

**Research Article**

**A Critical Analysis of Knowledge of Parents on Oral Health  
to Dental Caries of Their Children**

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**ABSTRACT**

**Objective:** The prevalence of the dental caries was the target of the research paper in the children those were going to school and their age ranged from twelve to fifteen years. These children belonged to Malir, Karachi. Another objective of the research paper was exploration of parent's knowledge about the children's oral health linked with the dental caries of kids.

**Method:** The nature of the research paper was cross-sectional. Researched focused the children those were going to school and their age ranged from twelve to fifteen years. These children belonged to Malir, Karachi. An adequate size of the sample was selected with a total of 3800 children. DMFT index was used for the measurement of dental caries prevalence after clinical investigations. Through questionnaire the factors of children knowledge, oral health knowledge of parents and educational background of the parents was measured.

**Results:** Many risk factors were linked in dental carries but their significance was not proved statistically because of the participants including between meals snacks, income and qualification of the father. The proportion of females and males was 49% and 51% respectively. Dental caries prevalence was observed 70%. In students the score of mean DFT was 1.4. Rate f DMFT was less in boys in comparison to boys. Boys reflected less carious rate than girls. The dental odds were also less in boys than girls, they were also significant statistically. With the increase in age the dental caries also increased from the age of twelve years to fifteen years of age. With the educational improvement of the father the incidence of dental caries also increased, these odds were higher in the fluoride mixed toothpastes. Higher rate of dental caries wasalso significant when compared to other groups.

**Keywords:** DMFT, Students, socio economic, parents, education and oral hygiene.

**INTRODUCTION**

Centuries before there are evidences of dental caries in millions of people. It is actually an infection that is caused due to demineralization of the dental hard tissue including cementum, dentin and enamel. This eventually directs the situation to cavities of teeth. Because of sustainable environment lesions occur in oral cavity. Carious lesions are affected by time play, oral hygiene and

diet in the bacteria collection such as cariogenic streptococcus mutants [1]. Dental caries is a multifactorial disease instead of classical infection.

Oral environmental imbalance is also caused with the association of numerous risk factors external in nature. Embedded bacteria, tooth surface and diet form the dental plaquewhich is gelatinous

mass. Naked eyes cannot observe the internally formed initial stage of dental caries which exist in the form of cavitation. This cavitation is asymptomatic in nature. Furthermore, it increases to chronic stage and dental pulp is stimulated. Certain preventive steps can catch these lesions ultimately forming dental caries [2].

### **MATERIAL AND METHOD**

The nature of the research paper was cross-sectional. Researched focused the children those were going to school and their age ranged from twelve to fifteen years. These children belonged to Malir, Karachi. This town was one of the eighteen towns of Malir. Random selection targeted private sector schools. From twenty-seven Union Councils two from each Union Council were selected and twenty-eight students short listed from every school.

### **STRUCTURE OF THE TEETH**

**Enamel:** It is the external most part of tooth, thickest at occlusal and incisal tooth surface. Dentin color is linked with the color of enamel its stain and thickness as it is translucent. Amnioblast cells form the enamel [3].

Its structure contains 95 – 98 percent weight of inorganic matter and organic contents are 1 – 2 percent the water is 2 percent. It is excessively mineralized crystalline hydroxyapatite. In the human body it is known as the harder most part. Dentin enamel junction is a part where dentin meets enamel. Damaged enamel cannot be repaired himself. Complete and partial penetration is allowed by the enamel for certain permeable molecules and ions. Acidic medium can soluble it but fluoride decreases its solubility. By decreasing the acidic solubility, increasing mineralization and decreasing demineralization, enamel is preserved by fluoride [4].

**Dentin:** Compressive is dentine and brittle are enamel and it performs the function of cushion for enamel. It constitutes the major part of the tooth

and it is a part of the large size of the tooth. It is covered by enamel. This cover is on cementum, anatomic root and crown. Cavity pulp chamber walls are formed by dentin [5].

Dentin also covers the pulp cavity, canals and chamber [4]. After eruption of the pulp the formation is always continuous and dentin is formed. After three years this formation is completed, it is formed by primary dentin. Secondary dentin is formed after the primary dentin formation. Operative procedures, caries, trauma, erosions, abrasions and attrition form reparative dentine in the response to moderate irritation levels.

It is formed as a result of a defense reaction to the external stimuli. Dentin is formed by inorganic material, organic material and water respectively sharing 75 %, 20 % and 5 %, few other materials also add in the formation of dentine. It is less mineralized than enamel but more mineralized than bone and cementum [6]. With the increase in the age and mineral concentration dentine hardening increases. It is harder when compared to enamel. The color of dentine is also darker than enamel. The color of dentine is yellowish-white. It can also change into black or brown depending on the factor of caries and oral fluids [7].

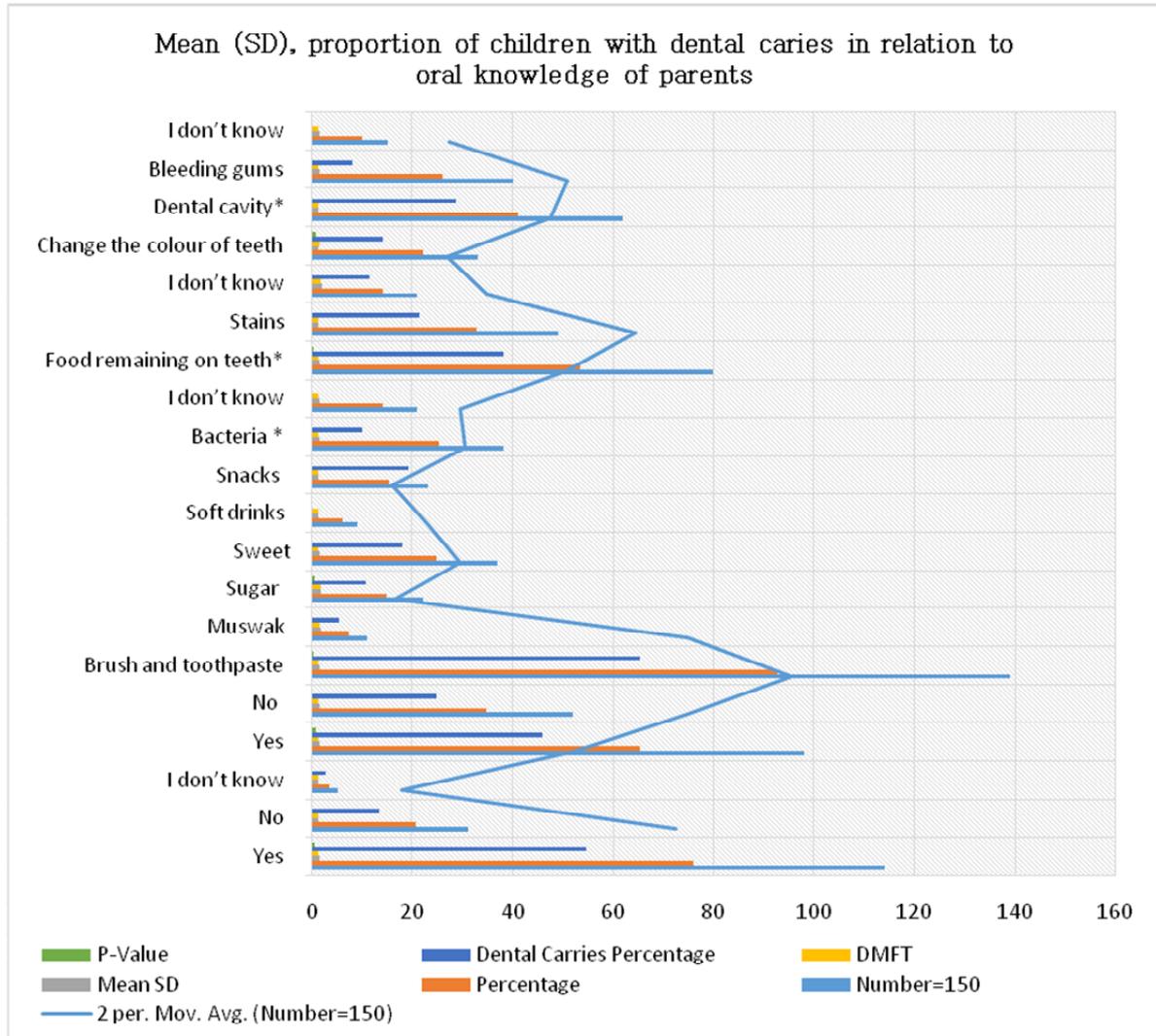
Dental pulp covers the cavity of tooth which is the combination of arteries, lymph channels, veins, fibroblasts, nerves, connective tissue, odontoblasts, intercellular substance, collagen, fine fibers and macrophages. Tooth root is covered by cementum which is formed by 45 – 50 percent of inorganic, 50 – 55 percent organic material [8]. polysaccharides and collagen form the organic part.

Cementum which covers the tooth is attached to the alveolar bone via Sharpey's fibers part of the periodontal ligament. Its color is yellow and its formation is continued throughout the life. It has an inbuilt characteristic of self-repair and not resorbed under regular situation. Cellular and acellular are two types of cementum [9].

**ANALYSIS :**  
Table and Graphs

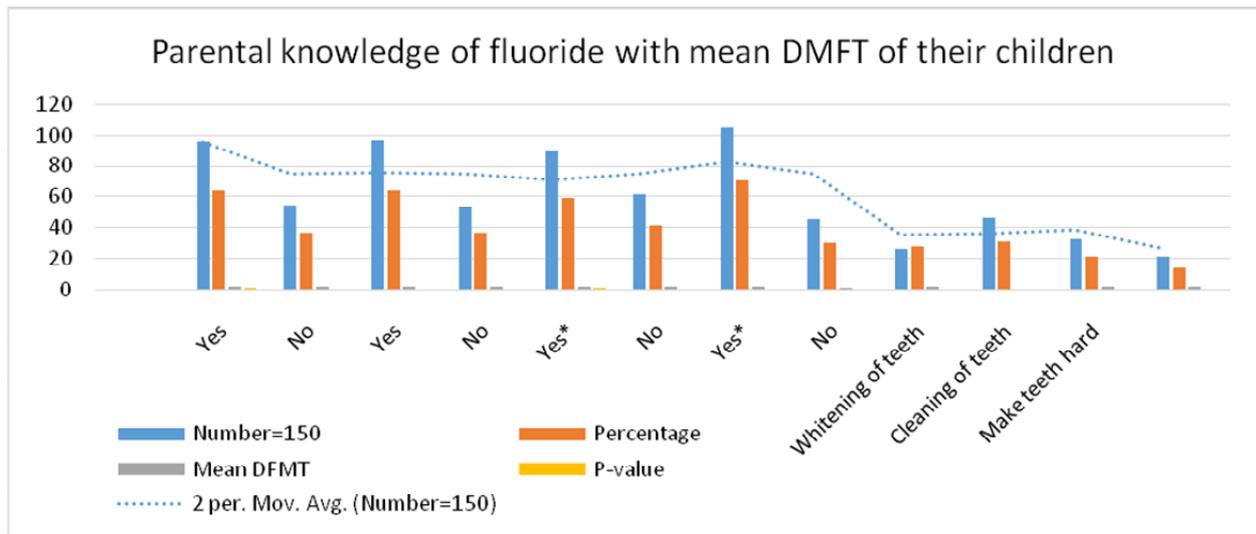
**Table 11:** Mean (SD), proportion of children with dental caries in relation to oral knowledge of parents.

Questions	Responses	Number =150	Percentage	Mean SD	DMFT	Dental Carries Percentage	P-Value
Brushing teeth protects dental caries.	Yes	114	76	1.4	1.3	54.7	0.5
	No	31	20.7	1.2	1.1	13.3	
	I don't know	5	3.3	1.2	1.1	2.7	
Guide your children how to brush teeth.	Yes	98	65.3	1.4	1.3	46	0.8
	No	52	34.7	1.4	1.3	24.7	
Tool your children use for cleaning.	Brush and toothpaste	139	92.7	1.4	1.3	65.3	0.3
	Miswak	11	7.3	1.8	1.5	5.3	
The cause of dental caries is.	Sugar	22	14.7	1.8	1.6	10.7	0.6
	Sweet	37	24.7	1.4	1.2	18	
	Soft drinks	9	6	1.2	1.1	3.3 9.3	
	Snacks	23	15.3	1.1	1.2	19.3	
	Bacteria *	38	25.3	1.4	1.2	10	
	I don't know	21	14	1.4	1.3		
What is dental plaque?	Food remaining on teeth*	80	53.3	1.4	1.2	38	0.08
	Stains	49	32.7	1.2	1.2	21.3	
	I don't know	21	14	2	1.62	11.3	
What does plaque do to your teeth?	Change the colour of teeth	33	22	1.3	1.4	14	0.8
	Dental cavity*	62	41	1.3	1.3	28.6	
	Bleeding gums	40	26	1.5	1.3	8	
	I don't know	15	10	1.5	1.3		



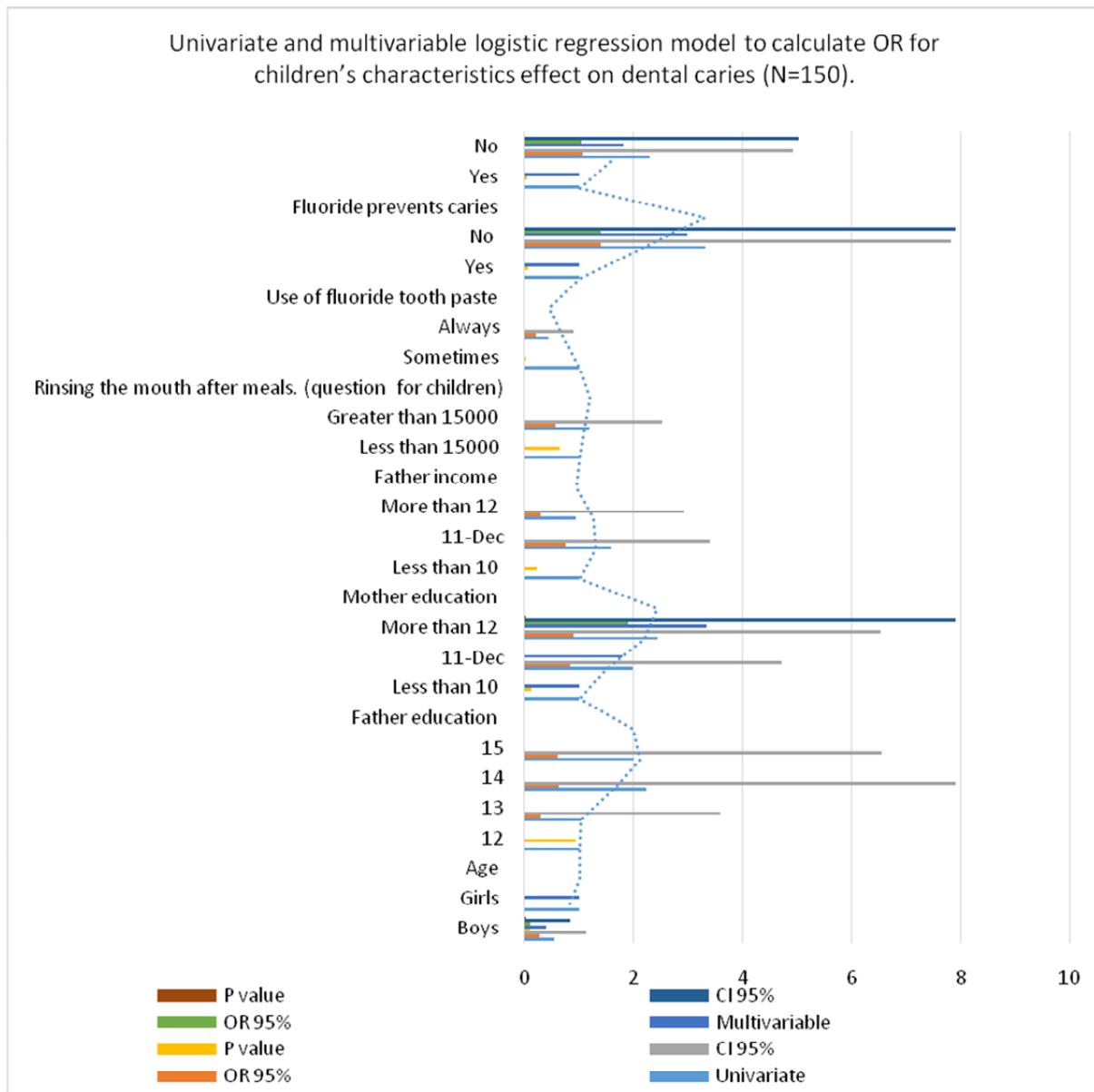
**Table 12:** Parental knowledge of fluoride with mean DMFT of their children

Questions	Responses	Number=150	Percentage	Mean DMFT	P-value
Do you know what fluoride is?	Yes	96	64	1.375	0.753
	No	54	36	1.444	
Do you use fluoride toothpaste for your child?	Yes	97	64	1.25	0.0497
	No	53	36	1.68	
Does fluoride helps preventing teeth from dental caries?	Yes*	89	59	1.35	0.552
	No	61	41	1.47	
Can fluoride reverse the dental cavity?	Yes*	105	70	1.53	0.053
	No	45	30	1.09	
What is the function of the fluoride?	Whitening of teeth	26	27	1.58	0.022
	Cleaning of teeth	46	31	0.93 1.5	
	Make teeth hard	32	21	2	
	Protect the teeth from bacteria* don't know	21	14	1.44	



**Table 13:** Univariate and multivariable logistic regression model to calculate OR for children’s characteristics effect on dental caries (N=150).

Variable	Univariate	OR 95%	CI 95%	P value	Multivariable	OR 95%	CI 95%	P value
Sex								
Boys	0.55	0.27	1.12	0.1	0.4	0.11	0.84	0.027
Girls	1				1			
Age								
12	1			0.94				NS
13	1.04	0.3	3.58					
14	2.22	0.62	7.9					
15	2	0.61	6.55					
Father education								
Less than 10	1			0.12	1			0.028
11-Dec	1.98	0.84	4.7		1.8			
More than 12	2.43	0.9	6.53		3.34	1.9	7.89	
Mother education								
Less than 10	1			0.23				NS
11-Dec	1.59	0.74	3.4					
More than 12	0.94	0.3	2.91					
Father income								
Less than 15000	1			0.64				NS
Greater than 15000	1.19	0.56	2.52					
Rinsing the mouth after meals. (question for children)								
Sometimes	1			0.03				
Always	0.442	0.21	0.9					
Use of fluoride tooth paste								
Yes	1			0.06	1			
No	3.31	1.4	7.82		2.97	1.39	7.9	
Fluoride prevents caries								
Yes	1			0.034	1			
No	2.3	1.06	4.92		1.82	1.05	5.02	



The outcomes from children and parent's analysis are included in this section. It is a fact that few facts were not statistically significant the research findings were compares with other available studies. DMFT and mean score in 150 students was 1.4 which was less than the NHSP score of 1.6 [10]. Urban area of Kenya reflected the dental caries reading similar to seventy percent. But according to the survey of 2004 it was higher as noticed at that time with a value of fifty percent. Because of decayed teeth higher mean DFMT weight was observed in girls and boys. On the basis of statistical finding the rate of DMFT was

more in girls than boys. Girls were prominent in decayed, missing and filled teeth. Same eating routine between the meals was observed as it was in the children of U.A.E [53]. Several factors are involved in the higher rates of DMFT in the girls. Oral activity is also influenced by the often snacking of girls during the food making process and hormonal influence in the state of pregnancy. Girls are more prone to the eruption of teeth than boys because of cariogenic exposure in the oral environment. Boys and girls also differ in the saliva biochemical composition. With an increase in the mother and father education index of DMFT

also increases. Lower index of DMFT is associated with the education of mothers in comparison to intermediate groups. Few past studies also supported the same finding in various educational groups [11]. Contrast is visible in the higher rates of income (more than fifteen thousand) in the index of DMFT. Filling, missing and decayed teeth are also associated with the higher income. This reveals that cariogenic and sugar consumption increased causes the decay of teeth, for restoration dental visits are increased.

There was misconception that instead of any bacteria sugar and related food causes dental caries in children. Unawareness is because of absence of dental awareness programmes specially in children attending schools. Basic information about oral health is to be communicated through specific programmes or at least it is to be communicated to children through the curriculum. Senior students, parents and teacher can play their role in the awareness programme about the oral hygienic health. Mothers play a very vital role in children for the motivation and of brushing their teeth at least twice a day, in the research paper it was observed that in various cities of Pakistan fifty percent of the children brush their teeth two times in a day and two third of them one per day [12].

Other studies on the same subject state that more dental caries was observed in the children using toothbrush instead of other available alternatives [13]. People visited dental clinics after the teeth pain but the ratio of routine visits was less; whereas the studies conducted in Bulgaria report vice-versa, dental pain was attributed to the dental visits in the Bulgarian studies [14]. Socio-demographic features were not associated with the dental caries in children through mean and DMFT. Higher society children reflected higher rates of DMFT with more incidence of decayed, filled and missing teeth. This factor was comparatively less in the lower level of economic groups. High income lead to the dental malformations in comparison to poor. These findings were contradictory to the studies conducted in USA [15]. Parents was unable to transfer the oral health knowledge in an appropriate way. It is also

observed that developed societies spend less time with their children and oral health knowledge from parents is less observed, on the other hand, in the absence of parent's children follow an unhealthy diet routine that causes dental caries. Forty-six percent of the parents considered that teeth can be cured and cleaned by fluoride and it also brings whitening is similar to the finding of studies conducted in KSA. Fluoride in water, gels and dentifrices varnishes the teeth and demineralizes the teeth that leads to decay and teeth vulnerability [16]. Parents instead of being aware and informed about dental knowledge never or less transferred this information to their toddlers. The guidance concerning to oral and dental health was not appropriately communicated to the children.

## CONCLUSIONS

Regular visits to dental experts can bring relief in the problems of teeth was already known to parents. But still parents visited the dentists in the act of dental pain. It was actually a forced visit caused by the pain in the teeth. Few of the parents were aware for dental consultation with the dental experts. National level work on the subject topic is not worth mentioning. Specially in the the school going children perspective, recent survey held on the same cause was completed back in 2004 in numerous cities of Pakistan. No research has been conducted or published in any of the international or national journals. In the premises of Karachi this research is sole that focuses the parents and children in the light of their oral, dental and dental caries awareness levels. For further and deeper probes in this aspect the in-hand research can serve as reference model for the studies to come. Mother's role in the children education about oral health is inevitable.

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