

## Assessment of Health Needs for Patient Treated with Chemotherapy

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### Abstract

**Background:** Cancer is a leading cause of death worldwide. Chemotherapy is one of the major therapeutic options for cancer treatment associated with unpleasant side effects.

**Aim of the study:** This study aimed to assess health needs for patients treated with chemotherapy.

#### Methodology:

**Design:** A descriptive study design was utilized to conduct this study.

**Setting:** This study was conducted in oncology department in Suez Canal university hospital at Ismailia city.

**Subject:** A purposive sample of 148 patients treated with chemotherapy.

**Tools:** Semi-Structured interviewing questionnaire included demographic data, medical history, surgical history and patient health needs assessment questionnaire (PNAT).

**Results:** the highest health needs of patients treated with chemotherapy were discomfort, anxiety and depression. There is statically significant correlation between physical health needs, psychological and social health needs with  $p$  value of 0.00. Additionally, there is statically significant correlation between physical discomfort and anxiety and between physical discomfort and depression with  $P$  value of 0.00.

**Conclusion:** The result of the study concluded that the health needs of patients treated with chemotherapy e.g. psychological, physical, and social should be fulfilled. Further researches should be conducted to develop strategy to overcome unfulfilled health needs of cancer patients treated with chemotherapy.

**Keywords:** "Cancer", "Chemotherapy", "Health needs", "Patient's Needs Assessment Tool".

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### I. Introduction

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Risk factors of cancer classified into external factors, such as tobacco, infectious organisms, and an unhealthy diet, and internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause cancer. Ten or more years often pass between exposure to external factors and detectable cancer (American Cancer Society, 2015). Moreover, Cancer is a major public health problem worldwide and is the second leading cause of death in the United States. In 2017, 1,688,780 new cancer cases and 600,920 cancer deaths are projected to occur in the United States. For all sites combined, the cancer incidence rate is 20% higher in men than in women, while the cancer death rate is 40% higher. However, sex disparities vary by cancer type. (Sigelel et al., 2017). Chemotherapy is a common treatment modality in many cancer patients in addition to surgery and radiation therapy. Also, cytotoxic drugs can lead to complete remissions for some disseminated cancers (lymphoma, for example), be effective in decreasing tumor size, and may prolong life in many other types of metastatic cancers, such as osteosarcoma. The choice of specific therapies depends on tumor type, histologic grade of the tumor, stage of cancer, and the patient's tolerance for the side effects of the various treatment types. Most chemotherapy patients enjoy a good quality of life while on therapy (MacDonald, 2009). Furthermore, Chemotherapy is presently used in four main clinical settings: primary induction treatment for advanced disease or for cancers for which there are no other effective treatment approaches; neoadjuvant treatment for patients who present with localized disease, for whom local forms of therapy, such as surgery and/or radiation, are inadequate by themselves; adjuvant treatment to local treatment modalities, including surgery and/or radiation therapy; and direct instillation into sanctuary sites or by site-directed perfusion of specific regions of the body directly affected by the cancer. (Chu & DeVita, 2015). Additionally, Chemotherapy is a common treatment for

most types of cancer. Adverse effects of chemotherapy include nausea, vomiting, constipation, diarrhea, appetite change, anorexia, dyspepsia, and food aversions and lead to malnutrition (Thompson et al., 2013). The presence of physical symptoms can often have a detrimental effect on an individual's psychological well-being. Which, body image changes due to weight loss/gain, hair loss, skin texture, nail changes, potential for fatigue, stoma management, and limb loss can confound the problems of psychological distress. (Roe & Lennan, 2014)

Chemotherapy nurses play a central role in a substantial role in the prevention and management of chemotherapy side effects and it is important that nurses have sufficient knowledge and understands the individual treatment options prescribed (Krishnasamy et al., 2014). The main problems of long-term cancer survivors are in the areas of social/emotional support, health habits, spiritual/ philosophical view of life, and body image concerns. Many studies show good or adequate overall quality of life (QoL) in these patients. However, among long-term survivors, psychosocial issues and physical symptoms, particularly the adverse effects of chemotherapy on QoL still persist. (Heydarnejad et al., 2011).

**Significant of the study:**

Cancer is the leading cause of morbidity and mortality worldwide, with approximately 14 million new cases and 8.2 million cancer related deaths in 2012 (WHO, 2015). Most of cancer patients treated with chemotherapy and unfulfilled health needs of cancer patients treated with chemotherapy can lead to serious complications, so this study sheds light on assessment of health needs for patients treated with chemotherapy.

## **II. Subjects And Method**

**Aim of the study**

The aim of the present study is to assess health needs for patients treated with chemotherapy.

**Objectives:**

- Assess physical health needs for patients treated with chemotherapy.
- Assess psychological health needs for patients treated with chemotherapy.
- Assess social health needs for patients treated with chemotherapy.

**Research design:**

A descriptive study design was utilized in the current study.

**Setting:**

The study was carried out at the oncology department in Suez Canal University hospital in Ismailia city that contain male and female oncology departments.

**Subjects:**

Purposive sample was used to recruit the study sample with a total number of 148 patients.

**Tools for data collection:**

**Tool 1: patient health needs assessment tool which include three parts:-**

**Part one**

Semi-structure interviewing questionnaire was prepared by the researcher used to assess socio demographic data as age, gender, occupation, level of education.

**Part two**

Medical and surgical history as heart disease, renal diseases, anemia, and hypertension & body mass index (BMI). (Lewis, et al, 2016) & (Lynn, 2011).

**Part three: - Patient Needs Assessment Tool questionnaire (PNAT)**

This tool was developed by (Richardson et al. 2005) to assess health needs of cancer patients, it contain 16 items in 3 domains , each item ranged from one to five which mean; one mean sever impairment and five mean no impairment. First domain cover physical needs that include six items named mobility, communication, activities of daily living (e.g. Feeding and dressing), bowel & bladder function, discomfort and alertness and mentation, Second domain cover psychological needs and include five items that cover prior psychological adjustment, depression, anxiety, attitude toward disease and attitude toward treatment and Third domain cover social needs and include five items that cover practical support, individual support network, non-medical support network, medical support and financial security.

**Tools validity:**

The study tools were revised by nine expertise from medical surgical nursing, community health nursing, psychiatric health nursing and oncology medicine for clarity, relevancy, applicability, comprehensiveness, understanding and ease for implementation.

**Tools Reliability:**

Patient needs assessment tool scores for physical, psychological and social dimensions have tested the interrater reliability and internal consistency which revealed intra-class correlation coefficients of 0.71- 0.97. Criterion and construct validity was suggested through high correlation of each subscale with the evaluation of expert raters with correlation coefficients of 0.85-0.95 and with scores on validated patient-rated instruments appropriate to the functional area.

**Field work:**

Data were collected within six months period started in October 2016 and ended in March 2017. Data was collected three days/ week at afternoon shift from cancer patients in oncology department in Suez Canal University hospitals at Ismailia city. The interviewing questionnaire was completed within 25 to 35 minutes.

**Pilot Study**

Pilot study was conducted on 10% patients of the study sample to examine the clarity and feasibility of the study tools. It was carried out for one month. Data obtained from the pilot study were analyzed. The sample used for pilot study was excluded from the study sample.

**Administrative Design:**

Before conduction of this study a written approval was prepared from the dean of the faculty of nursing, Suez Canal University and directed to the director of Suez Canal University hospital to obtain a permission to conduct this study. Aim of the current study was explained to the hospital director, physicians and staff nurses working in oncology department of Suez Canal University hospital

**Statistical Analysis:**

Data was collected and presented in tabular form. Percentages were calculated for qualitative data while mean and standard deviations were calculated for quantitative data. The Statistical Package for Social Sciences (SPSS) version 20 was used for statistical analysis. Descriptive statistics including frequency, distribution, mean, standard deviation and chi square were used to describe different characteristics.

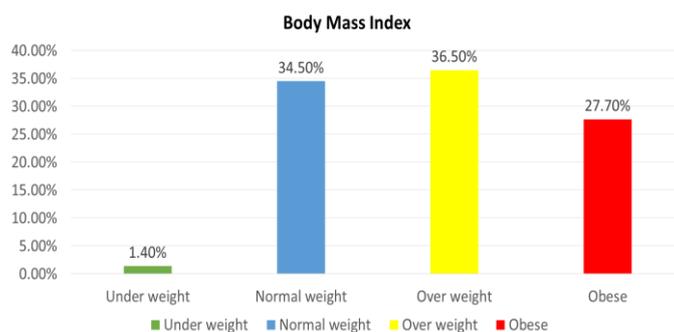
### III. Results

**Part I: Biographic characteristics:**

**Table (1):** show distribution of study sample according to socio-demographic characteristics which revealed that, the highest percent of studied patient age 37.2% falls between 44 and 56 years old, the same percent was above 56 years old with mean of age of 50.9. Regarding education and occupation about 30.4% of studied patient had secondary education and more than half of studied patient 51.4% was working.

**Table (1): Distribution of the study sample according to their socio-demographic characteristics (n= 148).**

Personal variable	No.	Percentage
<b>Age</b>		
18- 30	10	6.8%
>30-43	28	18.9%
>43-56	55	37.2%
>56	55	37.2%
<b>Mean ± SD</b>	<b>50.90 ± 11.84</b>	
<b>Occupation</b>		
-Work	76	51.4%
-Not working	72	48.6%
<b>Educational level</b>		
-Illiterate	40	27 %
-Write and read	17	11.5%
- Basic education	24	16.2%
- Secondary education - University education	45	30.4 %
	22	14.9%



**Figure (1):** Distribution of studied patient according to their body mass index. (n= 148).

**Figure (1):** This figure show, the highest of studied patient 36.5% were overweight. While, the minority of them 1.4% were underweight.

**Part II: Distribution of the studied patient according to health needs.**

**Table (2):** shows the highest percent 84.5 % of the level of physical health needs of studied patients are mild.

**Table (2):** Distribution of the studied patient according to level of physical health needs. (n= 148)

Level of physical need	No.	%
Profound	3	2.0
Sever	4	2.7
Moderate	16	10.8
Mild	125	84.5

**Table (3):** shows the highest percent 41.9 % of the level of psychological health needs of studied patients are moderate.

**Table (3):** Distribution of the studied patient according to level of psychological health needs. (n= 148)

Level of psychological needs	No.	%
Profound	5	3.4
Sever	19	12.8
Moderate	62	41.9
Mild	59	39.9
No Impairment	3	2.0

**Table (4):** shows the highest percent 48.6 % of the level of social health needs of studied patients are mild.

**Table (4):** Distribution of the studied patient according to level of social health needs. (n= 148)

Level of social needs	No.	%
Sever	15	10.1
Moderate	54	36.5
Mild	72	48.6
No impairment	7	4.7

**Table (5):** Show relation between physical health needs and psychological and social health needs. It was found significance relation between physical needs and psychological needs with p value .000 and social needs with p value .002.

**Table (5):** Relation between physical health needs and psychological and social health needs.

Health needs		Physical needs
Psychological needs	X <sup>2</sup>	454.148
	P Value	.000**
Social needs	X <sup>2</sup>	292.356
	P Value	.002**

\*\* Significant level considered when p value =<0.05

#### IV. Discussion

Cancer is a leading cause of death worldwide (Jemal et al., 2011) & (Torre et al., 2015) with approximately 14.1 million new cancer cases and 8.2 million cancer deaths in 2012 alone. It is now anticipated that by 2025 more than 20 million people will be affected by cancer (Ferlay et al., 2015). Most cancer patients receive curative or palliative chemotherapeutic intervention throughout the course of treatment. (Goffin et al., 2010) & (Okines et al., 2010). However, chemotherapy is one of the major therapeutic options for solid and tumors, it is often associated with unpleasant side effects (WHO, 2015), Chemotherapy side effects have a considerable impact on quality of life and can severely impair a patient's ability to manage daily activities, employment (Domati et al., 2015) & (Havrilesky et al., 2015) economic status, socio-cultural, personal experience and lifestyle aspects (Mansano-Schlosser & Ceolim., 2012). The results will be discussed as follow:

All patients in current study suffered from the discomfort that mean any symptom may be troubling cancer patients, such as fatigue, nausea, constipation, or itch.) This finding in agreement with the results of the study done by **Yamagishi et al., (2009) & Anthony. (2010)** which reported that Constipation is the third most common symptom in cancer patients receiving cytotoxic chemotherapy. On the same way, the study of **Aslam et al., (2014)** about adverse effects of chemotherapy in cancer patients and evaluation of patients' opinion about starvation based differential chemotherapy revealed that the most frequently reported side effects were weakness, fatigue, nausea and vomiting. Each of these side effects was experienced by more than 70% of the cancer patients treated with chemotherapy. Regarding the level of discomfort, this result could be interpreted with the side effects of chemotherapy treatment on the different body system.

Also, **Aranda et al., (2011)** supports the findings of the current study by stating that, the most bothering side effects of chemotherapy of cancer patient are nausea, vomiting & fatigue. Regarding the level of discomfort, this result could be interpreted with the side effects of chemotherapy treatment on the different body system. The results of a current study stated that most cancer patients treated with chemotherapy complain of depression and anxiety. This result reinforced by **Compaci et al., (2015)** who found that patients receive chemotherapy suffer from anxiety and depression. Also, **Abu Sharour, (2010)** who found that the majority of cancer patients suffered from depression and anxiety. Additionally **Teunissen, et al., (2007)** results; showed that the most common types of psychological distress of cancer patients are depression and anxiety. Also, **Souza, et al., (2013) results;** patients with cancer taking chemotherapy medication presented moderate or severe depression. Concerning the anxiety and depression of cancer patients in the current study could be due to physical discomfort.

In the current study, the most patients attitude toward disease were usually copes well, but has occasional periods of despair and hopelessness. In contrast **Hyphantis, et al, (2013)** reported that patients' resources to cope with the burden of their illness are limited. Additionally, **Hopman & Rijken., (2015)** results revealed that, most cancer patients perceive their illness as a chronic condition, as something that drastically affects their lives (consequences), and the more it elicits negative emotional responses, the more likely they are to adopt more passive ways of coping such as helplessness/hopelessness, preoccupation, or fatalism.

In the current study, the most patient's attitude toward treatment were frequently hopeful, with episodes of pessimism that any therapy can provide comfort or prolong life. On the other hand, the results of a study done by **Temel et al., (2011)** about perceptions of prognosis and goals of therapy in patients with metastatic non-small-cell lung cancer indicated that the majority of cancer patients endorsed getting rid of all of the cancer as a goal of therapy. Additionally **Jansen, et al, (2005)** reported that patients who had been treated with adjuvant chemotherapy as part of their primary treatment plan had a more positive attitude towards chemotherapy. Patients provided higher likelihood estimates of treatment advantages, such as life prolongation and evaluated the positive outcomes of chemotherapy more favorably. Also, **Hopman & Rijken., (2015)** results about the illness perceptions of cancer patients indicated that cancer patients strongly believe the cancer treatment to be effective. Concerning the attitude toward disease and treatment in the part of hope and coping ability could be due to social and medical support, but regarding to the part of episodes pessimism and despair could due to their diagnosis and physical discomfort.

Most cancer patients in the current study reported that assistance is available and adequate for any practical needs (Needed assistance with essential tasks, such as cooking, cleaning and shopping), individual support network (family& significant others) offering complete support and perceives the degree of support from these non-medical groups (e.g., religious, occupational, social recreational, political) to be generally, but not fully satisfactory. The result of current study supported by **Abu Sharour, (2010)** results which indicate that the cancer patients reported good social/ family circumstances and receiving all types of social support include practical, emotional and social engagement. Also **Nasari & Taleghani, (2012)** study about social support in

cancer patients support the finding of the current study, which found that, the majority of cancer patients received maximum social support from their family, friends and relatives.

On the other hand, **Maguire, et al., (2013)** study results about supportive care needs of people living with lung cancer, disagreed with the results of current study; stated that cancer patients had unmet practical, family, spiritual and social supportive care needs. In addition, the result of the current study contradicts with **Reeve et al., (2009)** study about the impact of cancer on health-related quality of life who reported that cancer patients had a decline in their social well-being. In the same way, **Şengul et al., (2014)** study about association between suicidal ideation and behavior, and depression, anxiety, and perceived social support in cancer patients indicate that social support perceived from family and friends is lower in cancer patients. Concerning the practice and individual support availability of cancer patients in the present study could be due to the culture of patients. The results of the current study showed a disparity between current resources and expenses. Full inpatient coverage and adequate funds for all needs, but unexpected and substantial additional expenses. This finding supported by **Meeker, et al., (2016)** study about relationships among financial distress, emotional distress, and overall distress in insured patients with cancer patients with cancer reported that twenty-nine percent scored in the range of high to overwhelming financial distress and they found that financial distress was associated with overall distress. In addition, **Smith et al., (2014)** study about bridging the gap between financial distress and available resources for patients with cancer reported that oncology social workers and financial care counselors reported inadequate financial resources and barriers faced in matching appropriate resources to cancer patients in need. Regarding the financial security of cancer patients in the present study could be due to costs of chemotherapy treatment is directly covered by health insurance.

The current study found significant relation between physical dimension and psychological dimension, the finding of current study supported by **Mansano-Schlosser & Ceolim, (2012)** study about quality of life of cancer patients during the chemotherapy period revealed that physical and psychological domains showed the highest significance correlation with each other and with other domains, suggesting the inter-relationship between them, as well as those that had the greatest influence in the general quality of life in cancer patients undergoing treatment with chemotherapy. Moreover, **Matzka et al., (2016)** study about the relationship between resilience, psychological distress and physical activity in cancer patients revealed that resilience was positively associated with activity level. Also, **Salvo et al., (2012)** study about the frequency of reporting and predictive factors for anxiety and depression in patients with advanced cancer showed that contribution of physical symptoms, e.g., nausea, drowsiness, dyspnea and overall well-being remained as significant factors associated with anxiety. Additionally, **Ko, et al., (2013)** study about the association between pain and depression, anxiety, and cognitive function among advanced cancer patients revealed a significant relation between physical pain and presence of anxiety and depression among cancer patients. This could be interpreted with physical discomfort may cause psychological problems such as depression and anxiety.

The results of the current study showed a significant correlation between activity of daily living and practical support and individual support network. These findings agree with the results of the study done by **Güneş & Çalışır, (2016)** about the quality of life and social support in cancer patients undergoing outpatient chemotherapy in Turkey reported a significant statistical correlation between physical role function and perceived social support. Inconsistent to current study findings, study results of **Haugland et al., (2016)** about the association between general self-efficacy, social support, cancer-related stress and physical health-related quality of life which found indirect relation between social support and physical health related quality of life. This could be interpreted with the availability of practical support in essential tasks such as cooking and shopping may lead to saving energy to do activities of daily living such as feeding and bathing.

## V. Conclusion

Based on the findings of the present study, it can be concluded that the majority of the studied sample had fulfilled physical needs but suffered from moderate physical discomfort. However, high frequency of them had unfulfilled psychological health needs which suffering from depression and anxiety. High frequency of study sample has been unsatisfied with non-medical support and mild disparity between current financial resources and expenses. Additionally, there was a statistically significant relation between physical health needs and both psychological and social health needs.

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