

Impact of Teaching Program on Management of Nausea and Vomiting Among Cancer Patients Receiving Chemotherapy in Elmak Nimer University Hospital

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Abstract - Chemotherapy is designed to kill fast-growing cancer cells, but it can also affect healthy cells that grow quickly. These include cells that line the mouth and intestines, bone marrow cells and hair cells. Chemotherapy causes side effects when it harms these healthy cells. This quasi-experimental study was, designed in three steps: pre-program, program intervention and post program . It was conducted in oncology unit in Elmak Nimer Hospital from December 2012 to June 2015, to assess the effectiveness of planned education given to patients receiving chemotherapy on nausea and vomiting follow chemotherapy there was improved on self-care practice among patient after the program. A total convenient sample of 60 patients was included. There was no relation between level of education and knowledge of patients regarding side effect. Type of cancers most frequently reported in this study were breast cancer followed by lymphoma, colorectal carcinoma and leukemia. The recommendation pointed on developing research that focuses on sequencing teaching information on side effects that are experienced in the initial phase of treatment and add information to patients as side effects are expected, to encourage the patients and family members to attend health education and counseling program about chemotherapy related side effects and to increase the number of qualified nurses at the chemotherapy in and outpatient clinics to provide the patients and family members with the necessary information.

Keywords - Nausea; Vomiting; Cancer; Patients ; Chemotherapy ; Sudan.

I. INTRODUCTION

Cancer is one of the leading causes of morbidity and mortality in developed and developing countries. More than 11 million new cases of cancer are diagnosed each year and that number is expected to rise to 16 million by 2020. Cancer is responsible for 7 million or 12.5% of all deaths worldwide. The global burden of diseases is shifting from communicable diseases to non-communicable diseases ⁽¹⁾.

The non-communicable diseases are increasingly recognized as a major cause of morbidity and mortality i.e. accounts for about 60% of deaths worldwide. In the developed countries the cancer is the second leading cause and in developed countries cancer ranks third as a cause of death (2).

The most important effect of chemotherapy is that it kills cancer cells. However, chemotherapy can also affect normal cells

and this may cause side effects which vary greatly. Some people will have no side effects, others will experience a few. Reactions vary from person to person, according to the type of drugs used, and from one treatment period to the next. Side effects usually start during the first few weeks of treatment. Fortunately, most are temporary and can be managed during treatment ⁽³⁾. In chemotherapy, anti-neoplastic agents are used in an attempt to destroy tumor cells by interfering with cellular functions and reproduction ⁽⁴⁾. The chemotherapy leads to side effects which generally depend on the type of therapy being offered. Most chemotherapy side effects cease after treatment. Although uncommon, some treatments may produce long-term effects (5). The most common side effects of chemotherapy are anemia , diarrhea , constipation, fatigue, fertility issues, hair changes, infection, memory loss, menopause and menopausal symptoms, mouth and throat sores, nail changes, neuropathy, bleeding, pain, nausea and vomiting, weight changes, osteoporosis, heart

problems, vision problems, flu-like symptoms and fluid retention⁽⁶⁾

II. MATERIALS AND METHODS

This is a quasi-experimental, hospital based study , carried in the period from October 2012 to June 2015 . It was designed in three steps: pre-program, program intervention and post program . Data was collected by interviewing the patients using structured questionnaire about self-care practice regarding nausea and vomiting after receiving chemotherapy. They were asked about nausea and vomiting development, compliance to antiemetic drugs, number of meals during this period, attitude of patients regarding non pharmacological management of nausea and vomiting.

A health educational program was developed to increase patients' knowledge and encourage self-care by changing patient attitude regarding nausea and vomiting following chemotherapy .The evaluation was done with the same questionnaire in pre and post program.

A total convenient sample of sixty patients were enrolled their age was 18 years or older and they are received at least one cycle of chemotherapy without concomitant chemo-radiotherapy .

Score system:

Knowledge: For the knowledge items, a correct response was scored (1) and the incorrect (zero). For each area of knowledge, the scores of the items were sum med-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

Knowledge was considered good if the percent score was 75% or more, satisfy if the percentage score between 40%-75% and poor if the percentage less than 40%.

Data collection technique:

Three tools were used to collect data: a sociodemograph characteristics data form, knowledge about common chemotherapy side effect and attitude of patients regarding management of developing side effect.

■ Pretest: -

This was done on the day of dose administration to assess the knowledge and attitude of patient regarding chemotherapy side effects.

■ Post test: -

The same questionnaire was done in post test to evaluate the effect of the program.

Periods of pre and post test took 1year and 3months.The evaluation was done every 3 weeks depending on availability of patients.

Health educational program:-

An educational program intervention was developed in small book in simple Arabic language included image to facilitate learning to the patients, to increase patients' knowledge and encourage self care by changing patient attitude regarding chemotherapy side effect and their management.

Implementation of the program

The program was designed to satisfy the actual educational need of the study subjects, to increase the knowledge and change the attitude regarding common side effect of chemotherapy and self-care practice of the patients.

The time of meeting with study group was weekly in the hot day (the day of administration of doses) in the oncology department in Elmak Nimer hospital .After pretest which filled by researcher , implantation of the program was started .initially when number of patients was large , the program was introduced as lecture ,which took one hours interrupted by comedy videos to change the mode and increase the attention to the program .The program include definition of chemotherapy and way of management of common side effects supported with images to facilitate the teaching (the group composed of 3-8 patients and total number of lectures were 10) . Then with reduction of number of patients the program was conducted individually, this way was very affective because the patient had more concentration and attention.

The researcher supplied the patients involved in the program with small gifts used in management of side effects like (soft brush, electrical shaver, anti-septic soap...etc).

Modules:

Real objects (soft brushes, anti-septic swap, electric razor, shampoo and masks) to aid learning of patients were given to them and also hand out of the program with high quality well colored and supported with image to facilitated education of patients if they were illiterate.

The researcher had used different media as charts, animation, colored pictures showing the common side effects and their management.

III. RESULT

A total of 60 patients (23.3%) Of them male, (76.7%) were females. The commonest age distribution was 46-55 years .Level of education of studied patients was in (28.3%) primary level ,(26.7%) were secondary, and (33.3%)were illiterate . Regarding marital status (76.7 %) were married.

Table 1. Personal Characteristic (Gender, Age, Tribe, Residence Occupation Marital Status And Education)

Gender	Frequency				Percent %	
Male	14				23.3	
Female	46				76.7	
Total	60				100	
Age	Frequency				Percent %	
18-25 years	8				13.3	
26-35 years	2				3.3	
36-45years	12				20.0	
46-55 years	20				33.3	
56-65 years	12				20.0	
above 65 years	6				10.0	
Total	60				100.0	
Employment s	Male		Female		Frequenc y	Tota l %
	F	%	F	%		
Un employed	3	5	38	63.3	41	68.3
Employed	4	6.6	4	6.7	8	13.3
Laborer	1	1.7	0	0	1	1.7
Professional	0	0	1	1.7	1	1.7
Free worker	6	10	3	5	9	15.0
Total	14	23.3	46	76.7	60	100.0
Marital Status	Male		Female		Frequenc y	Total %
	F	%	F	%		
Married	12	20	34	56.7	46	76.7

Single	1	1.7	1 2	20	13	21.7
Divorced	0	0	1	1.7	1	1.7
Total	1 3	21. 7	4 7	78. 3	60	100.0
Educational level	Male		Female		Frequenc y	Total %
	F	%	F	%		
Illiterate	5	8.3	1 5	25	20	33.3
Khalwa	1	1.7	1	1.7	2	3.3
Primary	4	6.7	1 3	21. 7	17	28.3
Secondary	4	6.7	1 2	20	16	26.7
University	1	1.7	4	6.7	5	8.3
Total	1 5	25	4 5	75	60	100.0

Nausea And Vomiting And., Compliance To Antiemetic Drugs And Times Of It.

Table (3) shows the occurrence of nausea and vomiting. The frequency was 86.8%) in preprogram and reduced to (58.3%) in post program P = 0.000.About (65%) in pre versus

(98.3%) in post took antiemetic regularly and(23%) in pre (1.7%) in post irregular taken. With P.value (0.000).Times of taking drug in relation to meal was in (90%) before meal in pre intervention versus (98.3%) after intervention with Value (0.046).

Regarding number of meals during periods of nausea and vomiting (65%) in pre versus (36.7%) in post program decreased ,while (30%) in pre versus (61.7%) in posttest did not change the number of meal with P.value (0.000).

About drinking of water after meal (53.3%) in pre versus (11.7%) did not drank water ,while (46.7%) in pre (88.53%) in post did not drank water immediately after meal ,(P.value 0.000). Regarding lying down (46.7%) in pre (10%) in post test lied occasionally while (38.3%) in pre versus (46.7%) in post test always lied down (P = 0.000) which was shown in table (4).

Table 2. Occurrence of nausea and vomiting and compliance to antiemetic drugs and their time of use.

Nausea and vomiting	Before intervention		After intervention		P-value
	F	%	F	%	
Occurred	52	86.7	35	58.3	0.000
Not occurred	8	13.3	25	41.7	
Total	60	100.0	60	100.0	
Compliance to anti emetic drugs					
Taken regularly	39	65.0	59	98.3	0.000
Irregular taken	14	23.3	1	1.7	
Not taken	7	11.7	0	0	
Total	60	100.0	60	100.0	
Time of taking antiemetic drugs					
Before meal	54	90.0	59	98.3	0.046
After meal	3	5.0	1	1.7	
Not taken	3	5.0	0	0	
Total	60	100.0	60	100.0	

Figure (1) showed knowledge of group about management of nausea and vomiting (6.7%) in pre versus (65%) had good knowledge while (90%) in pre versus (25%) in post has poor knowledge with P.value (0.000).

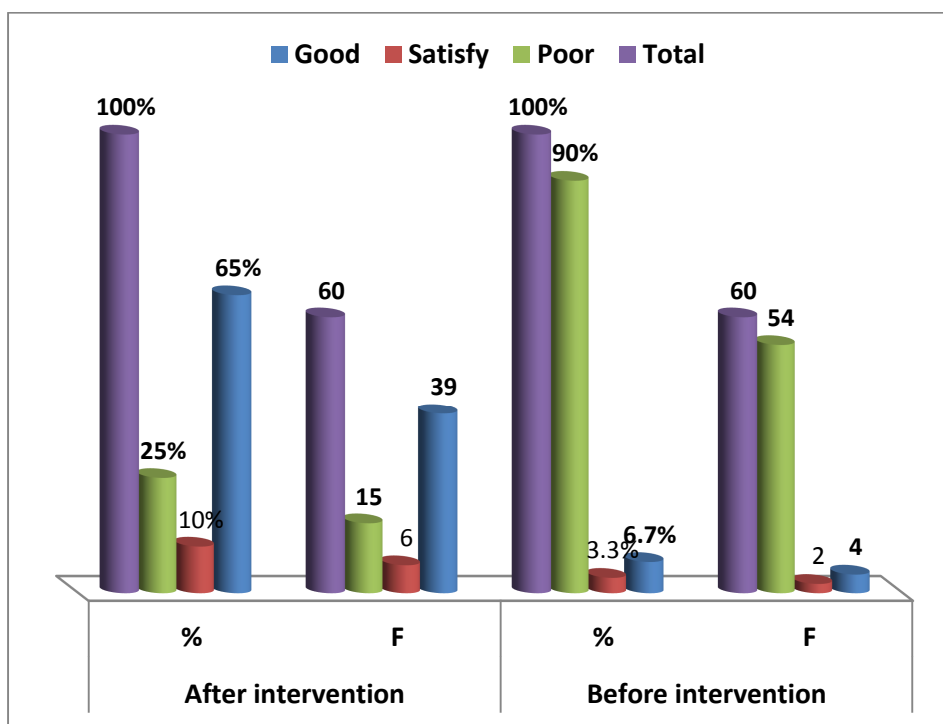
Table 4. Self-care practice during periods of nausea and vomiting

Number of meals	Before intervention		After intervention		P-value
	F	%	F	%	
Increased	3	5.0	1	1.7	0.000

Decreased	39	65.0	22	36.7	
Not changed	18	30.0	37	61.7	
Total	60	100.0	60	100.0	
Drinking of water immediately after meal					
Yes	32	53.3	7	11.7	0.000
No	28	46.7	53	88.3	
Total	60	100.0	60	100.0	
Lying down after meal					

Some times	28	46.7	6	10.0	0.000
Always	23	38.3	28	46.7	
No	9	15.0	26	43.3	

Total	60	100.0	60	100.0	
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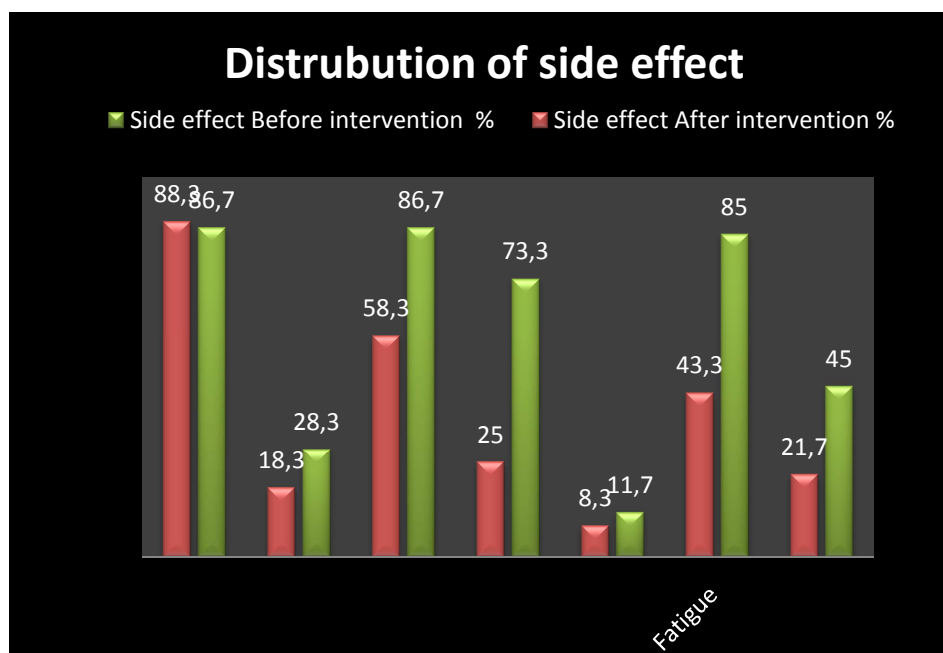


Figure 2. Distribution of side effect pre and post test

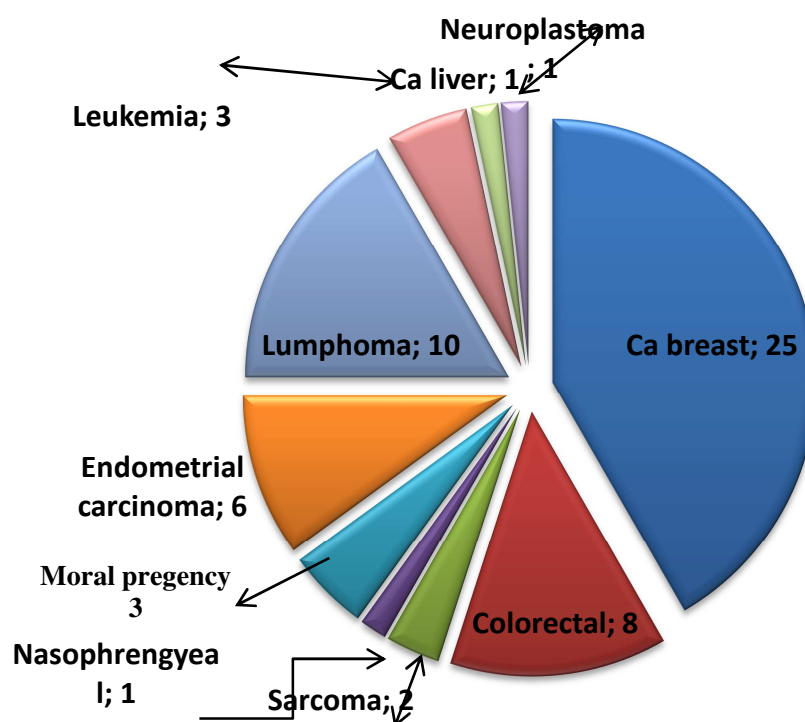


Figure 3.Type of Cancer

IV. DISCUSSION:

The role of nursing intervention is to improve health and to increase self-care practice. All persons require self-care in some manner in order to maintain an optimal level of health and wellbeing. In relation to oncology patients receiving outpatient chemotherapy treatments, side effect management is the self-care process that patients perform in order to maintain wellbeing. Nursing research has documented that patient's benefit from education about their disease, treatment and specific chemotherapy instruction⁽⁷⁾.

The characteristic of the study group showed that females were (76.3%). This correlates with the first National Population-based Cancer Registry in Sudan, 6771 new cancer cases were registered. Of those, (53.8%) were women and (46.2%) were men⁽⁸⁾. The commonest (33.3%) age range was (46-55) years which are the midlife age⁽⁹⁾. This was compatible with White MC1 et al. who reported that midlife is a period of life when the prevalence of multiple cancer risk factors is high and incidence rates begin to increase for many types of cancer. Because the number of adults reaching older ages is increasing rapidly, the number of new cancer cases will also increase if current incidence rates remain unchanged⁽¹⁰⁾.

Education was ranged from illiterate to university graduation and most of them were unemployed (68%). This correlated with Eid. M. et al. who found that most of the patients had no work, this may be due to many factors, among them age, disabilities caused by the disease itself, its treatment schedule or the side-effects of the drugs⁽¹¹⁾.

Nausea and vomiting were reported in (86.3%), Other side effects were reported with less. In contrast to Guswiler, Kelly A. who found the most frequent side effects were nausea/vomiting, diarrhea, mouth sore, and hair loss⁽¹²⁾. While in USA it was revealed the commonest side effect was fatigability (79%), nausea and/or vomiting (48%)⁽¹³⁾.

Majority of the patients (86.8%) experienced vomiting before the program which reduced to (58.3%) after the program ($P=0.000$). Maha Eid et al revealed that (80%, 78%) of the studied patients experienced nausea and vomiting following the first cycle⁽¹⁴⁾. These results were correlated with Bajano O who found that the majority of his studied patients post chemotherapy were always or sometimes experiencing a lot of stressors as nausea, vomiting, dryness of mouth, taste alteration, constipation, stomatitis, diarrhea, abdominal pain and loss of appetite⁽¹⁵⁾.

With regard to self-care practices to relieve nausea and vomiting, (65%) of patients before the program reported that they took the prescribed antiemetic drugs before chemotherapy which increased to near all (98.3%) after the program. Otherwise the knowledge of patient regarding the best times of taking anti emetic drugs was slightly improved ($P=0.046$). These results were inconsistent with Ibrahim (2001) who found that the majority of patients reported avoiding sight, smell, foods and fluids intake immediately prior to chemotherapy⁽¹⁶⁾, instead of taking antiemetic drugs.

Knowledge and attitude of study group about management of nausea and vomiting was improved with P -value 0.000. This could be attributed to the patient belief that medical measures may alleviate or control their symptoms which corresponds to (Antoni et al). Cognitive behavioral interventions (CBIs) by using a multimodal approach toward symptom management are particularly effective in decreasing symptom severity for patients with cancer⁽¹⁷⁾.

V. CONCLUSION

Females were predominant among study group and third of studied patients were illiterate. The severity and occurrence of nausea and vomiting was reduced in post test after the teaching program. Self care practice was changed significantly which affects positively the attitude and practice of patients. There was no significant relation between the knowledge and level of educations.

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