

Assessment of Knowledge, Attitude and Practices Regarding Oral Hygiene among the Parents of Pre- School Children: A Cross-Sectional Study

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Abstract

Background: Parents play a pivotal role in cultivating a positive dental attitude and healthy dietary and hygiene practices in their children if they have accurate knowledge about oral diseases and healthy dental practices. This study aims at assessing the knowledge, attitude, and practices of the parents of pre-schoolers in Saudi Arabia. **Materials & Methods:** A descriptive cross-sectional study has been conducted among the parents of 0-5-year-old children in Riyadh, Saudi Arabia. An online questionnaire was circulated among the participants containing 18 close-ended questions. Chi-square test, unpaired T-test, and ANOVA tests were computed to analyze the data using SPSS version 17 software (Illinois, Chicago, USA), wherein p-value < 0.05 was considered statistically significant. **Results:** Overall, 205 parents participated in the study. Fathers scored a higher mean score (10.08) than mothers (9.65), and the comparison was not statistically significant (p > 0.05). The education level did not significantly (p < 0.05) impact parents with both high school and university level education (9.8). Parents of the 31-40 years age group scored higher mean scores (10.36) while 51-60 years age group achieved the least mean score (9.12). There was no significant difference observed among and within the age groups (p > 0.05). **Conclusion:** Fathers in this study showed high mean scores than the mothers while there is no difference in parent's education and parents belong to 30-40 years had achieved good scores. There was no evidence of observed gender, education, and age on knowledge, attitude, and practices regarding oral hygiene among parents participated in the study.

Keywords: Oral hygiene; Pre-school children; Parents; Oral health

Introduction

Oral diseases are major contributors to the public health burden of several countries. Out of the 7.5 billion people residing on this planet, a whopping 2.3 billion reportedly suffer from dental caries of permanent dentition. In contrast, more than 530 million children suffer from caries affecting their primary dentition, as proclaimed by the global burden of disease study in 2017. ^[1,2] An integral component of the general health of an individual is oral health. Poor oral health can profoundly affect general health as it shares common risk factors and is significantly associated with major chronic diseases. Several studies have established a robust connection between chronic diseases such as cardiovascular diseases, stroke, diabetes, respiratory diseases, adverse pregnancy outcomes, and poor oral health. ^[3]

People worldwide are affected throughout their lifespan by these oral diseases that have both physical and psychological implications. It is not just the dental pain, discomfort, impairment of function, and disfigurement they have to suffer from many other things that impact their daily life. ^[3,4] Still,

these also influence their self-esteem, ability to socialize, and their feeling of well-being. It is mostly in children that the quality of life is comprised by severe dental caries, which causes pain, discomfort, acute and chronic infections, disfigurement, disruption of sleep and eating habits, greater risk of hospitalization, increased treatment costs which ultimately lead to loss of school-days diminishing their ability to learn. Interrupted sleep affects glucocorticoid production and growth. The presence of dental caries leads to insufficient nutrition intake, causing weight loss and thus deteriorating growth rate. ^[4,5] In a study by Acs et al., children less than three

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How to Cite this Article: AlBlehed AK, et al. Assessment of Knowledge, Attitude and Practices Regarding Oral Hygiene Followed by Parents of Pre-School Children in Riyadh, Saudi Arabia: A Cross-Sectional Study. *Ann Med Health Sci Res.* 2021;11:S2: 82-86.

years of age diagnosed with nursing caries weighed less than those without caries which could be attributed to toothache and infection altering their eating, and sleeping habits, dietary intake and metabolic processes.^[6]

The emphasis on dental research has shifted to preventive and conservative dentistry as most oral health conditions are escapable if diagnosed and treated in their early stages. Pre-school children spend the majority of their time with their parents or guardians, especially their mothers. It is during these years of ‘primary socialization’ that they adopt dietary habits and health routines. Consequently, parental awareness about proper feeding habits, oral health, association with general health, consequences on overall health and quality of life, their attitudes and practices play a pivotal role in their children’s oral health and hygiene. Hind^[7] and Suresh et al.^[8] studied the associated the increased prevalence of dental caries in infants and young children with poor attitudes towards their oral health.

A positive dental attitude and accurate knowledge about dental and dietary practices are of great importance in the mission towards preventive dentistry, which aims to reduce the disease burden by intervening even before initiating the disease. This preventive cycle begins with the precise assessment of the knowledge, attitudes, and a practice of parents’ attitude towards their children’s oral hygiene is the primary aim of this study. With the scarcity of such studies conducted among the parents in Saudi Arabia, the current study presents to be of great importance. The objective of the study was the knowledge, attitude, and practices of the parents of pre-schoolers in Saudi Arabia.^[9]

Materials and Methods

This descriptive cross-sectional study was conducted according to the STROBE guidelines for cross-sectional studies for six months (1st January 2020 to 30th June 2020). The study aimed to collect prevalent data about the knowledge, attitude, and practices pertaining to oral hygiene among parents of pre-school children (≤ 5 years of age) residing in the Riyadh province of Saudi Arabia.^[9] The ethical approval was obtained from the institutional review board under the project No MUREC-Feb 25/com-2020/22-1. A pilot study was conducted among 20 randomly selected participants to check for the flaws and feasibility of the study. A structured questionnaire was subsumed in the english language consisting of 18 close-ended questions, which was similar to prior studies carried out was curated. These questions’ psychometric properties were analyzed for reliability (using the cronbach alpha test, which gave a value of 0.7) and face and content validity. The G* Power Statistical Software (version 3.1.9.2) was used to calculate a minimum sample size which was found to be 154 participants. A convenience sampling technique was employed for sample acquisition. Those parents who were willing to participate in the study and agreed to sign a written informed consent were included. The parents of children older than 5 years of age and not residents of Saudi Arabia were excluded from the study. Convenience sampling was followed and this onlineself-explanatory questionnaire was made accessible to these practitioners in the form of a google link [Figure 1]. This survey

link was promoted through emails (obtained from the database of patients), and potential survey participants were invited to participate in the survey. The responses of the participants were scored. The correct response was given one point, and the incorrect was scored a zero. The maximum score one could obtain was 18 points. The data was then tabulated and analyzed statistically using Statistical Package for the Social Sciences database (SPSS Inc., SPSS version 17, Illinois Chicago, USA).^[10] The data were assessed for normality prior to analysis using Shapiro-Wilk’s test. Descriptive analysis with a 95% confidence level through frequency distribution was calculated, and the Chi-Square test was applied. Unpaired t-test was computed for identifying the differences in responses based on gender and level of education of the parents. A one-way ANOVA test was computed to determine the differences in responses based on the parents’ age. The level of education and the knowledge, attitudes, and oral hygiene practice of the mother of pre-school children were used as parameters for evaluating the data. A probability of less than 0.05 was considered significant.

Results

A total of 205 responses were obtained within the pre-determined period of the study through online forms. The parents’ age was categorized as ten years from 20 years to 60 years of age. The majority of parents that is 110 of them, belonged to the 1st category of 20-30 years of age, 53 belonged to 31-40 years, and 26 were aged between 41-50 years while 25 were more than 50 but less than 60 years of age. [Figure 2] Out of the 205 participating parents, 110 were mothers, and 95 were fathers [Figure 2]. When asked about their level of education and it was found that 35 parents were high school graduates while the remaining 170 had completed university-level education [Figure 2]. Among the parents’ responses, it was noted that fathers had a higher mean score of 10.08 than mothers (9.65) where 18 was the maximum they could score [Table 1], and there was no statistical significance was evident among the genders ($p > 0.05$). The level of education did not significantly impact how the

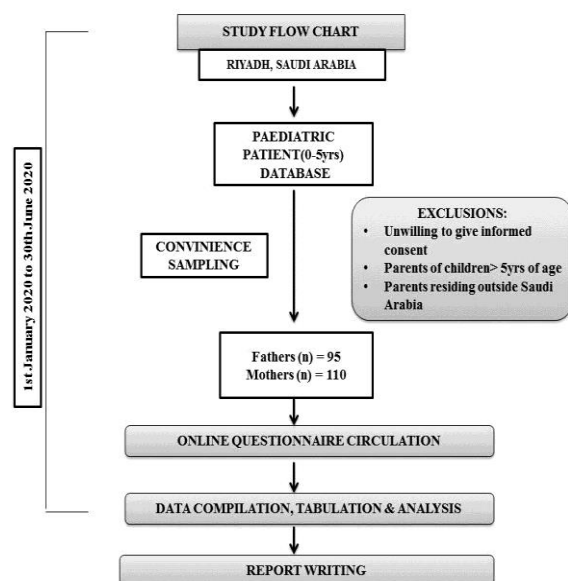


Figure 1: Flow diagram of study design.

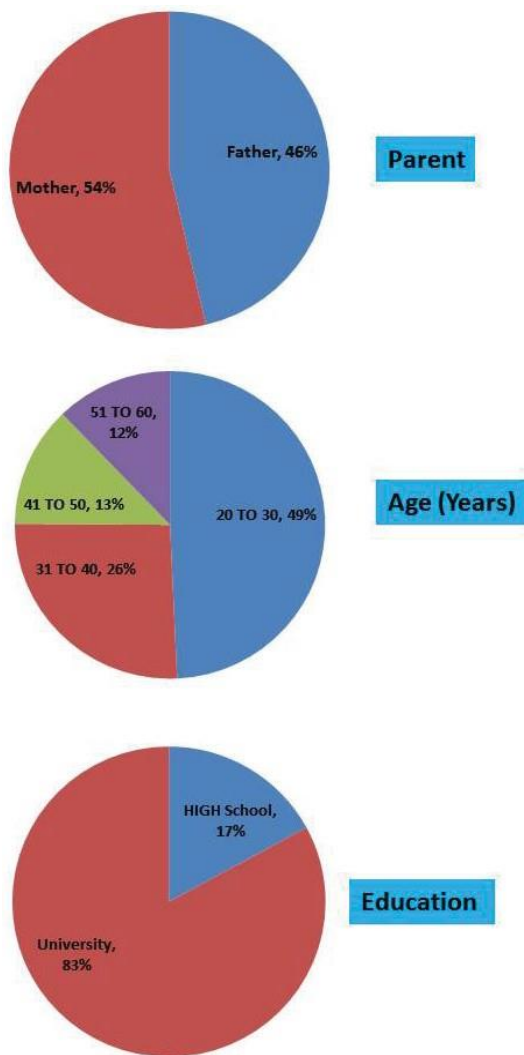


Figure 2: Demographic details of study participants.

parents scored, with parents belonging to both groups (high school and university level education) scoring approximately 9.8 [Table 2]. The comparisons among the parents’ various age groups showed that parents 31-40 years of age scored higher than the others, with their mean score being 10.36, and those belonging to 51-60 years age group showcased the least mean score of 9.12. However, the differences in the mean scores were not of statistical significance [Table 3]. The comparison among the groups [Table 4] should make no statistical difference ($P>0.05$).

Discussion

With the focus of contemporary dentistry shifting towards ‘preventive dentistry’, dental health education and promotion prove to be of utmost importance. Early reinforcement of healthy oral health practices during the influential period of a child’s life helps develop lifetime beliefs, optimistic attitudes, and personal skills, ultimately reducing the burden on public health because of oral diseases. [11] Health promotion programs targeted towards preschoolers and their parents play a crucial role in changing individual behaviors and attitudes towards a healthy lifestyle. The Ministry of Health Saudi Arabia has undertaken several initiatives targeting children and parents. Similarly, the oral health program for pre-school children primarily targets preschoolers to educate the mothers about proper diet, deleterious oral habits, regular check-up, and prompt treatment of dental diseases for children. Their primary objective is to check and monitor the eruption dates and eruption sequence of deciduous and permanent teeth. [12] Despite several such dental public health initiatives undertaken across the globe by the government, dental caries continue to be a significant concern in developing countries. Studies conducted in these countries have reported a high prevalence of dental caries such as China (85%), South Africa (49%), India (53%), while in countries such as

Table 1: Comparison of mean scores of parents based on the gender.

Details	Father (n=95)		Mother (n=110)		Mean Difference	95% Confidence interval	P value
	Mean	SD	Mean	SD			
Total score (max=18)	10.08	2.54	9.65	1.95	0.42	-0.19 1.04	0.17 ^{NS}

SD: Standard deviation; NS: Non significance.

Table 2: Comparison of mean scores of participants based on their education.

Details	High School (n=35)		University (n=170)		Mean Difference	95% Confidence interval	P value
	Mean	SD	Mean	SD			
Total score	9.82	1.91	9.8	2.31	-0.03	-0.85 0.79	0.94 ^{NS}

SD: Standard deviation; NS: Non significance.

Table 3: Comparison of mean scores of participants based on their age group.

Age (years)	N	Mean	Standard Deviation	Minimum	Maximum	F	P value
20 to 30	101	9.74	2.41	6.00	18.00	1.901	0.13 ^{NS}
31 to 40	53	10.35	2.44	6.00	16.00		
41 to 50	26	9.96	1.63	7.00	14.00		
51 to 60	25	9.12	1.39	6.00	12.00		

NS: Non significance.

Table 4: Comparison of mean scores of participants among the various age groups.

Age (Years)	Age (Years)	Mean difference	Std. Error	P value	95% Confidence interval	
					Lower bound	Upper bound
20 to 30	31 to 40	-0.61	0.37	0.63 ^{NS}	-1.62	0.39
	41 to 50	-0.21	0.49	1.00 ^{NS}	-1.52	1.09
	51 to 60	0.62	0.49	1.00 ^{NS}	-0.70	1.95
31 to 40	41 to 50	0.39	0.53	1.00 ^{NS}	-1.02	1.82
	51 to 60	1.23	0.54	0.14 ^{NS}	-0.20	2.68
41 to 50	51 to 60	0.84	0.62	1.00 ^{NS}	-0.82	2.51

NS: Non significance.

England and Italy, which are developed, these percentages were found to be significantly lower that is 32% and 16% respectively.^[3-17] In Riyadh, Saudi Arabia, the prevalence of caries was 69% in a study carried out by Al-Meedani et al.^[18] In their study, the education level of the parents and the prevalence of caries were observed to be negatively associated in the pre-school children.

Nutbeam^[19] has suggested actions of health promotion (such as education), health promotion outcomes (such as health literacy), intermediate health outcomes (e.g. health behavior), and lastly, health and social outcomes (e.g. plaque score) to be the pillars for evaluating any interventional programs. The current study focuses on the pillars of health literacy and health behaviors, which would be instrumental in evaluating the reach and influence of the existing interventional and educational programs in Riyadh. The people’s ability to acquire, process, and comprehend fundamental oral health data and services expected to achieve proper health resources constitutes oral health literacy.^[20,21] The parents’ oral health knowledge directly influences their children’s diet and hygiene practices. In contrast to prior studies related to higher education of the parents to increased oral health knowledge, our study did not find a significant relationship between the factors.^[18,21-25] This could be because all the study participants were at least high school graduates, with none being uneducated. Increased attendance to oral health programs could be another reason attributing to this find. However, it should be brought to attention that despite there being no significant difference in the knowledge of high school graduate parents and those with a university degree, their scores remained under par, with approximately 9.8 as the mean score. There was no significant difference noted when comparisons were made based on their age. Those parents belonging to the age group of 31-50 years scored slightly better than the rest. It could be ascribed to the possibility of these children not being their first child and having experience and knowledge attained from previous dental visits. This could be due to the concept of “dental neglect,” wherein the parents or guardians only visit a dentist for dental problems. A study by Al-Zahrani et al. concluded that only 22% of the parents took their child to a dentist only if they had a dental problem.^[26] A study in Saudi Arabia showed that 54.7% of mothers take their children to the dentist only when they complain despite being educated.^[18] It is pretty shocking to note that those belonging to the younger age groups having more access to various knowledge sources failed to score well.

During this study, certain shortcomings have been identified that should be kept in mind while undertaking future studies. The study was carried out on a small sample size and was restricted

to the Riyadh province of Saudi Arabia only. Future studies can utilize a larger sample size and be carried out in other regions as Saudi Arabia is a multicultural country, the results may vary. Specific factors that could have influenced this study’s findings, such as family size, socioeconomic status, immigrant status, ethnicity, the order of children etc. can be incorporated.^[19,26] Further studies can be carried out to evaluate these programs’ health outcomes by measuring the participants’ plaque scores and caries index. This study, along with prior studies, provides sufficient evidence about how an education at the grassroots level of expecting mothers and new parents could help reduce the next generation’s oral health problems. These programs’ targeted population’s importance of first dental visits and routine dental check-ups seems to be overlooked. A collective effort by parents, physicians, pediatricians, dentists, and the government is required for the effective implementation of these programs.

Conclusion

Fathers in this study showed high mean scores than the mothers while there is no difference in parents’ education and parents belong to 30-40 years had achieved good scores. There was no evidence of gender, education, and age on the preschool children’s knowledge, attitude, and practices regarding oral hygiene among their parents. This study’s general results raise questions regarding the adequate implementation of oral health awareness programs and highlight the need to revamp and modify the existing health education and promotion programs to ensure better reach. These programs need ‘booster programs’ to reiterate healthy oral health practices and bring about behavior modifications

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