Holistic Needs for Patients with Cancer and Suggested Nursing Guidelines

Maha Desoky Saleh sakr, Rehab Ragab Bayomi, Nadia Mohamed Taha
Medical Surgical Nursing, Faculty of Nursing, Zagazig University, Zagazig, Egypt

Abstract

Background: Cancer is a significant concern for public health for millions of people worldwide and it claims thousands of lives. Meeting the needs of cancer survivors in the long term has become a significant concern for public health. **This study aimed** to assess holistic needs for patient with cancer and suggest nursing guidelines. Descriptive design was used on hundred patients with cancer admitted to viruses' outpatient unit, in Zagazig University Hospital before receiving chemotherapy. Patient Interview Questionnaire was used to assess patient condition including sociodemographic data, Patient knowledge about cancer, Needs of patient with cancer by scale based on quality of life. **Results:** Half of the studied patients had unsatisfactory knowledge about cancer while nearly three-quarters of the studied patients had high needs, the highest needs was for Psychological needs more than four-fifths of the studied sample followed by physical need about three quarter, near three quarter for spiritual needs, and above three fifth for socio-economic needs. **Conclusion**: There was a statistical significant relation between patients' level of knowledge, total needs and their socio-demographic characteristics. In addition there was statistical significant relation between patients' total needs and their level of knowledge. **Recommendation:** conducting proposed protocol of patient's holistic needs management that's evidenced – based should be implemented and evaluated.

Keywords: Holistic Needs, Cancer, Nursing Guidelines

Correspondence Rehab Ragab, Tel: +20 1004403948; e-mail: rehab_ragab29@yahoo.com

Introduction

Cancer is a significant cause of morbidity and mortality and second most common cause of death after heart attack world – wide. It is a category of disease that occurs due to uncontrolled growth and abnormal cell proliferation which can also lead to death if not regulated. This also leads to physical insufficiencies and psychiatric issues with remission times and exacerbations (**Kajal, et al, 2017**).

Depending on the organ involved, cancer stage and physical condition of the patient, there are many different methods of treating cancer. The treatment also depends on the form of cancer cells and their development. Various methods of treating cancer include surgery, chemotherapy , radiation therapy, immunotherapy (also called biotherapy), bone marrow transplants, gene, hormone and proton therapy and complementary medicine, massage, acupuncture and mind therapy**(Ead , & Moursy, 2015**).

When diagnosing a person with cancer. It is likely to be a stressful experience not only for the diagnosed patient but for their family as well. The nurse is expected to provide treatment that represents the particular needs of a person (physical and psychological health should be taken into consideration). Treatment for cancer is meant to cure, monitor the disease process or or provide palliation of symptoms (**Peate, 2016**).

There are many physical, psychological, social, spiritual and financial problems facing cancer patients and cancer survivors. In addition, cancer treatment moves from a disease-focused approach to a holistic one, in which more attention is paid to psychosocial factors, quality of life, the interests of patients, and empowerment and survival. Providing holistic care is a component of providing integrative care. Integrative treatment uses traditional and complementary approaches to cancer that combine them with an emphasis on the whole person, including mental, spiritual, social and lifestyle (diet, physical activity, sleep, relationships) factors, the provider-patient relationship as a partnership and inter professional collaboration (**Cadet, et al, 2016**).

Holistic needs assessment is a process of collecting and discussing information with the patient and/or profession or supporter to develop an understanding of what knows, understands and needs of the person living with cancer. This holistic assessment is focused on the whole person, their entire well-being is discussed physical, emotional, spiritual, mental, social and environmental (**Cund, et al, 2015**).

Chemotherapy and acupuncture may be part of a systematic way of treating cancer. Medical therapies such as chemo and radiation have been shown to combat the disease, but its side effects can be difficult to deal with. A holistic approach can help relieve some of these issues and improve the health of patients (**Breckon, & Davison, 2015**). While **Bottorff et al, (2015)** stated that the term 'holism' comes from a Greek word meaning all, entire or whole. It is the idea that any given system cannot be explained by its component parts alone. Instead, the system as a whole determines how the parts behave.

Holistic assessment is back ground information and assessment preferences, physical needs, social, occupational needs, psychological and spiritual wellbeing. Holistic needs assessment identified is a part of the treatment of a patient with cancer. This can make a big difference to the overall experience of a patient and allows the patient to improve the results by easily finding and solving problems (**Williams & Wyatt, 2015**).However, A more consistent approach, through holistic needs assessment, of identifying those people whose needs are greatest and/or most immediate, enables teams and organizations to know where best to focus their efforts. It means that resources can be used more effectively and service needs identified (**Husson et al, 2011**)

Holistic needs assessment is critical because it: recognizes individuals in need of support, provides the person with the opportunity to think about their needs and their healthcare professional, to make a plan about how to best meet these, Helps people to self manage their condition, and helps teams to target support and care efforts and work more

efficiently by making appropriate and informed decisions (**Snowden & White, 2014).** While more than a third of adults use a treatment outside of mainstream medicine. It may not cure cancer but can enhance the quality of life. Patients may attempt some clinically validated ways to alleviate side effects (**Fong, et al, 2011**).

Significance of the study

According to World Health Organization (WHO), the global cancer incidence is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018. The increasing cancer burden results from many factors, including population growth and aging, and the evolving prevalence of certain cancer causes linked to social and economic development (**WHO, 2018**). Cancer affects the physical and psychosocial well-being of patients and families, so there is a substantial need for information following diagnosis of cancer, and the needs assessment of patients has a positive impact by enhancing patient perception of treatment and maintaining a trusted relationship with patients and organizing work with other health teams who have reflected improving quality of life. The study will therefore be implemented in an attempt to help in assessing the holistic needs of cancer patients.

Aim of the study:

This study aimed to:

1.Assess holistic needs for patients with cancer

2.Suggest a nursing guideline based on the holistic needs for patients with cancer.

Methodology

Research question:

What are the holistic needs for patients with cancer?

Research Design:

Descriptive design was utilized in this study.

Setting:

The study was conducted at viruses' outpatient units, in Zagazig University Hospital.

Subjects

Study subjects included one hundred cancer patients (76 males and 24 females) were admitted to the outpatient unit of viruses in Zagazig University Hospital prior to receiving chemotherapy, convenient sampling they were selected from all available patients irrespective of their age, gender , occupation, or educational level present during the study period

Tools and techniques of data collection:

Three tools have been used to collect the necessary data which include:

Tool 1- Patients' interview Questionnaire:

Questionnaire interview was used for determining patient condition. The researcher designed and developed it in Arabic language in order to avoid misunderstanding it after reading the relevant literature. It consisted of three parts of:

Part I: Socio-demographic Characteristics of the patients which were composed of seven closed ended questions which included (age, sex, marital status, level of education, occupation, crowding index and monthly income).

Scoring system

Crowding index: it is estimated by dividing number of family members living in this house to the number of rooms. If the result; < 2 meaning no crowding was scored zero score, where more than 2 meaning crowding was scored one score (**WHO, 2018)**

Part II: Patient' knowledge about cancer.

This part composed of (15) questions. This consisted of multiple choice and open ended questions, such as meaning of cancer, rick factor of cancer, signs, symptoms, complications, dietary regimen, medical follow up for patients with cancer, preparation before, during and after treatment, dose, side effects and dietary regimen.

Scoring system

Scoring system was rated according to the items of the interviewing questionnaire. The answers of the patients were evaluated using model answer prepared by the researcher. Each completed correct answer was scored two, incomplete correct answer was scored one and zero for wrong answer or did not know.

Total knowledge was scored satisfactory > 60% unsatisfactory < 60% based on data collection and statistical analyses.

Tool II-Holistic needs for patients with cancer: (*Barnett, 2017, Dore,* et al., 2009 & Boparai, et al., 2009)

The scale was based on quality of life scale. This scale was adapted and translated into Arabic form by the researchers. The scale constituted of questions and divided into four domains (physical and functioning needs, psychological needs, socioeconomic needs and spiritual needs).

1- **Physical/ functioning needs.**

It contains 50 questions, covering the side effects of the chemotherapy, physical and health needs consists of 11 health problems include: general, cardiovascular, respiratory, gastro-intestinal, musculoskeletal, dermal, neurological, psychological, reproductive health problems and 2 other problems changes of self-care and activities of daily living and effect of health status on the work. General health problems consisted of 5 health problems as headache, fatigue, fever, weakness, loss of weight, in relation to Cardiovascular consisted of 6 health problems such as, hypertension, hypotension, bleeding tendency, anemia and palpitation. Respiratory consists of 5 health problems as, dyspnea, cough, chest pain, rhinitis and recurrent attack of bronchitis.

In relation to gastro-intestinal consisted of 10 health problems as, nausea, vomiting, anorexia, dryness of mouth, taste change, halitosis, diarrhea, constipation, stomatitis, and abdominal pain. Musculoskeletal consists of 4 health problems as, joints pain, bone pain, inability to move and muscle cramps. Skin and hair consisted of 5 health problems as, inflammation, itching, loss

of hair, dryness of skin and skin rash. Neurological consisted of 6 health problems as, numbness, cramps, imbalance, decreased visual acuity, loss of consciousness and tremors.

Psychological consisted of 5 health problems as insomnia, decrease of concentration, nervousness, anxiety and depression. Reproductive consisted of 2 health problems as decrease sexual activity, fertility changes.

2- Psychological status

It included 14 items from 1 to 14 which covering the following: stress and anxiety do the patient' have, patient' ability to concentrate or remember things, effect on enjoying life activities**,** feeling of depression and hopelessness**,** feel like you are in control of things in your life, sleep disorders, effect on satisfying with your life, change in general appearance, preoccupation with return to normal health, magnitude of pain, stress of first time diagnosis, family support**,** problems with medication and continuous thinking of near death.

3- Socioeconomic needs

It consisted of 12 items from 1 to 12 covering the following: effect on fulfilling family roles, how beneficial to others, effect of illness and treatment on personal relations, effect of illness and treatment on sexual life, effect of illness and treatment on family ambitions, getting enough support from others, dependence on others in daily life activities, difficulty in getting medications, economic burden of illness and treatment, monthly income sufficiency for treatment, sufficiency of health care obtained and degree of isolation because of illness.

4- Spiritual needs:

It consisted of 8 items from 1 to 8 covering the following: extent of feeling of gloomy future, feeling having an aim for own life, effect of disease on feeling secure, effect of disease on feeling hope, effect of disease on religious ordinations, any positive changes of illness on life, effect of illness on recreational activities and effect of illness on feeling happy.

The scale comprised three levels for the patients' to select the representing his/her state which are: low grade, high grade, and not applicable to me.

Scoring system

Items were scored 0, 1, 2 for the responses one for low grade need, two for high grade need and zero for not applicable to me, respectively for positive items, and reversed for negative items. The scores of the items were summed- up and the total divided by the number of the items, giving a mean score for attitude. These scores were converted in to a percent score, and means and standard deviations were computed. The patients needs was considered high if the percent score was 60% or more and low if less than 60%.

Tool III: A nursing guideline sheet based on the holistic needs for patients with cancer.

It included all knowledge needed about cancer; definition, causes, manifestation, complications, and management in order to promote patients knowledge and in turn to satisfy their needs.

Operational Design:

The operational design included a preparatory phase, content validity and reliability, pilot study and field work.

Preparatory phase:

To develop the study tools, extensive reviewing of current past, local and international literatures related to the researcher problems through the use of articles, journals, books and internet search was done.

Content validity and reliability:

Content validity was tested by a jury consisted of 7 professors and experts in medicine and medical surgical nursing at zagazig university. Who reviewed the tool for clarity, relevance, comprehensiveness, understanding, and ease for administration. Reliability test was carried out, using Crombach`s alpha that measured the degree of reliability. It showed high reliability of the total Needs of patients with cancer, Alpha = 0.96.

Pilot study:

A pilot study was applied on a group of ten (10%) patients for testing clarity, arrangement and applicability of items and time consuming to fill in the tools, the modification were done for the used tools then the final form was developed. Patients included in the pilot study were excluded from the study group.

Field work:

The study was performed between the end of October 2019 up to April 2020 and the following was done:-

At the beginning of data collection, the researcher started by introducing herself to the patients, explaining the purpose of the study and the component of the tools to the patients. They were told that the collected information would be treated confidentially and would only be used for study purposes (oral consent was taken from the patients).

The researcher visited the outpatient unit in the morning from 10.00 A.M to 4 P.M every day this time was suitable.

The patients filled the written questionnaire in the presence of the researcher or it was filled by the researcher for illiterate patients.

Guidelines were given to patients presented at the time of data collection, time taken to provide all information about the disease varied depending on the patient's health status, patient's response and crusity to know more information. Time included ranged from 30 -45 minutes.

Ethical consideration:

The purpose of the study was explained to the patients and oral consent was obtained from them to participate in this study. They were given an opportunity to withdraw from the study without given a reason and they were assured that confidentiality of information was protected.

Administrative Design:

An official permission was obtained from medical, nursing director and responsible for viruses outpatient unit

to clear explanation about purpose and benefits of the study.

Statistical analysis

All data coded, entered, and analyzed by using SPSS, (Statistical Package for Social Sciences), soft-ware program version 20, which was applied to frequency tables, statistical significance and associations were assessed using chi-square test and coefficient relations to detect the relations between the variables, mean, range, and standard deviation were also used.

Results

Table 1: Illustrated the demographic characteristics of studied sample. It is clear that more than half of the patients (53 percent) were in < 30 years of age group, with mean age 38.6± 9.2 years. Regarding to sex, it was found that more than three-quarters of the patients (76%0) were males. As regard to marital status, it was found that nearly three-quarters of the patients (74%) were married. Regard to level of education, it was found that more than three-fifths of studied patients (61%) of them were basic and intermediate learning. Additionally the same table reveals that more than half (52%) of studied sample were manual worker. It was observed that nearly three- quarters (73%) of studied sample had high crowding index .It is clear from the table that three-fifths of the studied patients (60%) hadn't enough monthly income.

Table 2: shows the correct knowledge about cancer and its therapy among patients in the study sample. According to the table half (50%) of the patients had unsatisfactory knowledge. table also reveals that only 30% of studied sample had knowledge regarding to definition\ nature of cancer, half of the patients (50%) had knowledge regarding symptoms, only 20% of the patients had knowledge regarding symptoms of chronic cancer, 13% know the dietary regimen of cancer. Also the table clarifies that the entire studied sample 100% had not any knowledge regard to medical follow up for cancer and knowledge about types of treatment.

Table 3: Indicates that nearly three-quarters73% of the studied patients had high needs, the highest needs was for Psychological needs more than four-fifths of the studied sample 82% followed by physical needs 75% ,Spiritual needs 71%, and socio-economic needs 66%.

Table 4: Demonstrates that there was a statistical significant relation between patients' level of knowledge and their socio-demographic characteristics i.e. age, sex, job status and patients' knowledge p-value=(0.02, 0.047, 0.002) and the level of education and treatment fees paid by government had highly significant difference effect between the patients as regard to their knowledge (P- value<0.001).

Table 5: Concerning the effect of demographic characteristics and the total needs of the patients there were statistical significant relation between female gender and the total needs, Level of education and the total needs and Job status and the total needs with P-value <0.001, P-value =0.017 and P-value =0.01.

Table 6: Indicates statistical significant relation between patients' total needs and their level of knowledge it is clear that patients' knowledge affect Socio-economic needs P-value=0.04.

Table 1: Demographic Characteristics of Patients with cancer in the study sample (n=100)

Demographic Characteristics	Frequency No	Percent %
Age groups (years)		
<30	53	53.0
30-	30	30.0
50+	17	17.0
Range 18.0-56.0		
Mean ± SD 38.6±9.2		
Gender:		
Male	76	76.0
Female	24	24.0
Marital status		
Single	18	18.0
Married	74	74.0
Widow	7	7.0
Divorced	1	1.0
Level of education		
Illiterate	26	26.0
Basic \intermediate	61	61.0
University	13	13.0
Job status:		
Unemployed\ House wife	18	18.0
Employee	30	30.0
Manual worker	52	52.0
Crowding index		
<2	27	27.0
2+	73	73.0
Monthly income:		
Sufficient	40	40.0
Insufficient	60	60.0

Table 2: knowledge about cancer among patients in the study sample (n=100)

Satisfactory knowledge about:	**Frequency**	**Percent**
Definition\ nature of cancer.	30	30.0
Rick factor of cancer	100	100.0
Signs of cancer	50	50.0
Symptoms of cancer	20	20.0
Complications of cancer	60	60.0
Dietary in-tack for cancer patient	13	13.0
Medical follow up for cancer patients.	0	0.0
Preparation before intake of treatment.	100	100.0
Precaution during intake of treatment.	80	80.0
Precaution after treatment terminates.	24	24.0
Knowledge about line of treatment	0	0.0
Dose of chemotherapy	99	99.0
Dose of radiotherapy	99	99.0
Side effect of chemotherapy.	100	100.0
Care of side effect for treatment	9	9.0
Total knowledge:		
Satisfactory > (60%)	50	50.0
Unsatisfactory< (60%)	50	50.0

Table 3: Total holistic needs of patients with cancer in the study sample (n=100).

	To a great extent	
Total holistic needs:		
	No.	**%**
Psychological.	82	82.0
Physical \Functional.	75	75.5
Spiritual.	71	71.0
Socio-economic.	66	66.0
Total needs:		
High	73	73.0
Low	27	27.0

Table 4: Relation between patients' total level of knowledge and their demographic characteristics.

Demographic characteristics	Total Level of knowledge					
	Satisfactory		Unsatisfactory		x^2	P-value
	No.	%	No.	%	Test	
Age groups (years)						
<30	32	62.3	21	37.7		
30	14	46.7	16	53.3	8.05	0.02*
50+	4	23.5	13	76.5		
Gender						
Male	42	56.6	34	43.4		
Female	8	52.7	16	66.7	3.94	0.047*
Marital status						
Unmarried	11	46.2	15	53.8		
Married.	39	52.7	35	47.3	0.33	0.57
Level of education						
Illiterate	3	8.3	23	91.7		
Basic\intermediate	28	45.9	33	54.1	19.41	<0.001*
University	11	81.5	2	18.5		
Job status:						
Unemployed\ house wife	5	27.8	13	72.2		
Employee	22	76.7	8	23.3		
Manual worker	23	44.2	29	55.8	12.75	0.002*
Crowding index						
<2	16	59.3	11	40.7		
2+	34	47.9	39	52.1	1.01	0.31
Treatment fees paid by:						
Health insurance						
Government	23	77.4	8	22.6		
	27	39.1	42	60.9	12.55	<0.001*
Monthly income:						
Sufficient	19	49.4	21	50.6		
In Sufficient	31	57.9	29	42.1	0.45	0.50

(*) statistically significant at p>0.05

Table 5: Relation between patients' total holistic needs and their demographic characteristics.

	Total needs					
	High (60+)		Low (<60%)		x^2 Test	P-value
	No.	%	No.	%		
Age groups (years)						
<30	40	75.4	13	24.5		
30	22	73.3	8	26.7	0.44	0.80
50+	11	82.3	6	17.6		
Gender						
Male	55	72.7	21	27.6		
Female	18	75.0	6	25.0	28.58	<0.001*
Marital status						
Unmarried	20	76.9	6	23.1		
Married.	53	71.6	21	28.4	1.03	0.31
Level of education						
Illiterate	20	67.9	6	23.0		
Basic\intermediate	45	73.8	16	26.2	8.11	0.017*
University	6	46.1	7	53.8		
Job status:						
Unemployed\ house wife	4	22.2	14	77.8		
Employee	19	63.3	11	36.7	8.89	0.01*
Manual worker	42	80.8	10	19.2		
Crowding index						
<2	16	59.0	11	40.7		
2+	57	72.6	16	27.4	1.64	0.20
Treatment fees paid by:						
Health insurance						
Government	20	64.5	11	35.5		
	53	71.0	16	29.0	0.42	0.52
Monthly income:						
Sufficient	28	70.0	12	30.0		
In Sufficient	45	75.0	15	25.0	1.35	0.24

(*) statistically significant at p>0.05

Table 6: Relation between patients' total holistic needs and their level of knowledge.

	Level of knowledge					
	Satisfactory (60+)		Unsatisfactory (<60%)		x^2 Test	P-value
	No.	%	No.	%		
Physical\functional						
High	45	60.0	30	40.0		
Low.	5	20.0	20	80.0	1.94	0.16
Psychological						
High	42	51.2	40	48.8		
Low.	8	44.4	10	55.6	1.97	0.14
Socio-economic						
High	36	54.5	30	45.5		
Low.	14	41.2	20	58.8	4.33	0.04*
Spiritual.						
High	36	50.7	35	49.3		
Low.	14	48.3	15	51.7	Fisher	1.00
Total needs						
High	36	49.3	37	50.7		
Low.	14	51.9	13	48.1	0.61	0.43

(*) statistically significant at p>0.05

Discussion

The most significant and insidious oncological diseases affect not only physical but also psychological ones. For many patients these diseases cause severe social and financial problems. When such a disease is diagnosed, the whole patient life, including family member's life, will be changed dramatically**(Fulmekova, et al, 2017).** Knowledge about wellbeing has a critical effect on health outcomes. Knowledge of patients affects their ability to participate effectively in decision-making processes for medical care and treatment preferences, and their ability to control their condition to improve health outcomes. A general understanding of illness and phase is important for decision-making and adherence to cancer care. More knowledge about the diagnosis and treatment of cancer is also a primary factor for difference in survival **(Aragones, et al, 2013).**

The findings of the present study showed that the mean age of the patient was 38.6±9.2 and more than half of them were in the < 30 year age group. This finding was contradicted to a study conducted **by Ghonem, et al, (2017)** in their study about " Assessment of Health needs for Patient treated with Chemotherapy" who found that the highest percent of studied patients their age falls between 44 and 56 years with mean 50.9. This can be explained by the fact that cancer incidence increases with age and chronic life stressor exposure. That opinion is in line with what was reported by **Cinar and Tas (2015**) That cancer is one of the major causes of mortality and morbidity and increases its

incidence with aging that is a critical factor in cancer disease.

Current study results confirmed that nearly three-quarters of patients studied were married. This may reflect that married people are susceptible to cancer disease because they always face psychological stress from their role in society. This finding on the same line with **Effendy, et al (2017)** who indicated in their study about "Implementation of self – care symptom management program to enhance the quality of life of cancer patients undergoing chemotherapy and their family care givers, that the majority of studied sample were married.

The current study revealed that more than three fifths of patients studied were basic and intermediate learning in relation to the level of education. This reflected the high crowding index situation, which is characterized by a low level of education. This finding is in consistent with **Ead and Moursy (2014)** who found that majority of their studied patients were illiterate, read and write.

The result of the present study portrayed that, three- fifth of the studied patients hadn't enough monthly income. This reflected the situation of the studied patient, who belonged to the low income with a large family size, and high crowding index. This goes on line with **Hussein (2013)** who carried out a study at Ain Shams University about "Assessment of Patient's needs and coping Strategies post mastectomy" and reported that more than two thirds of studied patient had insufficient monthly income.

The current study showed that half of studied patients had unsatisfactory knowledge about cancer. The lack of knowledge can be due to the lack of training program and the lack of information resources on and the impact of the disease. This suggests a shortcoming in the position that health care professionals play as health educators. This finding was agree with **Allam and Abd El Aziz (2012**) who indicated that the majority of studied patient had unsatisfactory knowledge about cancer disease and self-care practices, and the source for information for the highest percentage of patients involved in their study was from their relatives and families.

In relation to needs of patients with cancer, the present study reported that nearly three quarters of the studied patients had high needs, the highest needs was for psychological needs followed by physical needs. This finding disagree with **Eleithy (2009)** who found that more than fifth of studied sample were low regarding physical and psychological needs while the majority of them were high regarding spiritual and social needs. This result may be due to the nurse stress on the importance of physical and psychological preparations for cancer patients and provide major effective form of care with a high quality service to meet this needs.

As regard to relation between total level of knowledge and their demographic characteristics. The result of the present study portrayed that, there was a statistical significant relation between patient's level of knowledge and their socio demographic characteristics. This finding disagreement with **Mohamed (2016)** who found that there is no a statistical significant relation between total knowledge and socio – demographic characteristics. This attributed to sample size was too small to reveal significance or non-significance results.

The finding of the present study revealed that there were statistical significant relation between female gender, level of education, job status and total needs. This may reflect the result of this study drawing attention to patients with cancer who might need more physical , psychological , spiritual and social needs. These findings go in the same direction **as George, et al (2017**) who reported that age, educational status, income and their patient's type of cancer and duration of treatment were statistically associated with quality of life.

The result of current study verified that there was statistical significant relation between patient's total needs and their level of knowledge; it is clear that patient's knowledge affect socioeconomic needs. This indicated that an important aspect of care is information to patient which be tailored according to knowledge base. This finding was contradicted to a study conducted by **Ibrahim (2017)** in her study about "Nutrition Status and information Needs Among Patients Receiving Chemotherapy and Radiotherapy" that there was statistical significant relation between total satisfactory patient knowledge who receiving chemotherapy and radiotherapy and nutrition status, and information needs.

Conclusion

The current study concluded that there was a statistically significant relationship between knowledge level, total needs and socio-demographic characteristics of the patients. Furthermore there was a statistically significant relationship between the total holistic needs of patients and their knowledge level.

Recommendation:

Conduct comprehensive health education programs for cancer patients in outpatient clinics with simplified printed guidelines by posters, brochures or booklets taught by professional staff to the patients.

The proposed protocol for the management of patient needs which is illustrated-should be implemented and evaluated.

Further studies should be carried out on a large sample size and with long term follow-up for cancer patients for evidence the results.

Author contribution

The first author contributed to the conception of the research, the development of the tools, statistical analysis, and commentary on the tables, wrote the discussion and references, and help in data collection. The second author contributed to the sample collection, and participated in the reference collection and analysis data. The third author contributed to the translation of the tools and booklet into Arabic, participated in the reference collection and data collection.

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