Journal of Research in Medical and Dental Science
2021, Volume 9, Issue 3, Page No: 17-23

Available Online at: www.jrmds.in
eISSN No. 2347-2367: pISSN No. 2347-2545

Parental Knowledge, Attitudes, and Practices of Oral Healthcare among Preschool Children in Riyadh City, Saudi Arabia

Manal A Al-Mutairi*

Department of Pediatric Dentistry and Orthodontics, College of Dentistry, King Saud University, P.O. Box 60169, Riyadh, 11545, Saudi Arabia

ABSTRACT

Background/purpose: The purpose of this cross-sectional study was to evaluate parent's knowledge, attitude, and practice towards oral health of preschool children in Riyadh, Saudi Arabia.

Materials and Methods: A cross-sectional study design was conducted using a survey for parents of preschool children of governmental kindergartens in different regions of Riyadh, Saudi Arabia. The data was coded, computerized, and analyzed for the quantitative and categorical variables.

Results: A total of 384 parents participated in the study. Mostly mothers (91.9%) filled the questionnaires. Demographic information showed that 61.5% of the parents constituted the most prevalent age group which was 30-39 year old parents. Tooth brushing with paste was the most common method of oral hygiene (89.1%) in all age groups. Most of the children brushed the teeth once or twice a day. About 80.7% of parents supervised and advised children during tooth brushing procedure. Almost all parents did not know the time of the first dental visit. Approximately all parents (99.2%) believed the important of teeth of their children's health and 84.4% recognized that primary teeth are important. Similarly, 70.8% of parents recognized any problems of primary teeth will affect the permanent teeth.

Conclusion: Parents of preschool children in this study had poor oral health knowledge. Despite their general positive attitudes towards oral health, their attitude was not reflected on their children regarding brushing and regular dental visit.

Key words: Child, Dentition, Humans, Oral Health, Parents

HOW TO CITE THIS ARTICLE: Manal A Al-Mutairi, Parental Knowledge, Attitudes, and Practices of Oral Healthcare among Preschool Children in Riyadh City, Saudi Arabia, J Res Med Dent Sci, 2021, 9 (3): 17-23.

Corresponding author: Manal A Al-Mutairi

e-mail✉: malmutairi1@ksu.edu.sa

Received: 21/01/2021

Accepted: 09/03/2021

INTRODUCTION

Improvement in children's oral health depends on parent's awareness and knowledge. It is essential to start basic good oral health habits from childhood so that the important dental norms are formed and then maintained into future [1]. Most of the parents are getting educated because of various community programs conducted in their respective countries. In Saudi Arabia, many organized public oral health programs such as "Community Oral Health Education" and "Oral Health Weeks" are offered to educate the population particularly the parents to improve their oral health knowledge.

Family background plays an important role in adapting oral hygiene practices. The family especially the mothers, is the first foundation that influences child behavior and development, who are the primary role model for developing behavior. Parents should get enough oral health knowledge to put into practice with their children for better oral health [2].

Previous studies conducted to assessed parental knowledge and attitudes towards oral health status of children revealed disappointing results [3-6]. Most parents had the knowledge but poor attitudes towards oral health which reflected in higher caries experience in infants and young children. Some authors reported parents and caregivers have positive attitudes towards oral health but appear to have encountered several barriers and challenges to achieving ideal preventive care for their children, with respect

to healthy diet, good oral hygiene, and dental attendance [7,8].

Oral health promotion should include effective dissemination of oral health information, more practical health advice and greater access to dental care for families with preschool children [9]. A study reported that mothers' oral health related to knowledge, attitude, and practices had a significant impact on oral health status of their children [10]. Another study found relatively good mother knowledge regarding dental health of preschool children but regrettably this knowledge was not fully reflected on practices and higher education mothers had better knowledge and practices and emphasized the significant role of mothers in promoting dental health of preschool children [11]. Mothers who are college graduates are more aware of the importance of oral health in children, treatment of dental caries, and brushing technique than mothers with school education. Hence, it is essential that government and health care providers impart oral health knowledge to mothers, as they are the role models for their children [12]. The mothers need to be educated in several important areas related to feeding, diet, and first dental check-up visit of their children [13].

Parent's knowledge, attitude, and practices regarding child's oral health are very important, but there is no adequate published data regarding this area in Saudi Arabia. This study addressed the research questions of what is the knowledge level of parents in urban city for preschool children regarding oral health and what is the relationship between demographic variables and parental knowledge of oral health risk factors [14].

Therefore, this cross-sectional study evaluated parent's knowledge, attitude, and practice towards oral health of preschool children in Riyadh, Saudi Arabia. The null hypothesis tested was no difference of parent's knowledge, attitude, and practice towards the oral health of their preschool children.

MATERIAL AND METHODS

This cross-sectional study was carried in Riyadh, Saudi Arabia and approved by the Institutional Review Board, and Ethics Committee, College of Dentistry Research Center. This was followed by permission from the headmasters of the selected kindergartens in order to conduct this study. A population-based cross-sectional study design was employed to determine the knowledge, attitudes, and practices of parents regarding the oral health of their preschool children. The study recruited from 5 governmental kindergartens located in 5 geographical regions (southern, northern, eastern, western, and central) in Riyadh, Saudi Arabia. The power sample size was calculated P=0.8, power 0.86, α=0.05 and maximum difference 0.06, and was determined to be at least 300 parents of 3-6- years–old children registered in 2018-2019. The study sample was calculated using a multistage random sampling technique. At least 60 children were randomly selected from each of these kindergartens. Informed consent was obtained from each participant before the commencement of the study. The purpose of the study was explained to the parents and confidentiality assured. The participation was entirely voluntary. Parents of medically fit Saudi preschool children aged 3-6 years old, who were able to fill the self-administered questionnaire were included in the study. Exclusion criteria were parents who do not agree to participate or not satisfying the inclusion criteria.

A structured questionnaire to investigate the knowledge, attitudes, and practices of parents regarding the oral health of their preschool children was developed. The questionnaire generated from previous research in this area [3,5,10,12,13] with necessary modifications made considering lifestyle and accounting for cultural sensitivities of the study population. The data collected through a questionnaire consisted of a set of multiple choice questions and Likert-scale questions. The data included the sociodemographic information; parents' age, gender educational level, and knowledge, attitude, and practices of oral health care for their preschool children.

The questionnaire was constructed in English before being translated into local language (Arabic) and then back to English to ensure accuracy. Then, the survey was pilot tested for test-retest reliability and clarity of the questionnaire by randomly selecting a convenience sample of ten parents from the

target participants who were not included in the main study. This pretested questionnaire for the easy understanding to the local population was translated to Arabic by Arabic native speaker who is able to speak both English and Arabic. Later, it was back-translated to English by another bilingual native Arabic speaker. This translated English questionnaire was compared with original English questionnaire. Through these continuous cycles, we could manage to get the original meaning in Arabic language. The answers were reviewed, and items reported by parent as confusing and difficult to answer were addressed. Accordingly, revision of the questionnaire was performed, and final survey was generated to avoid misinterpretation of the questions.

The data was coded, computerized, and analyzed using SPSS pc+ version 22.0 statistical software (IBM Inc., Chicago USA). Descriptive statistics (mean, standard deviation, frequencies, and percentages) were used to describe the quantitative and categorical variables. Pearson's chi-square analysis was employed. Confidence was kept at 95% and p-value≤ 0.05 was considered to be statistically significant.

RESULTS

All 384 questionnaires were completed and returned by the participants from all five geographic districts of Riyadh, thereby giving a response rate of 100%. Of 384 parents, 354 (91.6%) were mothers and 31 (8.1%) were fathers. Most of the parents (61.5%) were from 30 to 39 age groups. Nearly 57% of parents were self-employed or unemployed. In addition, 196 (51.1 %) were fathers and had university level education and 221 (57.3 %) were mothers and had university level education. Families with three children and more were more common in this study about 248 (64.8%) (Table 1).

About 324 (84.4%) of participants believed that primary teeth are important and 31 (8.1%) did not while 29 (7.6%) of the participants did not know about the importance of primary teeth. About 272 (70.8 %) of the subjects thought that problems in primary dentition can affect the permanent dentition, whereas 39 (10.2%) did not whereas 73 (19%) did not know whether such effect exists.

When asked if you know the teeth is an important part of your body, 381 (99.2%) of the participants answered correctly. With regard to the first dental visit, 3 (0.8 %) answered that the first dental visit should be at 6 months of age, 28 (7.8%) after the eruption of first primary teeth, and 220 (57.3 %) only when there is any problem. Additionally, 94 (24.5%) of parents answered their children did not visit dentist until now (Table 2). Toothbrush and paste was the most common method of oral hygiene 342 (89.1%) reported by parents, meanwhile only 4 (1%) of participants answered that use mouthwash and 2 (0.5%) use toothpicks. Half of the parents 190 (49.5%) brushed the teeth of their child once a day, while 155 (40.4%) brushed twice a day, and

Table 1: Sociodemographic characteristics of the study population (n=384).

Variables		Frequency % (number)
Parents Sex	Females	91.6% (353)
	Males	8.1% (31)
Parents Age	20-29	22.1% (85)
	30-39	61.5% (236)
	40 and older	16.4% (63)
Education level of Father	Below high school	6.7% (26)
	High school	42.2% (162)
	University degree	51.1% (196)
Education level of Mother	Below high school	10.1% (39)
	High school	32.3% (124)
	University degree	57.5% (221)
O0ccupational status of parents	Fall time Working	34.6% (133)
	Part time working	4.4% (17)
	Not working	57.3% (220)
	Students	3.6% (14)
Number of children in family	1	4.9% (19)
	2	30.5% (117)
	More than 3	64.6% (248)

Table 2: The frequency distribution of answers to the knowledge and awareness questions.

Question No.	Question Text	Category	No.	%
1	Do you know your teeth is an important part of your body?	Yes	381	99.2
		No	2	0.5
		Don't know	1	0.3
2	When was your child's dental visit?	6 months after birth	3	0.8
		After the eruption of first milk teeth	28	7.3
		1 year after birth	39	10.2
		Only when there is any problem	220	57.3
		Never visit dentist	94	24.5
3	When did you commence the cleaning of your child's teeth?	None	3	0.8
		Soon after first milk tooth had erupted	37	9.6
		After 4-6 milk teeth had erupted	70	18.2
		after all milk tooth had erupted	128	33.4
		after the first birthday of your child	146	38
4	Mainly Method of oral hygiene	Toothbrush with toothpaste	342	89.1
		Toothbrush with water	13	3.4
		Miswak	20	5.2
		Toothpicks	2	0.5
		Mouthwash	4	1
		miswak and wooden sticks	2	0.5
		None of the above	1	0.3
5	The frequency of tooth brushing	Once a day	190	49.5
		Twice a day	155	40.4
		More than twice a day	22	5.7
		Never brush	17	4.4
6	Do you know that some toothpaste contains fluoride?	Yes	314	81.8
		No	11	2.9
		Don't know	59	15.4
7	Do you know using fluoridated toothpaste is good for your children's' teeth?	Yes	181	47.1
		No	76	19.8
		Don't know	127	33.1
8	Do you think children should have their teeth brushed by an adult until they are in age of school?	Yes	310	80.7
		No	61	15.9
		Don't know	13	3.4
9	Do bacteria cause decay to get transmitted from parents to children?	Yes	46	12
		No	219	57
		I don't know	119	31
10	Do you think that consumption of sweet and sticky foods affect dental health?	Yes	368	95.8
		No	4	1
		I don't Know	12	3.1

17 (4.4%) answered that they do not brush teeth. Meanwhile, 146 (38%) of parents start brush teeth of their children after first birthday and 127 (33.4%) of parents start after eruption of all primary teeth. Eighty percent 314 of parents recognized that some of toothpaste contains fluoride and 59 (15.4%) do not know. On the other hand, 181 (47.1%) of parents recognized using fluoridated toothpaste is good for their children's' teeth but 79 (19.9%) do not know.

Approximately 310 (80.7%) of parents recognized children should have their teeth brushed by an adult until they are in age of school. Meanwhile 61 (15.9%) of parents were not supervising children during brushing teeth and only 13 (3.4%) did not know (Table 2). Most of the parents 245 (63.8%) were aware about the effect of prolonged and frequent bottle feeding on child's dental health and 62 (16.1%) thought that bottle feeding does not have any effect on child's teeth. While 77 (20.1%) did not know whether such effect exists.

When asked about food cariogenicity, 368 (95.8%), parents recognized that sugary food causes tooth decay but 12 (3.1%) did not know whether sugary and sticky foods affect the child dental health. On the other hand, only 4 (1%) did not think that sugary and sticky foods affect the child dental health. Only 46 (12%) parents were aware the bacteria that cause decay may be transmitted from parents to children while 219 (57%) parents believed it cannot be transmitted

from parents to children (Table 2).

The results showed that there are significant differences between thinking that children should have their teeth brushed by an adult until they are in age of school and gender of parents (p=0.008) (Table 3). Most of parents think children should have their teeth brushed by an adult until they are in age of school in all gender parents (Table 4). There was also a significant difference with age groups (p=0.03). On the other words, There was no statistically significant difference between frequency of tooth brushing and age of parents (p=0.18). Furthermore, surprisingly a statistically significant difference was not found between age of parents and opinion about necessary of fluoride in toothpastes (p=0.9) (Table 3).

DISCUSSION

Majority of the parents participated in this study reported difference in knowledge, attitude, and practice towards the oral health of their preschool children. Therefore, the null hypothesis of this study was rejected.

This study was the first of it is kind conducted in Riyadh, Saudi Arabia where the parents' population from governmental kindergartens were targeted. This cross-sectional study focuses on oral health knowledge among parents for preschool children. This study showed that knowledge and awareness about oral health among Saudi parents appeared to be poor. However, it is not different than many published studies [3,4,6,14-17]. This indicates a need for an effective oral health educational program to be educated and used by parents. Educational programs through social media or campaigns might be an effective tool to enhance parents' awareness.

Majority of parents (84.4%) were aware about the importance of primary teeth and should be taken care of and many of them (70.8%) agreed that problems in primary teeth will lead to problems on permanent teeth. This agreed with other studies [18,19]. The result of this study shows that 47.1% of the parents reflected good knowledge about toothpaste containing fluoride and it is mechanism to prevent caries. Similarly, a study by Wierzbicka et al. reported that only 46% of the responded parents know the importance of fluoride [20]. This was similar to a recent study in Saudi by Salama and colleges reported 72.5% of the parents agrees that using fluoridated toothpaste will help in prevention of tooth decay [14].

In the present study, 11% of the parents reported that the first dental visit of their children to dentist should be at six months or at least twelve months of age. While the other studies carried out in Riyadh, About 33% of parents thought that the

Table 3: Relationship between age groups, gender of parents and opinion regarding their child teeth brushed by an adult until they are in age of school and, frequency of tooth brushing and fluoride using.

Age groups	21-29	30-39	40 and older	p-value
Do you think children should have their teeth brushed by an adult until they are in age of school				
Yes	73	193	44	0.03
No	11	33	17	
Don't know	1	10	2	
Do you know using fluoridated toothpaste is good for your children's' teeth?				
Yes	36	111	34	0.933
No	27	44	5	
Don't know	22	81	24	
The frequency of tooth brushing				
Once a day	36	120	34	0.18
Twice a day	38	93	24	
More than twice a day	8	11	3	
Never brush	3	12	2	
P-value- Pearson chi square test was used				

Table 4: Relationship between gender of parents and opinion regarding their child teeth brushed by an adult until they are in age of school.

Gender of parent	Mother	Father	p-value
Do you think children should have their teeth brushed by an adult until they are in age of school			
Yes	290	20	0.008
No	53	8	
Don't know	10	3	

first dental visit of their children should be from six months to one year of age, however, about 42% described a dental visit to be at the age of six years and 14% believed that dental visits should be related to the children's complaints of pain [21]. These results were consistent with results obtained from dental patients who attended a Saudi dental college [15]. Other studies revealed similar results indicating that most parents were unaware of the age of the first dental visit [16,22].

In the present study the types of oral hygiene aids that were reported to use included toothbrush with toothpaste (89.1%), miswak (5.2%), and toothpicks (0.5%). While 0.3% of the parents do not use any of the aforementioned oral hygiene aids. A study in Riyadh revealed that 51.1% use toothbrush and 1% use miswak [23].

In the present study, a positive aspect of the respondents was that the majority of them recognized that prolonged and frequent bottle feeding, as well as sugary and sticky foods affect the child's dental health. A study conducted by Lenčova et al. in Czech Republic highlighted different attitude of parents and 79.4% of respondents disagreed that frequency's control of sugary intake can prevent caries development while 66.5% of parents disagreed that regular tooth brushing helps to prevent caries development. In general, the results of this survey showed higher parental awareness [24].

For interpreting the findings of the present study, it is important to outline the possible limitations. This study has some limitations including that the questionnaires were not distributed directly to parents and no oral examination was performed to evaluate oral health status and quality of tooth brushing. Furthermore, the sample of this survey was not representative as there are several types of families such as traditional and modern families in Kingdom of Saudi Arabia. The modern family is the most common in Riyadh today and consists of parents of 2-3 children. However, the degree of knowledge and awareness of Saudi parents varied according to the type of questions asked.

Recommendations generated from this study include avoiding frequent consumption of juices or other sugar-containing drinks in the bottle or Sippy cup and discouraging the behavior of a child sleeping with a bottle. Also, promoting noncariogenic foods for snacks and encouragement eating patterns consistent with the Food Guide Pyramid. In addition, limiting cariogenic foods to mealtimes and restricting sugar-containing snacks that are slowly eaten (e.g. candy, cough drops, lollipops, and suckers). Moreover, clearing cariogenic foods from the child's oral cavity rapidly by tooth brushing after sugar attack is necessary [25].

CONCLUSION

Within the limitations of this study, it is concluded that the knowledge of parents and awareness of oral health among Saudi parents were relatively poor. At the time of start of the study, it was found that great number of the children had not visited the dentist, although half of the parents assumed that it was necessary to visit a dentist when their child experienced pain in the teeth.

However, the results showed that there are significant differences between thinking that children should have their teeth brushed by an adult until they are in age of school and gender of parents. On the other hand, there was no statistically significant difference between frequency of tooth brushing and age of parents.

ACKNOWLEDGMENTS

The author thanks College of Dentistry King Saud University, Riyadh, KSA for providing the facilities used to carry out this study. I would like to thank all the parents who participated in the study and spared their time to fill the questionnaire. I would also like to acknowledge Mr. Nasser S. Almaflehi for helping in the statistical analysis.

FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

1. Bodhale P, Karkare S, Khedkar S. Knowledge and attitude of parents toward oral health maintenance and treatment modalities for their children. J Dent Res Rev 2014; 1:24-27.
2. Kotha SB, Alabdulaali RA, Dahy WT, et al. The influence

of oral health knowledge on parental practices among the Saudi parents of children aged 2–6 years in Riyadh City, Saudi Arabia. J Int Soc Prevent Communit Dent 2018; 8:565-571.

3. Chhabra N, Chhabra A. Parental knowledge, attitudes and cultural beliefs regarding oral health and dental care of preschool. Eur Archives Paediatr Dent 2012; 13:2:76-82.
4. Prabhu A, Rao AP, Reddy V, et al. Parental knowledge of preschool child oral health. J Community Health 2013; 38:880 884.
5. Oredugba F, Agbaje M, Ayedun O, et al. Assessment of mothers' oral health knowledge: Towards oral health promotion for infants and children. Health 2014; 6:908-915.
6. Sehrawat P, Shivlingesh KK, Gupta B, et al. Oral health knowledge, awareness and associated practices of pre-school children's mothers in Greater Noida, India. Niger Postgrad Med J 2016; 23:152-157.
7. Figueiredo MJ, de Amorim RG, Leal SC, et al. Prevalence and severity of clinical consequences of untreated dentine carious lesions in children from a deprived area of Brazil. Caries Res 2011; 45:435-542.
8. Bozorgmehr E, Hajizamani A, Mohammadi T. Oral health behavior of parents as a predictor of oral health status of their children. Hindawi Publishing Corporation 2013; 1-5.
9. Rahul N; June N, Maarit F. Oral healthcare of preschool children in Trinidad: a qualitative study of parents and caregivers. BMC Oral Health 2012; 12:27.
10. Pawar P, Kashyap N, Anand R. Knowledge, attitude, and practices of mothers related to their oral health status of 6-12 years old children in Bhilai City, Chhattisgarh, India. Eur Scient J 2018; 14:1857-7881.
11. Abduljalil HS, Abuaffan AH. Knowledge and practice of mothers in relation to dental health of pre-school children. Adv Genet Eng 2016; 5:153.
12. 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; 11:338–343.
13. Al-Zahrani AM, Al-Mushayt AS, Otaibi MF, et al. Knowledge and attitude of Saudi mothers towards their preschool children's oral health. Pak J Med Sci 2014; 30:720-724.
14. Salama F, Alwohaibi A, Alabdullatif A, et al. Knowledge, behaviours and beliefs of parents regarding the oral health of their children. Eur J Paediatr Dent 2020; 21:103-109.
15. Al-Shalan TA, Al-Musa BA, Al-Khamis AM. Parents' attitude towards children's first dental visit in the College of Dentistry, Riyadh, Saudi Arabia. Saudi Med J 2002; 23:1110-1114.
16. Nazari Z, Taherpour M. Mothers' awareness, regarding orodental health of their children at age of 16 years old in Shirvan. J North Khorasan Univ Med Sci 2013; 5:979-86.
17. Alyahya L. Parental knowledge and practices regarding their children's oral health in Kuwait. Eur J Paediatr Dent 2016; 17:267-273.
18. Hussein AS, Abu-Hassan MI, Schroth RJ, et al. Parent's perception on the importance of their children's first dental visit (A cross-sectional pilot study in Malaysia). J Oral Dent Res 2013; 1:17-24.
19. Aldosari MN, Aljabali I, Altammami A, et al. Assessment of parents knowledge about oral health in national guard primary schools, Riyadh, Saudi Arabia. Int J Med Res Health Sci 2019; 8:64-68.
20. Wierzbicka M, Petersen PE, Szatko F, et al. Changing oral health status and oral health behaviour of schoolchildren in Poland. Community Dent Health 2002; 19:243-250.
21. Hamasha A, Rasheed SJ, Aldosari M, et al. Parents knowledge and awareness of their children's oral health in Riyadh, Saudi Arabia. Open Dent J 2019; 13:236 -241.
22. Naderifar M, Akbarsharifi T, Pairovi H, et al. Mothers' awareness, regarding orodental health of their children at age of 16 years old. Iran J Nurs 2006; 19:15-27.
23. Wyne AH. Oral Health knowledge in parents of Saudi Arabia cerebral palsy children. Neurosci 2007; 12:306-11.
24. Lenčová E, Dušková J. Oral health attitudes and caries-preventive behaviour of Czech parents of preschool children. Acta Med Acad 2013; 42:209-215.
25. Tinanoff N, Palmer CA. Dietary Determinants of dental caries and dietary recommendations for preschool children. J Public Health Dent 2007; 3:197-206.