher the educational attainment of mothers, the better the dental health practices. An overwhelming majority of mothers (96.2%) believed that sweets and soft drinks can lead to caries, although this reflect excellent knowledge of sweet risk factor in dental caries, but at the same time, only 52.3% of the respondents relate this risk factor to the frequent sweets intake more than the quantity taken. Rafi et al. (2012) got the same finding. The majority of mothers (56.9%) had inadequate knowledge about the fact that sharing of utensils and kissing can transmit *Streptococci mutans* which causes caries. This finding is consistent with the finding of Sakai et al. (2008); although the transmissibility of dental caries is relatively well established in the literature. Night time bottle feeding with sugar; 82.6% of our respondents agreed that night time bottle feeding with sugar contributes to caries. Children that were put to sleep with a bottle had S-ECC compared to those not put to sleep with a bottle (Hallett and O'Rourke, 2006). In the present study, we inquired about the knowledge of the sweetened night time bottle feeding, but did not ask about the actual habit itself, especially in a country of high caries prevalence and this is a limitation of this study. Knowledge alone is not the absolute basis of oral health practices as other

Table 3. Number and percentage distribution of mother according to attitude items.

Question	Answer	N (%)
Child 1st visit to dentist	Pain treatment	191 (53.4)
	Never visit dentist	123 (34.4)
	Routine visit after 1st year	44 (12.3)
Mothers' brushing frequency	Don't brushing	30 (8.4)
	Once daily	84 (23.5)
	Twice daily	244 (68.8)
U55 When mother start brushing	Recently	64 (17.7)
	After primary	108 (29.9)
	Before primary	-

Table 4. Frequency and percentage distribution of participants according to attitude items.

Attitude of subjects towards oral health		Frequency	Percentage	Valid Percentage
Valid	Poor	14	3.8	3.8
	Average	162	44.4	44.4
	Good	189	51.8	51.8
	Total	365	100.0	100.0

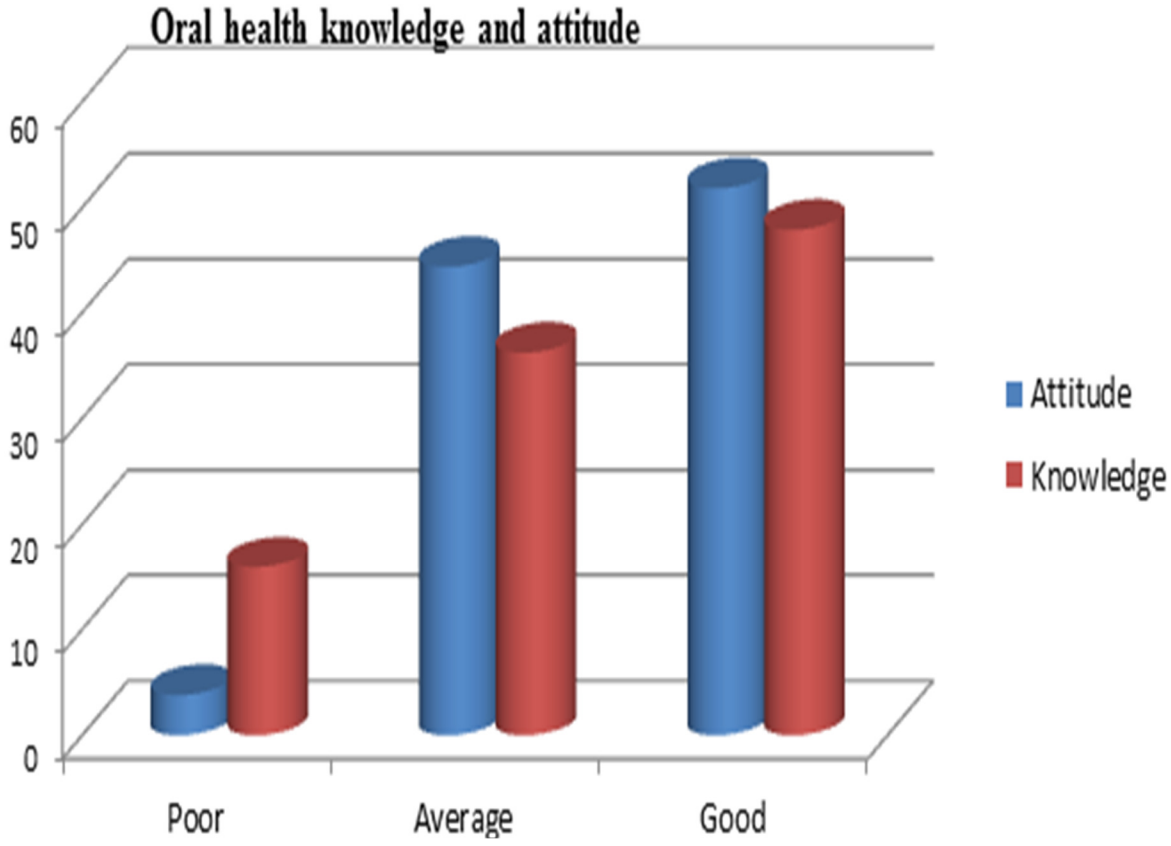

Figure 1. Oral health knowledge and attitude of the participants.

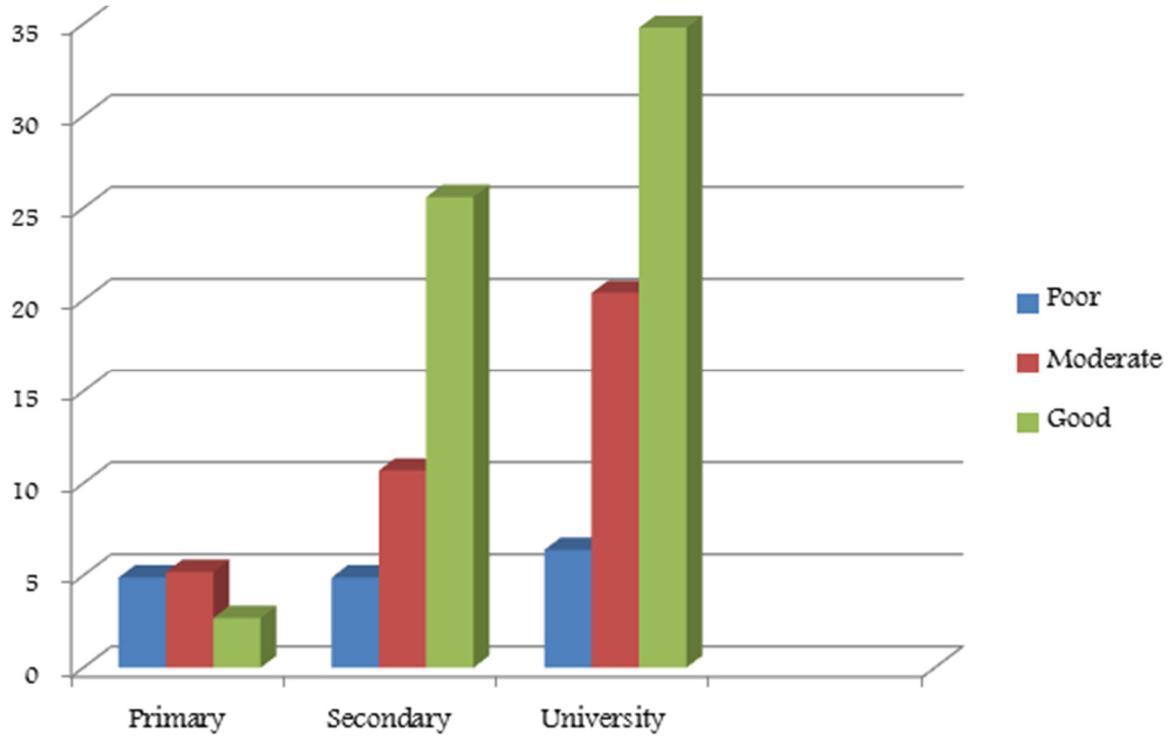

Figure 2. Impact of education on mothers' health knowledge.

factors like dietary traditions exist. Gussy et al. (2008) found that parents had good knowledge of diet related risk factors, but half the children were given bottle at bedtime. 62.0% of respondent of the present study agreed that the health of the pregnant mother affect her baby primary teeth health; this finding reflects good knowledge of the subjects. 61.6% agreed that primary teeth caries affect general health and child's permanent teeth which is almost the same finding with that of Rafi et al. (2012). Dental caries is a preventable disease, and it can be stopped and even potentially reversed during its early stages (Kawashita et al., 2011). The majority of the subjects of the present study (76%), agreed that primary teeth caries is preventable. In the present study, tooth brushing habits of mothers were assessed because they strongly affect brushing habits of their children (Castilho et al., 2013). This study showed good oral hygiene knowledge and practices which may result from high level of education of the majority of respondents (61.6% of our respondents had higher university education).

CONCLUSION AND RECOMMENDATIONS

Mothers' level of education improves the awareness of oral health related issues. They were familiar with factors causing dental caries, while transmissibility of caries and effect of frequent fermentable carbohydrates were not evident. The awareness of the importance of the first dental visit is very low. Majority of the mothers had good oral hygiene practices for themselves, but most of them ignore the proper age for starting new-born's mouth cleaning. Broadening prevention concepts with special focus on transmissibility of caries, frequent intake of sweets, infants' mouth cleaning commencement and first visit to dentists is recommended.

Conflict of Interest

The authors have not declared any conflict of interest.

REFERENCES

American Academy on Pediatric Dentistry (AAPD) (2011). Policy on early childhood caries (ECC): classifications, consequences, and preventive strategies. Pediatr. Dent. 36(6):14-15.

Acs G, Lodolini G, Kaminsky S, Cisneros GJ (1992). Effect of nursing caries on body weight in a pediatric population. Pediatr. Dent. 14(5):302-305.

Al-Malik MI, Rehbini YA (2006). Prevalence of dental caries, severity, and pattern in age 6 to 7-year-old children in a selected community in Saudi Arabia. J. Contemp. Dent. Pract. 7(2):46-54.

Al-Shalan TA, Erickson PR, Hardie NA (1997). Primary incisor decay before age 4 as a risk factor for future dental caries. Pediatr. Dent. 19(1):37-41.

Ashley FP (1996). Role of dental health education in preventive dentistry, In: Prevention of dental disease (Murray JJ). 3rd edition. Oxford: Oxford University Press, pp. 406-414.

Berkowitz RJ (2006). Mutans streptococci: Acquisition and transmission. Pediatr. Dent. 28(2):106-109.

Casamassimo PS, Thikkurissy S, Edelstein BL, Maiorini E (2009). Beyond the dmft: the human and economic cost of early childhood caries. J. Am. Dent. Assoc. 140(6):650-657.
Castilho AR, Mialhe FL, Barbosa Tde S, Puppin-Rontani RM (2013). Influence of family environment on children's oral health: a systematic review. J. Pediatr. (Rio J) 89(2):116–123
Filstrup S, Briskie D, da Fonseca M, Lawrence L, Wandera A, Inglehart MR (2003). Early childhood caries and quality of life: child and parent perspectives. Pediatr. Dent. 25(5):431-439.
Finlayson TL, Siefert K, Ismail AI, Sohn W (2007). Maternal self-efficacy and 1-5 year old children's brushing habits. Community Dent. Oral Epidemiol. 35(4):272-281.
Gussy MG, Waters EB, Riggs EM, Lo SK, Kilpatrick NM (2008). Parental Knowledge, Beliefs and Behaviours for Oral Health of Toddlers Residing in Rural Victoria. Aust. Dent. J. 53(1):52-60.
Hallett KB, PK O'Rourke PK (2006). Caries experience in preschool children referred for specialist dental care in hospital. Aust. Dent. J. 51(2):124-129.
Jain R, Oswal KC, Chitguppi R (2014). Knowledge, attitude and practices of mothers toward their children's oral health: A questionnaire survey among subpopulation in Mumbai (India). J. Dent. Res. Sci. Dev. 1(2):40-45.
Kawashita Y, Kitamura M, Saito T (2011). Early Childhood Caries. Int. J. Dent. 2011:725320.
Meera R, Muthu MS, Phanibabu M, Rathnaprabhu V (2008). First dental visit of a child. J. Indian Soc. Pedod. Prev. Dent. 26 Suppl 2:S68-71.
Plutzer K, Spencer AJ (2008). Efficacy of an oral health promotion intervention in the prevention of early childhood caries. Community Dent. Oral Epidemiol. 36(4):335-346.
Rafi AT, Zakirulla M, Syed MY, Nasim VS, Al Qahtani AR, Al-Turki AA (2012). Cross-sectional study of awareness and knowledge of causative factors for early childhood caries among Saudi parents: A step towards prevention. Int. J. Health Sci. Res. 2(3):1-7.
Sakai VT, Oliveira TM, Silva TC, Moretti AB, Geller-Palti D, Biella VA, Machado MA (2008). Knowledge and attitude of parents or caretakers regarding transmissibility of caries disease. J. Appl. Oral Sci. 16(2):150-154.
Shamta S, Ayyaz AK, Saima C (2009). Maternal Factors and Child's Dental Health. J. Oral Health Comm. Dent. 3(3):45-48.
Widmer R (2003). The first dental visit: an Australian perspective. Int. J. Paediatr. Dent. 13(4):270.