



Original Research

Effectiveness of an Instructional Program on Knowledge of Patients Undergoing Chemotherapy toward Self-Care in Kirkuk Center for Oncology and Hematology

Ahmed Atia Ali¹, Rebaz Ismael Ali¹, Assist. Prof²

¹Department of Adult Nursing,
College of Nursing, University
of Kirkuk, Iraq.

Email id:

narm22001@uokirkuk.edu.iq.

²Assistant Professor, Adult
Nursing, University of Kirkuk.
College of Nursing. Iraq.

Email id:

rebazali@uokirkuk.edu.iq

Abstract:

Background

Cancer is a perilous health issue that may result in mortality. The majority of individuals who have been diagnosed with cancer are administered chemotherapy. Chemotherapy has several adverse consequences that impact the physical, emotional, and social aspects of patients' lives, ultimately influencing their ability to engage in self-care activities.

Objectives: The main aim of the study is to determine the effectiveness of an instructional program on the knowledge of patients undergoing chemotherapy toward self-care.

Methodology The present research used a quantitative pre-experimental approach, including a one-group design. Two sets of data were gathered: (1) pre-test baseline data, which was taken before the study sample was exposed to the educational program, and (2) post-test data, which was acquired immediately after the educational program was implemented for the research sample. The research was conducted at Kirkuk Center for Oncology and Hematology from October 3, 2023, to April 30, 2024. The study instrument is composed of three main parts, Part I: The socio-demographic data of the patients, Part II: Clinical data of the patients, Part III: Knowledge of patients undergoing chemotherapy toward self-care. Validity of the study instrument was determined through a panel of experts and reliability of the instrument was determined through internal consistency method.

Results: The results of the research indicate there are statistically significant variations between the before and post-tests in the study group across three primary areas related to patients' knowledge of self-care, with a p-value <0.05.

Conclusion: The study's findings indicate that patients receiving chemotherapy had poor levels of knowledge before to the instructional program. However, the efficacy of the instructional program in improving patients' knowledge of self-care during chemotherapy was shown to be highly effective.

Keywords: Effectiveness, Chemotherapy, Self-Care, Oncology.

Introduction

Cancer is a complex condition that affects the body's cells, which are the basic units of the body. It is not a single disease with a single cause, but rather a group of distinct diseases that have different origins, manifestations, treatments, and outcomes. Constructing blocks. The body continuously generates new cells as a means of growth and expansion. Regenerate impaired tissue and address injuries. Cells undergo division and undergo programmed cell death in a systematic way. Occasionally, cells that are unable to undergo normal division undergo apoptosis. This may lead to the development of an abnormality in the blood or lymph fluid of the body, or the formation of an enlarged mass called a tumor (1).

Chemotherapy is a therapeutic approach that uses chemical substances to eradicate cancerous cells. The term "systemic treatment" is used because the medication is administered into the circulation and circulates throughout the body, effectively eliminating cancer cells at various sites. These drugs are primarily intended to have a systemic effect, aiming to eliminate cancer cells regardless of their location in the body. Chemotherapy is designed to selectively target rapidly dividing cells via the use of chemically modified agents. After reaching the cancer cells, they impede their proliferation until they are ultimately eradicated. The negative effects of chemotherapy depend on the kind of drug, dosage, frequency, and duration of treatment (2).

Originally, it was thought that chemotherapy medications would only destroy cancer cells. However, it is now commonly acknowledged that these medications also cause damage on normal cells, resulting in dose-dependent adverse effects. The side effects of this treatment can appear as nausea, alopecia, tiredness, constipation, pyrexia, diarrhea, stomatitis or mucositis, dysuria, infection, dermatitis, gingival hemorrhage, odontalgia, cough, jaundice, edema, vertigo, and in severe instances, mortality. Chemotherapy medications typically target tumor cells by inducing genotoxicity, which involves the generation of reactive oxygen species. This procedure causes

equal harm to both malignant and non-malignant cells.(3).

Self-care refers to the deliberate decisions and actions someone do to address an illness or facilitate their recovery. Chemotherapy patients may need to adapt their self-care habits to meet the physical and psychological side effects of the treatment. (4)

An essential skill in the process of healing is the ability to regulate and manage one's own care. Patients might have a feeling of worth and social inclusion when they are capable of living productive and fulfilling lives. The advantages of educating patients about the negative effects of chemotherapy and ways for managing symptoms have significantly improved their quality of life. In order to prevent serious effects, it is essential for cancer patients receiving chemotherapy to have knowledge about their drugs and engage in self-care. Cancer patients need to have knowledge on the diverse range of side effects they may experience and be provided with comprehensive instructions on how to effectively handle them in order to ensure the effectiveness of self-care practices. Cancer patients receiving chemotherapy require comprehensive understanding of their drugs and essential self-care protocols to prevent significant adverse reactions. (5)

Methodology

The present research used a quantitative pre-experimental approach, including a one-group design. Two sets of data were gathered: (1) pre-test baseline data, which was taken before the study sample was exposed to the educational program, and (2) post-test data, which was acquired immediately after the educational program was implemented for the research sample. The research was conducted at Kirkuk Center for Oncology and Hematology from October 3, 2023, to May 5, 2024.

Patients undergoing chemotherapy for cancer were the subjects of the research at Kirkuk Oncology and Hematology Center. The Sample of the Study A non- probability (purposive) sample of (30) patients undergoing chemotherapy at Kirkuk Oncology and Hematology Center. The number of patients in the oncology unit at Kirkuk Oncology

and Hematology Center and those undergoing chemotherapy during the period of the study was (81) patients. The number of patients who refused to participate in the program was (11) patients, (7) patients did not complete the program, (8) patients were treated elsewhere, (5) patients were unable to participate. A final total of (50) patients during the time of the study period, and met the study criteria. Ten patients for pilot study were excluded from the study. Ten patients who participated in the needs assessment were also excluded from the research. A final total of (30). There are three main components to the research instrument: Part one of the study instrument collects patients' demographic and socioeconomic information; part two deals with their medical history; and part three administers a knowledge test consisting of a questionnaire with twenty-one items (multiple choice) broken down into three primary dimensions relating to patients' awareness of self-care. Each question was composed of (3) items in

alternative form of a multiple choice and given the correct answer score (1) and the incorrect answer scored (0). About (20-25) minutes are given for the test completion. The educational program has three sessions and is conducted over a four-week period in the oncology department. The duration of each session ranged from 45 to 50 minutes. The research instrument's validity was established by a panel of seven experts, while its reliability was assessed using the Cronbach's Alpha technique. The data analysis included descriptive statistics and statistical inference to identify the disparities among the study group. The data were analyzed using the SPSS program, specifically version 23.0. Descriptive data analysis involves calculating the Mean of score (M.S), along with the Standard Deviation (S.D) and frequency (f). Inferential data analysis encompasses several statistical tests such as the Binomial test, McNamara test, Wilcoxon signed rank test, and Analysis of Covariance (ANCOVA).

Results

Table (1): Distribution of the studied (SD Cv.) with comparisons significant (N=30)

SDCv.	Classes	No	%
Age Groups Yrs.	20 _ 29	4	13.3
	30 _ 39	6	20.0
	40 _ 49	9	30.0
	50 _ 59	6	20.0
	60 _ 69	5	16.7
	Mean ± SD		42.00 ± 12.91
Gender	Male	17	56.7
	Female	13	43.3
Education level	Illiterate	4	13.33
	Can Read & Write	7	23.33
	Primary School Graduate	7	23.33
	Secondary School Graduate	3	10.0
	High School Graduate	3	10.0
	Institute Graduate	4	13.33
	Bachelor's degree and above	2	6.66
Marital status	Married	20	66.7
	Single	6	20.0
	Widowed	2	6.7
	Divorced	1	3.3
	Separated	1	3.3
Occupation Status	Employee	6	20.0
	Unemployed	9	30.0
	Retired	2	6.7

	House wife	12	40.0
	Student	1	3.3
Residency	Rural	16	53.3
	Urban	14	46.7
Monthly Income	Sufficient	6	20.0
	Barely Sufficient	11	36.7
	Insufficient	13	43.3

In this table, the socio-demographic data is shown, indicating that the mean age for the study group is (42.00 ± 12.91). A larger proportion of the study group consists of individuals aged 40 to 49 years (n = 9; 30.0%). Regarding gender, the data suggest that males constitute the majority of the study group, accounting for (56.7%). Nearly 25% of the individuals in the study group are in elementary school and have the ability to read and write (n = 7; 23.33%). The majority of individuals in the study group are married (n=20; 66.7). In relation to the

occupation, the findings indicate that (n = 12; 40.0%) of individuals in the study group were identified as housewives. The majority of participants in the study group live in rural places, totaling (n = 16; 53.3%). A higher proportion of the individuals in the study group (n = 13; 43.3%) reported having an inadequate monthly income. The table indicates that there are no statistically significant associations associated with the specified variables, since the p-value >0.05.

Table (2): Descriptive Statistics for studied sampled according to "Knowledge of patients undergoing chemotherapy toward self-care during daily living activities" items along Pre to Post Periods with comparisons significant (N=30)

Knowledge of patients undergoing Chemotherapy toward Self-Care during daily living activities	Responses	Pre			Post			C.S. (*) P-value
		No.	%	MS	No.	%	MS	
Adaptation with disease:	False	22	73.3	0.267	10	33.3	0.667	P=0.002 (HS)
	Correct	8	26.7		20	66.7		
You can improve sleep by:	False	20	66.7	0.333	15	50	0.500	P=0.267 (NS)
	Correct	10	33.3		15	50		
Nutrition and fluids intake:	False	11	36.7	0.633	0	0	1.000	P=0.001 (HS)
	Correct	19	63.3		30	100		
You can avoid colds and flu by:	False	21	70	0.300	2	6.7	0.933	P=0.000 (HS)
	Correct	9	30		28	93.3		
Stop smoking for patients undergoing chemotherapy:	False	12	40	0.600	4	13.3	0.867	P=0.008 (HS)
	Correct	18	60		26	86.7		
Whether you can work during chemotherapy depends on:	False	26	86.7	0.133	21	70	0.300	P=0.063 (NS)
	Correct	4	13.3		9	30		
You can reduce stress, anxiety and fear by:	False	26	86.7	0.133	22	73.3	0.267	P=0.125 (NS)
	Correct	4	13.3		8	26.7		
Personal appearance:	False	20	66.7	0.333	6	20	0.800	P=0.000 (HS)
	Correct	10	33.3		24	80		

Results shows in this table that responding before applying instructional program of low assessed are accounted 4(50.0%) items, while leftover items 4(40.0%) have moderate level. As for results after implementing the program, although there were two items remained with a low assessed, but a positive change has been occurred, since its relative

sufficiency are bordered to a moderate assess, in addition to positive changes in the remaining items. since no significant different are accounted at $P>0.05$ despite meaningful differences are accounted between patient's responses along the studied periods.

Table (3): Relationships between improvements due to applying a proposed of Instructional Program and Patient's fixed factors (N=30)

GLM – 10 ways ANCOVA							
Source of variation	Type III Sum of Squares	d.f.	Mean Square	F	Sig.	C.S.	
Intercept	4415.59	1	4415.59	239.25	0.004	HS	
Age Groups	257.70	4	64.43	3.491	0.235	NS	
Gander	21.20	1	21.20	1.149	0.396	NS	
Educational Levels	211.30	6	35.22	1.908	0.383	NS	
Marital Status	159.54	4	39.89	2.161	0.340	NS	
Occupation	346.20	4	86.55	4.690	0.183	NS	
Residency	14.50	1	14.50	0.786	0.469	NS	
Monthly Income	88.54	2	44.27	2.399	0.294	NS	

Results shows that weak relationships are proved between patient's improvement overall assessments before and after applying the proposed program and their (SDCv.), since no significant relationships were accounted at $P>0.05$, and according to that, it could be concluding that proposed instructional program of studying patients with undergoing chemotherapy toward self-care in Kirkuk Center for Oncology and Hematology. Could be generalize on the studied population even though differences within their (SDCv.).

Discussion:

Concerning the age, data reveal that the biggest proportion (30.0%) are in age range of (40-49) years in the result study with mean age (42.00 ± 12.91), The present study finding are supported by (6) A study conducted in a public hospital in Yogyakarta, Indonesia, examined the effectiveness of a self-care symptom management program in

improving the quality of life for cancer patients undergoing chemotherapy and their family caregivers. The study found that the majority of participants (82.5% of the sample) were between the ages of 40 and 65. The study finds that the majority of patients in the same age range indicated above are more prone to developing cancer owing to many reasons, including hormonal changes that grow with the aging process. In relation to gender, the data analysis conducted in this research revealed that 56.6% of the participants were male. The findings of this study align with the research conducted by Salwa (2016) on the evaluation of cancer patients undergoing chemotherapy and their knowledge of self-care at the Tumor Therapy and Cancer Research Center in Shendi. Salwa study revealed that 60.0% of the participants were male. While, disagrees with(7) A research done at the Oncology Therapy Unit of Alexandria Main University Hospital found that 76.0% of the participants were females. The data suggest that

males smoked more than females, which may explain the observed difference in interpretation. Among the participants in this research, (23.33%) had completed elementary school and were able to read and write. This data suggests that the majority of cancer patients receiving chemotherapy had completed elementary school. By raising patients' knowledge of the illness and its treatment options, patient education has the potential to influence early cancer detection, mitigate the impact of risk factors, and lessen the severity of consequences. For this reason, cancer is more common among people with lower levels of education. Patients with higher levels of education are more likely to be aware of their sickness and its symptoms, while those with lower levels of education are less likely to be aware of these symptoms and are more likely to experience increased stress as a result.(8) A research conducted at the National Regional Cancer Center in Chonburi City examined the self-care behaviors of chemotherapy patients. The findings revealed that the largest proportion of patients (31.3%) had completed primary school. Regarding marital status, the majority of participants in the study are married, accounting for (66.7%) of the total. Based on the most relevant papers, there is no substantial disparity in cancer susceptibility between those who are single and those who are married. However, the risk of cancer is reduced via the practice of breastfeeding, particularly when a woman breastfeeds for a duration exceeding one year. In addition, a significant aspect that might enhance awareness about self-care is obtaining information from a spouse.(9, 10) The researchers discovered that over 70% of the participants in their investigations were married. Regarding to occupation status, the majority of patients in the research sample, including 40.0% and 30.0% respectively, are classified as housewives and jobless individuals. This may be attributed to the fact that a significant component of the sample consists of older individuals who are unable to work due to their illness. Collaborating in a group involves gathering knowledge about sickness and treatment by actively listening to the experiences shared by others.(7) A their research conducted on 50

participants revealed that the majority of individuals in the sample were unemployed. Regarding residence, the research findings indicate that the majority of participant's dwell in rural regions, accounting for (53.3%) of the total. The environment is a significant factor contributing to the increased risk of cancer. In Iraq, there is a significant increase in environmental pollution due to chemical variables that impact the air, such as industrial pollutants and explosions, as well as the leftovers of war. This contributes to being the primary risk factor for cancer, particularly in large cities.(2) In Uttarakhand, the majority of cancer patients resided in rural areas, with 35 individuals (58%) coming from rural areas and 25 individuals (42%) coming from urban areas. Regarding monthly income, the majority of participants in the study reported inadequate monthly income (43.3%). Monthly income may influence patients' awareness of self-care. Poverty is seen as a significant factor that might heighten the likelihood of cancer development and delay early diagnosis because of financial constraints within the family.(11) in their reports According to their findings, it was emphasized that the rising prevalence of cancer in poor and medium income nations would elevate the global hazards associated with both cancer occurrence and cancer-related mortality. Results shows that responding before applying instructional program of low assessed are accounted 4(50.0%) items, while leftover items 4(40.0%) has moderate level. As for results after implementing the program, although there were two items remained with a low assessed, but a positive change has been occurred, since its relative sufficiency are bordered to a moderate assess, in addition to positive changes in the remaining items. Our findings indicate that educating patients about cancer treatment and subsequent recovery can result in increased protein intake, a lower prevalence of depression, fewer side effects from chemotherapy, and enhanced athletic condition (12). A pre-chemotherapy instruction courses increases patient understanding about the intended treatment and reduces anxiety (13). Results shows that weak relationships are proved between patient's improvement overall assessments before

and after applying the proposed program and there, since no significant relationships were accounted at $P>0.05$ (8) The findings suggest that marital status and awareness about cancer are positively correlated with self-care behavior in avoiding cervical cancer.(2)The study found that the factors of location of residence and prior knowledge of chemotherapy were not significantly associated with awareness of the adverse effects of chemotherapy and how to manage it at home. A study discovered (14) similar findings that the majority of the participants were from deprived backgrounds with modest earnings and little learning, which has been connected with disregarding medical information and developing negative views about cancer.

(Cancer is serious disease and the leading cause of death worldwide. It has a negative impact on person's quality of life in all areas, and there are many changes that appear in patients from the beginning) (12)

(This study was initiated in response to the significant negative impact of CIPN on the daily lives of patients with diverse cancer diagnoses, as well as the lack of a standardized strategy among oncology nurses for dealing with patients who receive neurotoxic medications.) (13)

Conclusions:

An increasing number of cancer cases are seen in older age groups. There is a higher occurrence of this condition in males, possibly because to their smoking habits and frequent exposure to aggravating work environments compared to women. The majority of patients had a low educational level, perhaps leading to less health literacy and increased challenges in accessing healthcare services. We conducted an educational intervention tailored for these patients, including audio-visual resources to assist chemotherapy patients in self-care management. A moderate or poor monthly income is seen as a significant factor that might raise the likelihood of getting cancer and hinder early identification because of financial constraints within the family.

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