

Association between Demographic Factors Parental Oral Health Knowledge and their Influences on the Dietary and Oral Hygiene Practices followed by Parents in Children of 2–6 Years in Buraidah City Saudi Arabia: A Pilot Study

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ABSTRACT

Background: Preschool children's oral hygiene maintenance is greatly prejudiced by their parent's knowledge and understanding regarding oral health. When parents are devoid of the basic awareness of caries-associated factors, the significance of primary teeth, and oral healthcare, it is challenging to program disease prevention strategies and apply them effectively.

Aims and objectives: This pilot study aimed to assess the knowledge regarding oral health, its effects, and the influence of demographic values on the parental practices among the parents of 2–6-year-old children by using a self-administered pretested questionnaire.

Materials and methods: The questionnaire was randomly distributed among parents of 2–6-year-old children who visited Buraidah Central Hospital. The sample size taken for this pilot study was 1,000. The questionnaire included 26 questions associated with the parent's knowledge about the oral health of the child, hygiene maintenance, and dietary habits. The collected data was analyzed using SPSS software.

Results: In the present research, a total of 1,000 parents participated in the study. It was observed that parental knowledge and hygiene practices increased as the educational status increased. It was also observed that as the number of children decreased in the family, the dietary practices and hygiene practices improved. All these observations were found to be statistically significant ($p < 0.05$).

Conclusion: Parent's education and knowledge reflect in their child's development of healthy practices. Thus the parents need to know about oral health, which can be put into practice in their children.

Clinical significance: This research helps us to understand the significance of parental knowledge and education in the oral health practices and maintenance among the children inculcated by parents, which can help in bringing down the oral health diseases in children in future.

Keywords: Dental checkup, Dietary habits, Parental knowledge, Parental practices, Oral health.

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INTRODUCTION

Dental health is a vital constituent of overall health, which affects a person's quality of life. Dental health compartments play an important role in the deterrence of certain dental diseases. Dental habits are formed in early life.¹ Parents play an important part in raising young children. Small kids are reliant on their caretakers or parents for their oral health maintenance and feeding. Improper tooth brushing, addition of sweeteners to the liquid, prolonged exposures to sugary liquids at bedtime, and negligence toward dental checkups have been associated with early childhood caries.² Children usually spend their early years with parents and family. These initial years of life embroil "primary socialization" through which early babyhood habits and practices are learned. Such as healthy eating routines and good behaviors recognized as rules in the house are reliant on the knowledge and behavior of parents. Various research has proven that the negligent attitude of parents toward the oral health of young children is related to amplified dental caries occurrence.³

Dental caries is a common ailment of babyhood that upsets the child's quality of life because of multiple issues such as infection, pain, and sleeplessness due to pain, poor diet, insufficient nutrition, and compromised growth and development. Dental caries is preventable by following basic oral health instructions. Dental

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cleanliness methods must be followed as soon as the first primary tooth erupts. Toothbrushing must be implemented for children under parental guidance two times a day. A soft bristles toothbrush must be used with a safe quantity of fluoride-containing toothpaste, and the span of brushing must not exceed 1 minute every time.⁴

Dental caries in the primary dentition are a potential sign for the occurrence of dental caries in the mixed dentition and permanent

dentitions. Thus, it can be suggested that parents of children and parents expecting their first or second child must be educated, invigorated, and encouraged to avert the development of dental caries in their infants and young children.⁵

Thus, we conducted a pilot study to assess the knowledge regarding oral health, its effects, and the influence of demographic values on the parental practices among the parents of 2–6-year-old children by using self-administered pretested questionnaires in Buraidah city, Al-Qassim.

MATERIALS AND METHODS

Before beginning the study, the research proposal was submitted to regional research ethical committee, Al-Qassim region, and an ethical approval letter numbered 1,442–379,160 was obtained from the same.

Sample Size

In the present study, a questionnaire consisting of 26 questions related to parent knowledge about the oral health of the child, hygiene maintenance, and dietary habits was randomly distributed among parents of 2–6-year-old children who visited Buraidah Central Hospital. The sample size taken for this pilot study was 1,000. The sample size was calculated using the formula $n = 2(z2\alpha/2 * z2\beta)/d2$. Only Saudi parents who had children of 2–6 years and who were physically and mentally stable to answer the questionnaire were included in the study.

Demographic information such as ages of the parents, the gender of the parents who answered the questionnaire, educational qualification of the parents, and their monetary status was obtained. The questionnaire method was chosen in the study as it was easy to cover a large group of people in less time.⁶

Study Questionnaire

In the present survey, the questionnaire used was pretested and self-administered. Apart from pursuing the demographic data, the

questionnaire consisted of 26 questions about parental knowledge about dental health (14 questions), dietary habits (five questions) including hygiene practices (seven) which the parents inculcated in their children. This questionnaire was pretested, validated, and used in a similar study conducted by Kotha et al. in Riyadh population.^{7,8}

The questions of parent’s knowledge were 14, with three responses YES- counted as three points, MAY BE- counted as two points, and NO- counted as one point. Thus, the scores ranged from the lowest to the highest, that is, 14–24, respectively. There were five questions related to dietary habits which, were answered as ALWAYS- counted as three points, SOMETIMES- counted as two times, and RARELY- counted as one point. This was similar for five questions in hygiene practices except for the questions “Who will supervise your child in brushing?” and “When do you prefer taking your child to the dentist?” where the parents had to select from the options “Mother/Father/Maid/Child himself” and “Regularly/Only when the child complains/Never prefer going to a dentist,” respectively.

RESULTS

Analysis of the demographic data showed that 96.6% of the participants were mothers and 3.4% were fathers. Their average age was estimated to be 32.9 years.

The relationship between the demographic factors and oral healthcare factors, that is, parental knowledge, dietary, and hygiene practices, was calculated. It was observed that the mean score regarding knowledge, dietary factors, and hygiene practices among the mothers and fathers was not statistically significant.

In our study, 79.3% of parents were graduates, 11.7% were those who had completed schooling, and only 9% were postgraduates. When the education status was tallied with knowledge, there was a statistically significant relation which shows that the awareness regarding dental health was higher in parents with higher education and qualification ($p < 0.003$) (Table 1 and Fig. 1). The same was

Table 1: Relationship between the demographic factors with knowledge, dietary, and hygiene practices

Demographic factors	Mean ± SD		
	Parental knowledge	Dietary practice	Hygiene practice
	<i>Parent</i>		
Mother	9.7313 ± 1.62	9.56 ± 1.44	13.23 ± 3.05
Father	10.2647 ± 1.92	9.64 ± 1.57	13.15 ± 3.24
<i>p</i> -value	0.063	0.756	0.881
	<i>Educational status</i>		
Schooling	9.66 ± 1.66	9.59 ± 1.5	13.46 ± 3.16
Graduates	9.99 ± 1.63	9.59 ± 1.41	13.31 ± 3.0
Postgraduates	10.20 ± 1.56	9.31 ± 1.64	12.12 ± 3.23
<i>p</i> -value	0.003*	0.203	0.002*
	<i>Financial status</i>		
<5,000	9.69 ± 1.7	9.63 ± 1.65	13.99 ± 2.75
5,000–10,000	9.77 ± 1.62	9.61 ± 1.38	13.19 ± 3.0
>10,000	9.74 ± 1.62	9.5 ± 1.40	12.94 ± 3.19
<i>p</i> -value	0.846	0.457	0.001*
	<i>Number of children</i>		
1 child	9.63 ± 1.61	9.90 ± 1.49	13.94 ± 3.23
2–3 children	9.74 ± 1.65	9.47 ± 1.39	12.93 ± 3.06
>3 children	9.88 ± 1.62	9.40 ± 1.44	13.24 ± 2.80
<i>p</i> -value	0.252	<0.001**	<0.001**

Significant at 5% level of significance; Significant at 1% level of significance



true with hygiene practice scores ($p > 0.05$), but dietary practices remained insignificant. Since, in our study, more parents had completed schooling and fewer postgraduates, the hygiene scores were higher in parents who had completed schooling.

A comparison of financial position displayed that the scores of hygiene practices had a statistically significant relationship with the financial status of the parent ($p = 0.001$), but the same was not true for parental knowledge and dietary practices. The parents with more children had the highest knowledge score but were statistically insignificant however scores for dietary and hygiene practice were highest among parents who had one child, and it was statistically significant ($p < 0.001$) (Table 1).

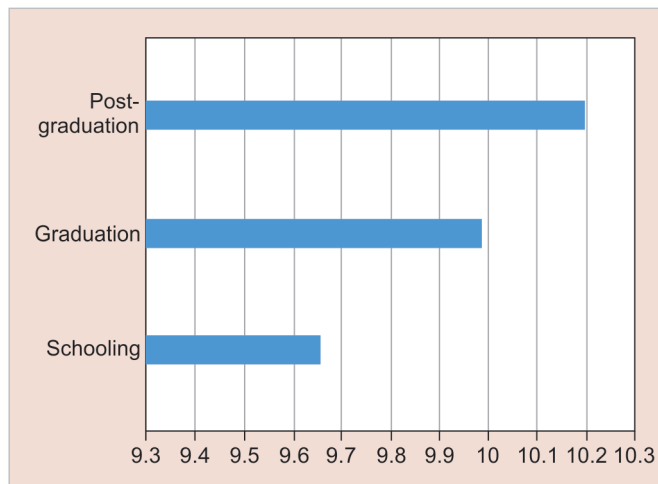


Fig. 1: Parental knowledge of dental health according to their education

Post hoc analysis was done to analyze the means of parental knowledge scores in the educational status of the parents that were significantly different from each other. It was seen that there was a precise significance in scores between the parents who graduated and parents who completed postgraduation (Table 2).

When the choice of visiting a dental specialist was compared to the various factors such as educational status, financial status, and the number of children in the family, it was observed that 69.2% of the participating parents, irrespective of their education, preferred to take their child to the dentist only when he complained of pain and this observation was found to be statistically significant ($p < 0.001$). Similar results were observed when the financial status of the parents and the number of children were tallied with their preferences to visit the dentist. It was seen that 69.2% of the parents in both categories preferred to take their child to the dentist only when he complained of pain, and this was statistically significant (Table 3).

Pearson correlation was tested among the parental knowledge, dietary habits, and hygiene practices. It was observed that parents who had good knowledge about dental health practiced good hygiene protocol, and this was statistically significant at 1% level of significance (Table 4).

DISCUSSION

Personal, cultural, and economic aspects that affect dental health practices, and dietary routines are influential factors when families look for dental care. Habits developed in the early years of life form a foundation for oral health maintenance and hygiene practices in adulthood. Parents are considered to be the role models for children, and any diminution in the knowledge regarding oral health may impact the hygiene practices and dietary aspects among their offspring.⁹

Table 2: Post hoc analysis of the parental knowledge scores within the groups of demographic variables

Demographic factors	Parental knowledge			Post hoc analysis
	Schooling (A)	Graduation (B)	Postgraduation (C)	
Education				
Mean	9.66	9.99	10.20	A = B < C

=, Denotes not significant; <, Denotes significant

Table 3: Demographic factors in relation to preference of taking to a dentist

Demographic factors	Rarely	Only when he complains	Never	p-value
<i>Parent</i>				
Mother	274 (28.5)	667 (69.3)	22 (2.3)	0.944
Father	9 (26.5)	24 (70.6)	1 (2.9)	
<i>Educational status</i>				
Schooling	24 (20.5)	91 (77.8)	2 (1.7)	<0.001**
Graduates	216 (27.3)	555 (70.2)	20 (2.5)	
Postgraduates	43 (47.8)	46 (51.1)	1 (1.1)	
<i>Financial status</i>				
<5,000	32 (17.9)	142 (79.3)	5 (2.8)	0.003*
5,000–10,000	107 (28.5)	256 (68.3)	12 (3.2)	
>10,000	144 (32.4)	294 (66.2)	6 (1.4)	
<i>Number of children</i>				
1 child	82 (32.4)	162 (64.0)	9 (3.6)	0.030*
2–3 children	153 (28.9)	364 (68.8)	12 (2.3)	
>3 children	48 (22.2)	166 (76.9)	2 (0.9)	

Significant at 5% level of significance; Significant at 1% level of significance

Table 4: Pearson correlation among three oral health score components

	<i>Parental knowledge</i>	<i>Dietary practice</i>	<i>Hygiene practice</i>
Parental knowledge	1	-0.003	-0.184**
Dietary practice	-0.003	1	0.023
Hygiene practice	-0.184**	0.023	1

Correlation is Significant at 1% level of significance

Various factors influence the parents' attitude and knowledge concerning oral health, such as financial status, education, working mothers, size of the family, cultural influences, and ethnicity. Thus this pilot study was undertaken to assess the knowledge regarding oral health, its effects, and the influence of demographic values on the parental practices among the parents of 2–6-year-old children in Buraidah city.

Demographic values vary according to ethnicity, geographic region, religion, social norms, parents' education, financial status of the family, etc. These influence the family values that form an atmosphere needed for a healthy standard of living, upsurges self-assurance, and aids in healthy habit development.¹⁰ In our study, it was seen that most parents were those who had completed schooling or were graduates. It was also seen that knowledge regarding dental health were higher in parents with higher education and qualification. This finding was as per the results of the study conducted by Saldūnaitė et al. stating that more attention was given to oral health and hygiene in families where parents had higher education and higher socioeconomic status.¹¹ This finding was also similar to the conclusions of William et al. wherein they found that education of parents significantly influenced the oral health of their children.¹² In our study, parents with higher education also had higher hygiene practice scores ($p > 0.05$), but dietary practices remained insignificant. Since, in our study, more parents had completed schooling and fewer postgraduates, the hygiene scores were higher in parents who had completed schooling. The parents with more children had the highest knowledge score but were statistically insignificant; however scores for dietary and hygiene practice were highest among parents who had one child, and it was statistically significant.

According to Costa et al., parents with low income could not pay adequate attention to the oral health of the child.¹³ Similarly, according to Saldūnaitė et al., parents who had less income and could not save much had difficulties attending to the oral health needs of their children.¹¹ This was true in our study too, wherein children of parents with good socioeconomic status had healthy hygiene practices though oral health knowledge and dietary habits were not significant. The parents with more children had the highest knowledge score but were statistically insignificant; however scores for dietary and hygiene practice were highest among parents who had one child, and it was statistically significant.

Dental caries is the most common noncommunicable disease globally, and the prime etiology is microbes and free sugars. According to WHO, bacteria in the oral cavity, in a controlled environment, ferment sugars producing acids as byproducts that corrode the enamel and dentin, leading to cavitation in the future.¹⁴

In the present study, 39.7% of parents always gave "between the meals" snacks to their children, and 53.2% sometimes gave "between the meals" snacks to their children. In a study conducted by Iftikhar et al. on the occurrence of dental caries in school children snacking between meals, it was concluded that children who snacked more frequently between meals and had abnormal dietary habits were more prone to dental caries.¹⁵

In the present study, 97.5% of parents felt that eating sweets during bedtime led to tooth decay. This percentage was much higher when compared to the study conducted by Ashkanani et al. on the Kuwaiti population, where only 91.3% of the parents agreed that sweets consumption led to dental caries.¹⁶ Similarly, according to de Silva-Sanigorski et al., 90% of parents in the Australian population felt that a cariogenic diet during bedtime caused dental caries.¹⁷

World Health Organization states that "Limiting free sugars intake to less than 10% of total energy intake and ideally even further, to <5%—minimizes the risk of dental caries throughout the life course."¹⁴

In our study, it was seen that 98% of the parents were aware of the importance of brushing at night, but not many parents were aware of the anticariogenic property of fluoride. Only 69.2% of the parents felt that fluoride toothpaste would reduce the occurrence of caries in teeth. This finding was also observed in the study conducted by Shetty et al. on the effect of mother's dental care knowledge on the oral health status of their child; it was observed that 59.3% of mothers were unaware of the functions of fluoride in toothpaste and the amount it must be used in.¹⁸ These findings were similar to the studies conducted by Suresh et al.³ and Kamolmatyakul et al.¹⁹

Various studies have proven that most parents prefer to take their child to the dentist for curative treatment rather than preventive treatment.²⁰ In our study also, it was seen that 69.2% of the participating parents, irrespective of their education and financial status, preferred to take their child to the dentist only when he complained of pain, and this observation was found to be statistically significant. In spite of the fact that the Kingdom of Saudi Arabia has very good medical care facilities for its citizens, it becomes the responsibility of the dentists to recall the patients for checkups in the future, as suggested by the public health specialists.²¹

In our study, it was seen that the primary outcome measuring the parents' knowledge significantly influenced the child's dental health and hygiene. Dietary factors and hygiene practices were considered secondary outcomes and were directly related to and influenced by parents' knowledge (Table 4).

From the present study, it can be established that enhancing parents' knowledge about oral health is of utmost importance. With the improvement in knowledge, modification in diet and hygiene practices will follow simultaneously.

From this pilot study, we understand that there is a need for a substantially larger study with more sample size so that there is more parental participation and better clarity regarding their knowledge and perceptions.

CONCLUSION

It can be concluded from this pilot study that personal, communal, cultural, and economic factors influence dental health behaviors and nutritional habits are powerful determinants when families seek dental care. Parents need to be helped to realize that they

are role models for their children and to be encouraged to improve their children's dental health. There is a necessity to enhance dental health education activities targeting parents and children to start a preventive strategy at an early age.

CLINICAL SIGNIFICANCE

This research helps us to understand the significance of parental knowledge and education in oral health practices and maintenance among the children inculcated by parents, which can help in bringing down the burden of oral health diseases in children in the future.

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