

Mother's Attitudes and Knowledge for Oral Hygiene among Pre-School Children in Saudi Arabia

Sarah Ahmed Bahammam*

Department of Pediatric Dentistry and Orthodontics, College of Dentistry, Taibah University, Medina, Kingdom of Saudi Arabia

ABSTRACT

Introduction: Early intervention of dental disorders provides helps educating the parents in various aspects such as maintenance of proper brushing of teeth, good oral hygiene, preventing nursing caries, good diet intake, preventing dental injuries and dentist visit regularly.

Aim: The present study aimed to assess knowledge and attitude of mothers about the maintenance of good oral hygiene among children.

Materials and methods: A cross sectional study was conducted through face to face interview at Taibah University College of Dentistry and Hospital (TUCDH) during the period of January 2022–April 2022. The study recruited 384 mothers aged between 16 to 34 years. The data were calculated for categorical variables. Age of children were divided into two groups in which 293 (76.3%) were between 2-4 years of age and 336 (87.5%) mothers were between 26-34 years of age.

Results and discussion: None of the children brushed their teeth twice or after every meal and none of them were using non fluoridated toothpaste and 370 (96.4%) mothers changed brush after it was frayed. Attitude assessment of mothers revealed that none of the participant went for dental checkup in 3 and 6 months. However, 370 (96.4%) mothers needed proper guidance about appropriate oral hygiene management. It necessary to start pre-school dental service among the schools in Saudi Arabia.

Conclusion: These findings assist dental professionals in modifying oral health prevention activities and to make oral health promotion efforts effective to enhance the oral health of young children.

Key words: Attitude, Children, Dental checkup, Knowledge, Oral hygiene

HOW TO CITE THIS ARTICLE: Sarah Ahmed Bahammam, Mother's Attitudes and Knowledge for Oral Hygiene among Pre-School Children in Saudi Arabia, J Res Med Dent Sci, 2023, 11 (01): 288-293

Corresponding author: Dr. Sarah Ahmed Bahammam

E-mail: sarah.bahammam@gmail.com

Received: 25-Oct-2022, Manuscript No. JRMDS-23-91893;

Editor assigned: 28-Oct-2022, PreQC No. JRMDS-23-91893 (PQ);

Reviewed: 11-Nov-2022, QC No. JRMDS-23-91893;

Revised: 26-Dec-2022, Manuscript No. JRMDS-23-91893 (R);

Published: 11-Jan-2023

INTRODUCTION

The developing countries face significant oral health problems because of increased prevalence, economic consequences and negative influence on individual's quality of life. A total of 65% of the general population in rural areas face the problems of dental caries and 90% of them suffer from periodontal disease [1]. The intricate association between oral health and general health adversely affect interpersonal relationship, concentration and productivity. For instance, children get ashamed to speak or smile malnutrition and face difficulty in chewing and eating [2]. If the dental caries is not treated timely, they are likely to result in infection causing pain, which may lead to absence at the school and lower academic performance of the affected child. Few of the studies have

observed significant increase in dental caries among the pre-school children [3-5]. The parents need to be educated about the early intervention plans for maintaining good oral hygiene by proper tooth brushing, reinforcement of regular dental visits and proper dietary practices [5]. The occurrence of dental caries has been considered as a major health problem among the Saudi pre-school children [6]. Dental caries and periodontal diseases are the most common dental diseases, which are easily controlled or preventable through simple processes. These procedures include adequate use of fluoride and periodic visits to the dentist, controlling the extent of sugar consumption, tooth brushing and good oral health [7]. The association between economic, social, educational and political conditions explains the high prevalence and occurrence of these pathologies, excluding biological factors that interact in the etiology of these diseases [8]. Socialization, as a modeling process, to oral health behaviors assists children in imitating their parent's behavior, which are available and offer valued contribution for their offspring [9].

Parent modeling has been accepted as a powerful way to establish new behaviors among children, which include

tooth brushing behavior, but it has been rarely discussed in the context of a behavioral factor with corresponding inter associations among oral diseases variables [10]. The tooth brushing habit of parents has been related with oral cleaning extent of their children as they play a fundamental role in the family to transfer health related habits to the children [11]. This being higher among families with higher socio-economic status. On the contrary, a few studies have been carried out on these relationships [12].

Health education is the most cost effective method among many different ways of dental diseases prevention [13]. Educational and motivational programs have been adopted in oral health to access information associated to issues in the guidelines and oral cavity for hygiene and motivation to pay particular attention to oral health [14]. As World Health Organization recommended, promoting oral health in the schools through curricular activities. In addition, other issues should be considered in educational practices, including obesity, sexual health, healthy eating and cardiac diseases [15]. However, it is assumed that the growth of programs promote oral health in the schools based on home reinforcement, specifically by the parents. Therefore, educational strategies are highly valuable to emphasize on parents of pre-schoolers as their behavior about oral health directly impact on the number of dental caries of their children [16]. There is a positive impact of parents' attitudes on the oral health status of children as the children develop positive oral health habits when tooth brushing and sugar consumption is controlled by parents [17,18].

The recent researches have indicated increased dental cavities among pre-schoolers. Moreover, the intensity of decay is so damaging that there is a dire need to give the children general anesthesia and sedation for extensive treatments. In today's era, children are exposed to such activities that cause dental problems in the early childhood and thus increase the social as well as economic burden. Early intervention of dental disorders provides an opportunity for educating the parents in various aspects including the maintenance of good oral hygiene, proper brushing of teeth, preventing nursing caries, good diet intake, preventing dental injuries and dentist visit regularly. Therefore, the present study was aimed to assess the knowledge and attitude of Saudi mothers regarding proper management of oral hygiene among the pre-school children.

MATERIALS AND METHODS

A cross-sectional study was conducted at Taibah University College of Dentistry and Hospital, Al Madinah Al Munawarah, Saudi Arabia from January 2022–April 2022. Ethical approval from the Institutional review board was received. At confidence level of 95% and confidence alpha 5% and with reference to the response rate of 81.7% by Winnier, et al. the sample size was calculated to be 230 (minimum) with a total population of 1300000 in Al Madinah Al Munawarah region, Saudi Arabia. Nearby primary schools around Taibah university college of dentistry were contacted and a letter

comprised of the study objectives and the procedure to be followed for the conduction of study was sent to the school management.

An official permission letter was received from the respective school to contact the mothers of children. Research team primarily contacted 600 mothers through telephone and were counseled about the study, out of which 400 were willing to participate and agreed to come for face to face interview at Taibah university college of dentistry. Mothers who provided written informed consent and had children of age between 2-8 years were included in the study. However, children with any medical condition and were suffering from any disease during the study period excluded. Mothers with no parity were also excluded from the study.

Cronbach's alpha was used to assess the reliability of questionnaire and it was found 0.911. For increased understandability, the questionnaire was developed in Arabic and English formats to reduce the chances of misunderstandings. The questionnaire was comprised of 12 questions excluding the demographic variables and all questions were closed ended. The questions were asked to assess the knowledge and attitude of mothers regarding the oral hygiene of the children.

Knowledge was measured by following questions

- Change of brush;
- Cleaning tongue of the child;
- Number of times child brushes in a day;
- Habit of rinsing mouth or drinking water after meal;
- Brushing duration;
- Important time for brushing duration;
- Type of toothpaste.

However, attitude of mothers was measured by following questions

- Poor/bad eating habits;
- Chocolate consumption;
- Regular checkup;
- Intake of carbonated drinks;
- Proper management of oral hygiene.

The data was primarily entered on Microsoft excel and analyzed by using statistical package for social sciences version 20.0 and frequency and percentages were calculated for categorical variables.

RESULTS

In this cross sectional study, a sample size of 230 was calculated. However, initially 600 participants were called for interview and out of which 400 mothers agreed to come and participated in the study. Out of 400 mothers, 384 responded and 16 (4%) participants did not give consent and hence excluded from the study. Overall response rate of study was 96%. Age of children were divided into two groups in which 293 (76.3%) were between 2-4 years of age. Similarly mother's age was also divided in two groups and 336 (87.5%) participants were between 26-34 years of age. Demographic characteristics

of participants are presented in Table 1. Table 2 describes the knowledge of mothers regarding maintaining oral hygiene of children and it was found out that none of their children brushed their teeth twice or after every meal and none of them were using non fluoridated toothpaste and 370 (96.4%) mothers changed the brush after it was frayed. We also sought out the attitude of mothers regarding the oral hygiene of children and it was

revealed that none of the participant went for dental checkup in 3 and 6 months. However, 370 (96.4%) mothers needed proper guidance about appropriate oral hygiene management among their children. Detail results are depicted in Table 3.

Table 1: Demographic profile of children's mothers.

Variables	Response	Frequency	Percentage (%)
Age of the child	2-4 years	293	76.3
	5-8 years	91	23.7
Age of mother	16-25 years	48	12.5
	26-34 years	336	87.5
Mother's qualification	Illiterate	108	28.1
	Can read and write	246	64.1
	Graduate	17	4.4
	Post-graduate	13	3.4
Working status of mother	No	318	82.8
	Yes (Full-time)	41	10.7
	Yes (Part-time)	25	6.5
Number of children	1	211	54.9
	2	134	34.9
	≥ 3	39	10.2
When kids started brushing?	After 1 Year	10	2.6
	After 2 Years	374	97.4
Till what age child need supervision in brushing teeth?	2-3 years	110	28.6
	4-5 years	240	62.5
	6-7 years	34	8.9

Table 2: Knowledge of mothers regarding maintaining oral hygiene among their children.

Questions	Response	Frequency	Percentage (%)
Change of brush	3 months	3	0.8
	6 months	11	2.9
	After it gets frayed	370	96.4
Cleaning tongue of the child	Yes	3	0.8
	No	257	66.9
	I don't know how to clean tongue	124	32.3
How many times child brushes in a day?	0	326	84.9
	1	58	15.1
	2	0	0
	After every meal	0	0
Habit of rinsing mouth or drink water after every meal	Yes	336	87.5
	No	48	12.5

Brushing duration	15 seconds	259	67.4
	30 seconds	121	31.5
	1 minute	4	1
Most important time for brushing teeth	Morning	15	3.9
	Night	279	72.7
	Both	90	23.4
Type of toothpaste used	Non-fluoridated	0	0
	Fluoridated	32	8.3
	Unsure	352	91.7

Table 3: Attitude of mothers regarding maintaining oral hygiene among their children.

Questions	Response	Frequency	Percentage (%)
Does your child have any poor/bad eating habits?	Yes	364	94.8
	No	20	5.2
Chocolate consumption by the child	Yes	360	93.8
	No	24	6.3
Regular check-up with the dentist	Once in 3 months	0	0
	Once in 6 months	0	0
	Once in 1 year	24	6.3
	Never	253	65.9
	When has pain	107	27.9
Intake of carbonated drinks	Yes	326	84.9
	No	58	15.1
Proper management of oral hygiene	Yes	370	96.4
	No	14	3.6

DISCUSSION

There are studies that suggested the key role of mothers in maintaining the oral hygiene of their children. The current study was conducted to assess the knowledge and attitude of mothers regarding their children's oral hygiene. The overall response rate of this study was 96% that is similar to an Indian study by Gurunathan, et al. [19] and greater than another Indian study in which they have reported response rate of 81.7%. A study conducted in the United Kingdom on oral hygiene of children reported the response rate of 69.9% that is contrary to our findings. The higher number of participants in our study was between 26-34 years of age (87.5%) which is contrary to the findings of Petrauskiene, et al. [20].

In our study, only a small percentage of mothers (0.8%) changed their child's brush after every 3 months; whereas, 2.9% of them changed after every 6 months and 96% changed the brush when it was frayed. These findings are dissimilar to the study in which 53.8% of the parents replaced their child's brush once in 3 months and 47.6% waited for the brush to be frayed. However, the fraying of tooth brush is highly variable and the early

wearing of toothbrush may be due to the application of greater pressure while brushing, which can even damage the enamel surface [21].

The mothers' literacy level is an important factor to evaluate oral health status as it refers to the level of information identified by a parent regarding the significance of the oral health of children in the community which was found to be very low in our study. The mothers who have passed the degree was very limited in our study *i.e.* 3.4%, however a study reported that mothers who have passed the degree were 65.28%. It has also been reported that cleaning of tongue regularly tends to provide an effective reduction in *Streptococcus mutant* count and plaque levels. In our study 66.9% of mothers did not clean brush the tongue. While a study reported that only 11% of the mother were not involved in cleaning of tongue.

The knowledge of mother was assessed by the times their children were brushing their teeth and it was found out that only 15.1% of the children brushed their teeth once a day. Approximately a two folds response was observed in a study in which 34% children brushed their

teeth at least once in a day. In another European study, the percentage of children brushed their teeth once a day was 38%. It is important to maintain the habit of brushing teeth twice a day; first before having breakfast and at night after having the day's last meal [22]. Sufficient plaque removal was not achieved by majority of the children; therefore, brushing teeth twice a day has been recommended to maintain a good oral hygiene. A study conducted by Bozorgmehr, et al. [23] stated that attitude of parents towards the significance of developing good oral hygiene is directly associated with tooth brushing habits among their children.

A study conducted by Truby, et al. [24] and Winnier, et al. reported that the brushing time in morning was preferred than the evening. Contrary findings were seen in the present study in which 73% participants preferred night timings. Selection of the toothpaste has a significant role in prevention of plaque formation. Mechanical removal and debridement of plaque or biofilm is more important for the developing teeth as it plays an important role to prevent accumulation of dental plaque. In this regard the knowledge of mothers in our study was assessed on what type of toothpaste they used for their children and 92% of the participants were unsure. Similar response was observed in a study conducted by Tay, et al. [25]. However, in a study, 36.8% of the parents had the knowledge about the significance of fluoride in preventing dental caries.

According to American academy of pediatric dentistry guidelines the parents need to supervise their child in brushing till the age of 7-8 years. Whereas, in the present study, majority of the mothers (62.5%) believed to assess their child in brushing till the age of 4-5 years of age. The mothers need to supervise their child in brushing teeth till the age of 7-8 years as fine motor skills like cursive writing, tying knots and brushing teeth develops at this age.

Attitude of mothers regarding the oral hygiene in our study was also found unsatisfactory as 95% mothers reported that their children had bad habits, 94% children had the sweet candies consumption, 85% reported the intake of carbonated drinks and 66% never visited dental clinical. A study done in The United Kingdom also reported that 58.7%. Mother's reported that their children consumed the sweet candies less than daily.

Dental caries in the early childhood is a public health problem, which requires attention and resources from the community. Majority of the mothers (96.4%) needed proper guidance about appropriate oral hygiene management among their children. The opinion of mothers is considered as a valuable tool to assess the oral hygiene of their children. The present findings can provide an insight of the association between children's oral health and mothers' attitudes, but there are some limitations as the study is cross-sectional and descriptive in nature and no inferential statistics is postulated.

CONCLUSION

The study has reported widespread negligence of maintaining oral health among the school going children in Saudi Arabia. The results of present study have imposed a number of implications regarding the prevention and management of oral hygiene. It has indicated a number of wrong practices implemented by the mothers such as not brushing twice a day, for long durations, and not changing the toothbrushes till it gets frayed. The results of this study clearly showed that it is necessary to start pre-school dental service among the schools in Saudi Arabia. These findings assist the dental professionals in modifying oral health prevention activities and to make oral health promotion efforts effective to enhance the oral health of young children. Therefore, it is essential for mothers to be aware of the importance of clearing the misconceptions and periodic dental visits about parental practices and attitudes toward the oral health of their children.

ACKNOWLEDGEMENT

The author is thankful to all the associated personnel, who contributed for this study by any means.

AVAILABILITY OF DATA AND MATERIALS

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

COMPETING INTEREST

The author declares no competing interest.

FUNDING

This research is not funded by any resource.

REFERENCES

1. Alshunaiber R, Alzaid H, Meaigel S, et al. Early childhood caries and infant's oral health; pediatricians' and family physicians' practice, knowledge and attitude in Riyadh city, Saudi Arabia. *Saudi Dent J* 2019; 31:S96-105.
2. Amin TT, Al-Abad BM. Oral hygiene practices, dental knowledge, dietary habits and their relation to caries among male primary school children in Al Hassa, Saudi Arabia. *Int J Dent Hyg* 2008; 6:361-170.
3. Batra M, Shah AF, Virtanen JI. Integration of oral health in primary health care through motivational interviewing for mothers of young children: A pilot study. *J Indian Soc Pedod Prev Dent* 2018; 36:86.
4. Bennadi D, Kshetrimayum N, Sibyl S, et al. Toothpaste utilization profiles among preschool children. *J Clin Diagn Res* 2014; 8:212.
5. Bennadi D, Reddy CV, Sunitha S, et al. Oral Health status of 3-6 years old children and their mother's

- oral health related knowledge, attitude and practices in Mysore City, India. *Asian J Med Sci* 2015; 6:66-71.
6. Bozorgmehr E, Hajizamani A, Malek Mohammadi T. Oral health behavior of parents as a predictor of oral health status of their children. *ISRN Dent* 2013; 2013.
 7. Chala S, Houzmali S, Abouqal R, et al. Knowledge, attitudes and self-reported practices toward children oral health among mother's attending maternal and child's units, Sale, Morocco. *BMC Public Health* 2018; 18:1-8.
 8. Garbin CA, Soares GB, Docusse FR, et al. Oral health education in school: Parent's attitudes and prevalence of caries in children. *UNESP J Dent* 2015; 44:285-291.
 9. Gurunathan D, Moses J, Arunachalam SK. Knowledge, attitude and practice of mothers regarding oral hygiene of primary school children in Chennai, Tamil Nadu, India. *Int J Clin Pediatr Dent* 2018; 11:338.
 10. Hashemi A, Bahrololoumi Z, Khaksar Y, et al. Mouth rinses for the prevention of chemotherapy induced oral microsites in children: A systematic review. *Iran J Ped Hematol Oncol* 2015; 5:106.
 11. Iwuala SO, Umeizudike KA, Ozoh OB, et al. Oral self-care practices, dental attendance and self-perceived oral health status among internal medicine residents in Nigeria. *Eur J Dent* 2015; 4:79-86.
 12. Joseph A, Prabu D, Naveen N, et al. Knowledge, attitude, of mothers on oral hygiene practices among 1-5 years old children and association with their oral hygiene practices a comparative study. *Pesquisa* 2012; 4.
 13. Kuriakose S, Prasannan M, Remya KC, et al. Prevalence of early childhood caries among preschool children in Trivandrum and its association with various risk factors. *Contemp Clin Dent* 2015; 6:69.
 14. Mahat G, Bowen F. Parental knowledge about urban preschool children's oral health risk. *Pediatr Nurs* 2017; 43:30.
 15. Martins Junior PA, Vieira Andrade RG, Correa Faria P, et al. Impact of early childhood caries on the oral health related quality of life of preschool children and their parents. *Caries Res* 2013; 47:211-218.
 16. Petrauskiene S, Narbutaite J, Petrauskiene A, et al. Oral health behavior, attitude towards and knowledge of dental caries among mothers of 0-to3-year-old children living in Kaunas, Lithuania. *Clin Exp Dent Res* 2020; 6:215-224.
 17. Pullishery F, Panchmal GS, Shenoy R. Parental attitudes and tooth brushing habits in preschool children in Mangalore, Karnataka: A cross-sectional study. *Int J Clin Pediatr* 2013; 6:156.
 18. Rupesh S, Winnier JJ, Nayak UA, et al. Comparative evaluation of the effects of an alum-containing mouth rinse and a saturated saline rinse on the salivary levels of *Streptococcus mutans*. *J Indian Soc Pedo Prev Dent* 2010; 28:138.
 19. Shah AF, Ibrahim I, Jan SM, et al. Impact of oral hygiene training of anganwadi workers on improvement of oral hygiene in rural child population of Jammu and Kashmir. *Int J Med Sci Public Health* 2017; 6:1325-1330.
 20. Shetty RM, Deoghare A, Rath S, et al. Influence of mother's oral health care knowledge on oral health status of their preschool child. *Saudi J Oral Sci* 2016; 3:12.
 21. Singhal K, Prasanth MA, Singh V, et al. Knowledge, attitude and practice of parents about child oral health in Jodhpur city: A questionnaire survey. *Int j dent med res* 2015; 1:34-41.
 22. Sogi HS, Hugar SM, Nalawade TM, et al. Knowledge, attitude and practices of oral health care in prevention of early childhood caries among parents of children in Belagavi city: A Questionnaire study. *J Family Med Prim Care* 2016; 5:286.
 23. Suvarna R, Rai K, Hegde AM. Knowledge and oral health attitudes among parents of children with congenital heart disease. *Int J Clin Pediatr Dent* 2011; 4:25.
 24. Tay HL, Zainudin IS, Jaafar N. Fluoride toothpaste utilization behavior among pre-school children in Perlis, Malaysia. *Community Dent Health* 2009; 26:211-215.
 25. Trubey RJ, Moore SC, Chestnutt IG. Children's tooth brushing frequency: The influence of parent's rationale for brushing, habits and family routines. *Caries Res* 2015; 49:157-164.