



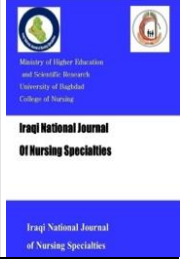
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Parents Knowledge of Oral Health of Children with Cancer

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ABSTRACT

Objective(s): To assess parents' knowledge about oral health for their children with cancer.

Methods: A descriptive study design conducted among 110 parents of children diagnosed with cancer. The study started from 1st July 2022 to 31 March 2023 at Baquba Oncology Center in Diyala, Iraq. Data was collected using Oral Health Scale (A-OHAT), and participants sociodemographic data. The self-report strategy was adopted to collect data from the participants. Data were analyzed through the use of the SPSS version (26).

Results: Parents have a high level of knowledge regarding the oral health for their children with mean score 2.58. However, they showed a moderate level in teeth eruption and dental distortion knowledge with mean score (2.11, 1.93) respectively. In spite of high percentage of parents have inadequate educational level.

Conclusion: Parents have adequate levels of knowledge regarding oral health care for their children with cancer.

Recommendations: A follow up and routine oral exam for cancer child, planning educational oral health programs to develop parents awareness on subjects related to oral health. Exam oral habits and behaviors practices of pediatric oral care.

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معارف الوالدين بصحة الفم للأطفال المصابين بالسرطان

المستخلص

الأهداف: تقييم معارف الوالدين حول صحة الفم للأطفال المصابين بالسرطان. **المنهجية:** دراسة وصفية ، بمشاركة 110 من الوالدين المشخصين ابنائهم بمرض السرطان. بدأت الدراسة من اول كانون الثاني 2022 الى 31 أيار 2023، في مركز اورام بعقوبة في ديالى ، العراق. جمعت بيانات الدراسة باستخدام مقياس صحة الفم (A-) OHAT من قبل الوالدين بالإضافة الى معلوماتهم الديموغرافية. تم اعتماد استراتيجية الاجابة الذاتية لجمع البيانات من المشاركين، وتم تحليل بيانات الدراسة الحالية من خلال استخدام برنامج (SPSS). **النتائج:** أظهرت النتائج أن ، الوالدين لديهم مستوى عالٍ من المعارف فيما يتعلق بصحة الفم لأطفالهم ، و كان متوسط الاجابة (2.58). على الرغم انهم اظهروا مستوى معارف متوسط فيما يخص ظهور الاسنان و تشوهات الاسنان بمتوسط (2.11 ، 1.93) تبعاً. بالرغم من ان النسب العالية للوالدين اظهرت ان لديهم مستوى تعليمي غير كافي. **الاستنتاجات :** وخلصت الدراسة إلى أن الوالدين لديهم مستوى كافٍ من المعارف فيما يتعلق برعاية صحة الفم لأطفالهم المصابين بالسرطان. **التوصيات:** متابعة و فحص دوري للأطفال المصابين بالسرطان ، تخطيط برامج تعليمية حول صحة الفم لرفع وعي الوالدين حول المواضيع المرتبطة بصحة فم اطفالهم. اختبار سلوكيات و عادات الاطفال حول ممارسات صحة الفم. **الكلمات المفتاحية:** الوالدين، معارف ، صحة الفم ، الاطفال ، السرطان.

Introduction

Oral health in children with cancer is a critical concern due to chemotherapy regime and radiation therapy, which can cause severe oral complications. The majority of these children undergo parenteral nutrition and lack of oral intake, that increase the contribution of poor oral health ⁽¹⁾. It is essential that the parents and the caregivers of children with cancer understand the importance of oral health and its impact on overall well-being ⁽²⁾.

The evidence showed that, approximately 40% of children receiving cancer treatment develop oral mucositis, which is a painful inflammatory condition of the oral mucosa ⁽³⁾. Moreover, untreated oral complications can lead to malnutrition, increased hospitalization, and longer recovery times ⁽⁴⁾. Therefore, it is crucial to determine parents awareness for potential risks of oral complications and the necessary steps to prevent and manage oral health problems, particularly for children undergoing cancer treatment ⁽⁵⁾.

Parents of children with cancer need to understand that maintaining good oral health is an integral part of cancer treatment. This

includes regular oral care, such as brushing and flossing, as well as monitoring for any signs of oral complications. Furthermore, it is essential to seek dental care before beginning cancer treatment to identify and address any pre-existing oral health issues ^(6, 7).

Parenteral role of follow up oral health of their children with cancer is vital for preventing long-term dental issues. The findings showed that, early dental intervention can improve oral health outcomes and prevent long-term complications ⁽⁸⁾. For instance, fluoride varnish applied to the teeth before chemotherapy can help protection against tooth decay. In addition, regular dental check-ups during and after cancer treatment can prevent oral complications and promote overall oral health ⁽⁹⁾. The daily basic oral care especially during treatment can reducing the long-term complication. Child compliance is the key for maintaining their oral health, during chemotherapy and radiation therapy parents may not take in their account the significance of keeping routine care of oral cavity ⁽¹⁰⁾. For that, it is crucial to increase the health literacy of the parents and the

caregivers about nutritional components role in the maintaining oral health in children with cancer ⁽¹¹⁾. A well-balanced diet that includes plenty of fruits and vegetables can promoting healthy teeth and gums. Moreover, avoiding foods that are high in sugar and carbohydrates, as these can increase the risk of tooth decay ^(12, 13).

Methods

Study Design and Setting

A descriptive study design is used to assess parents knowledge of oral health. The study was conducted in the departments of the Oncology Center in Baqubah District, Diyala Governorate, which consists of a pediatric consultant who receives all new undiagnosed cases with cancer, and the cases that it received chemotherapy. The center provides services of administrative chemotherapy, that lasts from minutes to several days, sometimes weeks. In addition to a room for diagnostic bone marrow aspiration and spinal fluid withdrawal for diagnostic purposes and glaucoma chemotherapy in the spinal fluid, file room, clinical examination, room for withdrawing analyzes for the patient and providing other nursing services.

Sample and Sampling

The sample of the study was selected from the chemotherapy units for receives the therapy according to the treatment protocol. Non probability sample of (110) patients were selected from the Baquba oncology Center. Including mothers and fathers of children only, with different level of education and having one child at least diagnosed previously with cancer. Parent of Children with Cancer who refer to the consulting clinic of the Oncology Center, who perform examinations and analyzes, and receive intravenous and home chemotherapy. The sample size calculated according to Richard Geiger equivalent population proportion = 50%, error probability = 5%, confidence = 95%, and the

standard score corresponding to the level of confidence = 1.96 ⁽¹⁴⁾.

Data Collection and the Study Instruments

A self-report strategy was adopted to collect data from the participants by interview technique. The researcher obtained approval from all parents and the names of the parent were not collected. Also, the researcher explains the research and its goals for them. Therefore fully informed about their mission was obtained. The researcher told all participants that the results of the questionnaire would be utilized specifically for research purposes. Also told those that all participants are autonomous individuals have the right to refuse involvement.

A questionnaire format was used to collected the data from the participants, the Oral Health Scale (A-OHAT) by Chalmers (2004) and his colleagues ⁽¹⁵⁾. This scale can be used by nonprofessional individuals, it cover parents` oral health assessment, if need for referral, and the contribution factors of oral health cavity. It consists of eight items. The responses of parents were categorized according to Likert scale; 1=don't know, 2=not sure, and 3=know. The total knowledge scores were calculated Low knowledge (1-1.66), Moderate knowledge (1.67-2.33), and High knowledge (2.34-3). The items of the scale were translated into Arabic language to be understandable by the participants. The back-forward translation was used, and the original form was compared with the translations. In addition, parents` age and educational level was collected.

Validity and Reliability of the Study Instrument

The questionnaire instrument was validated by (17) specialists of expert panel, the professionals had more than five years of experience. The experts were made revisions and modifications to the final translation to be suitable for the participants. The reliability was achieved by test-retest method in the pilot study is a smaller version of a proposed study,

which carried out on ten randomly selected parents out of the original sample to determine the time required for the sample, obstacles, and to realize reliability. The computation of the alpha correlation coefficient showed, the questionnaire format is sufficiently dependable by ($r=0.740$).

Ethical Considerations

All the participants were reported to their right in the participation, and the written consent form was obtained. In addition, the Scientific Research Ethics Committee of the

College of Nursing also approved the study project. The agreement from Iraqi Ministry of Health and the administration of Baquba Oncology Center was approved.

Data Analysis

The data of the present study were analyzed through the use of SPSS version 26. The variables were analyzed by using frequency and percentage, mean, rating and scoring.

Results

Table 1. Distribution of Parents` Socio-demographic Characteristics

Age (Years)	Mother		Father	
	F	%	F	%
20 – less than 30	28	25.5	13	11.8
30 – less than 40	45	40.9	46	41.8
40 – less than 50	35	31.8	33	30
50 – less than 60	1	0.9	15	13.7
60 and more	1	0.9	3	2.7
Mean ± SD	35.7 ± 8		39.8 ± 9	
Level of education	f	%	f	%
Doesn't read & write	10	9.1	6	5.5
Read & write	33	30	22	30
Primary school	43	39.1	40	36.4
Secondary school	14	12.7	33	30
Diploma	2	1.8	4	3.6
Bachelor	7	6.4	5	4.5
Postgraduate	1	0.9	0	0
Total	110	100	110	100

F= Frequency, %= Percentage, SD= Standard deviation

This table shows that, mothers are with mean age of (35.7 ± 8) years, while fathers` mean of age is (39.8 ± 9) years. High percentage of both parents are at age group 30-less than 40 years (40.9%, 41.8%) respectively. Regarding to the parents` levels of education, highest percentages of them are graduated from primary school (39.1%, 36.4%) respectively.

Table 2. Assessment of Parents' knowledge of Oral Health of Children with Cancer

List	Oral health problems	Responses	F (%)	Mean	Eval.
1	Tooth decay is one of the problems that can happen to a child with cancer and can cause pain	Don't know	4(3.6)	2.67	H
		Not sure	28(25.5)		
		Know	78(70.9)		
2	Late eruption of teeth can occur due to a child's lack of food	Don't know	26(23.6)	2.11	M
		Not sure	46(41.8)		
		Know	38(34.5)		
3	Lack of saliva is among the problems that can happen to a child and affect oral hydration and health	Don't know	6(5.5)	2.53	H
		Not sure	40(36.4)		
		Know	64(58.2)		

4	Inflammation of the gums and ulcers of the mouth and lips can occur to the child during the treatment period	Don't know	1(.9)	2.84	H
		Not sure	16(14.5)		
		Know	93(84.5)		
5	Dental distortion is one of the problems that occur to a child with cancer	Don't know	39(35.5)	1.93	M
		Not sure	40(36.4)		
		Know	31(28.2)		
6	Have enough fluids to keep the mouth moist and avoid dehydration.	Don't know	0(0)	2.96	H
		Not sure	4(3.6)		
		Know	106(96.4)		
7	The appearance of white spots in the mouth is a sign of stomatitis	Don't know	0(0)	2.95	H
		Not sure	6(5.5)		
		Know	104(94.5)		
8	Gingivitis and deformation of the roots can occur to the child during the treatment period	Don't know	8(7.3)	2.69	H
		Not sure	18(16.4)		
		Know	84(76.4)		
Total knowledge				2.58	H

Eval: Evaluation, **Low (L)**= 1 – 1.66, **Moderate (M)**= 1.67 – 2.33, **High (H)**= 2.34– 3

Table (2) presents the items of parents' knowledge regarding oral health for their children; the findings indicate parents' responses were range from moderate to high scores. The knowledge of parents is scored at high level at all items except items (2 and 5) that show moderate score. While the total knowledge is high.

Discussion

The findings showed, the highest percentage of mothers and fathers are with the age group 30-less than 40 years, with mean age and SD (35.7 ± 8 & 39.8 ± 9) years, table (1). This result supported by Iraqi study, which demonstrated most parents recorded at less than 40 years of age ⁽¹⁶⁾.

In many cultures, individuals tend to delay marriage and childbirth until later in life due to social, economic, or personal reasons. However, as individuals enter their 30s, they may feel more secure in their careers, finances, and relationships, making them more likely to start a family. Thus, the higher percentage of parents in the "30-less than 40 years" age group may reflect this trend ⁽¹⁷⁾.

The findings reveal that the highest percentages among levels of education for mothers and fathers are refer to "primary school graduation" as reported among 39.1% of mothers and 36.4% of fathers. In some regions, primary school education may be the highest level of education available to individuals, particularly those in rural or low-

income areas. Additionally, families in these regions may prioritize early marriage and childbearing over pursuing higher education, which may further contribute to the high percentage of primary school graduates. well can face the burden of their children's illness ⁽¹⁶⁾. The level of education is an important factor which affecting knowledge of parents. The parents with a higher education is usually more important than others in caring with their children. A systematic review documented parents' education as one factors contributed to increase morbidity and mortality rate among children ⁽¹⁸⁾.

The findings in table (2) suggested that, parents generally have a high level of knowledge regarding oral health in children with cancer, except for two specific items related to late tooth eruption and dental distortion. These two items indicate moderate awareness among parents, which may be attributed to a lack of information or education on these specific issues.

The late eruption of teeth in children can occur due to a variety of factors, including malnutrition, medication, and genetics ⁽¹⁹⁾. In addition to the effect of chemotherapy and radiation therapy ⁽²⁰⁾. However, parents may not be aware of the link between a child's lack of food and late tooth eruption, which could explain the moderate level of awareness on this item. Similarly, dental distortion can occur as a result of cancer treatments, but parents may not be familiar with this specific problem ⁽²¹⁾.

In the same context with this finding, supportive evidence is found in a recent study conducted in which revealed that the parents' perception of their child's dental status was satisfactory among half of the participants, and about two fifth of them stated very good perception ⁽²²⁾.

The moderate level of knowledge according to the researcher's opinion may be due to several factors, including a lack of education and information on oral health care for children with cancer, limited access to oral health care providers, and the complex nature of cancer treatment.

In spite of inadequate educational level of parents, they recorded adequate awareness, this may be attributed to the actual concern of parents for caring their cancer child. the follow up and the educational services at oncology center may rise parent awareness of oral health care, and impact on a child's overall health and well-being. This finding supported by another study found that, more parents who perceived their child's overall oral health status as good as well as those who thought that their child did not have any caries were aware ⁽²³⁾.

While in a study conducted in Almost one-fifth of the Saudi Arabian parents attending university dentistry clinics had not routinely monitored their child's dental health ⁽²⁴⁾.

In contrast with the results of the present study, low parental knowledge

regarding other aspects of children's oral health such as dental caries has been similarly reported. A recent Canadian study found that more than half of the participating parents were not aware of their child's oral health status ⁽²⁵⁾. In another study conducted, she supported what the researcher said ⁽²⁶⁾.

Conclusion

Parents showed adequate levels of knowledge regarding oral health care for their children with cancer.

Recommendations

Follow up and routine oral exam for cancer child, planning educational oral health programs to develop parents awareness on subjects related to oral health. Exam oral habits and behaviors practices of pediatric oral care.

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