

Knowledge and Experiences of Mothers toward Their Children's Oral Health in Jeddah, Saudi Arabia

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ABSTRACT

Background: Oral health is an essential component of preschool children's well-being and health. Despite of that, many preschool children suffer from dental caries at an early age, even before the first year of their life.

Objectives: To determine knowledge, views and experiences of mothers towards oral health of their preschool children in Jeddah city, Saudi Arabia.

Methods: This cross-sectional study was carried at Jeddah city, Kingdom of Saudi Arabia. One hospital was randomly selected (Dental North center, Ministry of Health). A representative random sample of mothers having children aged between 3 and 6 years and attended the out-patients' clinics of the selected hospital throughout the period of study conduction (December, 2016) was selected. Data was collected using an Arabic self-administered structured questionnaire.

Results: The study included 187 mothers out of recruited 246 giving a response rate of 76%. About one-third of mothers (31.6%) were in the age group 30-34. Approximately half (49.2%) of mothers reported a combination source of information regarding oral health and hygiene whereas social media and dentist were reported alone by 24.6% and 23.5% of them, respectively. Overall, good knowledge and practice regarding oral health was reported by 54% and 17.6% of mothers, respectively. Working mothers were more knowledgeable than not working mothers (24.4% versus 11.9%), $p=0.025$. Mothers who rated their knowledge level about oral health as good were more knowledgeable than those rated it as poor (25.3% versus 6.3%), $p=0.033$. Regarding practice related to child's oral health, good

practice was reported at higher rate among mothers whose source of information was multiple source (59.8%) or dentists alone (59.1%) than those whose source of information was TV/newspapers (zero%), $p=0.022$. Mothers who rated their knowledge level about oral health as good had good child oral health's practice than those rated it as poor (64.4% 12.5%), $p=0.001$. Mothers whose children had dental deformity had better practice regarding oral health than those who were unaware about this, $p=0.017$.

Conclusion: There is an apparent gap between mother's knowledge regarding child's oral health and hygiene and their practice in this regards. Dentists and social media should play an essential role in improving maternal knowledge regarding child's oral health as well as encourage them to transfer knowledge into actual practice.

Keywords: Oral Health, Oral Hygiene, Knowledge, Practice, Mothers.

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INTRODUCTION

Oral health is an essential component of preschool children's well-being and health. Despite of that, many preschool children suffer from dental caries at an early age, even before the first year of their life.¹ Among those affected, oral health-related quality of life is usually reduced as compared to their caries-free counterparts.² Additionally, children with early childhood caries oftenly develop associated problems such as local infections, oral pain that also manifests as difficulty in eating and sleeping, reduced growth, psychosocial problems and increased risk of caries in permanent dentition.^{2,3} Also, the primary dentition

affected by dental caries at such a very young age mostly has to be treated under general anesthesia, which carry its own adverse outcome.^{3,4}

Children's oral health maintenance and fate are affected by their mother's knowledge and views, which influence oral hygiene and healthy eating habits. Mother's knowledge and positive attitude toward good dental care are very essential in the prevention of dental problems. It has been documented that the more positive is the mothers' attitudes toward oral health; the better will be the oral health of their children.⁵

A number of risk factors have been documented for early childhood caries that include; prolonged breast feeding, prolonged/frequent/nocturnal bottle feeding, the child's birth order, oral hygiene practices, nutritional habits, and timing for child's first dental visit.^{6,7}

This study aimed to determine knowledge, views and experiences of mothers towards oral health of their preschool children in Jeddah city, Saudi Arabia.

SUBJECTS AND METHODS

This cross-sectional study was carried at Jeddah city, Kingdom of Saudi Arabia. Jeddah is the largest sea port on the Red Sea, and the second-largest city in Saudi Arabia after the capital city, Riyadh. With a population currently at 3.4 million people.⁸ One hospital was randomly selected (Dental North Center, Ministry of Health).

All mothers having children aged between 3 and 6 years and attended the out-patients' clinics of the selected hospital throughout the period of study conduction (December, 2016) and gave consent was included in the study.

With an error fixed at 5%, sample size was calculated to be 246. Sample size was calculated based on $Z^2 pq/c^2$. $Z = 1.96$ for 95% of the confidence interval; $p =$ proportion of the population who had knowledge about oral health was 20% (0.2), $q = 1 - p = 0.8$ and $c =$ margin of error was at 4% =0.05.

Systematic random sampling technique was adopted according to the number of eligible participants attended outpatients' clinics.

Data was collected using an Arabic self-administered structured questionnaire. It was designed in English¹⁰ and then translated in 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 fluent in both Arabic and English. The back-translated version was compared with the English version to verify

that the questions were properly translated. Questionnaire was pretested and validated among 20 mothers and these subjects were not included in the final analysis. The questionnaire includes two main parts. The first part includes socio-demographic data (Child's age, gender, mother's age, job and family income in Saudi Riyals/month). The second part includes 14 knowledge and 9 practice questions regarding children's dental health and hygiene.

A scoring system was developed; scores were based on the percentage of correct/favorable answers given by mothers. Knowledge was considered "good" if they answered correctly 50% of questions or more and was considered "poor" if the answered correctly less than 50% of questions. Separate score was assigned for each of knowledge and practice.

Approvals from Regional Research and Ethics teams and medical director of the selected hospital in Jeddah were obtained. Consent to participate in the study was obtained from each participant.

The statistical Package for Social Sciences (SPSS) software version 23.0 was used for data entry and analysis. Descriptive statistics in the form of frequency and percentage were computed and analytic statistics, using chi-square test was applied for comparisons. P-values <0.05 was considered as statistically significant.

RESULTS

The study included 187 mothers out of recruited 246 giving a response rate of 76%. Table 1 presents their general characteristics. More than half of children were females (52.8%). About one-third of mothers (31.6%) were in the age group 30-34 years whereas 8.6% of them aged over 40 years. Nearly half of mothers (49.7%) were at least university graduated. Less than half of mothers (46%) were working. The income ranged between 5000 to 20000 SR/month among majority of mothers (84.5%).

Table 1: General characteristics of the participants (n=187)

		Frequency	Percentage
Child's age in years (n=184)	3	58	31.5
	4	41	22.3
	5	41	22.3
	6	44	23.9
Child's gender (n=178)	Male	84	47.2
	Female	94	52.8
Mother's age	18-24	17	9.1
	25-29	54	28.9
	30-34	59	31.6
	35-39	41	21.9
	≥40	16	8.6
Mother's educational level	Below secondary	25	13.4
	Secondary-Diploma	69	36.9
	University	75	40.1
	Postgraduate	18	9.6
Mother's job status	Working	86	46.0
	Not working	101	54.0
Family income (SR/month)	<5000	11	5.9
	5000-10000	82	43.9
	>10000-20000	76	40.6
	>20000	18	9.6

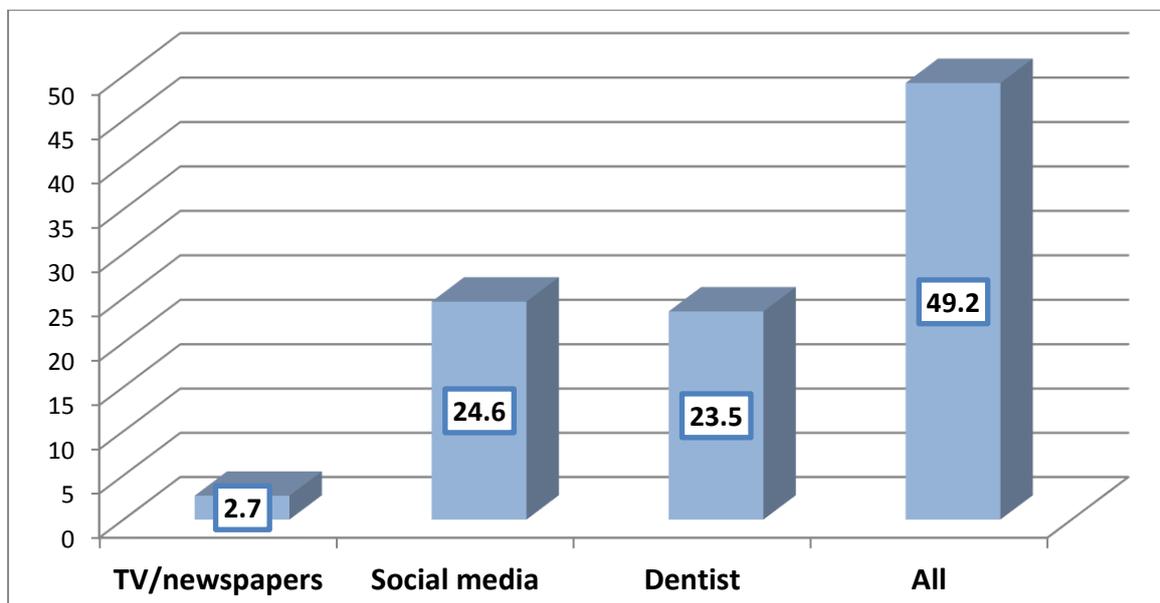


Figure 1: Source of information regarding oral and dental health

Table 2: Factors associated with oral health knowledge among mothers

		Oral health knowledge		p-value
		Poor N=151 N (%)	Good N=36 N (%)	
Child's age in years (n=184)	3 (n=58)	43 (74.1)	15 (25.9)	0.108
	4 (n=41)	32 (78.0)	9 (22.0)	
	5 (n=41)	37 (90.2)	4 (9.8)	
	6 (n=44)	39 (88.6)	5 (11.4)	
	Child's gender (n=178)	Male (n=84)	70 (83.3)	
	Female (n=94)	77 (81.9)	17 (18.1)	
Mother's age	18-24 (n=17)	15 (88.2)	2 (11.8)	0.366
	25-29 (n=54)	41 (75.9)	13 (24.1)	
	30-34 (n=59)	49 (83.1)	10 (16.9)	
	35-39 (n=41)	37 (90.2)	4 (9.8)	
	≥40 (n=16)	12 (75.0)	4 (25.0)	
Mother's educational level	Below secondary (n=25)	19 (76.0)	6 (24.0)	0.177
	Secondary-Diploma (n=69)	62 (89.9)	7 (10.1)	
	University (n=75)	60 (80.0)	15 (20.0)	
	Postgraduate (n=18)	13 (72.2)	5 (27.8)	
Mother's job status	Working (n=86)	65 (75.6)	21 (24.4)	0.025
	Not working (n=101)	50 (49.5)	12 (11.9)	
Family income (SR/month)	<5000 (n=11)	7 (63.6)	4 (36.4)	0.176
	5000-10000 (n=82)	71 (86.6)	11 (13.4)	
	>10000-20000 (n=76)	63 (82.9)	13 (17.1)	
	>20000 (n=18)	13 (72.2)	5 (27.8)	
Source of information	TV/newspapers (n=5)	5 (100)	0 (0.0)	0.175
	Social media (n=46)	42 (91.3)	4 (8.7)	
	Dentist (n=44)	34 (77.3)	10 (22.7)	
	All (n=92)	73 (79.3)	19 (20.7)	
Self-rating of mother's dental health	Good (n=87)	65 (74.7)	22 (25.3)	0.033
	Medium (n=84)	74 (88.1)	10 (11.9)	
	Poor (n=16)	15 (93.8)	1 (6.3)	
Number of child's decayed teeth	Never (n=72)	53 (73.6)	19 (26.4)	0.093
	<3 (n=64)	56 (87.5)	8 (12.5)	
	3-6 (n=39)	35 (89.7)	4 (10.3)	
	>6 (n=12)	10 (83.3)	2 (16.7)	
Child's dental deformity	Yes (n=37)	29 (78.4)	8 (21.6)	0.468
	No (n=128)	105 (82.0)	23 (18.0)	
	Unknown (n=22)	20 (90.9)	2 (9.1)	

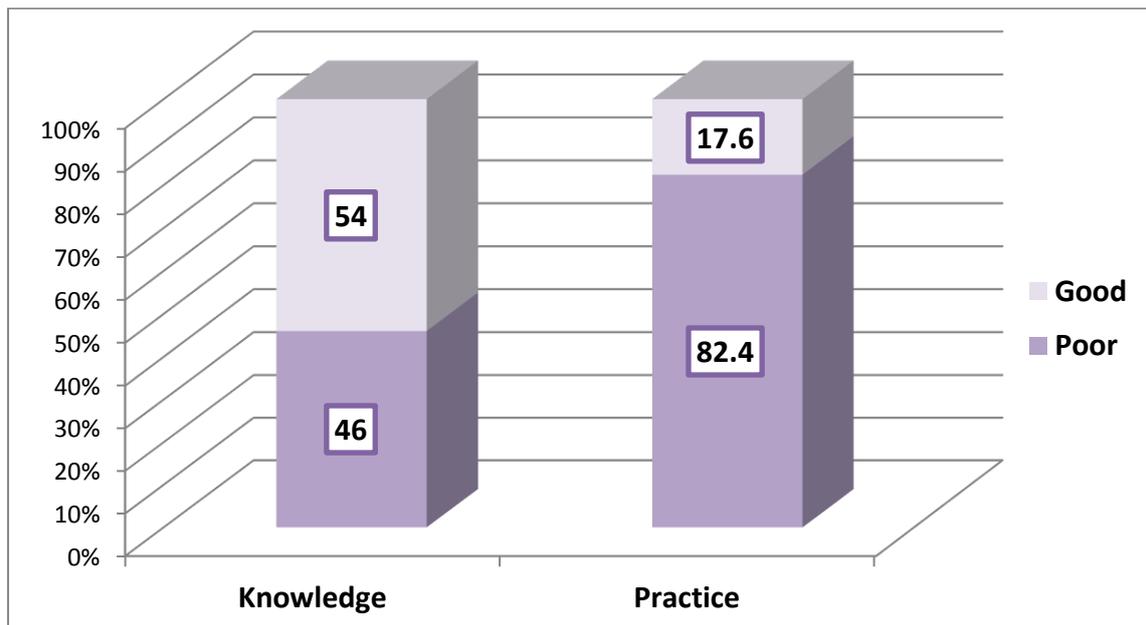


Figure 2: Oral health knowledge and practice levels among mothers.

Table 3: Factors associated with oral health practice among mothers

		Oral health Practice		p-value
		Poor N=151 N (%)	Good N=33 N (%)	
Child's age in years (n=184)	3 (n=58)	25 (43.1)	33 (56.9)	0.938
	4 (n=41)	20 (48.8)	21 (51.2)	
	5 (n=41)	19 (46.3)	22 (53.7)	
	6 (n=44)	19 (43.2)	25 (56.8)	
	Child's gender (n=178)	Male (n=84)	37 (44.0)	
	Female (n=94)	44 (46.8)	50 (53.2)	
Mother's age	18-24 (n=17)	7 (41.2)	10 (58.8)	0.938
	25-29 (n=54)	25 (46.3)	29 (53.7)	
	30-34 (n=59)	28 (47.5)	31 (52.4)	
	35-39 (n=41)	20 (48.8)	21 (51.2)	
	≥40 (n=16)	6 (37.5)	10 (62.5)	
Mother's educational level	Below secondary (n=25)	10 (40.0)	15 (60.0)	0.425
	Secondary-Diploma (n=69)	29 (42.0)	40 (58.0)	
	University (n=75)	40 (53.3)	35 (46.7)	
	Postgraduate (n=18)	7 (38.9)	11 (61.1)	
Mother's job status	Working (n=86)	36 (41.9)	50 (58.1)	0.296
	Not working (n=101)	50 (49.5)	51 (50.5)	
Family income (SR/month)	<5000 (n=11)	6 (54.5)	5 (45.5)	0.942
	5000-10000 (n=82)	38 (46.3)	44 (53.7)	
	>10000-20000 (n=76)	34 (44.7)	42 (55.3)	
	>20000 (n=18)	8 (44.4)	10 (55.6)	
Source of information	TV/newspapers (n=5)	5 (100)	0 (0.0)	0.022
	Social media (n=46)	26 (56.5)	20 (43.5)	
	Dentist (n=44)	18 (40.9)	26 (59.1)	
Self-rating of mother's dental health	All (92)	37 (40.2)	55 (59.8)	0.001
	Good (n=87)	31 (35.6)	56 (64.4)	
	Medium (n=84)	41 (48.8)	43 (51.2)	
Number of child's decayed teeth	Poor (n=16)	14 (87.5)	2 (12.5)	0.774
	Never (n=72)	32 (44.4)	40 (55.6)	
	<3 (n=64)	31 (48.4)	33 (51.6)	
Child's dental deformity	3-6 (n=39)	19 (48.7)	20 (51.3)	0.017
	>6 (n=12)	4 (33.3)	8 (66.7)	
	Yes (n=37)	13 (35.1)	24 (64.9)	
	No (n=128)	57 (44.5)	71 (55.5)	
	Unknown (n=22)	16 (72.7)	6 (27.3)	

As shown in figure 1, 49.2% of mothers reported a combination source of information regarding oral health and hygiene whereas social media and dentist were reported alone by 24.6% and 23.5% of them, respectively. Overall, good knowledge and practice regarding oral health was reported by 54% and 17.6% of mothers, respectively. (Figure 2)

Dental cares was reported among 115 children (61.5%) whereas dental deformity was reported among 19.8% of them. Table 2 summarizes the factors associated with maternal knowledge regarding oral health and hygiene. Working mothers were more knowledgeable than not working mothers (24.4% versus 11.9%), $p=0.025$. Mothers who rated their knowledge level about oral health as good were more knowledgeable than those rated it as poor (25.3% versus 6.3%), $p=0.033$. Others studied factors were not significantly associated with maternal oral health knowledge.

Regarding practice-related to child's oral health, good practice was reported at higher rate among mothers whose source of information was multiple source (59.8%) or dentists alone (59.1%) than those whose source of information was TV/newspapers (zero%), $p=0.022$. Mothers who rated their knowledge level about oral health as good had good child oral health's practice than those rated it as poor (64.4% 12.5%), $p=0.001$. Mothers whose children had dental deformity had better practice regarding oral health than those who were unaware about this, $p=0.017$. Others studied factors were not significantly associated with maternal oral health practice. (Table 3)

DISCUSSION

Dental caries prevalence amongst children in the present study is very high (61.5%). This is much higher than that reported in another study conducted among Brazilian children (16.7%),⁹ and Chinese children (19.5%).¹⁰ In the current study, data regarding the existence of tooth decay were obtained through questionnaires given to mothers, without confirmation by intraoral clinical examination during data collection. Thus, it is most likely that the gathered information might be mostly not accurate, either over or under-estimated.

In the current study, working mothers were more knowledgeable regarding child's oral health. This finding agreed with other similar studies.¹¹⁻¹³

On the other hand, in the present study, mothers' education was not significantly associated with both of knowledge and practice-related oral health and hygiene. This finding is not in agreement with other many studies,¹¹⁻¹⁷ which reported better knowledge and practice in relation to higher educational level of care givers. Further study is recommended in this regard.

In disagreement with others who reported that changing health-related behaviors takes more than just improving knowledge,^{13,18,19} the present study reported a significant association between good knowledge and practices-related oral hygiene. Further investigation of this finding is recommended to clarify the role of maternal working status and educational level in their knowledge and practice towards oral hygiene and health.

The results of this study revealed low rate of good practice related to oral health and hygiene. The good practice was significantly higher among who got their information from dentists than others. Some limitations of the present study should be mentioned. Its conduction in one facility at one city in the Kingdom of Saudi Arabia could affect the generalizability of results. The cross-

sectional nature of the study confirms only association and not causality between knowledge and practice regarding child's oral health from one side and factors associated with them from the other side. Finally the self-rating answers of questions related to decay are not confirmed by dental examination which could affect the accuracy of results.

Conclusively, there is an apparent gap between mother's knowledge regarding child's oral health and hygiene and their practice in this regards. Some factors were identified affecting both child's oral health knowledge and practice. Dentists and social media should play an essential role in improving maternal knowledge regarding child's oral health as well as encourage them to transfer knowledge into actual practice.

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