

Children's Oral Health Care Practices and their Dental Problems in Saudi Arabia 2024

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Abstract:

Background: Being free from oral and mouth infections, periodontal disease, tooth decay, tooth loss, and other conditions that impact millions of children makes oral health essential for overall health and a basic nursing duty. **Aim:** This study aimed to assess children's oral health care practices and their dental problems. **Subjects and Methods:** A descriptive design was conducted at outpatient dental clinics at Saudi University Hospitals. **Tools of data collection** involved I- a structured questionnaire to assess school age children knowledge as regards oral health care and dental problems. II- Dental Assessment Sheet to assess children's dental problems. III - Tooth brushing and flossing checklist (reported practice) to assess children's oral health care practices. **Results:** The study findings revealed that the majority (95%) of the studied children had decayed teeth. There was a highly statistically significant difference between studied children's decayed teeth and their total oral health care reported practices. **Conclusion:** The study concluded that the children's oral health care practices are tooth brushing and flossing technique and the children's dental problems are dental caries, dental injury and gingivitis and also concluded that there was appositive relation between children's oral health care practices and their dental problems. **Recommendations:** Educating the children proper tooth brushing with fluoride toothpaste, flossing technique through mass media and limiting sugar-containing takeaway food and beverage consumption, to provide adequate nutrition for children.

Key words: Dental problems, Knowledge, Nurse, Oral health, Practice, children

Introduction:

At every stage of life, oral health is critical to overall health and wellbeing. In addition to facilitating physical nutrition, a healthy mouth also fosters social connection, self-worth, and a sense of wellbeing. As a "window" to the rest of the body, the mouth can convey indicators of general health issues (Kabir, 2013).

"A state of being free from oral problems and facial pain, oral infection and sores, periodontal disease, tooth decay, tooth loss, and other diseases and problems that limit children's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing," is how the World Health Organization (WHO) defines oral health (WHO, 2018).

Maintaining good oral hygiene is essential for children's health and a basic nursing duty. Maintaining a clean mouth and teeth is known as oral hygiene. The goal of practicing good oral hygiene is to stop plaque—a sticky coating of food and bacteria—from accumulating on teeth in

order to avoid dental issues, including gingivitis and dental caries (**FDI World Dental Federation, 2015**).

By encouraging parents and their children to adopt healthy oral hygiene practices, dentists play a crucial role in establishing early dental preventative care and teaching kids about dental cleanliness. Teaching parents how to take good care of their teeth both at home and in the office, along with leading a healthy lifestyle and avoiding risk factors like smoking and excessive sugar intake, can significantly minimize dental and oral disease. At least twice a day, brush your teeth with fluoride toothpaste, and at least once a day, floss (**Frank, 2018**).

Oral diseases directly affect a limited area of the human body, but their consequences and impacts affect the body as a whole. Poor oral health impacts individuals in various ways: many conditions cause pain, affect quality of life, reduce school and work productivity and the required care results in a significant financial burden to healthcare systems and those concerned WHO estimates that oral diseases are the fourth most expensive diseases to treat (**Sheiham, 2015**).

According to the World Health Organization, children are highly susceptible to dental cavities and tooth decay. Worldwide 60 and 90 % of school children have at least one dental cavity. World Dental Federation has proposed that until 2020, the effect of oral and craniofacial illnesses on an individual's health and psychosocial development should decrease (FDI, 2016).

In addition, the secular trends have shown an increase in dental caries during the past few decades in Saudi Arabia. Apart from negatively affecting children's quality of life, dental caries may also have a detrimental impact on family functioning by interfering with parent's and caregivers' everyday lives (Al-Shamrani., 2021).

Aim of the study

Assess children's oral health care practices and their dental problems.

Research questions

- What are the children's oral health care practices?
- What are the children's dental problems?
- Is there a relation between children's oral health care practices and their dental problems?

Subjects and methods

1- Research design:

A descriptive research design was utilized in the current study.

2- Research setting:

This study was conducted at an out- patient dental clinics at Saudi University Hospitals.

3- Research subjects:

A convenient sample that included all available (80) school age children (6-12 years) in the previous mentioned settings over a three months' period, from January 2024 to March 2024.

Tools of data collection:

Data were collected through the using of the following tools:

1- A structured Questionnaire Format:

This tool was designed by the researcher in a simple Arabic language after reviewing the related scientific literature in the form of closed ended questions to assess school age children's knowledge regarding oral health and dental problems.

2- Dental Assessment Sheet: It was adapted from the Egyptian Ministry of Health (2015) to assess children's dental problems.

3- Tooth brushing and flossing checklists (reported practice): It was adapted after reviewing the related procedures from (Lewis, 2014). This tool was used to assess children's oral health care practices.

Pilot study:

The pilot study was conducted involving 10% (8 children) of the expected sample size. About two weeks period was required to fulfill the tools of data collection to evaluate the applicability of the study tool and validity of the data collection; the necessary modifications were done as revealed from the pilot study. The children of pilot study was not included in the study sample

Field of work:

The actual field work was carried out over three months period from the first week of January, 2024 up to the end of March, 2024 .

Ethical consideration:

Approval to carry out the study was obtained. An oral consent was also obtained from children's mothers to participate in study. Each study subject was informed that the collected data would be used for the research purpose only, the study was harmless and confidentiality was secured, their participation was voluntary and they had the right to withdraw from the study at any time.

Statistical analysis:

Data were statistically designed and analysis in appropriate statistical tests were used (No and percentage, $\pm$ SD, X^2 and t-test) using the Statistical Package for Social Sciences (SPSS) version 25. The study results were presented in tables and figures with appropriate comment to explain its contents. Statistical significant was considered at p-value < 0.05

Results

As regards characteristics of the studied children, table (1) showed that, 41.2 of them

were in the age group of $8 < 10$, with $\bar{X} \pm SD$ 8.9 ± 1.8 years, 23.7 of them were in grade six and 52.5% of them were males. 53.8% had the family size 5:7 members, and 42.5% of them were ranked as the middle child in the family and 70% of them were living in rural residence.

Characteristics	No	%
Age in years		
▪ 6:<8	24	30.0
▪ 8:<10	33	41.2
▪ 10:<12	23	28.8
	8.9±1.8	
$\bar{X} \pm SD$		
Educational level /Grade		
▪ First	6	7.5
▪ Second	15	18.8
▪ Third	11	13.8
▪ Fourth	17	21.2
▪ Fifth	12	15.0
▪ Sixth	19	23.7
Gender		
▪ Male	42	52.5
▪ Female	38	47.5
Family size		
▪ Less than 5	30	37.5
▪ (5:7)	43	53.8
▪ (7:9)	7	8.8
Child's rank		
▪ First	26	32.5
▪ Middle	34	42.5
▪ Last child	19	23.8
▪ The only child	1.0	1.30

As regards oral assessment of the studied children, table (2) demonstrated that, 95% of the studied children had decayed teeth. In relation to gum disease 80% of them had healthy gum

Oral assessment	No	%
Dental problems		
▪ Decayed	76	95.0
▪ Extracted	50	62.5
▪ Injured	11	13.8
▪ Erosion	3.0	3.80
▪ Filling teeth	30	37.5
Gum disease		
▪ Gingivitis	10	12.5
▪ Periodontitis	6.0	7.50
▪ Healthy gum	64	80.0

As regards total oral health knowledge of the studied children table (3) illustrated that 83.8% of children had un satisfactory oral health knowledge.

Total knowledge	N	%
Satisfactory	13	16.2
Unsatisfactory	67	83.8
Total	80	100.0

Table (4) showed that 91.2% of the children reported un satisfactory done oral reported health care practices.

Total practice	N	%
Satisfactory done	7.0	8.8
Unsatisfactory done	73	91.2
Total	80	100.0

Table (5) showed that, there was highly statistically significant difference between total oral health knowledge and total oral reported health care practices ($X^2=39.54$ and $P< 0.001$).

Total reported practices		Total knowledge					
		Satisfactory		Unsatisfactory		Total	
		N	%	N	%	N	%
Satisfactory done		7	53.8	0	0.0	7	8.8
Unsatisfactory done		6	46.2	67	100.0	73	91.3
Total		13	100.0	67	100.0	80	100.0
Chi-square	X^2				39.53		
	P-value				6		
					<0.001		
					**		

Table (6) showed that, there was highly statistically significant difference between studied children decayed teeth and their total oral health care reported practices ($X^2=43.91$ and $P< 0.001$).

	Total practice							
Dental assessment	Done		Not done		Total			
	Chi-square							
Decayed	N	%	N	%	N	%	X ²	P-value
Healthy	4	100.0	0	0.0	4	100.0	43.910	<0.001**
Unhealthy	3	3.9	73	96.1	76	100.0		
Extracted								
Healthy	5	17.2	24	82.8	29	100.0	4.108	0.043*

Unhealthy	2	3.9	49	96.1	51	100.0		
Injured								
Healthy	6	8.7	63	91.3	69	100.0	0.002	0.966
Unhealthy	1	9.1	10	90.9	11	100.0		
Erosion								
Healthy	6	7.8	71	92.2	77	100.0	2.359	0.125
Unhealthy	1	33.3	2	66.7	3	100.0		
Gingivitis								
Healthy	6	9.5	57	90.5	63	100.0	0.222	0.637
Unhealthy	1	5.9	16	94.1	17	100.0		

Discussion:

As regards the age of children, the result of the current study (table, 1) revealed that, less than half of the children were in the age group of 8:<10/years ($\bar{X} \pm SD$ 8.9+1.8 years). This result was consistent with the study by **Dotado- Maderazo and Reyes, (2014)** who found that the prevalence of caries was higher at 5-6 years in age group when compared to 8-10 years. This could be due to increase in age, there is an increased awareness of oral hygiene and permanent teeth more resistance to caries process than the primary teeth.

Regarding to children's residence (table, 1) the study found that, more than two thirds were living in rural residence. This finding was in agreement with a study conducted by **Pathania et al., (2015)** who reported that there was significance difference between the children from urban and rural areas in oral health. This may be due to children in rural areas have more untreated dental problems reflecting difficulty accessing dental care in these areas.

As regards oral assessment findings of the children, the current study revealed that, the majority of children had decayed teeth (table, 2). This finding was supported by **Mittal et al., (2014)** who found that dental caries was a common dental health problem among 5-12 years old students. This may be due to the fact that caries is a cumulative process and children were observed to have preference to caries prone foods available near the school premises.

Concerning children's gum assessment, the majority of children had healthy gum (table, 2). This finding was going with a study by **George and Mulamoottil, (2015)** who reported that majority of the 12 years students had a healthy periodontium. In the other side, the result of the current study was in-accordance with a study by **Pourhashemi et al., (2007)** who found that the prevalence and intensity of gingivitis in 6-10 years old elementary school children was (95.7%). These might be due to their different socioeconomic status and lifestyle.

In relation to total knowledge of children, the majority of children had un satisfactory oral health knowledge (table, 3). This finding was in the same line with a study by **Scaglia and Niknamdeh, (2017)** and **Al-Darwish, (2016)** who reported that oral hygiene of the majority of the children was unsatisfactory. From the researcher point of view, this could be due to that oral health is still not a major concern, especially the uneducated middle and low income families. As there is no awareness program involved in maintaining oral health.

Regarding the relation between total oral health knowledge and total oral reported health care practice, it was found that, there was highly statistically significant difference between total oral health knowledge and total oral reported health practice (Table, 5). This finding was in the same line with a study by **Scaglia and Niknamdeh, (2017)**, **Hazazi, et al, (2017)** and **Josca, (2014)** who found that Oral health knowledge was significantly associated with oral health practices. Children's with higher knowledge showed better practices.

The study declared that, there was highly statistically significant difference between decayed teeth and total oral reported health practice (Table, 6). This finding was in accordance with a study by **Gharlipour, et al (2016)** who found that the decayed teeth was highly significant associated with oral health practices.

From the researcher point of view, this could be due to the fact that dental caries occurs when foods containing carbohydrates become trapped between teeth and are not completely removed with brushing and flossing so, poor oral health can have negative consequences on teeth.

Conclusion:

The study concluded that the children's oral health care practices are tooth brushing and flossing technique and the children's dental problems are dental caries, dental injury and gingivitis and also concluded that there was appositve relation between children's oral health care practices and their dental problems.

Recommendations:

In the light of the study findings, the following recommendations were suggested:

- Educating the children proper tooth brushing with fluoride toothpaste, flossing technique through mass media.
- Regular oral health education for mothers, which addresses issues on oral hygiene, healthy diet and regular dental visits.

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