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Madhu Saini
Postgraduate Student,
Department of Paediatric and
Preventive Dentistry, Daswani
Dental College and Research
Centre, Kota, Rajasthan, India

Manish Goel
Professor and Head, Department
of Paediatric and Preventive
Dentistry, Daswani Dental
College and Research Centre,
Kota, Rajasthan, India

Rubaab Brar
Senior Lecturer, Department of
Paediatric and Preventive
Dentistry, Daswani Dental
College and Research Centre,
Kota, Rajasthan, India

Srinandan Pradhan
Senior Lecturer, Department of
Paediatric and Preventive
Dentistry, Daswani Dental
College and Research Centre,
Kota, Rajasthan, India

Simarjeet Kaur
Postgraduate Student,
Department of Paediatric and
Preventive Dentistry, Daswani
Dental College and Research
Centre, Kota, Rajasthan, India

Ajay Singh
Postgraduate Student,
Department of Paediatric and
Preventive Dentistry, Dental
College Azamgarh, Uttar
Pradesh, India

Corresponding Author:
Madhu Saini
Postgraduate Student,
Department of Paediatric and
Preventive Dentistry, Daswani
Dental College and Research
Centre, Kota, Rajasthan, India

Knowledge, attitude and practical behaviour of mothers, regarding their child's oral health in Kota region

Madhu Saini, Manish Goel, Rubaab Brar, Srinandan Pradhan, Simarjeet Kaur and Ajay Singh

Abstract

Introduction: Dental caries is one of the most common multifactorial infectious microbial diseases. Family imposes the most important effects on the psychological, physical, and social aspects of health from the moment a child is born. Mother's knowledge and attitude have a great impact on prevention and progression of this diseases.

Aim: To determine the knowledge, attitude and practical behaviour of mothers from different socio-economic groups regarding their children's oral health in Kota.

Methods: A cross-sectional study was conducted via questionnaire form targeting 390 mothers who reported in Department of Pediatric and Preventive Dentistry at Daswani Dental College & Research Centre, Kota. Respondent were divided into two groups according to their socioeconomic status (SES). Group I: annual income below 60,000(LOW-SES) Group II: annual income above 60,000(HIGH-SES). Data were entered and analyzed using chi-square test, fisher's exact test using Statistical Package for the Social Sciences (16.0). Scoring of knowledge, attitude and practice was given according to percentage of correct response: (0% - 33.33%) – poor, (33.33% - 66.66%) – average, (66.33% - 100%) – good.

Results: Knowledge of majority of mothers from both the groups is significantly less regarding effect of imbalanced diet and prolonged bottle/breast feeding, fluoride content of their toothpaste on dental caries. Awareness regarding treatment of milk teeth, oral health affecting general health was more in HSEG than LSEG.

Conclusion: The level of awareness among mothers of LSES is relatively low and there is need for the implementation of oral health awareness programs.

Keywords: Knowledge, attitude, practical behaviour, child's oral health

Introduction

Prevention is better than cure and is righteously implicated in case of dental caries [1]. Dental caries has a significant impact on children's well-being and overall health. It is one of the most prevalent chronic childhood diseases [1-3]. Family imposes the most important effects on the psychological, physical, and social aspects of health from the moment a child is born. Oral health practices and development of healthy attitudes towards oral health care are all influenced by family factors [4]. In promoting and improving access to oral health care in children, mothers role have been identified to be crucial in helping their children develop healthy oral habits early in life. Mothers are known to assume the role of primary caregivers in the early formative years of their children. The relationship between the dental health of mothers and that of their children has been highlighted by researchers [4, 5]. Oral health of the children is associated with oral health knowledge of their parents/guardians as oral health related habits (such as those related to oral hygiene and diet) are established during infancy and maintained throughout early childhood [6]. The tooth brushing habits, dietary habits, and food choices of mothers are directly associated with those of their children. Dental care professionals accept that efforts aimed at improving parental oral health behaviours of mothers could result in improved health in their children. However, a number of factors have been identified to indirectly influence mother's health habits and their children's health. Some of these factors include mother's education, occupation, age, current knowledge, attitude, and behavior relating to health.

Mother’s knowledge and attitude have a great impact on prevention and progression of this disease because most of her decisions with regard to the health of her child will be based on her knowledge. There is growing evidence that health promotion and education efforts to influence preventive behaviours must be targeted to specific audiences.⁷ Thus, to improve the oral health care access for children there is a need to assess the oral health knowledge of their mothers who are the primary care givers for the children. Paediatric dentist had to face variety of patients whose care mostly depend upon beliefs and priorities of their parents or care givers. We must know which factor is behind their behaviour, it’s a lack of knowledge, or following of age old practices or different priorities, which make parents disposing their children to this multifactorial infectious disease.

‘The Smart City’, ‘Kota’ popularly known as ‘Coaching Capital of India’ attracts people from different region, beliefs and practices for studies and employment. So, there is a need to assess knowledge, attitude and practical behavior of mothers of different socioeconomic status towards child oral health. Hence, in this study an attempt was made to evaluate and compare oral health awareness amongst mothers from different socioeconomic groups and their attitude toward dental treatment in kota region.

Methodology

This study was conducted on 390 mothers who reported in Department of Pediatric and Preventive Dentistry at Daswani Dental College & Research Centre, Kota via self-administered questionnaire form containing 15 questions.

Inclusion criteria

Mothers who were willing to participate.

Exclusion criteria

Uncooperative mother forms and incompletely filled forms. Those who fulfilled the above-mentioned eligibility criteria were included in the survey. Based on convenience sampling, a total sample size of 300 was obtained. Respondent were divided into two groups according to their socioeconomic status (SES).

Group I: annual income below 60,000.(LOW-SES)

Group II: annual income above 60,000.(HIGH-SES)

Data were entered and analyzed using chi-square test, fisher’s exact test using Statistical Package for the Social Sciences (16.0). Scoring of knowledge, attitude and practice was given according to percentage of correct response.

(0% - 33.33%) – Poor

(33.33% - 66.66%) – Average (Avg)

(66.33% - 100%) – Good

Results

Mothers with LSES have poor knowledge regarding requirement of treatment of milk teeth, oral health affect general health and tooth brushing as compared to mothers of HSES and this association was observed to be statistically significant [P ≤ 0.001]. Knowledge regarding first dental visit was poor in both groups and the association was statistically significant [P <0.0001].

Table 1: Demographic Characteristics

Demographic Characteristics		N = 300	n%
Age	< 30	204	68
	30 <	96	32
Education	Illiterate	25	8.3
	Below higher secondary	138	46
	Above higher secondary	137	45.6
Socio-Economic Status	Group I: Annual income below Rs 60,000	78	26
	Group II: Annual income above Rs 60,000	222	74

Both groups have poor knowledge, attitude and practice regarding imbalanced diet and prolonged breast/ bottle feeding [> 1.1/2 – 2 yr] causing dental caries, fluoride content of toothpaste, timing of initializing child’s teeth cleaning which was statistically significant [P<0.0001] but no significant association was evident between both groups when asked regarding cavity in milk teeth could affect permanent teeth, best time to give sugary foods and drinks to young children, practice of not leaving sugared milk bottle or sugary

liquid in mouth of child while they fall asleep, cleaning teeth as soon as they erupt[P>0.0001]. Both group mothers have good knowledge regarding stopping bottle/breast feeding which was statistically significant[P <0.0001] Mothers with LSES have average knowledge regarding cause of dental caries, transmission of disease through sharing utensils (like spoon) with child, daily teeth cleaning regimen whereas good number of HSES mothers doing correct practice[p<0.0001].

Table 2: Assessment of Knowledge, Attitude and Practical Behaviour of Mothers of Both Groups through Percentage of Correct Answers

Questions		Group I	KAP% (Poor /Avg/ Good)	Group II	KAP% (Poor /Avg/ Good)	p-value	Significant
Do you think treatment of milk teeth is required?						<0.0001	Y E S
a	Yes	8	10.25 Poor	100	45.04 Avg		
b	No	35		49			
c	don’t know	35		73			
Do you think cavity in milk teeth could affect permanent teeth?						0.3265	N O
a	Yes	8	10.25 Poor	30	13.51 Poor		
b	No	32		105			
c	don’t know	38		87			

Do you think oral health can effect general health?							
a	Yes	9	11.53 Poor	122	54.95 Avg	<0.0001	Y E S
b	No	36		80			
c	don't know	33		20			
Do you think imbalanced diet can cause dental caries?							
a	Yes	3	3.84 Poor	50	22.52 Poor	<0.0001	Y E S
b	No	10		52			
c	don't know	65		120			
Do you think prolonged breast/bottle feeding [more than 1.1/2 – 2 yr] can causes dental caries?							
a	Yes	5	6.41 Poor	28	12.61 Poor	<0.002	Y E S
b	No	45		162			
c	don't know	28		32			
Does your toothpaste contain fluoride?							
a	Yes	4	5.12 Poor	33	14.86 Poor	0.0014	Y E S
b	No	16		17			
c	don't know	58		172			
When should be the first dental visit?							
a	when problem arise	70	3.84 Poor	160	9.90 Poor	<0.001	Y E S
b	after 1 yr of birth	5		40			
c	as soon as tooth erupt	3		22			
Do you know, what is the reason for dental caries:							
a	improper brushing	23	51.28 Avg	30	81.08 Good	<0.0001	Y E S
b	sweet & sticky food	15		12			
c	all of above	40		180			
At what age you should stop bottle/breast feeding?							
a	1 yr	3	71.79 Good	20	85.58 Good	<0.0001	Y E S
b	2yr	56		190			
c	3yr	19		12			
When is it best to give sugary foods and drinks to young children?							
a	at meals	0	0 Poor	15	6.75 Poor	0.0611	N O
b	in between meals	7		17			
c	when child demands	71		190			
At what age you should start cleaning child's teeth?							
a	around 2 yr	69	0 Poor	190	8.55 Poor	0.0097	Y E S
b	around 1 yr	9		13			
c	as soon as tooth erupt	0		19			
Tooth brushing should be:							
a	once a day	33	28.20 Poor	47	68.91 Good	<0.0001	Y E S
b	twice a day	22		153			
c	Occasionally	23		22			
Do you leave / left sugared milk bottle or sugary liquid in mouth of child while they fall asleep?							
a	Yes	70	0 Poor	190	6.75 Poor	0.0536	N O
b	No	0		15			
c	Occasionally	8		17			
Do you share utensils (like spoon) with child while having food?							
a	Yes	30	38.46 Avg	8	90.09 Good	<0.0001	Y E S
b	No	30		200			
c	Occasionally	18		14			
With the eruption of the baby's first teeth, do you begin to clean them?							
a	Yes	0	0 Poor	0	0 Poor	0.0685	NO(fisher,s)
b	No	75		197			
c	Occasionally	3		25			

Discussion

The mouth is regarded as the mirror of the body and the gateway to good health^[8]. Home is regarded as the first school of child. The awareness of mothers regarding oral health practices creates a preventive barrier thus, promoting and establishing a sound oral health status of a child^[9]. Many camps are organized which work upon detailing the awareness regarding oral health but, are these sufficiently effective? or do we require different measures or new approaches, since on ground level it's a bad reality that children experiences more caries than adults which effect their development processes such as physical growth and motivation, social, cognitive, emotional development, learning and achievement of independence. Therefore, poor oral health often has a negative impact on the quality of life and well-being of childrens. Moreover, in school aged children, poor oral health has been related to decreased school performance, poor social relationships. Dental caries is a disease that is generally preventable and is strongly influenced by lifestyle. Majority of the surveys reported that mothers belonging to minority and economically disadvantaged groups were overrepresented in the poor perception of their children's oral health^[10]. As paediatric dental physicians it's our duty to assess the root cause and work upon it. This study highlights increased demand to initiate dental awareness programs aiming at the people belonging to LSES groups as well as HSEG.

Almost 41.02% from both groups did not agreed that milk teeth could affect permanent teeth while 48.71% from group I & 39.18% from group II don't know. Average population from both groups did not agreed that oral health can affect general health while 42.30% from group I & 9.0% from group II don't know. According to Bodhale P *et al.* (2014)^[11] study 49.66% of LSESG & 37.93% of HSESG belief that cavities primary teeth don't have any effect on permanent teeth and 34.22% of LSESG & 63.8% of HSESG agreed dental health had effect on general body health. Mothers should be provided education on the etiology and prevention of dental caries. In present study average number of mothers from both groups don't bother, whether milk teeth treatment should be done or not.

12.82% from group I & 23.42% from group II did not agreed that imbalanced diet can cause dental caries while majority of people from group I & 54.05% from group II were not decisive. Dietary education for mothers must include the cariogenicity of certain foods and beverages, role of frequency of consumption of these substances, and the demineralization/remineralization process. Acc to study conducted by Oredugba *et al.* (2014)^[12] 42.3% believed the type of baby food has effect on the child's teeth, 52.9% believed there is no effect while 4.8% did not know.

35.89% from group I & 14.41% from group II don't know that prolonged breast/bottle feeding [more than 1.1/2 – 2 yr] can causes dental caries while 57.69% from group I & 72.97% from group II did not agreed. In study conducted by Shetty R M *et al.* (2016)^[13] 52.3% respondent didn't agreed prolonged breast feeding causing dental caries while 33.7% supported and rest don't know. Most of mothers from both groups supported bottle/breast feeding till 2yrs while 24.35% from LSESG & 5.40% from HSESG supported till 3yrs. According to WHO guideline Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond. Most of mothers give sugary foods and drinks to young children when they demand while

only 6.75% mothers from HSEG at meals. Epidemiological research shows that human milk and breast-feeding of infants provide general health, nutritional, developmental, psychological, social, economic, and environmental advantages while significantly decreasing risk for a large number of acute and chronic diseases^[14]. Human breast milk is uniquely superior in providing the best possible nutrition to infants and has not been epidemiologically associated with caries^[15-17]. Majority of mothers from both groups use to leave sugared milk bottle or sugary liquid in mouth of child while they fall asleep. Frequent night time bottle feeding with milk is associated with, but not consistently implicated in, ECC.¹⁶ Breastfeeding >7 times daily after 12 months of age is associated with increased risk for ECC^[18]. Night time bottle feeding with juice, repeated use of a sippy or no-spill cup, and frequent in between meal consumption of sugar-containing snacks or drinks (eg, juice, formula, soda) increase the risk of caries^[19, 20]. High-sugar dietary practices appear to be established early, by 12 months of age, and are maintained throughout early childhood^[21, 22]. The American Academy of Pediatrics has recommended children 1-6 years of age consume no more than 4-6 ounces of fruit juice per day, from a cup (ie, not a bottle or covered cup) and as part of a meal or snack^[23].

Approximately 75% mothers from both groups dont know that their toothpaste contain fluoride or not. Study conducted by Kumar *et al.* (2019)^[24] in Delhi 94.8% of participants use a toothbrush with fluoridated toothpaste to clean their children's teeth. However, 4.0% use a toothbrush with non-fluoridated toothpaste. Optimal exposure to fluoride is important to all dentate infants and children^[25]. Decisions concerning the administration of fluoride are based on the unique needs of each patient^[26-28]. The use of fluoride for the prevention and control of caries is documented to be both safe and effective^[29-33]. When determining the risk-benefit of fluoride, the key issue is mild fluorosis versus preventing devastating dental disease. In children considered at moderate or high caries risk under the age of 2, a 'smear' of fluoridated toothpaste should be used. In all children ages 2 to 5, a 'pea-size' amount should be used^[34-36]. Professionally-applied topical fluoride, such as fluoride varnish, should be considered for children at risk for caries^[29, 32, 33, 37, 38]. Systemically-administered fluoride should be considered for all children at caries risk who drink fluoride deficient water (<0.6 ppm) after determining all other dietary sources of fluoride exposure^[39]. Careful monitoring of fluoride is indicated in the use of fluoride-containing products. Fluorosis has been associated with cumulative fluoride intake during enamel development. So educating mothers regarding drinking of optimal level fluoride water during pregnancy can prevent fluorosis in child teeth, is required.

Most of Mothers from group I belief first dental visit should be only when problem arise. While 10% of group II belief regular check-up is a must. Study conducted by Kumar *et al.*^[24] also revealed similar beliefs. In general, children with LSES and poor self-perception of oral health were less likely to have been to the dentist. Mothers should be informed about right time for first dental visit. Parents should establish a dental home for infants by 12 months of age^[40]. The initial visit should include thorough medical (infant) and dental (parent and infant) histories, a thorough oral examination, performance of an age-appropriate tooth brushing demonstration, and prophylaxis and fluoride varnish treatment if indicated. In addition, assessing the infant's risk of developing caries and determining a prevention plan and

interval for periodic re-evaluation should be done. Infants should be referred to the appropriate health professional if specialized intervention is necessary. Providing anticipatory guidance regarding dental and oral development, fluoride status, non-nutritive sucking habits, teething, injury prevention, oral hygiene instruction, and the effects of diet on the dentition are also important components of the initial visit. Mothers from both groups were well aware that improper brushing leads to dental caries. Most of mothers use to start cleaning their children teeth around 2 yr of age, only 8.55% of HSESG mothers practice cleaning child teeth as soon as they erupt while none of mothers from LSEG. In study conducted by Bracksley *et al.* (2013) ^[41] most mothers used to clean teeth around 2 yr. 42.3% LSESG mothers & 21.17% HSESG mothers belief brushing once a day is sufficient, while 29.48% mothers from LSESG & 9.90% HSESG belief occasional brushing is sufficient. Oral hygiene measures should be implemented no later than the time of eruption of the first primary tooth. Cleansing the infant's teeth as soon as they erupt with a soft toothbrush will help reduce bacterial colonization. Tooth-brushing should be performed for children by a parent twice daily, using a soft toothbrush of age-appropriate size. Flossing should be initiated when adjacent tooth surfaces can not be cleansed with a toothbrush ^[42].

HSESG mothers are well aware of transmission of infections through sharing utensils. With the eruption of teeth none of the mothers (from both groups) used to clean them. Similar results were obtained in study conducted by Nagarajappa R *et al.* (2013) ^[43]. Educating the parent on avoiding saliva-sharing behaviors (eg, sharing spoons and other utensils, sharing cups, cleaning a dropped pacifier or toy with their mouth) can help prevent early colonization of poinee bacteria of dental caries in child oral cavity.

Our results suggest that knowledge of majority of mothers from both the groups is significantly less regarding effect of imbalanced diet and prolonged bottle/breast feeding on dental caries, fluoride content of their toothpaste. Awareness regarding treatment of milk teeth, oral health affecting general health was more in HSEG than LSEG. Similar results were obtained in other studies ^[24, 41, 44].

The underlying impact of socioeconomic conditions on different health outcomes is widely recognized ^[45-49]. Socioeconomic inequalities could affect oral health, at both the individual and population levels, and by psychosocial or material deprivation causal pathways ^[45-50]. The reason postulated behind this was economic restraints, limited availability of information, and limited access to health-care professionals ^[51]. Prevention first starts from the home and family, so it is of prime importance to evaluate and assess the cultural beliefs, dietary habits, and awareness of mothers or guardians regarding oral health procedure before implementation of the program.

The limitations of the present study were as follows: questions were restricted to mothers so under-reporting could not be ignored, especially in the cases of uneducated mothers. Over reporting is to be assumed in all the points because respondents often give socially desirable answers. Furthermore, the present study discussed the retrospective dental practice of mothers, so memory bias could be a confounding variable affecting the results of the study. Training of mothers along with child at school level will help to establish more effective preventive measures, reducing the cost burden for complex dental treatment.

Conclusion

This study emphasizes the need to initiate positive attitude toward caring of milk teeth to prevent teeth related problems & acceptance towards treatment modalities for primary teeth in kota region. In conclusion many mothers had good knowledge, but the same did not reflect in their attitude and practice. It is worthwhile to attempt regular oral health promotion education programs, with stress on revealing importance of milk teeth and cleaning measures, feeding practice and knowledge regarding first dental visit.

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