

AWARENESS OF EARLY CHILDHOOD CARIES AND ATTITUDES TOWARDS CHILD'S ORAL HEALTH AMONG PRESCHOOL CHILDREN'S MOTHERS IN CHENNAI

Dr. A. Vinita Mary^{*1}, Dr. Kesavan R.², Dr. Divya U.³, Dr. Elakiya V.³, Dr. Dalmia D.³

¹Professor and Head, Department of Public Health Dentistry, Thai Moogambigai Dental College and Hospital, Dr. M. G. R. Educational and Research Institute (Deemed to be University), Chennai.

²Reader, Department of Public Health Dentistry, Thai Moogambigai Dental College and Hospital, Dr. M. G. R. Educational and Research Institute (Deemed to be University), Chennai.

³Senior Resident, Department of Public Health Dentistry, Thai Moogambigai Dental College and Hospital, Dr. M. G. R. Educational and Research Institute (Deemed to be University), Chennai.

Article Received on
15 Feb. 2019,

Revised on 08 March 2019,
Accepted on 29 March 2019

DOI: 10.20959/wjpr20195-14710

*Corresponding Author

A. Vinita Mary

Professor and Head,
Department of Public Health
Dentistry, Thai
Moogambigai Dental
College and Hospital, Dr.
M. G. R. Educational and
Research Institute (Deemed
to be University), Chennai.

ABSTRACT

A study on prevalence and associated etiological factors of ECC (early childhood caries). This study aimed to find the prevalence of ECC and the associated factors among preschool children in Chennai. Early childhood caries is a chronic infectious disease affecting the primary teeth, especially when the baby is sleeping with on demand breast or bottle feeding. The samples were selected according to convenience. The study shows that in spite of good knowledge among mothers, their attitude and practices are lacking to keep up with necessary standards. Mothers play a pivotal role and also mothers are the primary caretakers. Therefore, the main focus should be on parents during oral health promotion for children, especially of pre-schoolers and children (<6 years).

KEYWORDS: Early childhood caries, Breast feeding, preschool children.

INTRODUCTION

Dental caries is one of the most common oral health diseases. Early Childhood Caries is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child between

birth and 71 months of age. The term "Severe Early Childhood Caries" refers to "atypical" or "progressive" or "acute" or "rampant" patterns of dental caries. Though dental caries is preventable, not much importance has been given to the preventive aspect of dental caries due to lack of oral health education. Vertical colonization occurs from care giver usually mother to the child. Since, mother plays an important role in a child's life, their knowledge about child's oral health will have a significant impact on the child's oral health status. A proper knowledge for the mothers regarding infant's oral health care will be useful in reducing the increase of dental caries in children. Hence, a study was conducted to evaluate the mother's knowledge, attitude and practice towards infant oral health care.^[1] In children younger than 3 years of age, any sign of smooth surface caries is indicative of severe early childhood caries (S-ECC).^[2]

The prevalence of ECC in India is reported to be 51.9% which is a major threat to the oral health of the developing population.^[3] The factors contributing to the high prevalence of ECC are lack of knowledge & education of the parent mostly mothers, their familial background, employment and socio-economic status along with the child's inherent immunity against the pathogens present in their oral flora, feeding intervals and usage of sweetener's and pacifiers. Correlation between the feeding intervals, practices of the mother regarding the hygiene of the child, infant's oral flora are considered risk factors of ECC. Thus, stating a fact that early childhood caries (ECC) is multifactorial, most of the parents are working with very less time left for performing day-to-day oral health care practices in their child's early years.^[4] Especially in preschool children, parental role is the most important aspect of maintaining good oral health. This study was conducted to appraise the influence of the mothers on the risk factors associated with ECC, general knowledge and awareness regarding their child's oral health.

MATERIALS AND METHODS

A cross-sectional study was conducted on playschool going children, Chennai, India, and the obtained data was tabulated to analyse and interpret the significant values examined based on the respective demographic data collected from the mothers, socio-economic status of the family, age and gender of their children and order of birth among mothers by distributing a questionnaire, which assessed their educational status, employment status, socio-economic status of the family and general information about their child and a set of 22 questions to evaluate their awareness regarding the risk factors and its association with early childhood

caries (ECC) along with their dentition status which was assessed using dft index, which was done by examining the child's dentition using mouth mirror and explorer. The mothers focused for the study had children who were both pre-schoolers and playgroup among the suburban population, Chennai, India. The samples were selected according to convenience sampling. The need of the study was explained to mothers and consent of the mothers were obtained before distributing the questionnaire.

RESULTS

A descriptive study was conducted among mothers of the playgroup children situated in suburban areas, Chennai, India. Among the study population, 53.5% were of 21-30 years and 46.5% were of 31-50 years age group. Among the study population, 50% were undergraduates, 38.4% were post-graduates and 8.2% had higher-secondary level of education. Though 82.2% were educated, only 26.7% were employed and the rest 73.3% were homemakers. Majority of them, 65.3% were from class-2 socio-economic status and 78.1% of the mothers had their first child.

The duration of breast-feeding has been reported as 1-2 years by 53.4% of the mothers which was significant with p value 0.017, around 43% of the mother had awareness regarding caries and its association with a duration of breast feeding and bottle feeding which was significant with p-value 0.028 which was related to child age and gender. (Table1(a)) Around 51.4% of mothers had started weaning at the age of 6 months – 1 year.

Table 1 (A): Comparison of Practices with Demographic Factors.

		How long did you breast feed your child?			Do you think frequent breast-feeding causes tooth decay?		Does your child brush before going to bed?	
		< 1 year	1 to 2 years	2 to 3 years	Yes	No	yes	No
Mom Age	21-30	21(42%)	49(63%)	6(33%)	12(16%)	64(51%)	20(41%)	56(58%)
	31-40	29(58%)	29(37%)	12(67%)	64(84%)	61(49%)	29(59%)	41(42%)
	P value	0.017			0.614		0.053	
Child Age	2	1(2%)	4(5%)	1(6%)	0(0)	6(5%)	1(2%)	5(5%)
	3	28(56%)	43(55%)	7(39%)	17 (81%)	61(49%)	25(51%)	53(55%)
	4	11(22%)	20(26%)	6(33%)	4(19%)	33(26%)	14(29%)	23(24%)
	5	10(20%)	11(14%)	4(22%)	0(0)	25(20%)	9(18%)	16(16%)
	P value	0.776			0.028		0.749	
Child Gender	Male	27(39%)	23(40%)	0(0)	6(29%)	69(55%)	24(49%)	51(53%)
	Female	43(61%)	35(60%)	0(0)	15(71%)	56(45%)	25(51%)	46(47%)
	P value	0.101			0.024		0.681	

Children's neglect towards brushing was around 26.7% even though they had educated mothers (p-value=0.019) and 76% are aware of the importance of cleaning gum pad had a p value of 0.006 relative to their child order. Around 33.6% reported that their kids do not brush before bed. Awareness among mothers that eating after brushing at night causes decay is more in educated group 69.9% and 80.8% of the evaluated mothers are aware that prolonged usage of pacifiers is harmful. Only 6.2% of them were aware of fluoride varnish application. Only 24% of their mothers felt necessary to have a dental check-up. And 65.1% stated that it is necessary to treat primary teeth. (Table 1(b)).

Around 56.8% of educated mother and 25.3% of socialised mother stated that it is necessary to rinse their child's mouth had a p value of 0.003 and 0.00 respectively and 25.3% employed mothers feel it is necessary to use chocolates or candies to make their child behave which had a p value of 0.036. Around 24.7% gave sweetened pacifiers to their child relative to their child order with a p value of 0.040 and around 44% of the mothers stated that their child have thumb sucking, mouth breathing and nail-biting habits with a p value of 0.050 and around 65.1% of the mothers felt it is unnecessary to treat the primary teeth which was significant with p values 0.001. (Table 2). The study also showed significance with the dft index where 0.028 child eat sweet or sugary foods and 0.008 had their child teeth applied with fluoride varnish during the past one year.

Table 1 (B): Comparison of Practices With Demographic Factors

		Importance of cleaning gum pads?		It's necessary to rinse your child's mouth?		It's necessary to use chocolates or candies to make them behave?		Do you give sweetened pacifiers to your child?		Child's Oral habits				It's necessary to treat primary teeth?	
		Yes N (%)	No N (%)	Yes N (%)	No N (%)	Yes N (%)	No N (%)	Yes N (%)	No N (%)	Thumb sucking N (%)	Mouth breathing N (%)	Nail biting N (%)	None N (%)	Yes N (%)	No N (%)
Child Order	1	87 (78)	24 (75)	100 (76)	8 (89)	29 (78.3)	85 (78)	31 (86.1)	83 (75.5)	11 (79)	8 (67)	21 (88)	74 (77)	73 (77)	40 (80)
	2	24 (22)	5 (16)	28 (21)	1 (11.1)	6 (16.2)	23 (21.1)	3 (8.3)	26 (23.6)	3 (21.4)	4 (33.3)	3 (13)	19 (20)	19 (20)	10 (20)
	3	0 (0)	3 (9)	3 (2)	0 (0)	2 (5.4)	1 (0.9)	2 (5.6)	1 (0.9)	0 (0)	0 (0)	0 (0)	3 (3.1)	3 (3.1)	0 (0)
	P value	0.006		0.701		0.219		0.040		0.701				0.752	
Education	1	2 (2)	0 (0)	1 (0.7)	1 (11.2)	1 (3)	1 (1)	0 (0)	2 (2)	0 (0)	0 (0)	1 (4.16)	1 (1)	0 (0)	2 (4)
	2	2 (2)	1 (3)	3 (2.2)	0 (0)	1 (3)	2 (2)	2 (6)	1 (1)	1 (7.14)	0 (0)	0 (0)	2 (2)	2 (2.1)	1 (2)
	3	7 (6.3)	5 (14.2)	9 (6.6)	3 (33.3)	5 (14)	7 (6.2)	6 (17)	6 (6)	2 (14.2)	2 (17)	1 (4.16)	7 (7.29)	2 (2.1)	10 (20)
	4	59 (53.1)	14 (40)	71 (51.8)	2 (22.2)	17 (46)	56 (51.3)	17 (47.2)	56 (52)	6 (43)	6 (50)	13 (54.16)	48 (50)	45 (47.4)	28 (56)
	5	41 (37)	15 (43)	53 (38.7)	3 (33.3)	13 (35.1)	43 (39.4)	11 (31)	43 (40)	5 (36)	4 (33.3)	9 (38)	38 (40)	46 (48.4)	9 (18)
	P value	0.406		0.003		0.604		0.075		0.862				0.001	
Social	1	27 (24.3)	8 (22.85)	33 (24.08)	2 (22.2)	6 (16.2)	29 (26.6)	8 (22.2)	27 (24.3)	2 (14.2)	5 (41.6)	3 (12.5)	25 (26.04)	29 (30.5)	5 (10)
	2	68 (61.2)	23 (65.7)	89 (64.9)	2 (22.2)	24 (64.8)	67 (61.4)	20 (55.5)	71 (63.9)	11 (78.5)	4 (33.3)	18 (75)	58 (60.4)	59 (62.1)	32 (64)
	3	11	4	13	2	6	9	5	10	0	3	3	9	6	9

		(9.9)	(11.4)	(9.48)	(22.2)	(16.2)	(8.25)	(13.8)	(9)	(0)	(25)	(12.5)	(9.3)	(6.3)	(18)
	4	4 (3.6)	0 (0)	2 (1.45)	2 (22.2)	1 (2.7)	3 (2.75)	2 (5.5)	2 (1.8)	1 (7.1)	0 (0)	0 (0)	3 (3.1)	1 (1.05)	3 (6)
	5	1 (0.9)	0 (0)	0 (0)	1 (11.1)	0 (0)	1 (0.9)	1 (2.7)	0 (0)	0 (0)	0 (0)	0 (0)	1 (1.04)	0 (0)	1 (2)
	P value	0.783		0.000		0.503		0.243		0.354				0.020	
Employment	1	28 (25.2)	11 (31.4)	39 (28.4)	0 (0)	5 (13.5)	34 (31.2)	6 (16.6)	33 (30)	8 (57.2)	2 (17)	5 (20.8)	24 (25)	27 (69.2)	68 (64.1)
	2	83 (74.7)	24 (68.5)	98 (71.5)	9 (100)	32 (86.5)	75 (68.8)	30 (83.3)	77 (70)	6 (42.8)	10 (83)	19 (79.1)	72 (75)	12 (30.7)	38 (35.8)
	P value	0.470		0.062		0.036		0.117		0.050				0.707	

Table 2: Comparison of Practices with Dentition Status.

		How often does your child eat sweet or sugary foods?		During the past year, has your child had fluoride varnish applied on his/her teeth	
		Rarely	Frequently	Yes	No
Decay	Absent	74(77.9%)	31(60.8%)	3(33.3%)	102(74.5%)
	Present	21(22.1%)	20(39.2%)	6(66.7%)	35(25.5%)
	P value	0.028		0.008	
Total dft		74(77.9%)	31(60.8%)	3(33.3%)	102(74.5%)
		21(22.1%)	20(39.2%)	6(66.7%)	35(25.5%)
	P value	0.028		0.008	

DISCUSSION

Mothers play an important role in influencing the good oral health of the children. This study was directed on mothers of playschool going children among suburban population, Chennai India. Lack of awareness among mothers of the children results in poor oral hygiene of the child. 63% of mothers who are in age group of 21 -30 years and 67% of mothers who are in age group of 31-40 years breast feed their child for about 1- 2 years and 2-3 years respectively. This shows that mothers are unaware that longer duration of breast feeding increases the risk of early childhood caries which is also discussed by Tham R et al (2015). In his study, he said that longer duration of breast feeding causes dental caries.^[6] About 81% of mothers having 3-year-old children and 71.4% of mothers who have female child were aware that frequent breast feeding causes dental caries which is similar to the study done by Colak H et al (2013). In his study, it's been reported that frequent breast feeding increases the risk of caries.^[2] 78.3% of mothers having first child felt that it is important to clean their child's gum pads which is also discussed by Nagaraj A et al (2012). His study also reported that mothers use cotton gauze in cleaning their child's gum pads. Educated mothers 51.8% reported that it is necessary to rinse their child's mouth after eating and this is discussed by Jain R et al (2014). In his study 75% of mothers showed positive attitude towards cleaning their child's teeth.^[8] Majority of mothers 95.8% who are educated were aware of importance of treating the primary teeth which is in accordance with the study done by Setty J V et al (2016). Setty reported that 86% of mothers were aware of necessity to treat the primary teeth.^[9] It is pleased to see 65% of mothers (p value-0.000) who are in class 2 socio-economic status SES were aware of the importance of rinsing their child's mouth after eating, which in turn reduces the prevalence of caries which is also similar to the study done by Ayele F A et al (2013).^[10] 39.2% of mothers reported that their child frequently eats sweet or sugary foods, which increases the caries rate which is similar to the study done by Johansson I et al

(2010). In his study, he strongly reported positive association between intake of sugary foods and risk of caries.^[11] About 74.5% of mothers had been said that their child had not applied fluoride varnish on their teeth. Having said that our study showed high prevalence of dental caries among children which is also similar to the study done by Si Y et al (2016). He discussed that application of fluoride decreases the prevalence of caries among children.^[12]

CONCLUSION

The study shows that in spite of good knowledge among mothers, their attitude and practices are lacking to keep up with necessary standards. Mothers play a pivotal role and also mothers are the primary caretakers. Therefore, the main focus should be on parents during oral health promotion for children, especially of pre-schoolers and children (<6 years). In addition, awareness to visit the dentist before child's first birthday should be insisted.^[5]

Parents should be informed to brush their children's teeth at least once by parents themselves at night before going to bed. This shows that parents need to be trained and motivated to carry out oral hygiene practices in a proper way and efficiently.^[5]

In addition, due to inability of parents to carry out oral hygiene practices, additive professional preventive practices such as (a) topical fluoride application and, (b) pit and fissure sealants should be carried at primary health centres (PHCs) along with vaccinations after complete eruption of all deciduous teeth, especially deciduous molars as they have a longer lifespan in the oral cavity of children.

REFERENCES

1. Dhull KS, Dutta B, Devraj IM, Samir PV. Knowledge, Attitude, and Practice of Mothers towards Infant Oral Healthcare. *Int J Clin Pediatr Dent*, 2018; 11(5): 435-439.
2. Çolak H, Dülgergil ÇT, Dalli M, Hamidi MM. Early childhood caries update: A review of causes, diagnoses, and treatments. *Journal of natural science, biology, and medicine*, Jan, 2013; 4(1): 29.
3. Anil S, Anand PS. Early childhood caries: prevalence, risk factors, and prevention. *Frontiers in paediatrics*, Jul 18, 2017; 5: 157.
4. Koya S, Ravichandra KS, Arunkumar VA, Sahana S, Pushpalatha HM. Prevalence of early childhood caries in children of West Godavari District, Andhra Pradesh, South India: an epidemiological study. *International journal of clinical pediatric dentistry*, Jul, 2016; 9(3): 251.

5. American Academy of Pediatric Dentistry. Policy on early childhood caries (ECC): Classifications, consequences, and preventive strategies. *Pediatr Dent*, 2014, 2015; 36: 50-2.
6. Tham R, Bowatte G, Dharmage SC, Tan DJ, Lau MX, Dai X, Allen KJ, Lodge CJ. Breastfeeding and the risk of dental caries: a systematic review and meta-analysis. *Acta Paediatrica*, Dec, 2015; 104: 62-84.
7. Nagaraj A, Pareek S. Infant oral health knowledge and awareness: Disparity among pregnant women and mothers visiting a government health care organization. *International journal of clinical pediatric dentistry*, Sep, 2012; 5(3): 167.
8. 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*, Jul 1, 2014; 1(2): 40-5.
9. Setty JV, Srinivasan I. Knowledge and awareness of primary teeth and their importance among parents in Bengaluru City, India. *International journal of clinical pediatric dentistry*, Jan, 2016; 9(1): 56.
10. Ayele FA, Taye BW, Ayele TA, Gelaye KA. Predictors of dental caries among children 7–14 years old in Northwest Ethiopia: a community based cross-sectional study. *BMC Oral Health*, Dec, 2013; 13(1): 7.
11. Johansson I, Holgerson PL, Kressin NR, Nunn ME, Tanner AC. Snacking habits and caries in young children. *Caries research*, 2010; 44(5): 421-30.
12. Si Y, Guo Y, Yuan C, Xu T, Zheng SG. Comprehensive oral health care to reduce the incidence of severe early childhood caries (s-ECC) in urban China. *Chin J Dent Res.*, Mar, 2016; 19(1): 55-63.