

## KNOWLEDGE, ATTITUDE, OF MOTHERS ON ORAL HYGIENE PRACTICES AMONG 1-5 YEAR OLD CHILDREN AND ASSOCIATION WITH THEIR ORAL HYGIENE PRACTICES- A COMPARITIVE STUDY.

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**ABSTRACT: Aim:** This study aims to investigate oral hygiene and frequency of oral cleaning in children up to 5 years in relation to mother related factors. **Materials and Methods:** A cross-sectional study of 250 children aged 1-5 years in Chennai, Tamil Nadu was implemented. Mothers answered questions about their own oral self-care and their children's oral hygiene. Chi-square test and logistic regression analysis was done. **Results:** Twice daily oral cleaning was reported for 95% of all children . 92% of the mothers believed it necessary to rinse the mouth between meals and to clean the gum pads even if teeth have not erupted. Oral hygiene was seen to be better in children whose mother's own brushing frequency was high. It was also seen that mothers with a higher educational level had a better attitude towards their child's oral hygiene care. **Conclusion:** To improve oral hygiene in early childhood, more emphasis should be placed on mother's own tooth brushing practice and their skills in their children's oral hygiene.

**KEYWORDS:** Oral Hygiene, Children, Attitude, Mothers.

### INTRODUCTION

Adoption of consistent behavioral habits in childhood takes place at home, with the parents, especially the mother, being the primary model for behavior.<sup>1</sup>

Socialization to oral health behaviors maybe considered a modelling process in which children imitate the behavior of their parents, who are available and who provide valued role models for their offspring<sup>2</sup>. Parental modelling has proved to be a powerful means of establishing novel behaviors among children, such as tooth brushing behavior<sup>3</sup>, but has rarely been studied as a behavioral factor with simultaneous inter relationships among variables of oral diseases.

Tooth brushing twice daily is a part of recommended oral self care and should start as soon as an infant's tooth erupts.<sup>4</sup>

As young children lack the ability to clean their own teeth effectively, parents are recommended to clean their child's teeth atleast until they reach school age.<sup>5-7</sup>

Because parents play a key role in the family in transferring health related habits to the children, their tooth brushing habit has been associated with oral cleaning frequency of their children<sup>8,9-11</sup>. This being higher in families with higher socio-economic status<sup>10,12</sup>. However, few studies have been conducted on these associations.

This study investigated oral hygiene and frequency of oral cleaning among children of upto 5 years of age in relation to mother related factors.

#### Materials and Methods:

The study was conducted during March 2011 to June 2011. The study was conducted with the ethical clearance and approval from the ethical committee of Department of Preventive Dentistry and Oral Epidemiology. The questionnaire was filled with the consent of the individuals.

**Study Area:** The study area was randomly picked. The study was carried out in Chennai, Tamil Nadu.

Table.I. shows the mothers attitude towards their children’s oral health.

Sl. No.	MOTHER’S ATTITUDE- PARAMETERS	RESPONSES	
		YES %(n)	NO %(n)
1.	Is it necessary to clean the gum pads even if teeth are absent?	92% (229)	8% (21)
2.	Is it necessary to lean the child’s teeth twice a day?	95% (236)	5% (14)
3.	Is mouth rinsing essential between meals?	92% (229)	8% (21)
4.	Does good care of primary teeth lead to the development of healthy permanent teeth?	94% (234)	6% (16)
5.	Do syrups and infant substitutes cause dental caries?	90% (225)	10%(25)

Table.II. The frequency of mother’s tooth brushing in relation to their attitude towards child’s oral hygiene care.

I. I don’t know how to brush or clean my child’s teeth properly.					
Mother’s own tooth brushing	Strongly agree	Agree	Strongly disagree	Disagree	P value
>Once a day	15	30	44	114	0.638
Once a day	1	6	7	32	
No cleaning	0	0	0	1	
II. We don’t have time to brush or clean our child’s teeth 2/day					
Mother’s own tooth brushing	Strongly agree	Agree	Strongly disagree	Disagree	P value
>once a day	7	47	44	105	0.453
Once a day	1	6	7	32	
No cleaning	0	0	0	1	
III. We cannot make our child brush or clean his/her teeth 2/day.					
Mother’s own tooth brushing	Strongly agree	Agree	Strongly disagree	Disagree	P value
>Once a day	18	99	22	64	0.14
Once a day	1	16	14	15	
No cleaning	0	0	0	1	

**Table.III. Factors related to oral cleaning on a daily basis for 1-5 year old children explained by logistic regression model.**

Parameters in model	Estimate of strength	Standard error	Odds ratio		p-value
			OR	95% CI	
Mother's tooth brushing frequency	0.835	1.482	2.306	0.126-42.134	0.573
I don't know how to brush or clean my child's teeth properly.	-1.607	1.012	4.990	0.687- 36.255	0.112
We don't have time to brush or clean our child's teeth twice a day	1.067	1.089	2.907	0.344-24.589	0.327
We cannot make our child brush or clean his/her teeth twice a day	-1.190	1.111	0.304	0.034- 2.685	0.284
Mother's education	1.795	1.062	6.017	0.861- 3.315	0.127
Child's age	0.525	0.349	1.690	0.751- 48.203	0.091

**Table.IV. Factors related to oral cleaning on a twice daily basis for 1-5 year old children explained by logistic regression model.**

Parameters in the model	Estimate of strength	Standard error	Odds ratio		P value
			OR	95% CI	
Mother's tooth brushing frequency	-1.567	0.394	0.209	0.096- .452	0.000
I don't know how to brush or clean my child's teeth properly	0.000	0.189	1.000	0.690-1.450	1.000
We don't have time to brush or clean our child's teeth twice a day	0.504	0.219	1.655	1.078-2.540	0.021
We cannot make our child brush or clean his/her teeth twice a day	0.108	0.175	1.114	0.790- 1.572	0.537
Child's age	0.100	0.116	1.105	0.880- 1.387	0.391
Child's gender	0.342	0.124	1.407	1.105- 1.793	0.006
Mother's education	-0.256	0.308	0.774	0.423-1.417	0.407

**Table.V. Factors related to good oral hygiene in 1-5 year old children explained by logistic regression model.**

Parameters in the model	Estimate of strength	Standard error	Odds ratio		P VALUE
			OR	95% CI	
Mother's tooth brushing frequency.	0.318	0.380	1.375	0.652- 2.897	0.403
I don't know how to brush or clean my child's teeth properly	-0.256	0.181	0.774	0.543- 1.105	0.159
We don't have time to brush or clean our child's teeth twice a day	0.122	0.206	1.130	0.754- 1.693	0.554
We cannot make our child brush or clean his/her teeth twice a day	-0.290	0.153	0.748	0.555- 1.009	0.058
Child's age	0.125	0.112	1.133	0.910- 1.412	0.264
Mother's education	-0.431	0.106	0.650	0.528- 0.799	0.000

**Study Populations:** The study population included 250 mothers and their children. A preformed questionnaire was distributed till the target of 250 was achieved.

**Sampling And Sample:** The sample included children aged 1-5 years and their mothers who visited maternity and nursing homes and day care centres in Chennai, Tamil Nadu. The mothers were asked to answer a preformed questionnaire regarding their spouse, child/children and themselves. Data collection was concluded by the 14<sup>th</sup> of June 2011.

**Pre-Test:** Prior to the study 20 samples were pre-tested to assess the validity of the questionnaire. The results of the pre-test were included in the analysis.

**Oral Cleaning Of The Child:** This was covered by questions on frequency of oral cleaning for the child, cleaning devices used (toothbrush, gauze/cloth) and adult's role in oral cleaning for the child (whether the child brushed alone, under adult supervision or adults solely performed the cleaning).

**Mother Related Factors:** Mother's own oral cleaning was assessed in terms of the frequency of her own tooth brushing.

Mother's attitude towards their child's oral hygiene was measured by 3 items<sup>13,14</sup> by asking her whether she knew how to brush her child's teeth properly and the frequency of brushing the child's teeth twice a day.

**Sociodemographic Information:** The questionnaire also sought information on the child's age, gender, parental level of education and socio economic status.

Kuppasami's scale was applied to assess the parents' education level, income and socio-economic status.

#### Statistics Applied:

Data collected was entered into the spreadsheets; statistical package for social sciences (SPSS) version 15.0 was used for data analysis.

The chi square test was used for the comparison of different variables between groups. A logistic regression model served for multivariable assessment, separately for factors related to the oral cleaning for the child on a) daily basis, b) twice-daily basis and c) whether the child's oral hygiene was good. The corresponding odds ratios (OR) and their 95% confidence intervals (95% CI) were determined. A *p-value* less than 0.05 denoted statistical significance.

#### Results:

Mothers attitude towards their children's oral health is shown in **Table.I.** 92% of the mothers believed it is

necessary to clean the gum pads even if the teeth are absent and the remaining 8% thought otherwise. 95% of the mothers thought it was necessary to clean their children's teeth twice a day to maintain good oral hygiene whereas the remaining 5% thought it was not necessary. 92% of the mothers felt that it is essential to rinse their children's mouth in between meals. The remaining 8% did not find mouth rinsing essential between meals. 94% of the mothers thought that it is necessary to take good care of primary teeth for the development of healthy permanent teeth and the remaining 6% felt otherwise. 90% of the mothers believe that intake of syrups and infant substitutes cause dental caries. The remaining 10% of mothers did not share this opinion.

The relation between the mother's own brushing frequency to her attitude towards the child's oral hygiene care is shown in **Table.2**. It was found that majority (114) of the mothers agreed that they could brush their child's teeth properly. Most of the mothers (105) agreed that they could brush their child's teeth twice a day. Majority of the mothers (99) agreed that they could not make their child brush his/her teeth twice a day. None of the values were found to be statistically significant.

It is seen that the mother's tooth brushing frequency had a direct effect on the child's oral hygiene.(OR= 2.30). (**Table.3.**) Insufficient time was also a direct contributing factor for poor oral health Higher the mother's educational level better is her attitude towards the child's oral hygiene care.(OR=6.07). However, none of the factors had a significant impact on the child's daily oral hygiene.

Mother's tooth brushing frequency had a significant impact on the child's brushing frequency. ( $p=0.00$ , statistically significant) as shown in (**Table.4**). It also showed that the child's gender had an effect on the mother's attitude towards the child's oral hygiene. ( $P=0.006$ , statistically significant)

It is also seen that the mother's educational level had a significant impact on the child's oral hygiene. ( $p=0.000$ , statistically significant). The child's age and the mother's attitude did not have a significant impact on the child's oral health. (**Table.5.**)

#### Discussion:

The results of the study indicate that a higher frequency of mother's own tooth brushing has an obvious impact on higher frequency of oral cleaning for the child and his/her good oral hygiene in early childhood.

In addition, mother's positive perceptions of their ability to maintain their child's oral hygiene showed association with higher frequency.

The results of the study shows that 92% of the mothers believed in cleaning the gum pads even before the teeth begin to erupt. This is not in agreement with the results from other similar studies that were carried out. In that study only 44% felt it was necessary to clean the oral cavity right from birth.<sup>15</sup>

The results of the study shows 95% of the mothers believed in brushing their child's tooth twice a day. In another similar study only 5% mothers reported twice daily oral cleaning for their children.<sup>16</sup> The results of the study shows 92% mothers found mouth rinsing essential. In another similar study 66.2% started this practice immediately from birth.<sup>15</sup>

The results of the study shows 94% mothers thought that care of primary teeth is very essential for healthy permanent teeth. 67.7 % of mothers and care givers thought differently in another study.<sup>15</sup> The results of the study shows 90% mothers believed syrups and sugar substitutes caused dental caries.

The results of the study shows shows 92% mothers used toothbrushes as cleaning devices which is in agreement with other similar studies.<sup>15-17</sup> The results of the study shows 82% mothers brushed their own teeth twice a day which was in agreement with another study.<sup>16</sup>

The results of the study shows that higher the educational level of the mother better is her attitude towards the child's oral hygiene which is in agreement with another study.<sup>16</sup> The results of the study shows that the mother's brushing frequency is proportional to the child's brushing frequency. Similar results were seen in other studies.<sup>2</sup>

The results indicate that now a days mothers are better educated and well informed and hence there is a direct effect on their attitude and practices for their child's oral hygiene care. The number of dentists has increased, who believe in educating patients on oral hygiene practices and therefore preventing them from becoming victims of poor oral hygiene. Awareness is also being spread among the population via the media which helps them to understand better as to how to improve and maintain their oral hygiene.

It is highly recommended that adults perform oral cleaning for young children, who until approximately 6 years of age lack the dexterity and cognition needed for adequate cleaning.<sup>4,5,6</sup>

The positive relationship between the mother's own toothbrushing frequency and the child's oral hygiene was an encouraging finding. It indicates that the mothers who brush their own teeth more frequently were able to perform the oral cleaning for the child more efficaciously. This again calls for more emphasis on mother's own oral

hygiene behavior regarding oral health promotion programmes for children during early childhood.

Children learn oral self care in the course of primary socialization.<sup>7</sup> Consequently, the health behavior of both parents affected their child's oral health behavior.<sup>7,8,9,10</sup> Mothers play a key role not only as facilitators of oral cleaning of very young children, but also as transmitters of oral health behavior for them.

Future epidemiological research that includes the clinical examination of mother would be useful for considering the direct assessments of various types of oral health indicators for mother and child.

## CONCLUSION

Health professionals, who are the first to come into contact with new mothers, need to disseminate appropriate and accurate information about oral health care for infants and caregivers. The value of tooth brushing with a child's type of toothpaste should also be emphasized to parents. It is necessary to promote dental awareness amongst the major caregivers to facilitate early dental check-ups for young children. In addition, the parent's own regular tooth brushing and their active role in performing oral cleaning for their children should be encouraged.

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