|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Volume 5, Issue 7; July: 2021; Page No. 104-110

Original Research Article

MOTHER'S KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS CHILD'S ORAL HEALTH CARE IN WESTERN MAHARASHTRA: A QUESTIONNAIRE STUDY

Sharayu Dhande[1], Renuka Nagarale[2], Mandar Todkar[3], Bilal Shaikh[4], Prerna Ghodke[5], Raunak Baksh[6]

[1,5,6] Postgraduate, Dept. of Periodontology, M A Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra.
[2]Associate Professor, Dept. of Public Health Dentistry, M A Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra.
[3]Assistant Professor, Dept. of Public Health Dentistry, M A Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra.
[4]Assistant Professor, Dept. of Conservative Dentistry and Endodontics, M A Rangoonwala College of Dental Sciences and Research Centre, Pune, Maharashtra.

Article Info: Received 04 May 2021; Accepted 15 July 2021
DOI: https://doi.org/10.32553/ijmbs.v5i7.1890
Corresponding author: Mandar Todkar
Conflict of interest: No conflict of interest.

Abstract

Background: It is important to initiate basic good oral health habits in childhood so that the appropriate dental norms are established and then maintained into adult life. The family is the first institution that influences child behaviour and development, especially mothers, who are the primary model for developing behaviour.

Materials and Methods: A cross-sectional study was conducted among the mothers in Pune city. All mothers having children aged below 5 years old was selected in the study. The questionnaire includes a range of response options designed to identify the awareness among the mothers towards their child's oral health and also the various measures taken to maintain oral hygiene. Statistical analysis was done using descriptive statistics and the chi-square test.

Results: In this study, a total of 500 subjects participated. The knowledge regarding fluorides was poor and the majority 62% of parents were unaware of the positive anti-cariogenic effect of fluoridated toothpaste on dental health. Around 91% of mothers feel it is essential to clean their child's teeth after every meal whereas 9% feel it is not so required.

Conclusion: The mother's knowledge of the child's oral health care was inadequate. Oral health education and school oral health programs should be conducted at regular interval.

Keywords: Children, Dental care, Mother's attitude, Oral Hygiene, Questionnaire study.

Introduction

Dental caries in the early stages of life is an unsolved enigma for most of us around the world. It is a multifactorial, post-eruptive bacterial infectious disease characterized by a progressive demineralization process that affects the mineralized tissues and it develops through gradual complex biological interactions of acidogenic bacteria, fermentable carbohydrates and host factors such as teeth and saliva, during the time.[1] For a lifetime of healthy smiles, the role of parents in proper oral healthcare is very important because they are the main decision-makers and caregivers of oral health to their children during the first 3 years of life.[2] The early years involve primary socialization during which earliest childhood routines and habits are acquired.[3] Primary socialization is the crucial period during childhood when he or she learns the value, norms and behaviours that should be displayed to live accordingly to a specific culture.[4] Maternal habits and behaviours may sometimes stimulate or add up to microbial contamination in an infant's oral cavity.[5] The frequent contact between mother and child may cause early contamination and transmission of bacteria.[6] Streptococcus mutans is implicated as one of the major etiological factors for dental caries initiation.[7] High levels of Streptococcus mutans in mothers increase their children's chance of developing dental caries.[8] A reduction in the number of S. mutans in the saliva of highly infected mothers is appropriate to avoid colonization by these microorganisms of their children's oral cavity. This is an important aspect that should be assessed, since the earlier the child is exposed to cariogenic microorganisms, the higher is the risk of developing new caries.[9] Nowadays, the efforts are directed towards oral health promotion and disease prevention which are fundamentally superior to dental rehabilitation and secondary to disease development. As a result, early preventive dental visits are widely advocated.[10] The goal of health education is to improve knowledge, which leads to the adoption of favourable oral health behaviours that contribute to better oral health. Thus more positive is the parent's attitude towards dentistry the better will be the dental health of their children. Hence, an attempt had been made in this study to assess the knowledge, attitude and practices of mothers towards their children's oral health.

Materials and Methods:

A cross-sectional study was conducted in the outpatient department of the dental schools in Western Maharashtra. The study duration was six months. All mothers having children aged below 5 years old and who gave consent were included in the study. The structured questionnaire proforma was designed in a local language that is the Marathi Language. A questionnaire was pretested and validated among 30 subjects to check feasibility, clarity, comprehensiveness, and acceptability and these subjects were not included in the final analysis. Around 500 samples size selected for the study. The structured proforma was designed to collect the data, which consisted of two parts. The first part consisted of general information such as name, age, gender of the child, parent's education, occupation, and total family income. The second part consists of questions related to the mother's knowledge, attitude, and practices towards children's oral health. The questionnaire includes a range of response options designed to identify the awareness among the mothers towards their child's oral health and also the various measures taken to maintain oral hygiene. The questionnaire was distributed to the mothers during children and mother's visit to the hospital. Informed consent was also taken from participating mothers. All participants were interviewed by the investigators. Statistical analysis was done using descriptive statistics. Data collected were entered into a spreadsheet programme (Excel 2013; Microsoft) and subsequently subjected to statistical analysis using the SPSS 23 version software. The chi-square test used in the study and the p-value set at 5%.

Results:

In **table 1**, around 47% of mothers thought, tooth decay was the most common disease occurring in the children, while 3% of mothers thought that bad breathe was most common in their children. Few mother's (38%) mothers thought that restricting sweets helps prevent tooth decay, while 6% of mothers were sceptical about the aetiology behind tooth decay. Overall, 46% of mothers felt permanent teeth erupt after 8 years of age, while 15% felt permanent teeth erupt after 12 years of age. The knowledge regarding fluorides was poor and the majority 62% of parents were unaware of the positive anti-cariogenic effect of fluoridated toothpaste on dental health. However, no significant statistical difference was found between age and knowledge of mothers.

In **table 2**, overall 63% of mothers thought that milk teeth are essential for a healthy mouth, while 18% of mothers showed a negative response towards the importance of primary teeth. Majority of mothers 92% feel necessary to take a child for a regular dental visit, while 8% disagree with the need for regular dental visits. Around 91% of mothers feel it is essential to clean their child's teeth after every meal whereas 9% feel it is not so required. The majority 89% of parents thought excess intake of sugar-containing foodstuff causes cavities while 11% of parents feel sugar-containing foodstuff causes does not have any significant effect on their child's teeth. However, no significant statistical difference was found between age and attitude of mothers.

In **table 3**, more than half (58%) mothers replied that their child's first dental visit was after the age of 3 years and above. Very few, only 1% mothers replied their child's first dental visit was before 6 months. Less than half (42%) of mothers told they started cleaning their child's teeth after the eruption of 4 to 6 milk teeth. While only a few, 11% mothers told they had started cleaning their child's teeth after the eruption of first milk tooth. Almost half 52% of parents replied that child's father used to supervise the child's toothbrushing while 8% of them replied mothers used to supervise whereas 34% of them used to brush without any adult supervision. Very few i.e. 27% of parents used children's toothpaste while 71% of them used family toothpaste and hardly 1% of parents used to clean their child's teeth without using any toothpaste. However, no significant statistical difference was found between age and oral hygiene practice of mothers.

Table 1: The distribution of responses on knowledge aspects according to age groups of the respondents (n=500)

Knowledge aspects	Responses	Age groups (years)						p-value
		<30 (n=202)		>30 (n=298)		All (n=500)		
		n	%	n	%	n	%	
Which is the most common disease in your child's mouth?	Tooth decay	87	43.1	143	50	230	47.5	0.153 NS
	Toothache	22	6.9	51	17.1	73	13	
	Bleeding gum	24	11.9	23	7.1	47	9.4	
	Discolored teeth	20	9.9	19	6.4	39	7.8	
	Bed Breath	9	4.5	13	3.4	22	3.8	
	Don't Know	30	14.8	33	10.1	63	12	
	None	10	8.9	16	5.4	26	6.8	
Which of the following do you think	Restricting sweets	87	43.1	104	34.9	191	38.2	0.234

prevents tooth decay	Tooth brushing	68	33.7	131	43.9	199	39.8	NS
	Tooth paste	17	8.4	23	7.7	40	8	
	Regular dental visit	17	8.4	23	7.7	40	8	
	Don't know	13	6.4	17	5.7	30	6	
At what age milk teeth erupt in the oral cavity	Before 6 months of age	35	17.3	41	13.8	76	15.2	0.585 NS
	At 6 months	99	49	160	53.7	259	51.8	
	6 months to 1 year	52	25.7	78	26.2	130	26	
	After 1 year of age	16	7.9	19	6.4	35	7	
How many milk teeth are there in the oral cavity?	10	36	17.8	49	16.4	85	17	0.211 NS
	32	20	9.9	36	12.1	56	11.2	
	20	79	39.1	130	43.6	209	41.8	
	Don't know	75	37.1	83	27.9	158	31.6	
At what age permanent teeth erupts in oral cavity	6-7 years	65	32.2	122	40.9	187	37.4	0.129 NS
	After 8 years	101	0.5	133	44.6	234	46.8	
	After 12 years	36	17.8	43	14.4	79	15.8	
Are u aware about fluorides	Yes	72	35.6	116	38.9	188	37.6	0.457 NS
	No	130	64.4	182	61.1	312	62.4	

Note: Values are n (% of respondents. P-values by Chi-Square test, P-value<0.05 is considered to be statistically significant,*P-value<0.05, **P-value<0.01, ***P-value<0.001, Ns-Statistically non-significant.

Table 2: The distribution of responses on attitude aspects according to age groups (n=500).

Attitude aspects	**Responses**	**Age groups (years)**						**p-value**
		<30 (n=70)		**>30 (n=130)**		**All (n=500)**		
		n	**%**	**n**	**%**	**n**	**%**	
Do u think milk teeth are important for a healthy mouth?	Yes	119	58.9	196	65.8	315	63	0.089 NS
	No	37	18.3	57	19.1	94	18.8	
	Don't Know	46	22.8	45	15.1	91	18.2	
Is it necessary to take a child for a regular dental visit	Strongly Agree	53	26.2	79	26.5	132	26.4	0.821 NS
	Agree	131	64.9	197	66.1	328	65.4	
	Disagree	15	7.4	20	6.7	35	7	
	Strongly Disagree	3	1.5	2	0.7	5	1	
Milk teeth don't require good care as it's going to fall anyway?	Yes	107	52.9	132	44.3	239	47.8	0.567 NS
	No	95	47.0	166	55.7	261	52.2	
Healthy milk teeth are essential for children to chew the food properly?	Strongly Agree	55	27.2	106	35.6	161	32.2	0.099 NS
	Agree	122	60.4	155	52	277	55.4	
	Disagree	25	12.4	34	11.4	59	11.8	

	Strongly Disagree	0	0	3	1	3	0.6	
Is it necessary to clean a child's teeth after every meal?	Strongly Agree	68	33.7	111	37.2	179	35.8	0.067 NS
	Agree	123	60.9	156	52.3	279	55.8	
	Disagree	11	5.5	26	8.7	37	7.4	
	Strongly Disagree	0	0	5	1.7	5	1	
Excess intake of food for infants containing sugar can cause cavities?	Strongly Agree	76	37.6	127	42.6	203	40.6	0.211 NS
	Agree	104	51.5	138	46.3	242	48.4	
	Disagree	20	9.9	33	11.1	53	10.6	
	Strongly Disagree	2	0.9	0	0	2	0.4	
It harms a baby's tooth to let him/her sleep all night with a milk bottle in mouth	Strongly Agree	47	23.3	57	19.1	104	20.8	0.065 NS
	Agree	108	53.5	154	51.7	262	52.4	
	Disagree	37	18.3	80	26.8	117	23.4	
	Strongly Disagree	10	4.9	7	2.3	17	3.4	

Note: Values are n (% of respondents. P-values by Chi-Square test, P-value<0.05 is considered to be statistically significant,*P-value<0.05, **P-value<0.01, ***P-value<0.001, NS - Statistically non-significant.

Table 3: The distribution of responses on practice aspects according to age group (n=500).

Practice aspects	**Responses**	**Age groups (years)**				**All (n=500)**		**p value**
		<30 (n=70)		**>30 (n=130)**				
		n	**%**	**n**	**%**	**n**	**%**	
At what age was your child's first visit to Dentist?	Before 6 months	4	1.9	4	1.3	8	1.6	0.537 NS
	0.6 to 1 year	21	10.4	31	10.4	52	10.4	
	1 to 3 years	67	33.2	83	27.9	150	30.0	
	3 years above	110	54.5	180	60.4	290	58.0	
How many times did your child visit a Dentist in the last 1 year?	Never	54	26.7	88	29.5	142	28.4	0.214 NS
	Once	66	32.7	72	24.2	138	27.6	
	Twice	54	26.7	88	29.5	142	28.4	
	More than twice	28	13.9	50	16.8	78	15.6	
Does your child rinse the mouth after eating or drinking	Yes	43	21.3	80	26.8	123	24.6	0.209 NS
	No	47	23.3	75	25.2	122	24.4	
	Sometimes	82	40.6	114	38.3	196	39.2	
	Don't know	30	14.8	29	9.7	59	11.8	
At what time do you give the sugary food items to your child?	With meals	39	19.3	60	20.1	99	19.8	0.319 NS
	Between meals	38	18.8	51	17.1	89	17.8	
	before bed	15	7.4	37	12.4	52	10.4	
	Not particular	110	54.5	150	50.3	260	52.0	
When did you start the cleaning	After the first milk	22	10.9	36	12.1	58	11.6	0.162 NS

of your child's teeth?	tooth erupts							
	After 4-6 milk teeth	78	38.6	136	45.6	214	42.8	
	After all milk teeth	67	33.2	93	31.2	160	32.0	
	Don't know	35	17.3	33	11.1	68	13.6	
What material do you use to clean your child's teeth?	Toothpaste	45	22.3	59	19.8	104	20.8	0.342 NS
	Toothpowder	21	10.4	22	7.4	43	8.6	
	Toothbrush+paste	136	67.3	217	72.8	353	70.6	
	Any other	0	0	0	0	0	0.0	
How often does the child brush his/her teeth?	Can't remember	1	0.5	3	1.0	4	0.8	0.160 NS
	Once a day	145	71.8	198	66.4	343	68.6	
	twice a day	46	22.8	82	27.5	128	25.6	
	Never	10	4.9	15	5.0	25	5.0	
Who supervises your child's toothbrushing?	Himself / Herself	59	29.2	115	38.6	174	34.8	0.071 NS
	Father	118	58.4	148	49.7	266	52.2	
	Mother	14	6.9	26	8.7	40	8.0	
	Other	11	5.4	9	3.0	20	4.0	
If you use toothpaste then which once your child use?	Children's toothpaste	46	22.8	90	30.2	136	27.2	0.147 NS
	Family toothpaste	154	76.2	204	68.5	358	71.6	
	Without toothpaste	2	1	4	1.3	6	1.2	

Note: Values are n (% of respondents. P-values by Chi-Square test, P-value<0.05 is considered to be statistically significant,*P-value<0.05, **P-value<0.01, ***P-value<0.001, Ns-Statistically non-significant.

Discussion:

Dental caries is the most common disease of the oral cavity and one of the main concerns consists in the lack of information and knowledge of parents and consequence lack of transmission of health education information to their children.[1] Preschool years provide a foundation for oral health condition and patterns for use of dental services later in adulthood. Parents especially mothers need to be helped to realize that they are role models for their children and to be encouraged to improve the child's dental health.[12] Health professionals are the first to come into contact with expectant and new mothers need to disseminate appropriate and accurate information about oral health care for infants, especially the use of nursing bottle at night, the value of tooth brushing and regular dental visits. Therefore, development and implementation of wide-scale, long term programs of health education and promotion for expectant new mothers.[13] Cultural norms and practices comprising religion, health beliefs, language, diet, family structure, medical and dental approaches also influence children's oral health.[5]

In this study, few mothers 47% could identify that tooth decay as the most common dental disease among children. Toothache was the second most common disease found followed by bleeding gums and discoloured teeth, and bad breathe 3% being the least common disease. Regular tooth brushing would help prevent tooth decay was thought by 39% of mothers. Restricting sweets would also have a major role in preventing tooth decay was thought by 38% of mothers. This throws light on inadequate knowledge about the relationship between different forms of sugar consumption and dental caries. While 8% of mothers felt a change in toothpaste and regular dental visits would also have an impact on the prevention of tooth decay. The results of this study were found similar to the results of a study conducted by Jain R et. al.[14] in 2014. Nearly, half of the total number of mothers, 51% of them thought eruption of milk teeth was at 6 months of age, while 7% thought milk teeth milk erupt after 1 year of age. Around 41% of mothers thought, 20 milk teeth erupt in their child's oral cavity. Similar results were found in studies done by Jain R et. al.[14] in 2014. In this study, knowledge regarding fluorides was poor. This was similar to the study done by Jain R et. al.[14] in 2014, whereas studies done by Thakare VG et. al.[15] in 2012 reported good knowledge about fluoride. However, in this study, the majority of parents

were aware of the positive effect of fluoridated toothpaste on dental health.

In the present study, mothers with higher education have a better knowledge regarding oral hygiene practice and the importance of deciduous teeth. Overall 63% of mothers thought that milk teeth are important for a healthy mouth. While 18% of mothers showed a negative response towards the importance of primary teeth. Moreover, a significantly higher 65% of parents showed a positive response towards regular dental visits. The first dental visit of a child is considered to be one of the major dental caries preventive measures. Hence AAPD, recommends that an infant's first oral health care visit should within 6 months of the eruption of the primary tooth and no later than 12 months of age. Infant oral health care begins with oral health counselling for parents and must include an oral examination of the child as well as some initial health education.[15]

In this study, responding mothers had partial knowledge and a sceptical attitude on the importance of deciduous teeth. Many of them said that baby's teeth do not require good care as they will fall off. This was per a study done by Jain R et. al.[14] in 2014. About more than half, 55% of mothers agreed on the importance of primary teeth to chew the food properly. Similar results were found in a study conducted by Jain R et. al.[14] in 2014. Also, the study done by Kumar G et. al.[16] in 2013 showed that permanent teeth were more important than primary teeth. The majority of parents expressed the need for cleaning primary teeth. This reflects increasing awareness about the importance of primary teeth. Similar results were seen in studies done by Thakare VG et. al.[15] in 2012 and Nagarajappa R et. al.[13] in 2013.

In this study, most of the females were aware that sugary items like chocolates can lead to tooth decay. However, there was low awareness about different forms of sugary items, which are harmful to teeth and these results of the study matched with a study done by Jain R et. al.[14] in 2014. On average, the majority of mothers agreed that making the child sleep with a baby bottle is not a good practice. Similar findings were reported by studies of Thakare VG et. al.[15] in 2012 and few studies such as of Nagarajappa R et. al.[13] in 2013 showed 52% of parents who disagreed on the nighttime bottle or breastfeeding as a cause of dental decay and other related oral diseases. Consumption of sweet milk or juices at bedtime was reported as being a dominant caries indicator. Almost more than half 60% of parents agreed that their children should be guided and supervised by parents while brushing their teeth. A higher prevalence of dental caries was reported among those who were not assisted by their parents.[15]

An important aspect of oral hygiene practices is regular brushing. In the present study, a major proportion of parents 42% believed that their child's mouth need not be cleaned before primary teeth erupt which was lower in comparison to the findings obtained by studies conducted by Nagarajappa R et. al.[13] in 2013. Few parents 32% also felt that they should brush their child's teeth when all the primary teeth have erupted. It was found that children who start brushing at a later age have a higher prevalence of early childhood caries.[13] The small sample size and different other variables were the limitation of the present study. However, in this study, the mother's knowledge of the child's oral health care was inadequate. Health professionals, who are first to come into contact with expectant and new mothers, need to disseminate appropriate and accurate information about oral health care for infants, especially the use of nursing bottle at night, the value of tooth brushing, and regular dental visits. A matter of high priority in the development and implementation of wide-scale, long-term programs of health education.

Conclusion:

The study concluded that the mother's knowledge of the child's oral health care was inadequate. Moreover, oral health education and school oral health programs should be conducted regularly to improve the overall attitude and practices of a mother towards a child's oral care.

Acknowledgement:

All authors would like to acknowledge all the participated mothers and the principals of participated dental colleges for their support and cooperation during the study.

References:

1. Veiga N, Aires D, Douglas F, Pereira M, Vaz A, Rama L et. al. Dental caries: A review. J Dent Oral Health. 2016;5(5):43-46.
2. Kamolmatyakul S. Oral health knowledge, attitude and practices of parents/caregivers, oral health care - prosthodontics, periodontology, biology, research and systemic conditions, editor Mandeep Virdi, InTech. 2012 Feb 29;21:341-56.
3. Prabhu A, Rao AP, Reddy V, Ahamed SS, Muhammad S, Thayumanavan S. Parental knowledge of pre-school child oral health. J community health. 2013 Oct 1;38(5):880-4.
4. Handel G, editor. Childhood socialization. Transaction Publishers; 2011 Dec 31;44-45.
5. de Castilho AR, Mialhe FL, de Souza Barbosa T, Puppin-Rontani RM. Influence of family environment on children's oral health: a systematic review. Jornal de pediatria. 2013 Mar 1;89(2):116-23.
6. Bozorgmehr E, Hajizamani A, Malek Mohammadi T. Oral health behavior of parents as a predictor of oral health status of their children. ISRN Dentistry. 2013;2013:1-5.
7. Lemos JA, Palmer SR, Zeng L, Wen ZT, Kajfasz JK, Freires IA, Abranches J, Brady LJ. The biology of Streptococcus mutans. Gram-Positive Pathogens. 2019 Oct 1:435-48.
8. Damle SG, Yadav R, Garg S, Dhindsa A, Beniwal V, Loomba A, Chatterjee S. Transmission of mutans

streptococci in mother-child pairs. Indian J Med Res. 2016 Aug;144(2):264-70.
9. Edelstein BL, Ureles SD, Smaldone A. Very high salivary Streptococcus mutans predicts caries progression in young children. Pediatric dentistry. 2016 Jul 15;38(4):325-30.
10. Bhaskar V, McGraw KA, Divaris K. The importance of preventive dental visits from a young age: systematic review and current perspectives. Clin Cosmet Investig Dent. 2014 Mar 20;6:21-7.
11. Nakre PD, Harikiran AG. Effectiveness of oral health education programs: A systematic review. J Int Soc Prev Community Dent. 2013 Jul;3(2):103-15.
12. Vinay S, Naveen N, Naganandini N. Feeding and oral hygiene habits of children attending daycare centres in Bangalore and their caretakers' oral health knowledge, attitude and practices. Indian Journal of Dental Research. 2011 Jul 1;22(4):561.
13. Nagarajappa R, Kakatkar G, Sharda AJ, Asawa K, Ramesh G, Sandesh N. Infant oral health: Knowledge, attitude and practices of parents in Udaipur, India. Dent Res J. 2013 Sep;10(5):659-65.
14. Jain R, Oswal KC, Chitguppi R. Knowledge, attitude and practices of mothers toward their children's oral health: A questionnaire survey among subpopulation in Mumbai (India). J Dent Res Sci Develop. 2014 Jul 1;1(2):40-5.
15. Thakare VG, Ajith Krishnan CG, Chaware S. Parents' perceptions of factors influencing the oral health of their preschool children in Vadodara city, Gujarat: A descriptive study. Eur J Gen Dent. 2012 Jan 1;1(1):44-9.
16. Kumar G, Singh DK, Jalaluddin M, Dileep CL, Rout P, Mohanty R. Oral health of pre-school aged children in Dhanbad district, Jharkhand, India-A peek into their mother's attitude. J Clin Diagn Res. 2013 Sep;7(9):2060-26.