

Assessment of Children's Oral Health Care Practices and their Dental Problems

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Abstract

Background: Oral health is crucial for general health, and a fundamental nursing responsibility as it is a state of being free from mouth and oral infection, periodontal disease, tooth decay, tooth loss, and other diseases that affect millions of children. **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 both Ain Shams and Tanta 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 apposite 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, School children

Introduction

Oral health is essential to general health and well-being at every stage of life. A healthy mouth enables not only nutrition of the physical body, but also enhances social interaction and promotes self-esteem and feelings of well-being. The mouth serves as a “window” to the rest of the body, providing signals of general health disorders (Kabir, 2013).

The World Health Organization (WHO) defines oral health as ‘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’ (WHO, 2018).

Oral hygiene is crucial for children's health, and a fundamental nursing responsibility. Oral hygiene is the practice of keeping the mouth and teeth clean. The purpose of maintaining oral hygiene is to prevent the build-up of plaque, the sticky film of bacteria and food that forms on the teeth to prevent dental problems, especially dental caries and gingivitis (FDI World Dental Federation, 2015).

Nurses play an essential role in educating children and parents about practicing dental hygiene, and instituting early dental preventive care by encouraging parents and their children to practice good oral health habits. Dental and oral disease can be greatly reduced by instructing parents for proper self- and professional oral care, combined with a healthy lifestyle and avoiding risks, such as high sugar consumption and smoking. Brush teeth with fluoride toothpaste at least twice a day and floss the teeth at least once a day (Frank, 2018).

Significance of the Study

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).

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

The subjects and methods for this study were categorized under four main designs as the following:

- I. Technical design.
- II. Operational design.
- III. Administrative design.
- IV. Statistical design.

I-Technical design:

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 both Ain Shams and Tanta 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, four days per week.

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.

II. Operational design:

1- 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

2- Field of work:

The actual field work was carried out over three months period from the first week of January, 2018 up to the end of March, 2018. The researcher was available in the study settings, four days per week (from Saturday to Tuesday, during morning shift (8 am-2 pm) by rotation at this setting (2 days for Ain Shams

University Hospitals and 2 days for Tanta University Hospitals). After explaining the study aim and the expected outcomes of the study to the study sample. The tools were filled in by the researcher during the interval waiting time to be checked by dentist.

Ethical consideration:

Approval to carry out the study was obtained from the Ethical Research Committee at the Faculty of Nursing / Ain Shams University. 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

Results

Part (1): Characteristics of the studied sample.

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.

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

As regards total oral health knowledge of the studied children table (3) illustrated that

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

83.8% of children had un satisfactory oral health knowledge.

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

Part (III):. Relation between variables of the study

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 $P < 0.001$).

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 $P < 0.001$).

Table (1): Percentage distribution of the studied children according to their characteristics (n=80).

Characteristics	No	%
Age in years		
▪ 6:<8	24	30.0
▪ 8:<10	33	41.2
▪ 10:<12	23	28.8
$\bar{X} \pm SD$	8.9+1.8	
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
Residence		
▪ Rural	56	70
▪ urban	24	30

Part (II): Children's dental assessment and problems.

Table(2): Percentage distribution of the studied children according to oral assessment findings (n=80).

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

**Total number is not mutually exclusive

Table (3):Percentage distribution of total oral health knowledge of the studied children (n=80).

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

Table (4): Percentage distribution of total oral reported health care practices of the studied children (n=80).

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

Table (5): The relation between total oral health knowledge and total oral reported health care practices (n=80).

Total reported practices	Satisfactory		Total knowledge 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			39.536		
	P-value			<0.001**		

Non significant >0.05 Significant <0.05* High significant <0.001**

Table (6): The relation between total oral reported health care practices and total dental assessment of the studied children (n=80).

Dental assessment	Total practice						Chi-square	
	Done		Not done		Total		X ²	P-value
	N	%	N	%	N	%		
Decayed								
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)** entitled "Knowledge, Attitude and Practices on Oral Health of Public School Children of Batangas City" 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)** entitled "Oral Health Related Knowledge Attitude and Practices amongst School Children in Himachal Pradesh, India" 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)** entitled "Oral Health Status of 5 - 12 Years Old School Going Children in Rural Gurgaon, India: An Epidemiological Study" 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)** entitled "Oral Health Status of 5, 12, and 15 Years Old School

Children in Tiruvalla, Kerala, India" 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)** entitled "Prevalence and Intensity of Gingivitis among 6-10 Years Old Elementary School Children in Tehoran, Iran" 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)** entitled "Factors Affecting Oral-Dental Health in Children in the Viewpoints of Mothers Referred to the Health Centers in Qom City: Using the Health Belief Model" 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 appositive 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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