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Etiquette of Dental Health among Children in Vellore, Tamilnadu, India

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Abstract:

Aims and objectives: This study aims to evaluate and compare the children behaviour related to dental health between the family of own parents or adoptive.

Materials and methods: A cross-sectional study was carried out among children of aged 6-12 years from various families in Vellore, Tamilnadu. The data was collected by using questionnaire regarding tooth care, dental follow up, and eating habits of 500 children and also included questions related to the family composition which is a significant explanatory variable for children dental health behaviour. Statistical analysis was done by using SPSS version 13.5 to obtain the data. Chi-square test was used to determine the association between family compositions.

Results: Family composition showed us those children who grow with own parents have more probability to access dental services' than the adoptive parents or relatives. Children growing up with adoptive parents or relatives consume a higher amount of soft drinks and sweets.

Conclusion: Dental health behaviour was better among children grown with their own parents than those with adoptive parents. There are various other factors which also play a very vital role which can be assessed by more researches.

Keywords: Caries prevention; Dental health behaviour; Family composition; Socio-economic status.

INTRODUCTION: [3]

Family plays a major role in maintaining a good and healthy life. The composition of the family varies such as a joint family, a couple and their dependent children known as a nuclear family, an isolated or separated family, etc. Dental health varies depending on the structure of the family [(1)]. For instance, in India 93% of children are grown up with natural parents rest is by single mother, father, relatives, adoptive parents and protector. The structure of family varies in its distribution with the highest proportion of lonely and only a couple of families when compared to other types. [(2)]In developing countries many joint families shifting into a nuclear type of family so that most of the old peoples are staying alone [(3)].

Children raised from patchwork families are shown to achieve poorer education and healthy when compared to peers brought up by both parents. This study aims to evaluate and compare the children behavior towards dental health between a family of own parents or adoptive parents. Poor nutritional status affects the oral cavity and highly associated with periodontal diseases. Consumption of acidic beverages leads to dental erosion and caries formation by demineralization of the enamel [(4)].

The prolonged impact of oral health during pregnancy was not known. Certain studies had done to find whether prolonged improper oral health during maternity was a risk factor for caries among children and adults [(5)].

The trends of lifestyle drastically change from traditional to western among developing countries which leads to a higher intake of unhealthy foods. [(6)].

Dental caries was the most common ancient disease, dating back to the time that agriculture replaced hunting and gathering as the principle source of food, although the prevalence and severity were much lower than what we see today. Though the recent studies report that the dental caries was declined among developing countries due to fluoride use, [(7)] but it persists in higher proportion among economically developing and poor nations such as India this might be due to poor knowledge and awareness and changing trends of diet [(8)].

Introducing different fluoride delivery systems, changing trends of dietary behaviour and various preventive measures have declined the prevalence of caries among children in the United States [(9)].

The trends of family shape shifting globally with a higher rate of families with a single parent [(10)]. This affects health since family plays a first and most important role to motivate the children by modifying their behavior [(11)].

Children with single mothers/fathers had a high concern of caries as compared to children growing with their families. Different psychosocial variables, such as socioeconomic status, family type, and sibling position may be considered to be of great significance as it may influence child behavior patterns in a dental treatment situation. A study was done which revealed that no significant relationship between socio-economic status, family type and sibling position with child behavior pattern, but a trend has been observed that children of high socioeconomic background behave more positively, children of a nuclear family exhibit more negative attitude and middle siblings show less negative behavior than youngest and eldest [(12)].

Based on family atmosphere certain studies have conducted to verify the impact of the family towards the oral health of children since family plays a major role in encouraging oral health [(13),(14)].

The objectives of this study were 1. To describe the various type of family composition, oral health status, and diet consumption. 2. To evaluate the oral health-related knowledge, behaviour and attitude in these kinds of the family; and 3. To analyze the interrelationships between various type of family composition, their oral health behavior, and dietary intake.

MATERIALS AND METHODS:

A cross-sectional study was done among children between the age group of 14 to 16 years and from various types of family composition in Vellore district, Tamilnadu. There were 8 sites out of which 4 sites were selected by random sampling method. Prior permission was obtained from the ethical committee of the department of public health dentistry, SRM dental college, Ramapuram. About 100 families in each area were encouraged to give active participation in each survey site. In urban areas, families with various composition were taken. In rural areas, mainly the children grew up with either their relatives or natural parents. A total of 500 samples was recorded and analyzed. The questionnaire was extracted from the study done by Stefan Listl in the year 2010[15].

Data for the study was collected by face-to-face interviews through a structured questionnaire prepared in English and the local language. A closed-ended questionnaire used in this study consists of question regarding oral health, dietary habits which include sugar intake and various liquid drinks along with its specific quantity of consumption, family composition. It also included questions related to the demographic status of the samples such as age, gender, date of birth, education, occupation, phone number, etc.

The survey conducted in urban areas where mainly of government quarters and that of the rural area was a small group of families. The authorities in those particular areas were approached, the object and the nature of the study were discussed and permissions obtained. Each participant of the study signed a written consent after the purpose of the study was explained. The sample was separated according to age and gender. The shape of the family usually categorized into nuclear and joint families, as discussed above [16]. Other classifications are comprised of married couples with or without children and married couples with/without children living with their parents or multiple-family units [17].To identify particular differences in influences on health measures in comparison with multigenerational families, the following definition of family structures were used: *Alone* – Single person household; *Couple* – with no children, or siblings sharing the same domicile; *Nuclear family* – conventional family of parent(s) and children; and *Extended family* – family of grandparent(s), parent(s) and children [3 or more generation]. Statistical analysis was done and recorded between various family distribution. SPSS version 13.5 was used to obtain the data. Chi-square was used to determine the association between family compositions.

Table 1: shows the association of dependent variable with natural parents

S.NO	QUESTIONS	OPTIONS	NATURAL PARENTS		TOTAL	P VALUE
			YES	NO		
1	NUMBER OF DENTAL VISIT'S	A)once in a month	105	4	109	0.0001
		B)once in three months	36	1	37	
		C)once in a year	228	25	253	
		D)none	99	2	101	
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once in a day	125	3	128	0.07
		B)twice a day	164	5	169	
		C)at least once a week	167	24	191	
		D)never	12	0	12	
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes	335	12	367	0.06
		B)no	110	20	130	
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month	96	16	112	0.0001
		B)1 to 2 times per week	198	11	209	
		C)once per day	114	3	117	
		D)never	60	2	62	
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass	110	4	114	0.0001
		B)1/2th glass	127	7	134	
		C)1 glass	144	15	159	
		D)2 to 3 glasses	35	5	40	
		E)never	52	1	53	
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month	121	13	134	0.0001
		B)1 to 2 times per week	220	16	236	
		C)once per day	81	2	83	
		D)2 to 5 times a per day	44	1	45	
		E)never	2	0	2	
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass	31	1	32	0.0001
		B)1/2th glass	84	12	96	
		C)1 glass	138	4	142	
		D)2 to 3 glasses	181	15	196	
		E)never	34	0	34	
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month	55	2	57	0.0001
		B)1 to 2 times per week	260	26	286	
		C)once per day	38	3	41	
		D)2 to 5 times per day	110	1	111	
		E)never	5	0	5	
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month	194	16	210	0.0002
		B)1 to 2 times per week	127	8	135	
		C)once per day	32	5	37	
		D)2 to 5 times per day	113	3	116	
		E)never	2	0	2	

RESULTS:

In the table 1, the Chi-square test was used to determine the association of dependent variable with natural parents. There was a statistically significant difference was found in the children visiting dental and diet [P value 0.0001]. No statistically significant relation was found in their frequency of brushing [P value 0.07] and use of fluoride toothpaste [P value 0.06]

In table 2, the association of dependent variable with single mother was determined by using chi-square test. There was a statistically significant relation was found in the children visiting dental clinic, diet, brushing frequency and the use of fluoridated tooth paste [P value 0.0002]

In table 3, the association of dependent variable with single father was determined by using chi-square test. There was a statistically significant relation was found in the children visiting dental clinic, diet and brushing frequency [P value 0.002]. No significant relation was found in the use of fluoride tooth paste [P value 0.06].

In table 4, the association of dependent variable with relatives was determined using chi-square test. There was a statistically significant relation was found in the children visiting dental clinic, diet, brushing frequency and use of fluoridated tooth paste [P value 0.001]

In table 5, the association of dependent variable with adoptive parents was determined using chi-square test. There was a statistically significant difference was found in the children visiting dental clinic, diet and brushing frequency [P value 0.0001]. No significant relation was found in the use of fluoridated tooth paste [P value 0.07].

In table 6, the association of dependent variable with protector was determined by using chi-square test. No statistically significant relation was found in the children visiting dental clinic [P value 0.07], diet, brushing frequency [P 0.06] and the use of fluoridated toothpaste [P 0.07].

Table 2: shows the association of dependent variable with single mother

S.NO	QUESTIONS	OPTIONS	SINGLE MOTHER		TOTAL	P VALUE
			YES	NO		
1	NUMBER OF DENTAL VISIT'S	A)once in a month	2	107	109	0.0002
		B)once in three months	0	37	37	
		C)once in a year	7	246	253	
		D)none	0	101	101	
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once in a day	0	128	128	0.0002
		B)twice a day	2	167	169	
		C)at least once a week	7	184	191	
		D)never	0	12	12	
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes	5	362	367	0.0002
		B)no	4	126	130	
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month	4	108	112	0.0002
		B)1 to 2 times per week	4	205	209	
		C)once per day	1	116	117	
		D)never	0	62	62	
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass	1	113	114	0.0002
		B)1/2th glass	3	131	134	
		C)1 glass	4	155	159	
		D)2 to 3 glasses	1	39	40	
		E)never	0	53	53	
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month	5	129	134	0.0002
		B)1 to 2 times per week	4	232	236	
		C)once per day	0	83	83	
		D)2 to 5 times a per day	0	45	45	
		E)never	0	2	2	
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass	0	32	32	0.0002
		B)1/2th glass	3	93	96	
		C)1 glass	4	138	142	
		D)2 to 3 glasses	2	194	196	
		E)never	0	34	34	
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month	1	56	57	0.0002
		B)1 to 2 times per week	7	279	286	
		C)once per day	0	41	41	
		D)2 to 5 times per day	1	110	111	
		E)never	0	5	5	
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month	5	205	210	0.0002
		B)1 to 2 times per week	0	135	135	
		C)once per day	3	34	37	
		D)2 to 5 times per day	1	115	116	
		E)never	0	2	2	

Table 3 shows the association of dependent variable with single father

S.NO	QUESTIONS	OPTIONS	SINGLE FATHER		TOTAL	P VALUE
			YES	NO		
1	NUMBER OF DENTAL VISIT'S	A)once in a month B)once in three months C)once in a year D)none	0 0 7 0	109 37 246 101	109 37 253 101	0.002
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once daily B)twice daily C)at least once a week D)never	0 1 6 0	128 168 185 12	128 169 191 12	0.002
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes B)no	1 6	366 124	367 130	0.06
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month B)1 to 2 times a week C)once daily D)never	5 2 0 0	107 207 117 62	112 209 117 62	0.002
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	1 2 2 2 0	113 132 157 38 53	114 134 159 40 53	0.002
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times a day E)never	4 3 0 0 0	130 233 83 45 2	134 236 83 45 2	0.002
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	0 1 0 6 0	32 95 142 190 34	32 96 142 196 34	0.002
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	0 6 1 0 0	57 280 40 111 5	57 286 91 111 5	0.002
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times per day E)never	4 3 0 0 0	206 132 37 116 2	210 135 37 116 2	0.002

Table 4: shows the association of dependent variable with relatives

S.NO	QUESTIONS	OPTIONS	RELATIVES		TOTAL	P VALUE
			YES	NO		
1	NUMBER OF DENTAL VISIT'S	A)once in a month B)once in three months C)once in a year D)none	0 0 5 0	109 37 248 101	109 37 253 101	0.001
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once daily B)twice daily C)at least once a week D)never	0 0 5 0	128 109 186 12	128 169 191 12	0.001
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes B)no	2 3	365 127	367 130	0.001
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month B)1 to 2 times per week C)once daily D)never	2 2 0 1	110 207 117 61	112 209 117 62	0.001
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	1 1 3 0 0	113 133 156 40 53	114 134 159 40 53	0.001
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	3 2 0 0 0	137 234 83 45 2	134 236 83 45 2	0.001
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	0 4 0 1 0	32 92 142 195 34	32 96 142 196 34	0.001
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	0 5 0 0 0	57 281 41 111 5	57 286 41 111 5	0.001
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	2 3 0 0 0	208 132 37 116 2	210 135 37 116 2	0.001

Table 5: shows the association of dependent variable with adoptive parents

S.NO	QUESTIONS	OPTIONS	ADOPTIVE PARENTS		TOTAL	P VALUE
			YES	NO		
1	NUMBER OF DENTAL VISIT'S	A)once in a month B)once in three months C)once in a year D)none	2 1 7 2	107 36 246 99	109 37 253 101	0.0001
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once in a day B)twice a day C)at least once a week D)never	3 2 7 0	125 107 184 12	128 109 191 12	0.0001
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes B)no	4 8	363 122	367 130	0.07
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month B)1 to 2 times per week C)once daily D)never	5 4 2 1	107 205 115 61	112 209 117 62	0.0001
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	1 2 6 2 1	113 132 153 38 52	114 134 159 40 53	0.0001
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	22 7 2 1 0	132 229 81 44 2	134 236 83 45 2	0.0001
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass B)1/2th glass C)1 glass D)2 to 3 glasses E)never	1 4 0 7 0	31 92 142 189 34	32 96 142 196 34	0.0001
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month B)1 to 2 times per week C)once daily D)2 to 5 times daily E)never	1 9 2 0 0	56 277 39 111 5	57 286 41 111 5	0.0001
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month B)1 to 2 times per week C)once per day D)2 to 5 times daily E)never	5 3 2 2 0	205 132 35 114 2	210 135 37 116 2	0,0002

Table 6: shows the association of dependent variable with protector

S.NO	QUESTIONS	OPTIONS	PROTECTOR		TOTAL	P value
			yes	no		
1	NUMBER OF DENTAL VISIT'S	A)once in a month	0	109	109	0.07
		B)once in three months	0	37	37	
		C)once in a year	0	253	253	
		D)none	0	101	101	
2	HOW MANY TIME WILL YOU BRUSH IN A DAY	A)once daily	0	128	128	0.06
		B)twice daily	0	169	169	
		C)at least once a week	0	191	191	
		D)never	0	12	12	
3	DOES YOUR PASTE CONTAIN FLUORIDE	A)yes	0	367	367	0.07
		B)no	0	130	130	
4	HOW MANY TIMES YOU CONSUME SOFT DRINK'S	A)once per month	0	112	112	0.06
		B)1 to 2 times per week	0	209	209	
		C)once daily	0	117	117	
		D)never	0	62	62	
5	HOW MUCH QUANTITY OF SOFT DRINK'S YOU CONSUME	A)1/4th glass	0	114	114	0.06
		B)1/2th glass	0	134	134	
		C)1 glass	0	159	159	
		D)2 to 3 glasses	0	40	40	
		E)never	0	53	53	
6	HOW MANY TIMES DO YOU CONSUME JUICE	A)once per month	0	134	134	0.06
		B)1 to 2 times per week	0	236	236	
		C)once daily	0	83	83	
		D)2 to 5 times daily	0	45	45	
		E)never	0	2	2	
7	HOW MUCH QUANTITY OF JUICE DO YOU CONSUME	A)1/4th glass	0	32	32	0.06
		B)1/2th glass	0	96	96	
		C)1 glass	0	142	142	
		D)2 to 3 glasses	0	196	196	
		E)never	0	34	34	
8	HOW MANY TIMES DO YOU CONSUME CHOCOLATES	A)once per month	0	57	57	0.06
		B)1 to 2 times per week	0	286	286	
		C)once daily	0	41	41	
		D)2 to 5 times daily	0	111	111	
		E)never	0	5	5	
9	HOW MANY TIMES DO YOU CONSUME SWEET'S	A)once per month	0	210	210	0.06
		B)1 to 2 times per week	0	135	135	
		C)once daily	0	37	37	
		D)2 to 5 times daily	0	116	116	
		E)never	0	2	2	

DISCUSSION:

Health is most important than anything in life. Family plays a predominant role in health promotion by modifying their behaviour towards a healthy life. Subjects who live alone are significantly more which was determined by the General Health Questionnaire, compared with extended families (OR = 3.14).

Certain research illustrated various ways of interaction of extended families linked with the adoption of diet patterns [(18),(19)]. This indicates the opportunity of a coordinated way to raise better nutritional behaviour to promote healthy life [(20),(21)].

Study based on differences in the status of functional health and self-impact health between men and women in the region of Canada [(22)], men who live in the family of nuclear was associated with good health than women. This concludes the crucial importance of family towards health. Some research illustrated the peoples living in the small family has a higher probability of poor health than other families. This report of the current study illustrated that a large family has a higher impact on health.

Poor nutrition affects teeth development and aggravates the periodontal diseases and infections of the oral cavity. Unhealthy foods such as beverages, sugary, and sticky foods ultimately leads to dental caries and erosion.

A survey was done between the year 1999- 2001 stated that higher intake of acidic foods, sticky and sugary foods and beverages such as coca-cola, and consumption of soft

drinks was more common among students in the areas of rural when compared to students in urban areas. [23].

Based on univariate analysis, family shape and conditions has a very strong impact on self-perceptions of oral health among school children. This information was not clarified yet but it

was analyzed with other researches and hypothesis for the correlation between oral health behaviour and family atmosphere among children [24].

These findings indicated that the children raise from a family either with own mother and adopted father or parents have poor assess to dental care when compared to children with own parents. No difference was found between nuclear and non-nuclear families for the frequency 1of tooth brushing, the use of fluoride-containing toothpaste and salt. Altered composition patterns of sugar-containing foods are the high caries risk indicators. The higher amount of chocolates, cookies, and juice are consumed in larger amount by children in patchwork familial background.

This study concludes that children arise from other than families of nuclear had developed poor oral health behaviour when compared to those arises from own parents.

Conflict of interest: Nil

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