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RESEARCH ARTICLE

EVALUATION OF AWARENESS AMONG MOTHERS ABOUT THE FACTORS RESPONSIBLE FOR THE CAUSATION OF EARLY CHILDHOOD CARIES-A CROSS-SECTIONAL STUDY

Dr. Savitha Sathyaprasad, *Dr. Jerry George, Dr. Krishnamoorthy, S. H. and Dr. Dhanya, K. B.

Department of Pedodontics and Preventive Dentistry, KVG Dental College & Hospital, Sullia, India

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ABSTRACT

Early childhood caries (ECC), because of its ubiquitous nature and stubborn resistance to resolution, remains as one of the most common disease affecting very young children in today's era.

Aim: To evaluate the awareness among mothers about various factors responsible for the causation of ECC.

Methods: A questionnaire based survey was conducted on 200 mothers of children aged 1 to 6 years residing in Sullia, Karnataka. A structured questionnaire was given to each mother in the language they could read and those who were not able to read, were explained. Then the information collected were recorded and values were statistically analyzed.

Results: The mean age of the mothers participating in this study was 35 years.60% of the participants had education till university level,48% of the participants were aware of the fact that sleeping with milk bottle or juice causes ECC and further analysis of this study showed that participant awareness for the causes of ECC are in the following order:

Prolonged breast feeding (52%), nutritional deficiency (40%), smoking during pregnancy(25%), iron deficiency anemia (21%), preterm birth and low birth weight(20%),

Conclusion: Hence it was concluded that the mothers are moderately aware of the factors that are responsible for causing ECC.

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INTRODUCTION

Indian society of Pedodontics and preventive dentistry works with motto, every child has basic right towards complete oral health. Its obligation of every Pedodontist is to fulfill it. Early childhood caries (ECC), because of its ubiquitous nature and stubborn resistance to resolution, remains as one of the most common disease affecting very young children in today's era. Mostly ECC happens because of lack of awareness of mothers about etiologic factors, as feeding is completely under parents control in neonatal, infancy and pediatric age group. Early childhood caries can be predictive of not only future dental problems but also on growth and cognitive development by interfering with comfort, nutrition, concentration and school participation. ECC is the most common chronic disease in young children and may develop as soon as the teeth erupt (Douglass *et al.,* 2004). It is a significant public health problem and certain segments of society, such as the socially disadvantaged have the highest burden of this disease (Vargas and Ronzio, 2006).

******Corresponding author:* **Dr. Jerry George,**
Department of Pedodontics and Preventive Dentistry, KVG Dental College & Hospital, Sullia, India.

A number of risk factors are associated with ECC, which can be broadly classified into biological and social risk factors (Berg *et al.,* 2009). Biological risk factors include nutritional variables, feeding habits and early colonization of cariogenic micro-organisms. Social risk factors comprise low parental education, low socio-economic status and lack of awareness about dental disease (Hallett and O'Rourke, 2003). ECC affects the quality of life of families and their affected children due to dental pain and subsequent tooth loss resulting in difficulty in eating, speaking, sleeping and socializing (Edelstein *et al.,* 2006; Pahel *et al.,* 2007). Most of these, Strategies can be framed from these proven etiological factors, to lessen their impact which are directly responsible for ECC. However it is directly proportional to the awareness of the main stakeholders of child's oral health, out of whom mother plays a pivotal role. Irony is that, 40% of the Indian child population and ECC happens to be the highest disease of childhood. The first step towards prevention should be directed towards people or specialist handling pediatric population like mothers, pediatrician, pedodontist, teachers, ASHA workers, and Aanganwadi caretakers. This study intends to evaluate the first stalk holder of the disease, the mother, as the supervision should begin at the grass root level.

MATERIALS AND METHODS

A questionnaire based survey was conducted on 200 mothers of children, aged 1 to 6 years residing in Sullia, Karnataka. A structured questionnaire was given to each mother in the language they could read and those who were not able to read, were explained. Then the information collected were recorded and values were statistically analyzed. A questionnaire with questions to assess their knowledge about dental caries, attitude and awareness toward its prevention and practice guidelines and opinions was distributed. It contained both open and close ended questions. Dental examination was performed using mouth mirror, disposable gloves and mask and a gauze to dry the tooth. The WHO diagnostic criterion was used for diagnosis of dental caries (World Health Organization [WHO], 2003). ECC was diagnosed according to the WHO criteria. The overall score for caries and parents awareness were compared.Scores were given to each question with respect to knowledge, attitude and awareness section. The maximum score 1 was given to the correct answer and 2 was given to the incorrect answer. Scoring criteria: The scores were assessed as follows. –Good and -Poor. Statistical analysis was done to analyse the knowledge and attitude of the parents.

Analysis: Descriptive data was recorded and percentage distributionwas calculated

RESULTS

The data were collected and analysed using SPSS software, to assess the multivariable assessment of factors contributing to early childhood caries. The mean age of the mothers participating in this study was 35 years.45% of the participants had education till university level,62% of the participants were aware of the fact that sleeping with milk bottle or juice causes ECC and further analysis of this study showed that participant awareness of the causes for ECC are in the following order:

Prolonged breast feeding (51%), Nutritional deficiency (35%), Smoking during pregnancy (34%), Pacifiers dipped in honey (53%),Iron deficiency anemia (21%), Preterm birth and low birth weight(21%), Sweetening agents in pediatric syrups(49%).

The odds of having early childhood caries among children who consumed sweetened drink at night showed significant association as compared to children who did not consume sweetened drink at night. The children of mothers who breast fed for 18 to 24 months had ECC three times more as compared to those who breast fed for 6 month. In spite of awareness of mothers about chocolate and biscuits as a causation factor, the DMFT score was the highest in this group. Awareness of mothers were found to show a positive correlation to the DMFT of the child.

Mothers education level: primary school-1, H.S-2, secondary -3, University-4, graduate-5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	1.5	1.5	1.5
	2	28	13.7	13.7	15.2
	3	61	29.9	29.9	45.1
	4	91	44.6	44.6	89.7
	5	21	10.3	10.3	100.0

Freqencies

Feeding-1(breast), 2(bottle), 3(both), 0(none)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	96	47.1	47.1	47.1
	1	32	15.7	15.7	62.7
	2	26	12.7	12.7	75.5
	3	50	24.5	24.5	100.0
	Total	204	100.0	100.0	

Prolonged bottle feeding causes caries-1(Yes), 2(No)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	126	61.8	61.8	61.8
	2	76	37.3	37.3	99.0
	3	2	1.0	1.0	100.0
	Total	204	100.0	100.0	

Bacteria can be transmitted from mother to child-1(Yes), 2(No)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	1.0	1.0	1.0
	1	103	50.5	50.5	51.5
	2	99	48.5	48.5	100.0
	Total	204	100.0	100.0	

Pacifiers dipped in honey causes caries-1(Yes), 2(No)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	1.0	1.0	1.0
	1	109	53.4	53.4	54.4
	2	93	45.6	45.6	100.0
	Total	204	100.0	100.0	

Chocolates and biscuits causes caries-1(Yes), 2(No)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	171	83.8	83.8	83.8
	2	33	16.2	16.2	100.0
	Total	204	100.0	100.0	

Nutritional deficiency causes caries-1(Yes), 2(No)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	123	60.3	60.3	60.3
	2	81	39.7	39.7	100.0
	Total	204	100.0	100.0	

DISCUSSION

Early childhood caries is a chronic and infectious oral disease of young children, most commonly seen in poor and minority populations. The mothers are required to take care of their oral health during pregnancy and utilize routine dental health care to detect their oral health problems early, so that timely interventions will reduce the risk of caries and break the chain of transmission of bacteria to the new born child. The pregnancy is itself a “teachable moment” in self-care and future child-care, dental health education should be a part of antenatal checkups. The priority should be given to mothers who have suffered from dental caries so that they can effectively prevent transmission of disease to their children. Oral disease, predominantly caries in young children can be

prevented to a great extent if parents are sufficiently educated and motivated. Oral health literacy is one of the important factors affecting oral health. In our study it was proved that caries, the prevalence of ECC was found twice more in children's of illiterate mothers than with children of mothers having a graduate education. Oral disease, predominantly caries in young children can be prevented to a great extent if parents are sufficiently educated and motivated. Oral health literacy is one of the important factors affecting oral health. Poor health literacy is associated with poorer perceptions of health, decreased utilization of services and poorer understanding of verbal and written instructions of self-care (Jackson, 2006). The lack of awareness could be main cause for ECC and creating awareness in mothers on the etiologic factors can be the first step towards the prevention of this devastating disease. Higher education mothers had better knowledge and practices. The findings of this study emphasize the significant role of mothers in promoting dental health of pre-school children.

The American Academy of pediatric dentistry declared that breast feed and bottle fed infants are at potentially devastating risk for caries. This is related to prolonged and repetitive feeding without proper oral hygiene. Our study also proves the same, the children of mothers who breast fed for 18 to 24 months had ECC three times more as compared to those who breast fed for 6 months. In our study, it was proved consumption of sweetened drink at night was more associated with chance of caries occurrence than who not. Healthy feeding habit is necessary for the proper growth and development of children. The World Health Organization has recommended that healthy diet and proper feeding habits have important role in prevention of oral diseases including; early childhood caries, dental caries, diseases of the oral mucosa and periodontal diseases. In other studies, urban Mexican American and immigrant Latino mothers rarely recognized cariogenic food beyond candy and demonstrated uncertainty as to how exactly bottle feeding is detrimental to oral health (Hoeft *et al.,* 2010). In another study, ninety eight percent of children had juice in bottles or sippy cups (Southward *et al.,* 2006). In Hong Kong, 60% gave fruit juices in bottles, some consuming non-diary products more than six times per day (Chan *et al.,* 2002). The role of dietary and lifestyle factors are very important because the future targeted caries prevention programs depend upon the understanding of these factors. Parents play an essential role in developing a child's dietary behaviors and infancy is an important time to start healthy dietary habits (Park *et al.,* 2015). These factors are under the control of mothers and if she possesses adequate knowledge regarding brushing technique and healthy diet can provide best oral preventive health care to their children.

Conclusion

The lack of awareness could be main cause for ECC and creating awareness in mothers about the etiologic factors can be the first step towards the prevention of this devastating disease. Highly educated mothers had better knowledge and practices. The findings of this study emphasize the significant role of mothers in promoting dental health of pre-school children.

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