



## Relationship of Parental Knowledge and Attitude with Oral Health Status of Children in Karachi East

Anum Sami<sup>1\*</sup>, Kulsoom Fatima<sup>2</sup>, Hira Moin<sup>3</sup>, Raima Bashir<sup>1</sup>  
and Jehanzaib Ahmed<sup>3</sup>

<sup>1</sup>Bahria University Medical and Dental College, Sailor Street, Adjacent PNS Shifa, DHA Phase 2, Karachi, 75500, Pakistan.

<sup>2</sup>Department of Community Dentistry, Bahria University Medical and Dental College, Sailor Street, Adjacent PNS Shifa, DHA Phase 2, Karachi, 75500, Pakistan.

<sup>3</sup>Dr. Ishrat-ul-Ibad Institute of Oral Health Sciences, Dow University of Health Sciences, Gulzar-e-Hijri, Ojha Campus, Suparco Road, KDA Scheme-33, Karachi, Pakistan.

### Authors' contributions

Authors AS, HM and KF were responsible for concept and designing of the study and wrote the protocol. Authors AS and HM performed the data collection, statistical analysis and result formulation.

Author JA helped in methodology designing and data collection. Authors AS, HM, RB and KF managed the results, research compilation and type scripting. All authors read and approved the final manuscript.

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### ABSTRACT

**Objective:** This study aims to determine the relationship of parental knowledge and attitude towards their child's oral habits and health status, and evaluate whether educational status of parents plays a significant role and the level of motivation of parents for child's regular dental checkup.

**Design:** Descriptive, cross-sectional study.

**Place and Duration of Study:** Dental OPD of Dow International Dental College and Fazaia Degree College, April 2014, Karachi East, Pakistan.

**Methodology:** Parents of preschool and primary school going children. A self-designed closed ended type questionnaire was provided in both English and Urdu language. Statistical analysis was done using SPSS version 16. The relationship between variables was done by frequency

\*Corresponding author: E-mail: [anum.sami@live.com](mailto:anum.sami@live.com);

distribution and Chi-square test.

**Results:** A total of 200 completed questionnaires were considered for final analysis. 61% of the parents had children of preschool age and 38.5% were primary school going. 56.5% of the subjects had education up to Graduation or higher level. Majority of the parents belonged to Middle class 63%. 82-96% of parents were aware of preventive role of tooth brushing and fluoride. 95.5% considered regular dental checkup important. 74-95% of parents showed positive attitude towards factors important for maintenance of oral health. But 64.5% of parents still did not take their child for regular visit to dentist.

**Conclusions:** The study shows that parents have relatively higher knowledge and positive attitude regardless of educational and socioeconomic status, however children still seemed to practice habits which affected their oral health therefore preventive dental programmes should not only focus on educating but developing personal skills in both the parents and young children and improve parents' attitude on importance of early preventive dental visit.

*Keywords: Oral health awareness; parental knowledge; parental attitude; children preschool aged; primary school children.*

## 1. INTRODUCTION

Oral health of a child is a major determinant of the quality of a child's life as it is an integral component of his/her general health. A range of oral diseases and conditions including dental caries, periodontal disease, malocclusion, discoloration etc. plays havoc on a child's oral health status as well as daily attributes of his life. Despite of much advancement in the preventive and interventional approaches, these conditions remain prevalent in children. In order to combat these oral health diseases, basic oral health practices are to be instigated from early childhood in the light of fact that childhood is an important period of life that needs to be monitored closely.

Parents are the main influence for a child in early years of his/her life. Parental awareness and behaviors related to oral health and hygiene directly affects the child's oral well-being. Therefore parents should be considered as a powerful social force for ensuring the well-being of young children thus changing the overall oral health outcomes of future generations of community. Their contribution can lead to increased preventive dental care which children receive at home and use of professional dental services [1].

The key elements which show a significant influence on children's oral health behavior and oral health status are parental knowledge, attitude, cultural beliefs and awareness related to oral health. Here, knowledge pertains to the parental education and information about the dental health processes and provision of care. A significant relationship has been reported between mothers' educational level and the oral

hygiene status of their children [2-4]. Parents with higher education generally have more positive outlook towards their child's healthy habits and stronger intentions to maintain their healthy dentition than low-educated parents [5,6]. A Polish study reports that a lower level of mother's education directly correlates to a low level of oral health knowledge [4].

Attitude is parents' behavioral approach towards their child's oral habits. Parents who have been shown to have oral hygiene skills and positive attitude by looking after their child's tooth brushing and dietary sugar intake have resulted in favorable oral health habits in children, indicating that parental attitudes have a positive impact on their children [7-9].

Cultural norms refer to the values, health beliefs and practices related to oral health habits that pertain in a society e.g. use of home remedies, infant diet and feeding practices and care seeking behaviors. It is essential to understand the oral health beliefs of parents and changing the customs that are inconsistent with scientific knowledge in order to overcome socio-cultural barriers in promoting good oral health in children [10].

Awareness is the consciousness of parents about their child's oral health status, implicating their dental health knowledge e.g. when to take the child for a dental visit. Zavras et al. [11] reported the frequency of utilization of dental service being higher in parents with high educational status although the behavior of visiting the dentist when problematic symptoms occur was seen which could be due to negligence on behalf of the subject. In a study by Nagaveni et al. [12] when asked about

awareness, 82% of the parents didn't know the importance of primary teeth and 61% preferred to get the carious primary teeth extracted. Mothers awareness on the importance of oral hygiene has been found to be directly associated with establishment of better brushing habits and more frequent daily brushing in children [13].

A range of widely conducted researches have aimed at this factor of parental influence on child's oral health status. Many studies related parent's behaviors with the child oral habits whereas some evaluated the effect of parent's education on child's dental health. Therefore, the present study aims to assess the relationship of parental knowledge and attitude with their child's oral health status and habits.

Hypothesis – Whether parental knowledge and attitude is related to the dental habits and health status of a child

Hypothesis – Whether educational status of parents effect their knowledge and attitude towards dental health and level of motivation to take their children for regular dental check-up.

## **2. METHODOLOGY**

### **2.1 Study Setting and Participants**

The present study was a descriptive, cross-sectional survey which was carried out in Karachi East, Pakistan. The representative subjects were selected by convenience sampling and included parents of preschool children categorized as between the age of 6 months to 4 years and primary school going children categorized as between 4 to 10 years of age. The parents were chosen at public dental opd of Dow International Dental College and Fazaia Degree College Primary Section private school in east neighborhood of the city that were known to have children of this age group. A total of 250 subjects participated in the study. The sample size was calculated using Raosoft sample size calculator. An informed consent was obtained prior to data collection.

### **2.2 Data Collection**

A self-designed closed end type of questionnaire was provided which was formulated in both English and Urdu language and comprised of 31 questions including, Personal details of subjects: Demographic data, age of their children, level of education which was categorized into primary (5

years of education), secondary (10 years), college (12 years), university (16 years and above), social class based on their average monthly household income [14] categorized into low(PKR4,000/\$40 or less - 20,000/\$200 monthly), middle(PKR 20,000/\$200 - 100,000/\$1000 monthly) and high(PKR 100,000/\$1000 or above monthly)

### **2.2.1 Parents' knowledge of oral health**

Evaluating parents' knowledge on causes of tooth decay, gum disease, malocclusion and fluorosis, importance of tooth brushing, use of fluoride toothpaste, primary dentition and regular dental check-ups.

### **2.2.2 Parents' attitude towards oral health**

Questions on parents' attitude towards factors causing caries, staining and malocclusion, frequency of dental visit, significance of dental knowledge and level of motivation internal or external to take their child for dental checkup.

### **2.2.3 Child's habits and oral health status**

Twice daily brushing, sweet intake and habits causing malocclusion, presence of decay, staining, malocclusion and treatment need from parents' perspective was recorded.

## **2.3 Data analysis**

Statistical analysis was done using SPSS version 16. The frequency of variables was expressed by frequency distribution and Chi-square test performed for relationship between variables with confidence interval of 91%.

## **3. RESULTS AND DISCUSSION**

In this study, a total of 200 subjects completed the questionnaire and were considered for final analysis. Table 1 shows the population profile and it is noteworthy to mention here that majority of parents had education upto graduation level or above (56.5%) and belonging to middle class (63%).

The results of parents' knowledge and attitude are tabulated. Table 2 shows level of parental knowledge on oral health which turned out to be relatively high. Table 3 shows parental attitude towards their child's oral health. It turned out more than three-fourth of parents (74-95%) showed positive attitude towards factors important for maintenance of oral health. But a

significantly high number of parents (89%) still bottle feed their child in sleep or had bottlefed in the past.

Fig. 1 shows relationship of parent's dental knowledge and their child's habits. Despite high level of knowledge among parents, our results showed more than half of children were still irregular in brushing twice daily (52%) and had excessive sweet intake (73%).

Fig. 2 shows relationship of parental attitude and their child's oral health status. According to the parents, their children were still suffering from oral diseases despite their extremely positive attitude although the frequency reported was low (19-33%).

When Chi-square test was applied no significant relation of childhood habits was seen with education level of parents except the twice daily toothbrushing habit of children (P=0.05) which increased with ascending level of education. Nearly all the parents (95.5%) considered regular dental checkup important but when assessed for attitude 64.5% of parents did not take their child

for regular visit to dentist. When this was correlated with education level, significant relationship was found (P=0.053). The relationship of socioeconomic status of parents with their knowledge and attitude did not turn out to be significantly important.

This study assessed the importance of parental knowledge and attitude regarding oral health maintenance and its relationship with the persisting health status of their children. As far as parental knowledge was concerned, in spite of the difference in educational standards of the parents, it was observed that 98% of parents were aware of importance of toothbrushing and 96% agreed excessive sweet consumption affects dental health of an individual. This is in contrast to the results found out in researches previously where different educational standards of parent, demonstrated a difference in their levels of knowledge regarding prevention of dental problems [2,4,5].

Knowledge regarding fluoride intake was also good with 85% parents understanding the role of fluoridated toothpastes in preventing dental

**Table 1. Population profile**

	Frequency	Percentage
<b>Predominant Age Group</b>		
Parents with children aged between 6 months- 4 years	122	61%
Parents with primary school going children	77	38.5%
<b>Parents Education Level (years of education)</b>		
University (16 years or above)	113	56.5%
College (12 years)	66	33%
Secondary school (10 years)	16	8%
Primary school (5 years)	5	2.5%
<b>Family Income</b>		
Middle class	126	63%
Upper class	40	20%
Lower class	34	17%

**Table 2. Parental knowledge of oral health**

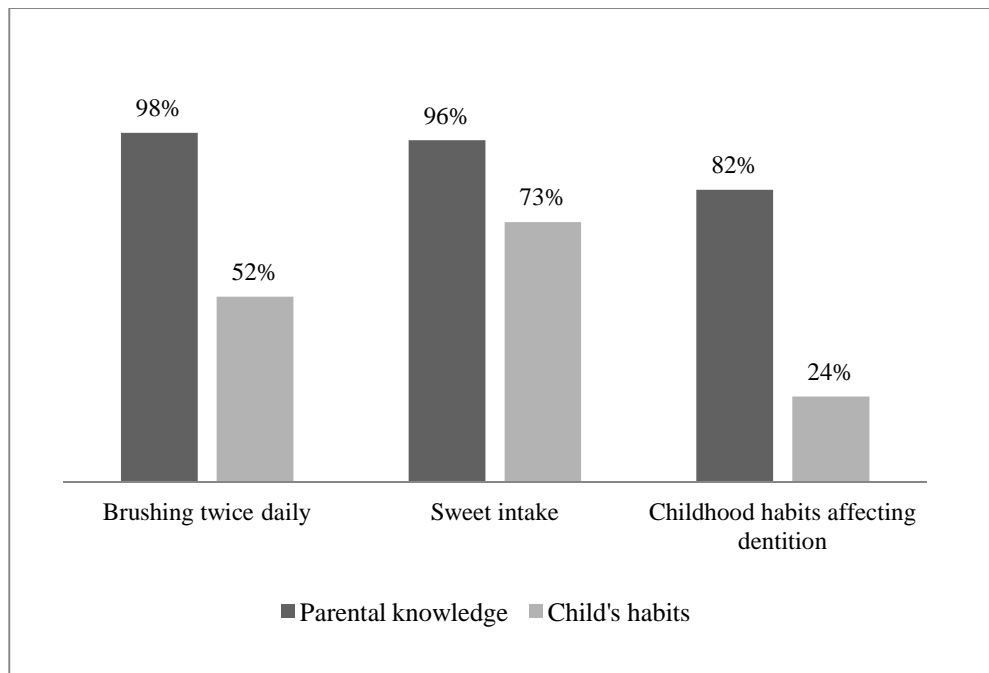
	Yes		No	
Do you know brushing the teeth prevents dental problems?	196	98%	4	2%
Do you know frequent exposure to sweet, sticky and acidic food causes decay?	192	96%	8	4%
Do you know fluoride prevents decay?	171	85.5%	29	14.5%
Do you know excessive fluoride also affects your child's dentition?	97	48.5%	103	51.5%
Do you have any knowledge about dentition sequence and its significance?	169	84.5%	31	15.5%
Do you know problems of primary teeth affect permanent teeth?	135	67.5%	65	32.5%
Do you know certain habits during childhood (thumb sucking, tongue thrusting, nail biting) cause misalignment of teeth?	164	82%	36	18%
Do you think regular dental visit is important for your child's oral health maintenance?	191	95.5%	9	4.5%

decay which was greater than the results obtained from a study in China [15] but only 48.5% other were aware that even excessive fluoride intake or exposure was detrimental for the structure of teeth and other hard tissues of the body. This lack of awareness about cause of fluorosis among parents has also been reported by Erum Sami et al. [16] Measures that aim to increase knowledge of fluorosis among parents and general population can be a good approach to reduce fluorosis prevalence in our community.

84.5% parents were aware about the correct sequence of the primary dentition and its significance in the early years of their child's life compared to 41.67% observed in the study conducted in Saudi Arabia [17] but only 67% considered that problems persisting in the primary dentition of their children can affect the successors following them. This could be due to beliefs or cultural based opinion about primary teeth being temporary and their early loss by caries or any other disease is an accepted occurrence.

**Table 3. Parental attitude towards oral health of children**

	Yes		No	
Do you supervise your child while brushing?	177	88.5%	23	11.5%
Do you keep a check on your child's diet?	188	94%	11	5.5%
Is it fine to put baby to sleep with a bottle?	178	89%	22	11%
Do you consider staining of teeth as a matter of concern?	176	88%	23	11.5%
Do you consider primary teeth as important as permanent teeth?	148	74%	51	25.5%
Would you take any action to stop your child's habits that cause malocclusion?	161	80.5%	26	13%
Do you consider dental knowledge significant?	190	95%	8	4%
Do you take your child for regular dental check-up?	71	35.5%	129	64.5%
Has your own experience at the dentist influenced your decision to take your child to the dentist?	109	54.5%	91	45.5%
Are there other people who influence your dental care decisions taken for your child?	124	62%	76	38%
Does your child need any type of oral health associated treatment?	147	73.5%	53	26.5%



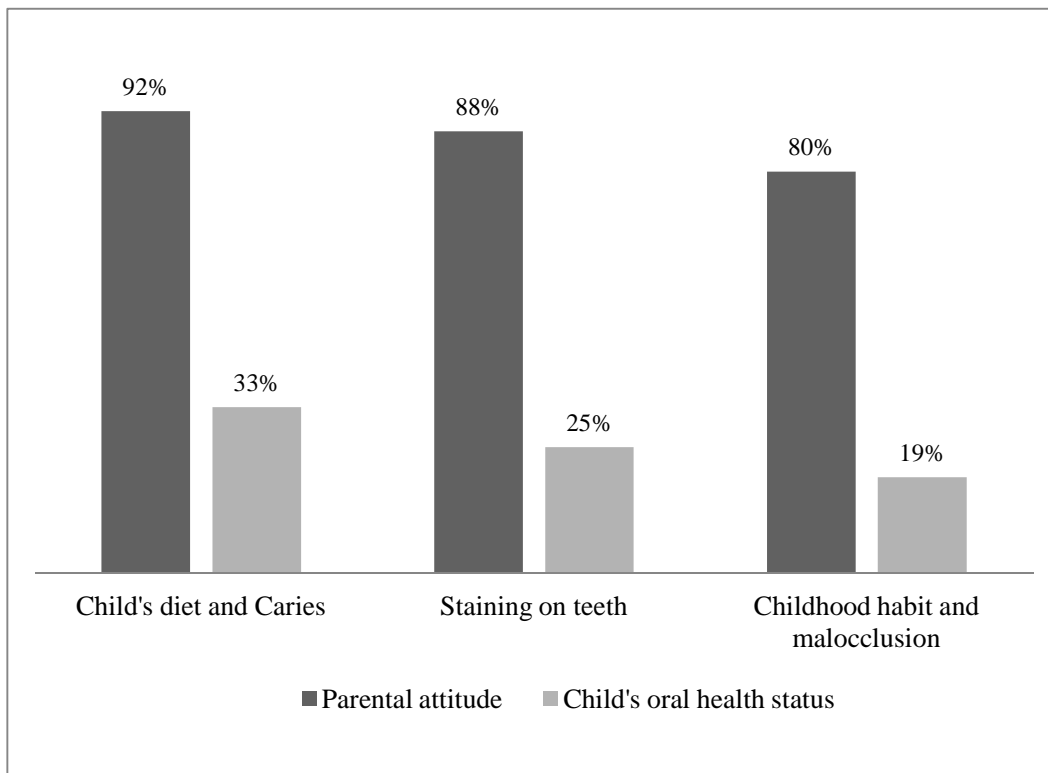
**Fig. 1. Relation between parents' dental knowledge and child's habits**

82% parents agreed that childhood parafunctional habits such as thumb, lip and finger sucking, nail biting and tongue thrusting can adversely affect the occlusion of their children which is quite high than the 86% lack of parental awareness reported by Nagaveni N. B. et al. [12].

It was appreciative to note that 88.5% parents supervised their children during tooth brushing, 88% considered staining of teeth as a matter of concerns, 94% kept a check on the proper diet of their children, 74% understood the importance of primary teeth in contrast to the 82% negative response in a research conducted in the Davangere city of India [12]. This shows positive behavior of parents in relation to well-being of their child's primary dentition. 89% parents however bottle fed their children while they were asleep regardless of their knowledge on causative factors of caries. This indicates that parents although having the knowledge still did not practice it. This dissimilarity between knowledge and attitude has also been reported by other authors [18]. Despite the fact that 95.5% parents appreciated the importance of

regular dental checkups only 35.5% took their child for regular dental visits which is a little less than the results obtained by study conducted in Saudi Arabia [19] this might be due to lack of awareness about early preventive dental care. Moreover, accessibility problems such as fear, cost or lack of resources might also be responsible. Therefore parents should be encouraged to seek professional oral health counseling as soon as primary teeth start to erupt. It was also seen that 54.6% parents were influenced & motivated by their own past dental experiences to render better dental care for their children and 62% were also influenced by sources other than personal, 7.5% however showed motivation from both sources. This shows that other social factors like peer pressure also plays a role in seeking professional advice for their children.

When the results were interrelated with each other it was observed that although 98% parents demonstrated knowledge that brushing twice daily is essential for maintenance of oral health but only 52% children actually practiced it.



**Fig. 2. Relation between parental attitude and child's oral health status**

A Lithuanian study by Kristina Saldūnaitė et al. [20] demonstrated interrelationship between parents' education level and likelihood of their children brushing two times a day. Better educated parents develop better oral hygiene practice in their children than their counterparts. This is confirmed by the result of our questionnaire based survey which showed that twice daily brushing habit of children is found greater with parents belonging to high education level.

96% parents recognized the association of high sweet consumption with caries development compared to 51.3% in a study carried out in Nigeria [21] yet 73% children gave a history of high sweet consumption in some form. 82% knew that delirious oral habits can affect dentition but still 24% children seen to have habits of thumb sucking etc. These findings could be due to non-compliance at child's end and reflect failure of parents to develop correct habits in the child during early years of life. Since parents are the primary social force influencing child development in the early childhood years, it seems that interventions targeting parental oral health beliefs and practices may be beneficial in the prevention of oral health problems [4].

Although it was stated that 94% parents checked their child's dietary habit still 33% children were found to have evidence of carious lesions according to their parents. 88% showed an attitude of concern on presence of stains on their child's teeth but 25% children had stains on their teeth. This highlights that the parents were somewhere lacking in undertaking proper oral hygiene measures and providing healthy diet. There is a need for training parents about correct brushing techniques and educate them about healthy nutrition for their children. About 80.5% parents accepted that they would stop their child from parafunctional habits which cause malocclusion and it was proven by only 19% malocclusion case finding amongst the children from parents perspective. An striking finding was that 73.5% parents believed their child doesn't require any professional treatment irrespective of the presence of these oral problems. This behavior of parents to disregard existing oral disease reflects lack of appropriate information and communication about identifying the problem and possibly because people only seek care for oral disease when symptom appears or it causes significant functional or aesthetic issue which was also explained by Zavras et al. [11] Similarly,

regular dental check-ups are important for prevention of oral diseases and parents with high educational level cared about these issues more than those with low education level [20,22]. This is also proven by our study as children whose parents had college or higher education made regular dental visits at higher rate.

The American Academy of Pediatrics (AAP) recommended that early intervention and counseling during perinatal period are essential to ensure good oral health for both the mother and child [23]. This level of awareness will promote the parents to seek early professional dental advice and incorporate healthy lifestyle which is adopted easily by growing children.

The limitation of our study failure to identify the difference in dental knowledge and attitude of both the parents.

#### 4. CONCLUSION

The present study depicts that the level of knowledge and attitude of parents has relatively increased regardless of their educational & socioeconomic status. However children still seemed to practice habits which affected their oral health therefore preventive dental programmes should not only focus on educating but developing personal skills in both the parents and young children with active participation from schools and other organizations. According to the parents their child's dental status was satisfactory and they were not in need of dental treatment but it was possible that the parents were not well aware of the ongoing disease process. This indicates health education should focus on improving parents' attitude on importance of early preventive dental visit in  $\leq 1$  year and dentists should provide one-on-one guidance to parents on developing oral hygiene habits and diet modification in children. Furthermore studies should be carried out to assess oral health from parents' perspective along with examining child's dental health status clinically.

#### ETHICAL APPROVAL

All authors hereby declare that the research was approved by Ethical Review Committee of Bahria University. We observed the highest possible ethical standards while carrying out the research. The research was questionnaire based and did not pose any harm to subjects.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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