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Gastrointestinal side effects of Chemotherapy: Parent s' Perception towards Children with Cancer

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ABSTRACT

Background: Children before the age of 18 years are highly vulnerable to certain life-threatening diseases such as cancer, which is predicted from statistical evidence in the literature reviewed and in need of chemotherapy medications with side effects.

Objectives: This study aimed to assess parents' perception of children with cancer complaining of gastrointestinal side effects of chemotherapy.

Materials and Methods: A cross-sectional study was conducted during the period (from October 4, 2023, to January 26, 2024) at Al-Furat Al-Awsat Oncology Hospital in Al-Najaf Al-Ashraf City using a questionnaire structured for objective achievement. The questionnaire consisted of a demographic and clinical data section and the parents' perception of the gastrointestinal side effects of chemotherapy. Statistical and inferential analyses were performed to examine the data. Data were collected from (113) participants who selected nonprobability (convenience) by the interview researcher.

Results: The study specified that mothers comprised the majority of the sample and their ages were between (41 and 50), while the sickest children were male and female. Loss of appetite and taste changes were the most effective gastrointestinal side effects of chemotherapy, and the overall perception of the parents was good.

Conclusions: This study demonstrated that most patients suffer from loss of appetite and taste change, and they have a good perception of this side effect. This result emphasizes the importance of providing sufficient information to parents about any side effects that could appear in a child after a chemotherapy session.

Keywords: *Parents, perception, gastrointestinal, and chemotherapy side effects.*

1. INTRODUCTION

Cancer "is a dangerous life-threatening disease which susceptibly develops in children before the age of eighteen years, that exposed to emotional discomfort, anxiety about unknown related to a lot of frequency diagnostic testing, therapeutic interventions, side effects, and adjustments to the children's and their families' priorities in life(1). Cancer is one of the main causes of mortality globally and represents a burden to society and across the globe. In 2018, there were 18.1 million new cancer cases were diagnosed and 9.5 million cancer-related deaths were reported worldwide. In 2020 (2) . The total number Between the beginning of 1999 and the end of 2019, 402,932 cancer cases in Iraq were reported by the Institute of ICR (implementation completion and result reported). There were 54.1% female and 45.9% male, according to IR(Interventional radiology), the top five malignancies were those of; breast (18.17%), lung (7.24%), colorectum (5.95%), brain/CNS (5.83%) and leukaemia (5.05%) (3). Cancer patients can receive a variety of medical treatments, whereas others can be treated surgically followed by chemotherapy, radiotherapy, or other treatments (4). The degree of side effects may range from moderate to potentially fatal. (5). During chemotherapy, symptoms related to the gastrointestinal system are the most prevalent, and chemotherapy drugs stimulate the entry of endocrine cells into the GI mucosa (6). Humans exhibit symptoms, such as vomiting, nausea, diarrhea, constipation, and loss of appetite. (7). The specific care of a child with "life-threatening "and" life limitation" disease can be difficult due to the long and complex disease trajectory. As primary caregivers, parents experience many physical, psychological, emotional, technological and nursing requirements (8). Despite receiving education about the side effects of chemotherapy from nurses and other medical professionals, patients and their caregivers do not meet the need of patients (9)

2. SUBJECTS AND METHODS

Study design

A cross-sectional study was conducted throughout the period (from October 4, 2023, to January 26, 2024) at Al-Furat Al-Awsat Oncology Hospital in Al-Najaf Al-Ashraf City.

Study Sample

Data were collected from (113) participants who selected non-probability (convenience) by an interview researcher administered in Al-Najaf Al-Ashraf. Study instrument.

The questionnaire consists of five parts:

Part I: Consists of the socio-demographic characteristics of parents, which consist of (five items) that include caregiver, caregiver age, marital status, level of education, and residency).

Part II includes the clinical data of children and consists of (four items) that include family history of cancer, type of cancer, duration of chemotherapy (months), and whether the child's condition affects his or her school performance.

Part III: Consists of the child's sociodemographic characteristics, which consist of (3item) that include child age, sex, and Child Rank within the family).

Part IIII consists of the side effects of chemotherapy in relation to gastrointestinal manifestations, while the last part is related to parents' perception of chemotherapy side effects, which includes 11 items**.**

Data collection

The researcher conducted face-to-face interviews with the parents from January 4 to March 26, 2024, after obtaining permission from the participants. Al-Furat Al-Awsat Oncology Hospital in Al-Najaf City.

Statistical Analysis

Data were analyzed using SPSS version 26. Analysis of descriptive statistics: as " mean, minimum, and maximum standard deviation, " categorical variables are shown as frequencies and percentages. Inferential Statistical Tests: Chi-Square Tests were employed to determine the association between parents' socio-demographic traits and their overall experiences and perceptions of the side effects of chemotherapy on their children's P-values of less than 0.05, which are considered to be statistically significant.

Ethical approval

One of the most crucial factors to adhere to and follow when conducting a study is the researcher's ethical obligation. Ethical approval (No:11/ date: 4/1/2024) was obtained from the University of Babylon, College of Nursing, and the Higher Studies Committee provided the initial approval after presenting the title and its objectives. An official agreement was obtained from Al-Furat Al-Awsat Oncology Hospital for data collection. Informed consent was obtained from all participants, and the data gathered from the study participants were kept private and confidential. The researcher agreed to use it only for goals related to the study.

3. RESULTS

The finding of the present study found that (74.3%) of caregivers were mothers and the Mean ± SD (Min-Max) of the age of participants was 41.65±7.912 (24-60). Regarding Marital Status, (97.3%) were married; finally, (73.5%) were housewives as shown in Table1**.**the result found that (63.7%) of family have a history of cancer. In relation to type of cancer, as (57.5%) were Leukemia, followed by Lymphoma (21.3). Regarding to receiving chemotherapy (30.1%) for about (7-12) month. Finally, more than halve (53.1%) of child condition effects on his / her school performance as shown in Table 2. Whereas the result found that (42.5) of the children were school age, (58.4%) of them were male, and (52.2%) of children Rank within the family were third or more as shown in Table 3. According to the distribution of side effects of chemotherapy-related gastrointestinal manifestations was as follows (41.6%) Abdominal pain,

(86.7%)taste change, (92.9%)loss of appetite, (73.5%) nausea, (39.8%) vomiting, (16.8%)diarrhea, (4.4%)bloating, and (61.1%) constipation as shown in Table4. The result elaborates on parents' perception regarding the disease and its treatment for their children with cancer the maximum mean is 1.90 with the item (The sick child is given antiemetic's to minimize nausea and/or vomiting), while the minimum mean is 1.42 (Abstain from giving your child foods contain spices or vinegar) as shown in Table 5. Concerning to overall parental perception regarding gastrointestinal side effects of chemotherapy the result finds that Less than half (73.5%) of the parents had a moderate level of perception as shown in Figure 1.

Table1: Distribution of parents' socio-demographic characteristics			
Item		Frequency	Percent%
Parent's	Father	29	25.7
	Mother	84	74.3
	Total	113	100.0
Parent's Age	21-30	9	8.0
	31-40	44	38.9
	41-50	45	39.8
	51-60	15	13.3
	Total	113	100.0
Mean ± SD (Min-Max)		41.65±7.912 (24-60)	
Marital Status	Married	110	97.3
	Divorced	3	2.7
	Total	113	100.0
Level of Education	Illiterate	32	28.3
	Primary school graduate	36	31.9
	Intermediate school graduate	27	23.9
	School graduate	14	12.4
	Diploma or more	4	3.5
	Total	113	100.0
Area of residence	Rural	51	45.1
	Urban	62	54.9
	Total	113	100.0

SD= Standard deviation

Table 2: Distribution of the children according to their Clinical data.				
No.	Item		Frequency	Percent%
1.	**Family history of cancer**	Yes	72	63.7
		No	41	36.3
		Total	113	100.0
2.	**Type of cancer**	Leukemia	65	57.5
		Nervous system cancer	7	6.2
		Lymphoma	24	21.3
		Kidney cancer	5	4.4
		Bone cancer	6	5.3
		Liver cancer	6	5.3
		Total	113	100.0
3.	**Duration of receiving chemotherapy (Months)**	<1	2	1.8
		1_6	25	22.1
		7-12	34	30.1
		13-24	29	25.6
		25 or more	23	20.4
		Total	113	100.0
4.	**Does the child condition effects on his / her school performance**	Yes	60	53.1
		No	17	15.0
		Not within school age	36	31.9
		Total	113	100.0

Table 3: Distribution of child's socio-demographic characteristics			
Item		Frequency	Percent%
Child age	Toddler	5	4.4
	Pre school	15	13.3
	School age	48	42.5
	Adolescent	45	39.8
	Total	113	100.0
Sex	female	4 7	41 .6
	male	6 6	58 . 4
	Total	113	100.0
Child Rank within the family	First	24	21.2
	Second	30	26.6
	Third or more	59	52.2
	total	1 1 3	100 .0

Table 4: Gastrointestinal manifestation side effects of chemotherapy							
Gastrointestinal manifestations		Frequency	Percent	5.Vomiting	No	68	60.2%
1. Abdominal pain	No	66	58.4%		Yes	45	39.8%
	Yes	47	41.6%		Total	133	100%
	Total	113	100.0%	6.Diarrhea	No	94	83.2 %
2.Taste changes	No	15	13.3%		Yes	19	16.8 %
	Yes	98	86.7%		Total	133	100 %
	Total	113	100.0%	7.Bloating	No	108	95.6 %
3.Loss of appetites	No	8	7.1%		Yes	5	4.4 %
	Yes	105	92.9%		Total	133	100 %
	Total	113	100.0 %	8.Constipation	No	44	38.9 %
4.Nausea	No	30	26.5 %		Yes	69	61.1
	Yes	83	73.5 %		Total	133	100 %
	Total	113	100.0%				

Table 5: Distribution of parents' responses about perception of disease and it's treatment for their children with cancer.					
Variables		Freq	Per %	Mean	SD
Alopecia is a side-effect of the chemotherapy	No	13	11.5	1.88	.320
	Yes	100	88.5		
	Total	113	100.0		
Loss of appetite is a side-effect of the chemotherapy	No	12	10.6	1.89	.309
	Yes	101	89.4		

	Total	113	100.0		
Limiting contact, especially with those experience infectious disease must be considered	No	53	46.9	1.53	.501
	Yes	60	53.1		
	Total	113	100.0		
Feeling with nausea and vomiting is of the common side-effects of the chemotherapy	No	13	11.5	1.88	.320
	Yes	100	88.5		
	Total	113	100.0		
The sick child is given antiemetic's to minimize nausea and/or vomiting	No	11	9.7	1.90	.298
	Yes	102	90.3		
	Total	113	100.0		
Avoiding give your child sweets when he has nausea and/or vomiting	No	50	44.2	1.56	.499
	Yes	63	55.8		
	Total	113	100.0		
Abstain from giving your child foods contain spices or vinegar	No	66	58.4	1.42	.495
	Yes	47	41.6		
	Total	113	100.0		
The given chemotherapy causes diarrhea or constipation	No	39	34.5	1.65	.478
	Yes	74	65.5		
	Total	133	100%		
Weight loss is One of the side-effects of chemotherapy	No	17	15.0	1.85	359.
	Yes	96	96		
	Total	133	100 %		
The side-effects of chemotherapy are temporary	No	45	39.8	1.60	492.
	Yes	68	60.2		
	Total	133	100%		
Chemotherapy exposes the child to fatigue and stress	No	13	11.5	1.88	.320
	Yes	100	88.5		
	Total	133	100%		

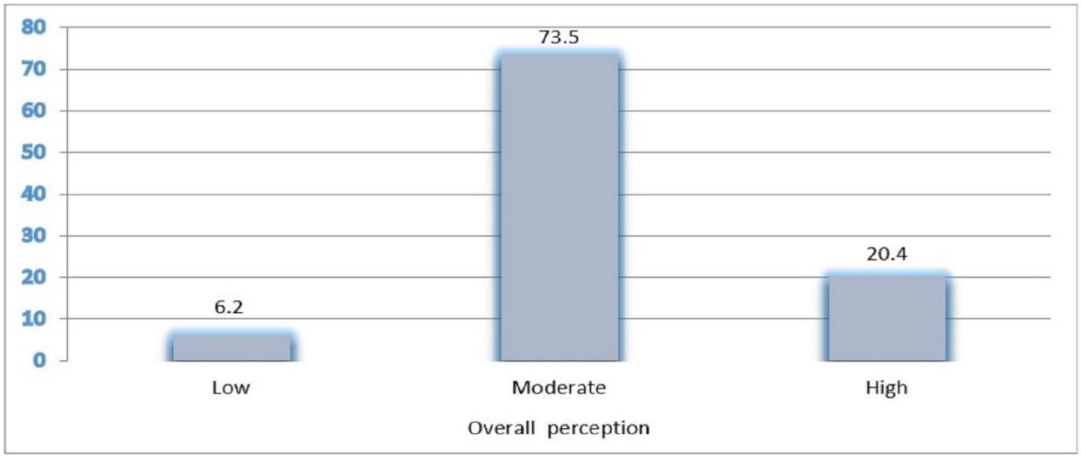

Figure 1: percentage of overall parental perception regarding gastrointestinal side effects of chemotherapy

4. DISCUSSION

Childhood cancer is rare worldwide, with great variation among countries for some specific tumors. Some of these geographical variations are attributed to environmental factors, whereas others seem to be related to genetic predispositions (10). It declared that three-quarters of participants were mothers more than fathers; moreover, the findings of the present study show that their ages range between (41-50) and their major education level was primary school. In addition, most of them were housewives, which reflects maternal affection and feelings of responsibility towards her child and his need for her during his illness and risky situations. She refused to leave him with another person, even if he was the father. Furthermore, this agrees with a study of 45 parents that used the Wilcoxon signed-rank test. Rank tests were conducted using Equation (11). The majority (86.7) of them were mothers. In addition, a cross-sectional (descriptive) design was developed in Basra by (12). Who aimed to determine the quality of life for children under going chemotherapy, which resulted in most mothers having primary school education, and the majority of them were housewives. With regard to the participants' residency, the finding shows that more than half of the cancer sample, was from urban areas, whereas, more than two-fifths were from rural areas. The equality of the sample in terms of residence justifies that the center designated to conduct the study is the only one specializing in cancer cases, and all infected patients come to it, whether residing in the city or the countryside, from inside and outside the governorate. The clinical data of children indicated that less than two-thirds of the participants had a family history of cancer, which means both parents or one of them has a genetic tendency toward cancer. This dispute with the descriptive nonprobability (convenience) study design by (13) In India, who take parents of 60 children, was to assess their awareness regarding the adverse effects of chemotherapy among parents of children attending oncology units, their finding demonstrating that the majority of participants had no medical history of cancer. In addition, the results of the current study indicated that more than half of the children had blood cancer (leukaemia) which is considered the most prevalent type of cancer affecting children worldwide, followed by lymphoma. This is supported by a study conducted in. India to clarify the knowledge regarding home management of side effects of chemotherapy among parents, which was conducted by (14), who showed that the majority of them had blood cancer. Another study on 247 pediatric cancers aimed at the pattern of distribution among pediatric cancers in Bihar, India. This indicated that acute lymphoblastic leukemia ALL in one-third of the participants was the most common pediatric cancer (15). Regarding the duration of chemotherapy, most patients receive treatment for 7-12 months, which is in line with a study carried out b (16). In India that showed (32%) of pediatric patient take treatment from to 7-12 months and also show that there is a relationship between the severity of chemotherapy side effects and the duration of treatment that is more severe 6 months after initiating treatment. In addition, the existing study interprets that more than half of children's conditions affect their schooling performance, which may be related to the mother's overprotection that prevents their children from going out or going to school for fear of catching any infection attached to them from peers or a polluted environment. Some studies have been directed by (17). In India, examining parents' knowledge, attitudes, and psychosocial responses regarding their child's cancer and treatment after initiating disease counselling, 43 mothers recently diagnosed with cancer restricted their child's outdoor activities, and attending school caused fear of catching an infection. The result of existing the study clarification of the topmost of children with cancer was a school age range of more than two-thirds, which aligns with a study in Germany (11). Who assessed pediatric patients and their parents through acute treatment, and the outcome showed that nearly two-thirds of the children were school-age exposed to environmental infection. However, the findings of the current study, indicate, that more than half of the children are male. In addition, a cross-sectional descriptive study in Turkey was conducted (18). Of the 100 parents of children with cancer who were taking chemotherapy drugs, more than half of the total number of children were male. Furthermore, a cross-sectional study design concerning chemotherapy-induced alopecia among children with cancer treated at an Indonesian academic hospital who took 50 parent children was carried out by(19). It was found that 54% of the total participants were male (46%) are female. According to the gastrointestinal side effects of chemotherapy, the highest side effect that appears in a child after chemotherapy associated with the gastric intestine is loss of appetite, which is related to physical symptoms such as nausea and vomiting, followed by taste change, constipation, and abdominal pain (Table 5). This is similar to the results of a pervious a study(20). A descriptive study with qualitative data analysis in Brazil on children with chemotherapy symptoms and caring strategies, clarified that the most symptoms cited were, pain, loss of appetite, vomiting, constipation, nausea, weakness, and sleep loss. Some of the symptoms are reported as systemic in nature, not unique to cancer, and of a general or constitutional character. The findings of the contemporary study show that most caregivers understand the possible side effects of chemotherapy and awareness of the treatment statutes, as well as symptoms such as nausea, vomiting, loss of appetite, diarrhea or constipation, antiemetic drugs, weight loss and fatigue after chemotherapy. Thus, three-quarters had a moderate level of perception regarding the side effects of the drug. As the researcher's point of view is justified by the increased used of the Internet and websites, mothers have long been searching for solutions to the health problems their children face, whether chronic or non-chronic diseases, which reflects the sample awareness and had sufficient knowledge about the side effects resulting from chemotherapy. Moreover, the result disagrees with a study in Egypt that declared that most mothers had unsatisfactory knowledge concerning the care of children undergoing chemotherapy, which affects the proper way of caring for their sick children because most of them were not oriented to precautions to protect children at home after the chemotherapy treatment session (21). Furthermore, a descriptive study designed in Erbil, Iraq. Made on 54 caregivers with findings (61%) of caregivers, reported a median level of coping with the child's condition or treatment, which resumed communication with other parents through the treatment session. In addition, by consulting the staff (health

workers) about harmful and beneficial issues for their children (22).

5. CONCLUSION:

Most of the participants were female housewives, and the side effects of chemotherapy demonstrated that most patients experienced loss of appetite and taste changes. Participants had a moderate level of information about their child's condition, particularly through side effects from the drug raised, with a moderate level according to perception. Moreover, it is very important to provide enough information to parents about any side effects that could appear on a child after the chemotherapy session, especially with the initiation of the treatment.

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