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Maternal Knowledge of their Preschool Aged Childern's Oral Health

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Abstract

Introduction: Mothers usually are the primary decision makers on matters affecting their children's health and health care. Therefore, mother, play a key role in attempts to achieve the best oral health outcomes for their young children. Considering mother central role in ensuring the well-being of young children, it is important to explore their perceptions about their children's oral health.

Objective: To assess the level of knowledge, of mothers in relation to their pre-school aged children, which in turn can influence the level of oral health.

Method: A cross sectional study was carried out among 312 mothers, selected randomly from the eight blocks of districts. They were introduced with structured questionnaire of knowledge, by an interviewer.

Results: Overall data indicates that the knowledge of mothers about oral health in their pre-school children increased as their age increases which was statistically significant ($p < .009$). Similarly, mothers those who had less than higher secondary school education and belonged to socioeconomically lower group had poor knowledge of oral health which where statistically significant ($p < .002$).

Conclusion: Mothers should be motivated so that their knowledge about their child's oral health is enhanced which in turn would improve their oral health related quality of life.

Keywords: *Maternal Knowledge; Oral Health; Pre-School Children*

Introduction

Mothers usually are the primary decision makers on matters affecting their children's health and health care [1]. Considering the parents' central role in ensuring the well-being of their young children, it is important to explore their knowledge about their children's oral health. These knowledge can affect the preventive dental care the children receive at home and their use of professional dental services. The parents' assessments can also provide some indication of their children's need for professional dental care, which in turn, has implications for the formulation of dental health policies. Maternal knowledge is especially important for preschool-aged children because of their inability to verbalize their emotions and distress [2]. Research on oral health perceptions has focused on school going children and adults. However, in the State of Madhya Pradesh no population-based study has been reported on the parents' knowledge of oral health of children younger than 6 years of age. However, a few studies have explored the parents' assessments of their children's general health. Mothers living in poverty and belonging to minority groups are more likely to report the general health of their children to be worse than are non-minority mothers who are not living in poverty. Studies among adults have used a behavioral model that considers one's socio-demographic characteristics in combination with beliefs, perceptions of disease and the presence of disease as major factors contributing to perceptions about one's oral health [1,3].

Material and Method

This cross-sectional study was conducted using a structured interview questionnaire and the respondents of this study were the mothers of pre-school children. The study was conducted on a randomly selected sample of rural mothers in Bhopal.

Around 312 mothers were selected based on the following sampling process. The age group of the sample ranged from 18 - 35 years and was divided into three group viz., 18 - 25 years, 26 - 35 years and above 35 years. The education of the mothers ranged from illiterate, primary school, intermediate, and above. The income of the families ranged below Rs. 5000, Rs. 5000 - Rs. 10000, and Rs. 10000 - Rs. 15000 and above Rs. 15000. The samples were taken from eight blocks of Bhopal. From each block 39 samples were taken for the study.

Statistical Analysis

The data was statistically analyzed and tabulated using the SPSS 12 (Statistical Package for Social Sciences, Version 12). Chi square test was used for comparing knowledge of the subjects in relation to oral health.

Results

The study was conducted in Bhopal, a major district of Madhya Pradesh State. A total of 312 mothers of pre-school children participated in the study. The mothers' age ranged between 18 - 25 years (35%), 26 - 35 years (59%) and above 35 years (9%) (Table 1). The level of education of the mothers ranged from illiterate (45%), upto primary school (44%), upto intermediate (8%) and above intermediate (3%). The monthly family income was below Rs. 5000 among 80% of the subjects, between Rs. 5000 - Rs. 10,000 among 19% subjects, between Rs. 10,000 - Rs. 15,000 among 0.3% subjects and above Rs. 15,000 among 0.7% subjects. Around 35% each of the children were present in the 3- and 4- year age groups, followed by 27.4% and 3.8% among the 5- and 6- year age groups, respectively (Table 1).

Age Group	Number (n)	Percentage (%)
Between 18 - 25	109	35
Between 26 - 35	184	59
Above 35	19	6
Education Level		
Illiterate	141	45
Upto Primary School	137	44
Upto Intermediate	25	08
Above Intermediate	09	03
Family Income		
Below 5000	247	80
Between 5000 - 10000	58	19
Between 10000 - 15000	03	0.3
Above 15000	04	0.7

Table 1: *Distribution of mothers based on Age group, Education and family income.*

Relationship of mother's knowledge about preschool aged children's oral health status with the age of the mother

When the mothers were asked about their child's oral health problems, the responses of mothers of age group 18 - 25 years showed that 63% accounted for dental decay, 27% for swollen/bleeding gums and 10% for no problem; responses of mothers aged 26 - 35 years included 43% for dental decay, 37% for swollen gums/bleeding gums and 20% for no problem; while responses of mothers above 35 years included, 69% for dental decay, 23% for swollen /bleeding gums and 08% for no problem.

When the 18 - 25 years age group mothers were asked about the cause of dental decay, more sweet consumption accounted for 25% responses, followed by improper brushing which accounted for 35.2% and 38.9% responses for both the aforesaid reasons and the use of coal in causing dental problems was 0.9% of the responses. The responses for the 26 - 35 years and above 35 years age group mothers were 20.9% and 5.3% for sugar consumption, 29.1% and 21.9% for improper brushing and 50% and 73.1% for both aforesaid reasons, respectively (Table 2). Statistically there was a significant difference in the responses of the mothers according to age (x^2= 13.54, p < 0.009).

Age Group	More Sweet consumption	Improper cleaning of teeth	Both	X^2 P value
18 - 25 years	25	20.9	5.3	$X^2_{==}$ 13.54 , p < .009, Significant
26 - 35 years	35.2	29.1	21.6	
Above 35 years	38.9	50	73.1	
Education Group				
Illiterate	15	27	57	$X^2_{==}$15.02, p < .002, Significant
Upto Primary school	28	29.4	42.6	
Upto Intermediate	28	44	28	
Above Intermediate	0	11.1	88.9	
Family Income				
Below Rs. 5,000	19	26.7	54.3	$X^2_{==}$20.90, p < .002 Significant
Rs. 5,000 - Rs. 10,000	34.5	41.9	24.1	
Rs. 10,000 - Rs. 15,000	0	0	100	
Rs. 10,000 - Rs. 15,000	0	25	75	

Table 2: *Maternal knowledge about the cause of dental decay with respect to their age, education and monthly family income.*

When the 18 - 25 years age group mothers were asked about the cause of gum disease, the response of less/improper brushing accounted for 78.7%, followed by other systemic/medical disease accounting for 13.9%, allergy reaction accounted for 5.6% and 1.9% subjects expressed that gum disease was communicable. The response for the 26 - 35 years and above 35 age group mothers were 78.6% and 63.2% for less/Improper brushing, 15.4% and 26.3% for other systemic/medical disease, 3.3% and 5.3.% for allergy/reaction and 2.8% and 5.3% for gums diseases being communicable (Table 3).

Age Group	Less/Improper brushing	Systemic/ Medical disease	Allergy/Reaction	Communicability of Gum disease	X^2 P value
18 - 25 years	78.7	13.9	5.6	1.9	$X^2_{==}$ 13.54 p > .31
26 - 35 years	78.6	15.4	3.3	2.8	Not Significant
Above 35 years	63.2	26.3	5.3	5.3	
Education Group					
Illiterate	79.3	11.42	1.4	7.9	$X^2_{==}$17..52, p > .131 Not Significant
Upto Primary school	70.6	19.9	5.9	3.9	
Upto Intermediate	72	8	12	8	
Above Intermediate	100	0	0	0	
Family Income					
Below Rs. 5,000	79.4	12.6	3.6	4	$X^2_{==}$16.88, p > .155 Significant
Rs. 5,000 - Rs. 10,000	58.6	20.6	10.4	10.4	
Rs. 10,000 - Rs. 15,000	100	0	0	0	
Rs. 10,000 - Rs. 15,000	100	0	0	0	

Table 3: *Maternal Knowledge about the cause of gum disease. with respect to their age, education and monthly family income.*

When the 18 - 25 year old mothers were asked about the treatment of dental decay, the response of proper brushing accounted for 60%, followed by oral rinsing accounting for 20% and visit to the dentist accounting for 20%. The response for 26 - 35 years and above 35 years age group mothers were, 50% and 35% for proper brushing, followed by 20% and 25% for oral rinsing and 30% and 55% for visit to the dentist, respectively When the 18 - 25 year old mothers were asked about the cure for swollen and bleeding gums, proper tooth brushing accounted for 25.9% of the responses, oral rinsing accounted for 12.1% and medicine accounted for 62% of the responses. The response for the 26 - 35 years and above 35 years age group mothers was 40.7% and 52.6% for proper tooth brushing, 14.3% and 5.3% for oral rinsing, 44.5% and 42.1% for medicine, respectively.

When the mothers were asked about the prevention of dental problems in the child, the responses of the 18 - 25 year old mothers were 49.1%, 8.3% and 42.6%, for proper tooth brushing, oral rinsing and visit to the dentist, respectively. The response for the 26 - 35 years and above 35 years age group mothers were 53.3% and 63.2% for proper tooth brushing, 9.3% and 36.8% for oral rinsing, and 37.4% and zero percent respectively.

When the 18 - 25 years age group mothers were asked about the identification of dental decay, discoloration in tooth accounted for 23% of the responses, followed by pain in tooth accounting for 70% and as explained by the dentist accounting for 7% of the responses. The response for the 26 - 35 years and above 35 years age group mothers were 18% and 15% for discoloration in tooth, 72% and 80% for pain in tooth and 10% and 5% for as explained by the dentist, respectively.

When the 18 - 25 years age group mothers were asked about the cause of forwardly placed teeth, family tendency accounted for 55% of the responses, followed by oral habit accounting for 35% and accident /trauma accounted for 10% of the responses. The response for the 26 - 35 years and above 35 years age group mothers were 63% and 60% for family tendency, 27% and 35% for oral habit and 10% and 5% for accident/trauma, respectively.

Relationship of mother's knowledge about pre-school aged children's oral health status with their education

When the illiterate mothers were asked about their child's oral health problems, dental decay accounted for 55% of the responses, followed by swollen gums/bleeding gums accounting for 25% of the responses. No problem was reported by 20% of the mothers. The responses from the mothers educated upto primary, intermediate and above intermediate were 60%, 65% and 75% for dental caries, 25%, 20% and 20% for swollen/bleeding gums and 15% each and 10% for absence of any problem, respectively.

When the illiterate group mothers were asked about the cause of dental decay, more sweet consumption accounted for 15% of the responses; improper brushing accounted for 27%; and 57% responded for both the aforesaid reasons. The response from the mothers educated upto primary and intermediate were 28% each for sugar consumption, 29.4% and 44% for improper brushing and 42.6% and 28% for both the aforesaid reasons, respectively (Table 2).

When the illiterate group mothers were asked about the cause of gum disease, less/improper brushing accounted for 79.3% of the responses, followed by other systemic/medical disease accounting for 11.4%. Allergy reaction accounted for 1.4% of the responses and 7.9% subjects felt that gum diseases were communicable. The response for the mothers educated upto primary and intermediate were 70.6% and 72% for less/improper brushing; 19.9% and 8% for other systemic/medical disease; 5.9% and 12% for allergy/reaction; and 3.7% and 8% for the perception that gum diseases were communicable, respectively (Table 3).

When the illiterate group mothers were asked about the treatment of dental decay, proper brushing and oral rinsing accounted for 20% each of the responses and visit to the dentist accounted for 60% of the responses. The response from the mothers educated upto primary, intermediate and above intermediate were, 15% each and 20% for proper brushing; 20% and 10% each for oral rinsing; and 60%, 70% and 75% for visit to the dentist, respectively.

When the illiterate group mother were asked about the cure for swollen and bleeding gums, proper tooth brushing accounted for 48.6% of the responses, followed by oral rinsing and medicine accounting for 7.1% and 44.3%, respectively. The response for the mothers educated upto primary, intermediate and above intermediate were 70.5%, 25% and 33.3% for proper tooth brushing; 19.9%, 18.4% and zero percent for oral rinsing; 5.9%, 56.6% and 67.7% for medicine, respectively.

When the illiterate mothers were asked about the prevention of dental problems in the child, proper tooth brushing accounted for 54.3%; oral rinsing accounted for 7.1%; and visit to the dentist accounted for 38.6%. The response for the mothers educated upto primary, intermediate and above intermediate were 44.4%, 48% and 55.7% for proper tooth brushing; 8.9%, 20% and 22.7% for oral rinsing; and 3.7%, 32% and 22% for visit to the dentist, respectively. However, there was no significant difference in the responses of the mothers according to education ($x^2 = 7.73$, $p > 0.25$).

When the illiterate mothers were asked about the identification of dental decay, discoloration of tooth accounted for 35% of the responses, followed by pain in the tooth accounting for 25%, and 40% for as explained by the dentist. The response from the mothers who were educated up to primary, intermediate and above intermediate was 15%, 05% and zero percent for discoloration of tooth; 40%, 30% and zero percent for pain in the tooth; and 45%, 65% and cent percent for as explained by the dentist, respectively.

When the illiterate mothers were asked about the cause of forwardly placed teeth, family tendency accounted for 50%, followed by oral habits accounting for 35% and 15% accounting for accident/trauma. The response from the mothers educated up to primary, intermediate and above intermediate were 40%, 45% and 33.3% for family tendency; 45%, 50% and 66.7% for oral habits and 15%, 5% and zero percent for accident/trauma, respectively.

Relationship of mother's knowledge about preschool aged children's oral health status with their family income

When the mothers were asked about their child's oral health problem a majority of the mothers (54.18%) reported dental decay as the main problem.

When the mothers were asked whether they knew about the cause of dental decay, they attributed it to improper tooth brushing (23.28%) and more sweet consumption (13.38%). A statistically significant difference ($x^2 = 20.90$, $p < 0.002$) in the responses of the mothers according to family income was observed.

When the mothers were asked whether they knew about the cause of gum disease, a majority of them (84.5%) attributed it to improper brushing (Table 3).

When the mothers were asked about the treatment for dental decay, a visit to the dentist (55.43%) was the major response. When the mothers were, asked about the cure for swollen and bleeding gums, a majority of them (44.85%) with income below Rs. 10,000 attributed medicine to be the main curative agent, while the mothers with income above Rs. 10,000 (70.85%) attributed proper tooth brushing as the cure for swollen and bleeding gums.

When the mothers were asked about the prevention of dental problems in the child, a majority of them (39.9%) with family income below Rs 10,000 attributed it to proper tooth brushing, while the mothers across the groups (76.1%) attributed a visit to the dentist as the main preventive measure for oral problems. When the mothers were asked if they could identify dental decay, a majority of them (57.93%) responded that the dentist would identify the dental decay.

When the mothers were asked about the cause of forwardly placed teeth, a majority of them (34.6%) accounted it to accident/trauma.

Discussion

The study was conducted in Bhopal, a major district of Madhya Pradesh State. A total of 312 mothers of pre-school children participated in the study. The mothers' age ranged between 18 - 25 years (35%), 26 - 35 years (59%) and above 35 years (9%). The level of education of the mothers ranged from illiterate (45%), upto primary school (44%), upto intermediate (8%) and above intermediate (3%). The monthly family income was below Rs. 5,000 among 80% of the study group, followed by 19% subjects with income between Rs. 5,000 - Rs 10,000. Subjects with income between Rs. 10000 - Rs. 15000 and above Rs. 15000 were 0.3% and 0.7% of the study group, respectively. Around 35% each of the children were present in the 3- and 4- year age groups, followed by 27.4% and 3.8% among the 5- and 6- year age groups, respectively [4-7].

In this study the knowledge of the mothers about oral health amongst their pre- school children does vary with age, which is in accordance with the study done by Talekar BS., *et al* [1,8,9].

In the present study, parents who belonged to the educationally and economically disadvantaged group with less than high school education were over-represented and had probably had poor perception about dental health. These findings are in accordance with the study conducted by Talekar BS, Slade GD, Ennet ST [1].

Socioeconomic status is usually evaluated by income and education among population groups. It has been shown that higher the mother's education level, the lower their child's caries experience. These findings are similar to the results observed in their study by Pacharuniti N., *et al* [2].

The findings of our study confirm that parents living in deprived areas and parents who have had no further education, all have less chances of having high levels of dental knowledge and positive dental attitudes. These observations are similar to the findings in the study conducted by Williams NJ., *et al* [3,10].

Conclusion

Mothers can play an important role in preventing oral disease and promoting oral health in children and should thus be well educated about oral health. A majority of the mothers with different ages, family income and education levels had low perception about the child's oral health and thus steps should be taken to educate the mothers as they are the most important link in improving the oral health in the new generation.

The organized sector should take a proactive role in identifying the key areas to be improved in relation to the overall health of the masses. This holistic view requires a joint effort from all the sectors concerned. The need for inter-sectoral co-ordination cannot be over emphasized.

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