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Research Article

Prevalence of Dental Caries and its Association to Maternal Education as a Risk Indicator: A Cross Section Study in Udaipur - Rajasthan

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Abstract: It is widely acknowledged that the behaviour and attitude of parents affects their children's health.The objective of this study was to determine the role of maternal education on oral health status in their children. A total of 465 children aged between 8-14 years studying in Government schools of Udaipur city were considered for this study. Clinical data was obtained through DMF-T based on WHO criteria and interview was conducted to know the maternal education level. Data was subjected for statistical analysis and it was observed that child with illiterate mother had a higher chance of caries than that of mother with higher level of education who had have a good knowledge about importance of oral hygiene.
Keywords: Caries, DMF-T, Literate, Maternal education

INTRODUCTION

Education is the basic need of wellbeing of an individual as well as the family. Women who has an important role in maintaining the health of the family, plays an important role as a mother in upbringing of the child healthy and hence it is of importance of her education. There is dearth of information on oral health of school children in India. It has been found that more positive is the parent's attitude toward dentistry the better will be the dental health of their children [1]. Oral health when neglected, result in deleterious effects resulting in dental caries that causes discomfort and affects quality of life. Dental caries deserves special attention because of its high prevalence and severity, especially among lower economic group population [2]. The fact that mothers of children in ethnic minority groups often receive only a few years of education results in poor communication skills, and consequently poor dental health [3]. Maternal education has been used as one of the best predictors of their children's health, especially in developing countries, among all other socioeconomic indicators [4, 5]. Contextual aspects related to a family's capacity to develop and maintain good dental health behaviors are relevant in pediatric dentistry, since parents with poor dental health behaviors indicate caries risk in their children [6]. Low parental education, especially of mothers, is a risk factor for dental caries in children [7-10].

The objective of this study was to associate the level of maternal education and to the prevalence and severity of dental caries among school going children in Udaipur – Rajasthan.

MATERIALS AND METHODS

A cross sectional study involving 10 – 14years School going children was carried out at various Government schools of rural and urban Udaipur. Sample size of 465 was considered after a pilot study. World Health Organization criteria 1997 DMF-T and DMF-T criteria were used to obtain the clinical information on caries [11]. Previously packed and autoclave sterilized diagnostic instruments as mouth mirror size no.3, straight probe and explorer were used and intraoral examination was performed by single observer. For non-clinical data, interviews were conducted with each child asking about parent's education and oral hygiene habits and were cross verified with their parents. The data was entered into the SPSS 17.0 software and were analysed in a descriptive way. Association tests were performed using Chi-squared or Fisher's exact test. Odds Ratios (OR) and confidence intervals were also calculated and converted into Prevalence Ratios (PR).

RESULTS

A total of 465children were examined, out of which 204 were girls with 162 of them having caries and 261were boys and 122 of them had positive finding of caries. Mothers of 289 children were illiterate, 161 had completed education and 15 were graduates. The prevalence of caries in children of graduate mother was

nil, whereas it was highest in children of illiterate mothers with 78.2% followed by 36% in school going children.

Table 1: Distribution of caries based on maternal education

		Caries	
		Yes	**No**
Illiterate	Count % within Mother's Education % within decayed	226 78.2% 79.6%	63 21.8% 34.8%
Education	Count % within Mother's Education % within decayed	58 36% 20.4%	103 64% 56.9%
Graduation and above	Count % within Mother's Education % within decayed	0 0% 0%	15 100% 8.3%

† Pearson's chi-square test

Table 2: Distribution of the study subjects based on gender

Children			**Prevalence of Caries**		**Total**	**P†**
			Yes	**No**		
Sex	Male	Count % within sex % within caries	162 62.1% 57%	99 37.9% 54.7%	261 100.0% 56.1%	0.63
	Female	Count % within sex % within caries	122 59.8% 43.0%	82 40.2% 45.3%	204 100.0% 43.9%	

† Pearson's chi-square test

Table 3: Maternal education and prevalence of caries

		Total	**P†**
Illiterate	Count Mother's Education (%) Children with caries (%)	289 100.0% 62.2%	0.000
Education	Count Mother's Education (%) Children with caries (%)	161 100.0% 34.6%	
Graduation and above	Count Mother's Education (%) Children with caries (%)	15 100.0% 3.2%	

† Pearson's chi-square test

Table 4: Logistic Regression

Variables	**Odds ratio (95% Confidence Interval)**	**p – value**
Gender	1.144 (0.747 – 1.752)	0.53
Mother's Education	5.481 (3.504 – 8.572)	0.00

DISCUSSION

The high response rate obtained in the study, the examiner's calibration process and the proper degree of diagnostic reproducibility obtained during the data collection suggested a good internal validity of the study. The prevalence of dental caries was 61.1% which was higher than the study done by V. Dhar *et al*. 2007 [12]. In the present study the 'D' (decayed) component was the largest contributor to the DMF-T score. Mothers with higher education have a better knowledge regarding the oral hygiene practice and importance of deciduous teeth. It was observed that higher the parent's education level, the more favourable the oral self-care of their children and maternal oral health habits undoubtedly influence her children's oral self-care,

emphasizing the mothers' role in the oral health of their offspring [13, 14].

Lower maternal education was shown to be associated with the prevalence of dental caries and similar to the study done by Jefferson Traebert 2011 [15]. Studies suggest maternal educational attainment to influence dental health of children; those having higher educational qualification, are reported to have children with better dental health [16-18]. Szatko and co-workers [19] found a strong interdependence on the mother's level of knowledge with that of her educational level which influenced the child's oral health. Similarly, a strong relationship has been observed between higher DMF score of children and the mother's low education level [20- 22]. Williams NJ *et al*. and Kinby CG also observed that socio-demographic characteristics affect oral health knowledge and attitudes of parents with a lower level of education, and negatively affect their oral health practices [23, 24]. In fact, this study supports the assertion of the existence of a directly proportional relationship between education levels and dental caries.

Zavras *et al*. (2002) have reported that 53% of well-educated mothers visited the dentists one or two times per year versus 19.6% mothers with basic education and assess appropriate source of information and understand that information more completely [25]. Although parents play the most important role in the oral health of their children, schoolteachers are also important and should be involved in children's oral health education as children spend a considerable amount of time at school, where they can be taught good health habits [26, 27]. Contrary to these, study by Shamta Sufia *et al*. [28] found no association between mother's educational level and child's dental caries.

Higher levels of education can mean better working conditions, higher family income and, therefore, better access to health services. In fact, the association between low maternal education and higher rates of dental caries evidences the importance of social and economic factors in the health-disease process. This reflects the limited access of children to dental services in the rural area. In fact, if the private service is not financially accessible for rural families, the public service is also unable to meet the needs.

CONCLUSION

A better understanding of social, economic, belief, behavioural, and attitudinal factors is crucial in studies with the goal of oral health promotion.Health professionals, who are the first to come into contact with expectant and new mothers, need to disseminate appropriate and accurate information about oral health care for infants, especially the use of nursing bottle at night, the value of tooth brushing and regular dental visits. To improve the oral health status of the studied population of schoolchildren, it must be recognized that low maternal education might represent low economic level, and consequently that these mothers do not have access to information about the essential care to maintain their children's oral health.It can be concluded that the prevalence of dental caries was found to be statistically higher among the male children of mothers who had a lower level of education.

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