

Parents' Perspectives and Awareness Concerning Oral Health Care of Pediatric Patients Receiving Chemotherapy

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Abstract

Objective: Assess and determine the relationship between the parent's awareness and perspectives on the oral health of their children receiving chemotherapy and demographics data.

Methods: A descriptive (cross-section) design study conducted in Holly Karbala Teaching Hospitals (Al-Turkish and AL-Wareth Oncology) from 24th of November 2023 to 30th June 2024.

Results: This study showed that 57% of participating parents had a low level of awareness regarding oral care, 49% regarding gum and tooth care, and 46% regarding nutrition. The study also found that 49% of parents had a low level of awareness overall regarding pediatric patients receiving chemotherapy need oral health care and the Correlation show that it was significant correlation among parents' awareness ($r= 0.9, p = 0.000$).

Conclusion: There is a low level of awareness of parents of children undergoing chemotherapy regarding their oral health.

Keywords: Cancer; Oral Hygiene; Oral Health Literacy; Pediatrics.

Citation: Fandy AN, et al. (2025) Parents' perspectives and Awareness Concerning Oral Health Care of pediatric Patients Receiving Chemotherapy. Dentistry 3000. 1:a001 doi:10.5195/d3000.2025.830

Received: January 18, 2025

Accepted: March 25, 2025

Published: April 23, 2025

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Introduction

According to the World Health Organization (WHO), around 4% of children will get cancer [1]. Chemotherapy, surgery, and radiation treatment are the main therapeutic modalities used to treat cancer in children [2]. Oral mucositis, xerostomia, neuropathy, oral infection, tooth decay, oral bleeding, lip care are side effects of the mouth and teeth during cancer treatment [3]. Improvement in childhood cancer services was achieved over the past two decades through better availability of WHO essential chemotherapy drugs, introduction of advanced diagnostic/screening

tools and bone marrow transplant services, provision of satellite telemedicine e-learning training program [4]. The burden of cancer will increase substantially to a prediction of 961,000 new annual cancer cases by 2030 [5]. Mothers play a crucial role in the management of the children's needs during the treatment period [6]. Cultural and regional distinctions in childhood cancer experiences are critical, including communication of diagnosis, hierarchies of family decision-making [7]. Children with cancer sometimes require extensive hospital stays, the long-term adverse effects of at-home

therapy, and these factors make ongoing intervention necessary. Enabling parents to take care of their children is one of the primary objectives of pediatric oncology nursing [8]. WHO recommended that pediatric palliative care (PPC) should start as soon as a child is diagnosed with a severe or life-threatening illness and continue whether the child receives treatment intended to improve their comfort level [9]. Family education is an essential and critical part of pediatric oncology nursing care, experts have been created to guide the education of relatives of newly diagnosed patients. Patient and family

education in pediatric oncology should begin as soon as a child receives a cancer diagnosis [10]. Understanding the parents' views on the importance of oral care is necessary to propose solutions and develop programs to ensure the best level of care for cancer children and protect them from such disorders.

Material and Methods

Design of Study

A descriptive (cross-sectional) study.

Ethical Considerations and Administrative Arrangement

The investigator obtained an approval from the University of Babylon's College of Nursing and its Ethical Committee. Official permissions were secured from the Ministry of Health's Holly Karbala Health Office and Development and Training Center. Agreements were obtained from three medical facilities in the region, including Imam Hussein Medical City, Imam Hassan Al Mujtaba Hospital, and others, to facilitate data collection.

Study Setting

The study was carried out at the Imam Hassan Al-Mujtaba Hospital (Al-Turkish) / AL-Wareth Oncology Hospital.

Study Sample

A sample of 100 parents who were present to the treatment of their injured children was selected for the purpose of assessing their awareness and views regarding oral care for their children.

Study Instrument

The measurement instrument was organized into four parts:

Part I: Social, demographic, and personal characteristics of the parents. This part includes sociodemographic data such as age, gender, marital status, number of family members, residence, educational level, and economic status.

Part II: Demographics of the child receiving chemotherapy.

Part III: Clinical data of the child.

Part IV: Contains domains for assessment of awareness and perspectives of parents regarding oral health status (oral care, gum and dental statuses, diet) of their children under chemotherapy. The parents' awareness levels were classified based on the mean score of their answers to the items of the awareness form, where their answers were given a score of 2 (not sure), 3 (I don't know), and 1 (I know). Parents' perspectives concerning oral health care of

pediatric patients receiving chemotherapy were measured using a Likert scale with three points: disagree = 1, unclear = 2, and agree = 3.

Rating and Scoring for Parents' Awareness

The section regarding a scale for Parents' awareness concerning oral health care of pediatric patients receiving chemotherapy contains 26 items each item is measured on a 3-point Likert scale as (Not sure = 2, I don't know = 3, and I know = 3). Cutoff points used are L (Low level of awareness mean = 2.34-3), M (Median level of awareness mean = 1.67-2.33) and H (High level of awareness mean = 1-1.66).

Rating and Scoring for Parents' Awareness

The section regarding a scale for Parents' awareness concerning oral health care of pediatric patients receiving chemotherapy contains 26 items each item is measured on a 3-point Likert scale as (Not sure = 2, I don't know = 3, and I know = 3). And cutoff point L: Low level of awareness mean =2.34 -3, M: Median level of awareness mean= 1.67- 2.33, H: High level of awareness mean = 1- 1.66.

Rating and Scoring for Negative elements:

This section regarding a scale for Parents' perspectives concerning oral health care of pediatric patients receiving chemotherapy contains 21 items. Each item is scored using a Likert scale with three points: disagree = 1, unclear = 2, and agree = 3.

Pilot Study

A pilot study was conducted from May 9th -15th, 2024. It took subjects 10 to 15 minutes to complete each self-report. Ten parents participated in the pilot study. The purpose was to ascertain the validity and reliability of the questionnaire.

Validation

Validation was obtained through exposure of the tool to 10 Panel of Experts, from different fields, with no less than 10 years of experience in investigating specificity of research tools. The reliability coefficient was used to calculate the agreement between the items of the questionnaire using the reliability test as a statistical analysis tool. Cronbach's alpha and the result of an internal consistency method. The reliability of awareness and perspectives questionnaire was 0.98 and 0.88 (Cronbach's alpha values). This

indicates that the questionnaire was reliable in measuring this variable. The results of the pilot study revealed that the questionnaire was valid and reliable for studying the phenomenon on the same population at any time in the future.

Data Collection Methodology

A self-administered, Arabic-language questionnaire was used to collect data from parents across two hospitals (May 16th to 30th, 2024). The researcher obtained verbal consent after explaining the study's purpose. Each one independently completed the questionnaire (10-15 minutes), and hospital health directors provided prior authorization.

Statistical analysis

Data analysis used SPSS V. 27. Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (Cronbach's alpha, independent samples t-test, Pearson correlation, one-way ANOVA) were employed

Results

Table 1 shows that ninety percent of kids live with both parents and 45% of the fathers were between 40-49 years old. The study also showed that 50% of the fathers had Intermediate education, while

48% of the mothers had primary education. study showed that 74% of the participants had family members between 6-10 people and did not have any previous infection with any child.

Table 2 shows that 42% of the children were between 6-10 years old, 62% of them were male, and 89% of them were fully certified on their parents. the study showed that 95% of the children participating in this study fed orally.

Table 3 shows that 94% of them were due to receiving regular, periodic doses for several hours without admission. The study also found that 44% of the children participating in this study were suffering from leukemia, with 77% of them being treated with chemotherapy.

Table 4 show that the study indicated that 29.7% of parents knew about 26.8% of pediatric chemotherapy patients received oral health care. Were unsure, and 43.5% of them did not know. This means that nearly half of them do not know, and thus their awareness is low.

Table 5 shows that this study found a statistically significant correlation between parents' perspectives and the number of family members, economic status,

father's and mother's educational levels, etc.

Table 6 shows that this study indicated that a statistically

meaningful correlation exists between parents' perspectives, sex, and child dependence on parents, school-age child, and arrangement of the child in the

family, feeding method, therapeutic modalities and diet.

Table 1. Distribution of the parent's demographic characteristics.

<i>Demographic Characteristics</i>		<i>f</i>	<i>%</i>	<i>Cumulative Percent</i>
Who is with the child	Father	4	4	4
	Mother	6	6	10
	Both	90	90	100
	Total	100	100	
Age father group Mean \pm SD 46.4 \pm 8.3	30-39	18	18	18.0
	40-49	45	45	63.0
	50-60	37	37	100.0
	Total	100	100	
Age mother group Mean \pm SD 41.1 \pm 7.7	30-39	39	39.0	39.0
	40-49	44	44.0	83.0
	50-60	17	17.0	100.0
	Total	100	100.0	
Educational level of father	Uneducated	2	2.0	2.0
	Primary education	30	30.0	32.0
	secondary education	50	50.0	82.0
	Diploma and above	18	18.0	100.0
	Total	100	100.0	
Educational level of mother	Uneducated	10	10.0	10.0
	Primary education	48	48.0	58.0
	secondary education	33	33.0	91.0
	Diploma and above	9	9.0	100.0

	Total	100	100.0	
Economic status	Enough	30	30.0	30.0
	somewhat adequate	38	38.0	68.0
	not enough	32	32.0	100.0
	Total	100	100.0	
Family status of parents	Separated couple	9	9.0	9
	Together	90	90.0	99
	death of one of them	1	1.0	100
	Total	100	100.0	
Number of family members	3-5	16	16.0	16
	6-10	74	74.0	90
	more than 10	10	10.0	100
	Total	100	100.0	
The presence of a previous injury to the child or a family member	Yes	14	14.0	14
	No	86	86.0	100
	Total	100	100.0	

#: percentage, f: Frequency

Table 2. Distribution of the child's demographic characteristics.

Demographic Characteristics		f	%	Cumulative Percent
Age group child	1-5 years	32	32.0	32
	6-10 years	42	42.0	74
Mean ± SD	11-18 years	26	26.0	100
	Total	100	100.0	
7.7 ± 4.1				
Sex	Home	62	62.0	62

	Woman	38	38.0	100
	Total	100	100.0	
Child dependence on parents	Fully certified	89	89.0	89
	Partially approved	8	8.0	97
	Unapproved	3	3.0	100
	Total	100	100.0	
A child of school age	Study Follower	57	57.0	57
	Study intermittently	26	26.0	83
	Leaving for study	17	17.0	100
	Total	100	100.0	
Sequence of the child in the family	3 rd	15	15.0	15.0
	4 th	9	9.0	24.0
	6 th	27	27.0	51.0
	7 th	24	24.0	75.0
	8 th	25	25.0	100.0
	Total	100	100.0	
The child's injury	First	97	97.0	97
	Second	3	3.0	100
	Total	100	100.0	
Feeding method	Orally	95	95.0	95.0

	NG tube	4	4.0	99.0
	IV	1	1.0	100.0
	Total	100	100.0	

Table 3. Distribution of children according to their clinical data.

<i>Clinical data</i>		<i>f</i>	<i>%</i>	<i>Cumulative Percent</i>
Duration of treatment	less than 5 years	77	77.0	77
	5 years or more	23	23.0	100
	Total	100	100.0	
The baby presence for the hospital was due to	The baby condition is critical and requires hospitalization	6	6.0	6
	Receiving regular, periodic doses for several hours without admission	94	94.0	100
	Total	100	100.0	
Child's diagnosis	Leukemia	44	44.0	44.0
	Solid tumor	11	11.0	55.0
	Tumors of the central nervous system	17	17.0	72.0
	Lymphoma	13	13.0	85.0
	Other	15	15.0	100.0
	Total	100	100.0	
Therapeutic Modalities	Radiation	7	7.0	7
	Chemotherapy	77	77.0	84
	Surgical and chemotherapy	16	16.0	100

	Total	100	100.0	
Diet	Follow a normal diet	88	88.0	88
	Follows a special diet specified by the health care provider	12	12.0	100
	Total	100	100.0	

Table 4. Identification of the relationship between perspectives and awareness of parents the importance of oral health care for children undergoing chemotherapy.

2-Tailed Correspondence	Average	Variance	Person correlation	
			r	p-value
Parents' awareness	2.13	0.68	0.915**	0.000
Parents' perspectives	2.18	0.58		

At the 2-tailed 0.01 significance level, the correlation is significant.

Table 5. Identification of the relationship between the knowledge of parents of the oral health care and demographics of pediatric chemotherapy patients.

Demographic Characteristics	Chi-square test of Perspectives	
	p-value	p-value
Who is with the child	0.003	0.003
Age father group	0.006	0.062
Age mother group	0.008	0.074
Educational level of father	0.006	0.000
Educational level of mother	0.028	0.000
Economic status	0.119	0.000
Family status of parents	0.61	0.19

Number of family members	0.431	0.000
The presence of a previous injury to the child or a family member	0.062	0.000

Table 6. Identification of the relationship between parents' knowledge of the oral health needs of young chemotherapy patients, as well as the child's clinical information and demographics.

Child's clinical information and demographics	<i>Chi-square test of Perspectives</i>	
	<i>p-value</i>	<i>p-value</i>
Age group of children	0.453	0.478
Sex	0.000	0.000
Child dependence on parents	0.134	0.000
A child of school age	0.000	0.000
Sequence of the child in the family	0.000	0.000
The child's injury	0.953	0.296
Feeding method	0.061	0.000
Duration of treatment	0.000	0.000
The child's presence in the hospital was due to	0.145	0.000
Child's diagnosis	0.000	0.000
Therapeutic Modalities	0.000	0.000
Diet	0.001	0.002

Discussion

Distribution of the parent's Demographic Characteristics

The study indicates that 90% of children live with both parents and

45% of the fathers were between 40-49 years old, and 44% of the mothers were as well. The study also showed that 50% of the

fathers had Intermediate education, while 48% of the mothers had primary education. The study indicated that 38% of the participants had an economic status of income and did not have any previous infection with any child or other family member, with a percentage of 86% and The findings of this study are consistent with a previous study [11], which showed that the mother of the children under observation was on average 33.73 ± 4.06 year, while the mean age of the studied children's father was 40.37 ± 2.97 year. Regarding parents' education, 66.7% of the studied children's mother had secondary education, while 40.0% of the studied children's father had secondary education. Related to children's parent income level, 85.0% of them were having insufficient income. The findings of this study conflict with a study conducted earlier [12]. This indicates that most mothers in this study are between the ages of 20 and 40, the majority have completed their university degree (87 % of the population).

Distribution of the Child's Demographic Characteristics

The study found that 42% of the children were between 6-10 years old, 62% of them were male, and

89% of them were fully certified on their parents. The study showed that 95% of the children participating in this study fed orally and the findings agree with previous work [12]. The results of this study are consistent with studies from the United States, which showed that although the survival rate of child cancer was the same for both sexes and disagree with research performed by others [13].

The dietary counseling of a patient undergoing chemotherapy is usually given by the dietitian. Ensuring a proper nutritional status through good hydration and balanced healthy diet is important for those patients.

Distribution of the Child's Clinical Data

The study showed that 77% of the children's treatment duration was less than 5 years, and 94% of them were due to receiving regular, periodic doses for several hours without admission. The study also found that 44% of the children participating in this study were suffering from leukemia, with 77% of them being treated with chemotherapy and 88% of them were following a normal die. These results agreed with a study previously done [14], which revealed leukemia was the most common malignancy among

children. Childhood brain and central nervous system cancer were the second most prevalent kind of cancer, which demonstrates the frequent childhood cancers in boys in the order they occur. The study results showed disagreement with study done by others [13]. About 88% of the parents were given dietary counseling by pediatrician or dietitian. However, 85.7% of the children consumed sweetened beverages and/or snacks between the meals.

Relationship between Perspectives and Awareness of Parents on the Topic of Children's Oral Health Care Undergoing Chemotherapy

Pearson's correlation tests showed that there was a significant correlation between parents' awareness and parents' perspectives ($r= 0.9$, $p = 0.000$). These results agreed with previous work done [18]. One study showed that parents of pediatric cancer patients receiving chemotherapy were unaware of dental health and most of them never took their child to the dentist. Previous findings of the generalized linear model's analysis of the correlation indicated that the mean knowledge and attitude scores increased with parent age [17]. Only knowledge was associated with statistically significant

changes in income, compared to high-income groups. Nevertheless, there was no statistically significant correlation found between scores and educational attainment, or household size [13]. Concern exists in parents understanding the essential care for oral hygiene, particularly among children [19]. The risks of cancer are considerably higher for children whose mothers have less education than those children whose mothers that have completed high school. Regarding the father's educational, four individuals declined to respond. There is concern regarding children not knowing how important it is to take care of their dental hygiene [13,19]. Our study findings disagreed with research [15], that showed that while most parents of children with cancer are aware of the significance of dental health. Furthermore, every parent mentioned that the oncology team needed to include a dentist. Parents' understanding and attitudes during chemotherapy and immunosuppression will have a significant influence on their children's oral health as well as fundamental oral hygiene routines.

Conclusion

The purpose of this study was to evaluate oral hygiene behaviors, such as how often people clean

their teeth and whether they take any further precautions. The questionnaire also evaluated dietary practices, including the kinds of food, sweetened snacks and beverages, and how often they were consumed. Furthermore, the goal was also to assess the parents' desire to keep their immune compromised child's teeth clean.

Conflicts of interest

The authors declare no competing interest.

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