

**KNOWLEDGE, ATTITUDE AND PRACTICES OF MOTHERS
TOWARD THEIR CHILDREN'S ORAL HEALTH: A
QUESTIONNAIRE SURVEY AMONG SUBPOPULATION IN
CHENNAI (INDIA)**

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ABSTRACT

Aim: Parental attitudes towards children's oral health determine the attitudes and practices of their children. This consecutively depends on the knowledge, attitude, and practices among parents which is being seeded to their children. **Objective:** The objective was to assess the knowledge, attitude and practices of mothers toward their children's oral health. **Materials and Methods:** A cross-sectional questionnaire survey was conducted among 206 mothers of preschool children who visited Saveetha Dental College in Chennai, India. Data were collected through a structured proforma. **Results:** Majority 83.3% showed fair attitude, 70% exhibited fair knowledge, and 66.7% showed poor

practices towards a children's oral health. Lack of knowledge regarding the role of fluorides, causes and prevention of dental caries, gum disease, and malocclusion were found among the respondents. **Conclusion:** This study showed that mothers had fair knowledge and attitude with poor practices towards their children's oral health which can be improved with effective oral health education.

KEYWORDS: knowledge, attitude and practices of mothers toward their children's oral health.

INTRODUCTION

A human being below the age of 18 years is considered a child unless under the law applicable to the child, majority is attained. Every child goes through many life stages such as infancy, childhood, adolescence before reaching adulthood. Children are mostly under the

care of parents, guardians or caretakers especially mothers, when they are below the age of 5 years. "Primary socialization" takes place during these early years where the earliest childhood routines and habits are attained.^[1] These include dietary habits and healthy behaviours ingrained at home because the child is vulnerable on the knowledge and behaviour of parents and elder siblings.^[2] Studies have showed that the more positive is the parents' attitude towards oral health; the better will be the oral health of their children.^[3] Hind and Gregory have reported that poor attitude of parents toward oral health of infants and young children are correlated with increased caries prevalence.^[4]

Streptococcus mutans is the main etiological microorganism responsible for dental caries which is a transmissible infectious disease. Improper feeding practices by mothers/caregivers encourages the early establishment of *S. mutans* in the oral cavity, increases the risk for the development of early childhood caries in infants and toddlers.^[2] Hence, mothers beliefs and attitude towards oral health care, plays a major role in children's oral health.^[5] Without basic knowledge of caries risk factors, importance of deciduous dentition and oral maintenance, prevalence of caries increases making it difficult to prevent oral diseases.^[6] Oral health care among preschool children is given priority as it determines the oral health status of the future generations.^[7] Hence, this study is done to assess the knowledge, attitude, and practices of preschool mothers toward their children's oral health and also to compare the knowledge, attitude, and practices with regards to age, educational level, and socioeconomic status in Chennai, India.

MATERIALS AND METHODS

Study design

A cross-sectional questionnaire study design was conducted for a month among mothers of 3-5 year old preschool children who visited Saveetha Dental College in Chennai and an informed consent was obtained from the study participants.

Sample size

Questionnaire was pretested and validated among 20 mothers and these subjects were not included in the final analysis. Based on the response rate the sample size was calculated to be 206. Sample size was calculated based on the formula $N = Z_{\alpha}^2 \frac{PQ}{L^2}$ where $P = 65.2$, $Q = 34.8$, $Z_{\alpha}^2 = 3.84$ and $L = 10\%$ of power = 6.5
 $P = 65.2$

$$\begin{aligned} Q &= 100 - P \\ &= 100 - 65.2 = 34.8 \end{aligned}$$

$$\begin{aligned} L &= 10\% \text{ of } P \\ &= 6.5 \end{aligned}$$

$$\frac{3.84 * 65.2 * 34.8}{6.5 * 6.5} = 206$$

Questionnaire

The structured proforma designed consisted of 2 parts. The first part was designed to delineate general information such as name, age, gender of the child, parent's education, occupation and total family income. The second part was the questionnaire, consisting of 25 questions concerning parental knowledge, attitude and practices towards their children's oral health and behaviours. Out of which 10 questions were related to knowledge, six were related to attitude and the remaining nine questions were related to practices. This proforma was designed in English and then translated in Tamil by two dentists who were fluent in both English and Tamil.

A scoring system was developed to assess the responses for the questionnaires. The scores were based on the number of correct/favourable answers given by mothers (8, 9). (Knowledge – good: >7, fair: 4–6, poor: <3, Attitude – good: >5, fair: 3–4, poor: <2, Practices – good: >7, fair: 4-6, poor: <3).

Data analysis

The data were computer-coded and analyzed with SPSS for windows, version 16.0, Chicago Inc. To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and the mean and standard deviation were used for continuous variables. To find the significant difference between the bivariate samples in Independent groups the unpaired sample t-test was used. For the multivariate analysis the one way ANOVA with Tukey's Post Hoc test was used. In both the above statistical tools the probability value 0.05 is considered as significant level.

RESULTS

In this study, a total of 206 mothers completed the questionnaire. The following are the results of this study. Table 1 shows the distribution of study participants according to their responses to the questions related to knowledge, attitude, and practices.

Table 1: Distribution of study participants according to their responses to knowledge, attitude and practice questions**Number Percentage Knowledge**

1. How many milk teeth are there in a child's mouth

A) 10	36	17.4
B) 12	20	9.71
C) 20	99	48.1
D) 28	15	7.28
E) I don't know	36	17.5

2. Does the tooth paste contain fluoride?

A) Yes	58	28.2
B) No	11	5.34
C) I don't know	137	66.5

3. What is the role of the fluoride in the tooth paste?

A) Prevents tooth decay	51	24.7
B) Gives freshness	14	6.80
C) Prevents gum problems	55	26.7
D) I don't know	86	41.7

4. What is the most common dental disease in the child?

A) Tooth decay	108	52.4
B) Discoloured tooth	57	27.7
C) Bleeding gums	11	5.34
D) I don't know	30	14.6

5. Which of the following food items can lead to tooth decay?

A) Chocolates	93	45.1
B) Soft drinks	19	9.22
C) Bakery products	31	15.0
D) All of the above	63	30.6

6. Which of the following do you think prevents the tooth decay?

A) Restricting sweets	93	45.1
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B) Tooth brushing	31	15.0
C) Regular dental visits	63	30.6
D) Fluoridated tooth paste	19	9.22
7. Causes for gum disease?		
A) Improper brushing	64	31.1
B) Tartar	15	7.28
C) All of the above	12	5.83
D) I don't know	115	55.8
8. Which of the following do you think prevents the gum disease?		
A) Regular brushing and mouth wash	43	20.9
B) Professional cleaning	90	43.7
C) All of the above	73	35.4
9. Which of the following can lead to irregular teeth?		
A) Thumb sucking/tongue thrusting/mouth breathing	24	11.7
B) Runs in the family	23	11.2
C) All of the above	78	37.9
D) I don't know	81	39.3
10. Can irregularly placed teeth be aligned in the correct position?		
A) Yes	109	52.9
B) No	30	14.6
C) I don't know	67	32.5

Attitude

1. It is necessary to take the child for regular dental visits

A) Agree	135	65.5
B) Disagree	31	15.0
C) Uncertain	40	19.4

2. Cleaning of the child's teeth should be done by mothers

A) Agree	117	56.8
B) Disagree	61	29.6
C) Uncertain	28	13.6

3. It is necessary to clean the child's teeth after every meal

A) Agree	119	57.8
B) Disagree	50	24.3
C) Uncertain	37	18.0

4. Milk teeth do not require good care as it is going to fall anyway

A) Agree	80	38.8
B) Disagree	90	43.7
C) Uncertain	36	17.5

5. Good oral health is related to the good general health

A) Agree	109	52.9
B) Disagree	33	16.0
C) Uncertain	64	31.1

6. Healthy milk teeth are essential for children to chew the food properly

A) Agree	158	76.7
B) Disagree	19	9.22
C) Uncertain	29	14.1

Practice

1. When was the child's first dental visit?

A) 6 months after birth	61	29.6
B) After the eruption of first milk tooth	32	15.5
C) 1 year after birth	20	9.71
D) Not yet visited	93	45.1

2. When do you take your child to visit the dentist?

A) Only during problems	138	67.0
B) Every 6 months	25	12.1
C) Every 1 year	43	20.9

3. When did you commence the cleaning of your child's teeth?

A) Soon after first milk tooth eruption	52	25.2
B) After 4-6 milk teeth eruption	23	11.2
C) After all milk teeth eruption	91	44.2

D)Don't remember	40	19.4
4. Which of the following aids are used to clean your child's teeth?		
A)Finger	9	4.37
B)Tooth brush	175	85.0
C)Twig	0	0
D)Any other	22	10.7
5. How many times do you brush your child's teeth?		
A) Once in a day	148	71.8
B) Twice in a day	37	18.0
C) After every meal	7	3.40
D) Not particular	14	6.80
6. When do you change your child's tooth brush?		
A) Once in 15 days	22	10.7
B) Once in a month	24	11.7
C) Every 2-3 months	46	22.3
D) Once the bristles fray out	61	29.6
E) Not particular	53	25.7
7. What material do you use to clean your child's teeth?		
A) Tooth paste	147	71.4
B) Tooth powder	33	16.0
C) Any others	26	12.6
8. Does your child rinse the mouth after eating/drinking?		
A) Yes	61	29.6
B) Sometimes	119	57.8
C) I don't know	26	12.6
9. At what time do you give the sugary food items to your child?		
A) With meals	42	20.4
B) In between meals	85	41.3
C) Before going to bed	16	7.77
D) Not particular	63	30.6

Overall knowledge, attitude and practices

Based on the scoring criteria as described earlier, it was found that 30% mothers exhibited poor knowledge and 66.7% showed poor practices. Whereas around 70% exhibited fair knowledge, 83.3% fair attitude and 0.11% showed fair practices. In this study very few participants were in the good category. Merely, 16.7% were good in attitude and 22.2% good in practice.

Association between age, educational qualification and socioeconomic status with knowledge, attitude and practice scores.

Mothers in the age group of 30-40 years showed significantly higher mean knowledge scores (mean= 5.63) compared with other age group ($P= 0.000$) [Table 2]. Mothers with high educational qualification (graduates) scored significantly higher mean knowledge (mean= 6.02), attitude (mean= 5.54) and practice (mean= 4.32) compared with lower educational qualification ($P= 0.000$) [Table 3]. Similarly mothers belonging to higher socioeconomic status showed better knowledge (mean= 6.66), attitude (mean= 4.18) and practice (mean= 3.94) [Table 4]. Significant positive correlation was seen between knowledge, attitude and practice.

Table 2

	Age	N	Mean	Std. Dev	T	Sig
Knowledge	<30 yrs	139	3.64	1.745	-5.736	0.000
	30-40 yrs	67	5.63	2.563		
Attitude	<30 yrs	139	3.60	1.684	0.882	0.379
	30-40 yrs	67	3.40	1.371		
Practice	<30 yrs	139	3.94	1.347	7.405	0.000
	30-40 yrs	67	2.73	0.947		

Table 3

		N	Mean	Std. Dev	F	Sig
Knowledge	Illiterate	49	2.78	0.468	20.151	0.000
	Primary	67	3.85	1.663		
	Secondary	41	5.57	1.814		
	Graduate	28	6.02	2.055		
	Postgraduate	21	4.10	3.780		
	Total	206	4.29	2.244		
Attitude	Illiterate	49	2.90	1.503	27.610	0.000
	Primary	67	2.88	1.543		
	Secondary	41	3.46	0.840		
	Graduate	28	5.54	0.508		
	Postgraduate	21	4.57	1.287		

	Total	206	3.53	1.588		
Practice	Illiterate	49	2.63	0.668	22.038	0.000
	Primary	67	4.27	1.620		
	Secondary	41	2.83	0.863		
	Graduate	28	4.32	0.863		
	Postgraduate	21	3.71	0.902		
	Total	206	3.54	1.353		

Table 4

	SES	N	Mean	Std. Dev	F	Sig.
Knowledge	Upper middle	67	6.66	1.847	129.955	0.000
	Lower middle	86	3.45	1.280		
	Upper lower	53	2.64	1.302		
	Total	206	4.29	2.244		
Attitude	Upper middle	67	4.18	1.642	21.999	0.000
	Lower middle	86	3.70	0.983		
	Upper lower	53	2.45	1.782		
	Total	206	3.53	1.588		
Practice	Upper middle	67	3.94	1.340	7.313	0.001
	Lower middle	86	3.15	1.132		
	Upper lower	53	3.40	1.472		
	Total	206	3.54	1.353		

DISCUSSION

Health-related habits and practices among the family members are derived through the norms, values and goals of the family.^[10] Children's favourable habits were very symbolic to the parents' favourable attitudes such as children's tooth brushing and sugar-snacking habits according to a study done by Adair *et al.*^[11] Hence, it is very important that mothers or caregivers have adequate knowledge on oral health promotion and have a positive attitude and practice to guide their young ones.

In this study, awareness on fluoride was very poor. This was similar to the study done by Moulana *et al.*^[9], Romi *et al.*^[12], Suresh *et al.*^[13] though studies done by Gussy *et al.*^[14] and Franzman *et al.*^[15] showed good knowledge about fluoride. Unlike fluoride, more than half (52.4%) of the mothers were able to point out that tooth decay was the most frequent dental disease among children and this was in line with other studies.^[12,13,14,15,16]

Studies done by Moulana *et al.*^[9], Romi *et al.*^[12], Kamolmatyakul and Saiong^[14], Wyne *et al.*^[15], and Chan *et al.*^[16] showed that majority of the mothers were acquainted that chocolates is the main reason for dental caries but they were unaware about the different modes of sugary items which is equally harmful to the teeth. Similarly, in this study 45.1% of mothers could identify chocolates and 30.6% of mothers said that all sugary items like bakery

products, soft drinks and chocolates together cause dental caries. Hence, this show that only scanty of them is aware between the different forms of sugary items and its consequences on our teeth. Besides that, this study reveals that knowledge about the caries preventive methods, cause and prevention of gum disease and malocclusion was low which was reciprocating with studies done by Romi *et al.*^[12] and Suresh *et al.*^[13] According to the results, mothers in Chennai showed poor knowledge about oral health, thus they need to be educated more on the oral health and the correct lifestyle. Most of the mothers (65.5%) in this study and majority of the mothers according to the study done by Moulana *et al.*^[9], Romi *et al.*^[12] and Chan *et al.*^[16] were having the same school of thought that it is essential to take the child for regular dental visits. Majority of the mothers had partial knowledge on the importance of deciduous teeth where only 43.7% agreed that milk tooth requires good care till they fall off.

In this study, many of them commenced tooth brushing for their child only after eruption of all deciduous teeth whereas according to a study done by Gussy *et al.* stated that 95% of the mothers in rural Australia believed that they should start brushing when the first tooth erupts.^[17] Dental visits were only done when the child has a problem. 67% mothers took their children to a dentist only when they were having pain or underwent trauma. This was in line with the other studies.^[18,19] This could be due to ignorance and high costs. Further motivation is needed to establish positive attitudes towards preventive dentistry.

Majority of the children (85%) used tooth brush and tooth paste for cleaning their teeth which was similar to studies done by Moulana *et al.*^[9], Romi *et al.*^[12] and Chan *et al.*^[16] Sadly, majority of the respondents were unaware of the significance of the intake of sugars at different timings. This was in line with the other studies.^[9,16] Contrary to our results, Blinkhorn^[20] has stated that 78% of mothers were very particular about their intake of sugars that it was restricted to meal-times only. Mothers with higher education and socioeconomic status have a better knowledge on oral health and they tend to emphasize on the development of healthy lifestyle behaviours in their children.

CONCLUSION

This study showed that overall, the mothers in Chennai had fair knowledge, attitude with poor practice towards oral health and their attitudes were followed by their children. However, we cannot come to a conclusion because the sample size was small and the study was conducted only to mothers who visited Saveetha Dental College. Hence, further research is needed to evaluate in prospective studies targeting a larger population on their knowledge

and behaviour towards oral health so that positive oral health behaviours can be imposed not only among parents but also the upcoming generation. Moreover, in a study conducted by Giedrius *et al*^[21] it was hypothesized that when parents improve their oral hygiene skills by themselves, their children accept this healthy behaviour more easily.

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