

Childhood Oral Health: Maternal Knowledge and Practice in Tabuk, Saudi Arabia

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ABSTRACT

Background: Dental cares is a prevalent health problem among preschool children, despite the fact that oral health is a main component of preschool children's well-being.

Objectives: To assess the knowledge and practice of mothers in Tabuk city, Saudi Arabia towards their preschool children oral health.

Methods: This cross-sectional study was carried at Tabuk city, Kingdom of Saudi Arabia. It was carried out in King Khalid military. All mothers having children aged between 3 and 6 years and attended the out-patients' clinics of King Khalid military hospital during the period of August 1st-October 31st, 2017 and accept to participate were invited to be included in the study sample. Arabic self-administered structured questionnaire was utilized for collecting data. It includes two main sections. The first section includes socio-demographic information and the second section includes ten knowledge and nine practice questions regarding children's dental health and hygiene.

Results: The study included 389 mothers. More than half of children were males (50.4%). Nearly one-third of mothers (34.3%) were in the age group 30-34 years whereas 10.3% of them aged above 45 years. Almost half of mothers (49.4%) reported all of social media, dentist and mass media as a source of information regarding oral health and hygiene whereas social media and dentist alone were reported by 17.2% and 21.3% of them, respectively. Collectively, sufficient knowledge was observed among 26% of the participants whereas adequate practice regarding oral health was reported by 36.5% of mothers. Dental cares was reported among 115 children (29.6%) whereas dental deformity was reported among 171 children (44%).

Conclusion: This study revealed insufficient knowledge and inadequate practice of mothers regarding their children oral health and hygiene. Some factors were identified affecting both child's oral health knowledge and practice.

Keywords: Teeth decay, Mothers, preschool children, Oral health, Oral hygiene, Knowledge.

INTRODUCTION

Dental cares is a prevalent health problem among preschool children, despite the fact that oral health is a main component of preschool children's well-being¹. Oral health-related quality of life is usually lower in affected children if compared with those not affected². In addition, children who developed caries often had associated health problems such as oral pain and local infections that resulted in difficulty in sleeping, eating, psychological problems, reduced growth, and increase in the risk of caries in permanent dentition.^{2,3} Additionally, dental caries at such a very young age often treated under general anesthesia, which carries its own adverse effects^{3,4}.

Early childhood caries is linked with numerous risk factors including frequent, prolonged and nocturnal bottle feeding, prolonged breast feeding, birth order of the child, family history of cares, nutritional habits, oral hygiene practices and timing for first dental visit^{5,6}.

It has been documented that mother's knowledge regarding oral health affect

maintenance and fate of their children oral health by influencing their oral hygiene and healthy eating habits. Therefore, Mother's good knowledge and positive attitude toward oral health are very important in the prevention of dental problems⁶.

The objective of the study was to assess the knowledge and practice of mothers in Tabuk city, Saudi Arabia towards their preschool children oral health.

SUBJECTS AND METHODS

This cross-sectional study was carried at Tabuk city, Kingdom of Saudi Arabia. Tabuk is a city located 2200 feet above sea level and has moderate climate in comparison with other Saudi cities. It has a population of 534,893 (2010 census)⁷.

The study was carried out in King Khalid military. All mothers having children aged between 3 and 6 years and attended the out-patients' clinics of King Khalid military hospital during the period

of August 1st-October 31st, 2017 and accept to participate were invited to be included in the study sample.

Sample size was calculated to be 381 according to the following equation:

$Z^2 pq/c^2$. $Z = 1.96$ for 95% of the confidence interval; $p =$ proportion of the mothers who had good knowledge about oral health, based on a previous recent Saudi study 54% (0.54)⁸, $q = 1 - p = 0.46$ and $c =$ margin of error was at 0.5.

Mothers who fulfilled the inclusion criteria were recruited through a systematic random sampling technique.

Arabic self-administered structured questionnaire was utilized for collecting data. It was designed in English⁹ and then translated into Arabic by two dentists who were fluent in both English and Arabic. The Arabic version was then back-translated into English by another two experts. The back-translated version was compared with the English version to verify that the questions were properly translated. Questionnaire was pretested and validated among twenty mothers and these subjects were not included in the final analysis. The questionnaire included two main sections. The first section comprised socio-demographic information such as child's age, gender, mother's age, education, job and family income in Saudi Riyals/month). The second section involved ten knowledge and nine practice questions regarding children's dental health and hygiene.

A scoring system was adopted where correct answers were given a score of "1" whereas wrong answers were given a score of "0". Then, total score and score percentage were computed for each participant. Mothers scored 50% or more were considered as having "sufficient knowledge" whereas those scored below 50% were considered as having "insufficient knowledge". Regarding practice, the same was adopted and those scored 50% or more were considered as having "adequate practice" whereas mothers scored less than 50% were considered as having "inadequate practice".

Approval from Regional Research and Ethics committee in King Khalid military hospital was obtained. Also, permission from the medical director of King Khalid military hospital in Tabuk was received. Written consent to participate in the study was taken from each participant prior to data collection. The study was done after approval of ethical committee of King Khalid Military hospital, Tabuk. Using the statistical Package for Social Sciences (SPSS) software version 22.0, data entry and analysis were performed. Descriptive statistics

in the form of frequency and percentage were computed and analytic statistics, using chi-square test was applied for comparisons. Statistical significance level was determined at $p < 0.05$.

RESULTS

The study included 389 mothers. Table 1 summarizes their socio-demographic profile. Almost one-third of children (33.9%) aged 6 years. More than half of children were males (50.4%). Nearly one-third of mothers (34.3%) were in the age group 30-34 years whereas 10.3% of them aged above 45 years. Almost half of mothers (47.6%) were university graduated. More than one-third of mothers (39.1%) were employed. The income ranged between 5000 to 10000 SR/month among 34.8% of the participants whereas it exceeded 20000 SR/month among 23.1% of them.

As shown in figure 1, almost half of mothers (49.4%) reported all of social media, dentist and mass media as a source of information regarding oral health and hygiene whereas social media and dentist alone were reported by 17.2% and 21.3% of them, respectively. Collectively, sufficient knowledge was observed among 26% of the participants as illustrated in figure 2 whereas adequate practice regarding oral health was reported by 36.5% of mothers as displayed in figure 3.

Dental cares was reported among 115 children (29.6%) whereas dental deformity was noted among 171 children (44%).

Table 2 presents the factors associated with maternal knowledge regarding oral health and hygiene. The only significant factor was the number of child's decayed teeth as 44.6% of mothers of children having >6 decayed teeth compared to 22.1% of those who had children without decayed teeth expressed sufficient knowledge, $p = 0.046$.

Concerning mothers 'practice-related to child's oral health, adequate practice was reported at higher significant rate among mothers of younger children (aged 3 years) "43.9%" than those with older children (6 years) "37.9%", $p = 0.018$. Relatively higher educated mothers (Diploma degree) expressed the highest level of adequate knowledge regarding oral health and hygiene (60.9%) whereas illiterate and PhD educated mothers expressed the lowest rate (27.3%), $p = 0.045$. Unemployed mothers had higher significant rate of adequate oral-health-related practice compared to employed women (40.1% versus 30.9%), $p = 0.042$ (Table 3).

Table 1: Socio-demographic profile of the participated mothers (n=389)

	Frequency	Percentage
Child`s age in years		
3	91	23.4
4	66	17.0
5	100	25.7
6	132	33.9
Child`s gender		
Male	196	50.4
Female	193	49.6
Mother`s age		
18-24	15	3.9
25-29	68	17.5
30-34	134	34.3
35-39	80	20.6
40-45	52	13.4
>45	40	10.3
Mother`s educational level		
Illiterate	11	2.8
Primary school	32	8.2
Intermediate school	18	4.6
Secondary school	83	21.3
Diploma	23	5.9
University	185	47.6
Master	15	3.9
PhD/equivalent	22	5.7
Mother`s employment status		
Employed	152	39.1
Unemployed	237	60.9
Family income (SR/month)		
<5000	41	10.5
5000-10000	135	34.8
>10000-20000	123	31.6
>20000	90	23.1

Table 2: Factors associated with oral health knowledge among mothers

	Oral health knowledge		p-value
	Sufficient N=101, N (%)	Insufficient N=288, N (%)	
Child`s age in years			
3 (n=91)	22 (24.2)	69 (75.8)	7.30 (0.063)
4 (n=66)	15 (22.6)	51 (77.3)	
5 (n=100)	36 (36.0)	64 (64.0)	
6 (n=132)	28 (21.2)	104 (78.8)	
Child`s gender			
Male (n=196)	52 (26.5)	144 (73.5)	0.07 (0.797)
Female (n=193)	49 (25.4)	144 (74.6)	
Mother`s age			
18-24 (n=15)	4 (26.7)	11 (73.3)	4.33 (0.503)
25-29 (n=68)	21 (30.9)	47 (69.1)	
30-34 (n=134)	36 (26.9)	98 (73.1)	
35-39 (n=80)	18 (22.5)	62 (77.5)	
40-45 (n=52)	9 (17.3)	43 (82.7)	
>45 (n=40)	13 (32.5)	27 (67.5)	
Mother`s educational level			
Illiterate (n=11)	1 (9.1)	10 (90.9)	9.79 (0.201)
Primary school (n=32)	13 (40.6)	19 (59.4)	
Intermediate school (n=18)	7 (38.9)	11 (61.1)	
Secondary school (n=83)	21 (25.3)	62 (74.7)	
Diploma (n=23)	3 (13.0)	20 (87.0)	
University (n=185)	49 (26.5)	136 (73.5)	
Master (n=15)	3 (20.0)	12 (80.0)	
PhD/equivalent (n=22)	4 (18.2)	18 (81.8)	
Mother`s employment status			
Employed (n=152)	33 (21.7)	119 (78.3)	2.35 (0.125)
Unemployed (n=237)	68 (58.7)	169 (71.3)	
Family income (SR/month)			
<5000 (n=41)	9 (22.0)	32 (78.0)	0.99 (0.803)
5000-10000 (n=135)	37 (27.4)	98 (72.6)	
>10000-20000 (n=123)	34 (27.6)	89 (72.4)	
>20000 (n=90)	21 (23.3)	69 (76.7)	
Source of information			
Mass media (TV/newspapers) (n=17)	3 (17.6)	14 (82.4)	2.96 (0.565)
Social media (n=67)	15 (22.4)	52 (77.6)	
Dentist (n=83)	19 (22.9)	64 (77.1)	
>two sources (n=30)	7 (23.3)	135 (70.3)	
All (n=192)	57 (29.7)	23 (76.7)	
Self-rating of mother`s dental health			
Good (n=155)	45 (29.0)	110 (71.0)	2.07 (0.355)
Medium (n=201)	46 (22.9)	155 (77.1)	
Poor (n=33)	10 (30.3)	23 (69.7)	
Number of child`s decayed teeth			
Never (n=154)	34 (22.1)	120 (77.9)	7.99 (0.046)
<3 (n=115)	26 (22.6)	89 (77.4)	
3-6 (n=93)	29 (31.2)	64 (68.8)	
>6 (n=27)	12 (44.4)	15 (55.6)	

Table 3: Factors associated with oral health practice among mothers

	Oral health Practice		χ^2 (p-value)*
	Inadequate N=247 N (%)	Adequate N=142 N (%)	
Child`s age in years			
3 (n=91)	52 (57.1)	39 (42.9)	10.01 (0.018)
4 (n=66)	37 (56.1)	29 (43.9)	
5 (n=100)	76 (76.0)	24 (24.0)	
6 (n=132)	82 (62.1)	50 (37.9)	
Child`s gender			
Male (n=196)	128 (64.3)	70 (35.7)	0.11 (0.744)
Female (n=193)	121 (62.7)	72 (37.3)	
Mother`s age			
18-24 (n=15)	10 (66.7)	5 (33.3)	1.10 (0.954)
25-29 (n=68)	41 (60.3)	27 (39.7)	
30-34 (n=134)	83 (61.9)	51 (38.1)	
35-39 (n=80)	54 (67.5)	26 (32.5)	
40-45 (n=52)	33 (63.5)	19 (36.5)	
>45 (n=40)	26 (65.0)	14 (35.0)	
Mother`s educational level			
Illiterate (n=11)	8 (72.7)	3 (27.3)	14.34 (0.045)
Primary school (n=32)	16 (50.0)	16 (50.0)	
Intermediate school (n=18)	8 (44.4)	10 (55.6)	
Secondary school (n=83)	56 (67.5)	27 (32.5)	
Diploma (n=23)	9 (39.1)	14 (60.9)	
University (n=185)	123 (66.5)	62 (33.5)	
Master (n=15)	11 (73.3)	4 (26.7)	
PhD/equivalent (n=22)	16 (72.7)	6 (27.3)	
Mother`s employment status			
Employed (n=152)	105 (69.1)	47 (30.9)	3.85 (0.042)
Unemployed (n=237)	142 (59.9)	95 (40.1)	
Family income (SR/month)			
<5000 (n=41)	21 (51.2)	20 (48.8)	4.72 (0.194)
5000-10000 (n=135)	82 (60.7)	53 (39.3)	
>10000-20000 (n=123)	84 (68.3)	39 (31.7)	
>20000 (n=90)	60 (66.7)	30 (33.3)	
Source of information			
Mass media (TV/newspapers) (n=17)	13 (76.5)	4 (23.5)	6.58 (0.160)
Social media (n=67)	46 (68.7)	21 (31.3)	
Dentist (n=83)	56 (67.5)	27 (32.5)	
>two sources (n=30)	14 (46.7)	16 (53.3)	
All (n=192)	118 (61.5)	74 (38.5)	
Self-rating of mother`s dental health			
Good (n=155)	102 (65.8)	53 (34.2)	0.64 (0.726)
Medium (n=201)	124 (61.7)	77 (38.3)	
Poor (n=33)	21 (63.6)	12 (36.4)	
Number of child`s decayed teeth			
Never (n=154)	96 (62.3)	58 (37.7)	2.89 (0.409)
<3 (n=115)	80 (69.6)	35 (30.4)	
3-6 (n=93)	55 (59.1)	38 (40.9)	
>6 (n=27)	16 (59.3)	11 (40.7)	

* Chi-square test

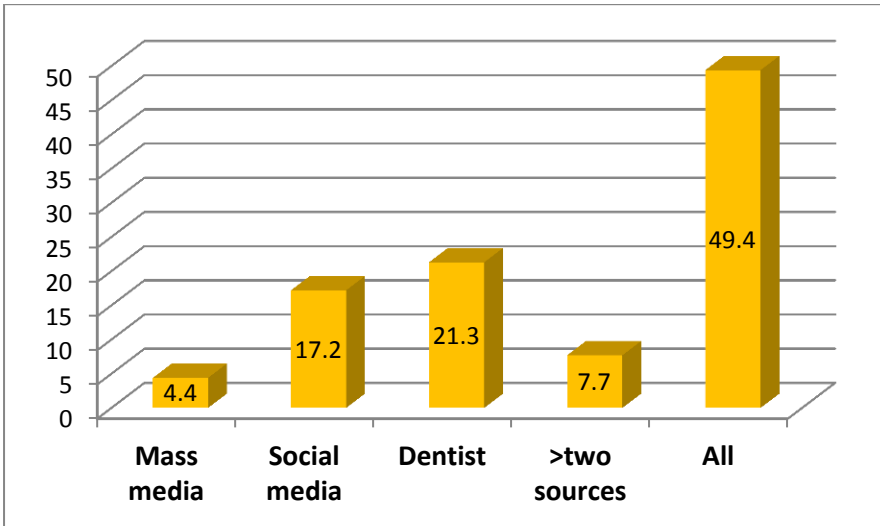


Figure 1: Source of information regarding oral and dental health

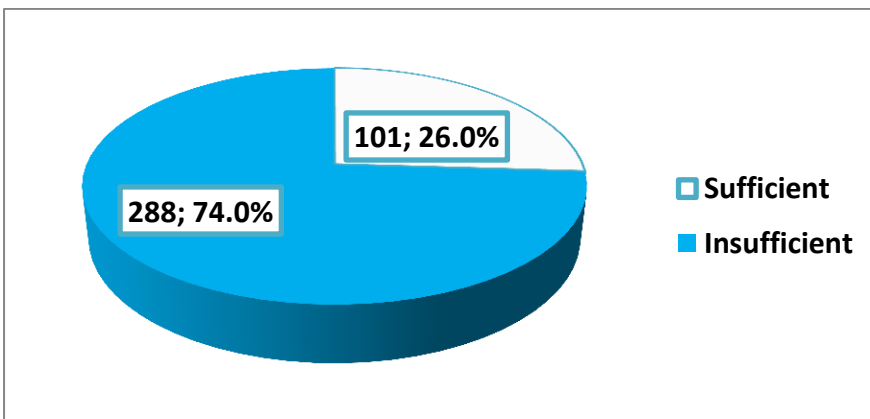


Figure 2: Oral health knowledge level among mothers.

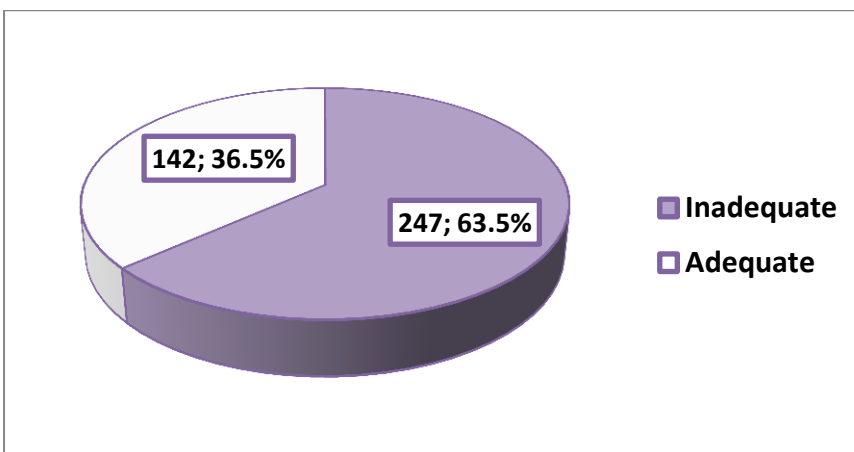


Figure 3: Oral health practice level among mothers.

DISCUSSION

The prevalence of dental care in the current study was 29.6%, which was lower than that reported in a similar study carried out recently in Jeddah amongst (61.5%).⁸ However, it is higher than those reported in Brazil (16.7%)⁹ and China (19.5%).¹⁰ The difference between these results, including ours, could be attributed to difference in the background of patients as well as difference in the consideration of tooth decay, as tooth decay was identified through the questionnaire only in the present study, however in other studies,^{9, 10} this was confirmed by intraoral clinical examination.

In the current study, unemployed mothers expressed higher rate of adequate practice regarding oral health and hygiene. This finding disagrees with those of other similar studies.¹¹⁻¹³ Further studies are recommended to clarify this finding.

In the present study, mothers' educational level was not significantly associated with knowledge of oral health and hygiene. However, it was significantly associated with practice-related oral health and hygiene as moderately educated mothers expressed higher adequate practices compared to both lower and higher educated mothers. This finding is not in agreement with that of other studies,¹¹⁻¹⁷ which reported better knowledge and practice in relation to higher educational level of caregivers. Again, further study is recommended in this regard.

In the present study, the conclusion that mothers who have more children with decayed teeth were more knowledgeable about decayed teeth than those with no children. This finding is apparently surprising and could be attributed to the fact that mothers who got more children with decayed teeth started early to have more information about oral hygiene compared to those who less experience.

Among the limitations of this study its cross-sectional design which did not prove causality between knowledge and practice regarding child's oral health from and other factors associated with them. Also, implementing the study in only one military hospital could reduce the validity and the interpretation of the results. Finally the self-rating to diagnose dental decay without being confirmed by dental examination could weaken the final contribution questionnaire used of the present results and lead to less association as well as correlation other conclusions of studies carried in other location.

Conclusively, this study revealed insufficient knowledge and inadequate practice of mothers regarding oral health and hygiene of their children. Some factors were identified affecting both children's oral health knowledge and practice. Dentists as well as other sources of information and knowledges should have an active role in improving maternal knowledge as well practice regarding children's oral health and insurance of Hygiene.

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