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# IMPLEMENTATION OF SELF-CARE SYMPTOM MANAGEMENT GUIDELINES FOR PATIENTS WITH CANCER RECEIVING CHEMOTHERAPY TO ENHANCE THEIR QUALITY OF LIFE

**Samia H. Gaballah[1]*, Hayat Mohamed Ahmed el Said[2], Nehad Ahmed Ibrahim Zahra[3], Naglaa Gida[4]**

*[1]Medical Surgical Nursing, Faculty of nursing, Suez Canal University, Egypt*
*[2]Medical Surgical Nursing, Faculty of nursing, Port-Said University, Egypt*
*[3]Community Health nursing Department, Faculty of nursing, Banha University, Egypt*
*[4]Family and Community Health Nursing, Port-Said University, Egypt*

**Corresponding Author's Email : gogo_na100@yahoo.com*

## ABSTRACT

**Introduction:** The Self-care Symptom Management (SSM) is educational guidelines with the goal of enhancing patients' self-care abilities to manage the side effects of chemotherapy and quality of life. **Objective:** The aim of the study was to evaluate self-care guidelines for symptom management of patient with caner receiving chemotherapy to enhance their quality of life (QOL). **Methods:** The study adopts a quasi-experimental design, with one group as pre and post intervention tests. The study was conducted in a public hospital in Port Said, Egypt, on 100 cancer patients. The tools of data collection were an interview questionnaire form to collect data about socio-demographic characteristics for studied cases, assessment of knowledge and reported practice related to cancer and chemotherapy sheet. The patients were given information regarding the side effects of chemotherapy with an outline of symptom management strategies by researchers. The extent of the severity of side effects of chemotherapy and the management of symptoms were assessed using both the therapy-related symptom checklist and the self-care method. The QOL of patients is measured using the EORTC QLQ-C30. **Results:** The commonest side effects of chemotherapy included: hair loss (84%), nausea (91%), vomiting (81%), fatigue (85%), and pain (82%). Self- care guidelines is effective on alleviating side effects of chemotherapy and improve quality of life. **Conclusion:** Knowledge of the side effects of chemotherapy and self-care management is essential for patients with cancer. The study recommended the importance of teaching methodology for symptom management. This is not only to ameliorate a patient's affliction but also to optimize their quality of life during the period of chemotherapy course.

***Keywords: Self-Care Management, Cancer, Chemotherapy, Quality of Life***

## INTRODUCTION

Cancer and its treatment represent significant challenges for the health care system worldwide. Chemotherapy presents a challenge for patients, families, and healthcare professionals (Panagiotopoulou *et al.*, 2018). At the present time, Chemotherapy is one of the methods that are used in treatment of cancer as it aims to reduce growth by destroying rapidly growing cell toward other organs, and to destroy cancer cells. Chemotherapeutic drug may be administered by topical, oral, intravenous, intramuscular, subcutaneous, arterial, intra cavity route that need to be administered with scrupulous care (Urdan, Stacy & Loug, 2009; Akhter, 2018; Mansur *et al.*, 2018).

Patient' receiving chemotherapy frequently experience adverse effects. The usual side effects such as nausea, vomiting, oral/alimentary ulcer, buccal mucositis, loss of appetite, change in dietary behavior, weight loss, abnormality of bone-morrow system, bleeding tendency, fever, prone to get infection easily, immune-compromised, constipation, diarrhea, loss of body fluid and mineral balance, hair loss and skin color change, fragile health and others such symptoms. These unfavorable symptoms definitely have an impact on mind and body adaptation as well as patients' social responsibilities; they can impair patient ability to work and function or to participate in social and recreational activities. Therefore, if patients are able to adapt and to manage these symptoms by themselves, they could gain a better quality of life during treatment with chemotherapy (Daniels & Nosek, 2012)

Self-care refers to decisions and actions that individuals can take to cope with a health problem or to improve his or her health. However, persons undergoing chemotherapy might alter their self-care practices in order to meet the physiological and psychological changes occurring as a result of the treatment (Black & Hawks, 2009). The ability to perform self-care management is essential and is an integral part of the recovery process. If the patients are able to live an effective and fulfilling life, they will feel worthy and feel accepted in society. In addition, there are advantages of educating patients regarding chemotherapy's side effects and symptom management strategies that had a great impact on improving patient's quality of life (Moorhead *et al.*, 2018).

Cancer patients receiving chemotherapy need information about the drugs they take and they must practice self-care in order to help prevent serious complications. "For the self-care behaviors to be effective, cancer patients are required to know the range of side effects they are likely to experience; they also need precise instruction on how to manage the side effects. Cancer patients receiving chemotherapy need information about the drugs they take and the self-care they must practice in order to prevent serious complications". For the self-care behaviors to be effective, cancer patients are required to know the range of side effects they are likely to experience; they also need precise instruction on how to manage the side effects (Iacorossi *et al.*, 2018).

Therefore, the nurse has a crucial role in identifying quantity and quality of self care deficits in patients with cancer and providing the knowledge, skills and support necessary for the maintenance of coping with disease, to perform self-care, patients must have a learned ability to meet their needs and access to re- sources, to enhance their knowledge.

### Significance of the Study:

Cancer is one of the life threatening diseases affecting the mankind, as more than 50% of the new cancer cases in the world occur in developing countries. Cancer occupies the second place after heart disease as a cause of death worldwide. The number of patient with cancer receiving chemotherapy from medical record of chemotherapy outpatient clinic at general Port Said Hospital in year 2016 was 750 patients (Medical Record of Chemotherapy Outpatient Clinic, 2016).

Chemotherapy has negative effect on health problem. The ability of cancer patient to control chemotherapy side effects is limited due to lack of knowledge and awareness about disease, lack proper self-care behavior and to learn it's important especially during treatment to control and minimize chemotherapy side effects (Lewis, Heitkemper & Dirksen, 2012).

## RESEARCH METHODOLOGY

Research design and setting: One-group pre-posttest quasi-experimental design was used in the current study. Patients from chemotherapy clinic at General Port Said Hospital who fulfilled inclusion criteria were enrolled in the study as follows: 1) Adult patient from both sexes aged 18 years or above with cancer who received chemotherapy 2) patients who were fully conscious, 3) patients with understandable verbal communication, 4) patients who are well-read in Arabic and 5) patients who gave informed consent. Patient with physical disorder; patients unable to communicate, visual or hearing impairment; known cognitive impairment; known psychiatric illness, were excluded. The study was approved by the ethical consideration-of each participating institution. Details of the side effects of chemotherapy and symptom self-management were imparted by researchers.

### Subjects' size

The sample size was determined by using the following equation (Dobson, 1984).

The prevalence of patients who were given chemotherapy among those with cancer was 93% this substituting in the following equation:

$$\text{Sample size (n)} = \frac{Z^2}{\Delta^2} \quad P(100 - P)$$

*Where:*

n=sample size

p= prevalence of patients who was given chemotherapy among those with cancer was 93%

Z= a percentile of the standard normal distribution by 95% confidence level = 1.96

$\Delta^2$ = the width of the confidence interval = 5.0

The calculated sample size is 100 patients who were given chemotherapy. A non-probability purposive sample of

**Data collecting included the following**

Demographic data e.g. age, gender, educational level, occupation, income, and residence, and marital status, having a care-giver, basic medication and background information was gathered to assess patients knowledge about disease (definition causes, purpose).

***a) Scoring system***

Question related to patients knowledge about cancer and chemotherapy treatment were scored 2 for a correct answer and 1 for an incorrect answer (Does not know =1 score, Complete knowledge =2 score).

Assessment of the level of side effect severity from chemotherapy used the therapy-related symptom checklist (TRSC) form comprising 25-item symptom checklists which classified problems and the level of severity of the problem into five levels. To indicate the presence and severity of the symptoms with 0 meaning (not present) and 0-4 rating of symptoms severity: level 0=no symptom, 1=mild, 2=moderate, 3=severe, 4=very severe.

Assessment of symptom management used the self-care method (SCM) comprising identifiable symptoms, self-care method and symptom alleviation. Symptom management strategies were categorized into 1) by changing lifestyle choices, 2) by adapting mental and physical behavior, 3) by exercises therapy, 4) by herb therapy, 5) by using suggested medication.

The EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-C30) is valid and reliable tool used to assess the quality of life of the cancer patients. This consist of 30 items covering five domains, including physical functioning, mental or emotional functioning, social functioning, fatigue and pain. The first 28 items are answered with a four-point Likert scale: No, a little bit, frequent and very frequent. The other two items are evaluated with a scale ranging from 1 (very poor) to 7 (very good). The results were then analyzed and the final score converted to a scale ranging from 0-100. Higher scores on the physical scale and global quality of life scale show a good level of functioning, whereas higher scores on the symptom scale indicate more severe symptoms or a lower quality of life. With regard to the statistical significance, a difference of 5-10 points is considered as (somewhat) slightly significant, of 10-20 points as moderately significant, and a change of more than 20 points is considered as significantly or a clinically meaningful difference. Clinical relevance is shown by a difference in the average score of ≥ 10 points.

***b) Content Validity***

It was established by a panel of five experts who will review the tool for clarity, relevance, comprehensive, understandable and applicable, reliability will be tested statistically.

**Reliability**

***c) Pilot study***

It was carried out on 10% of the total study sample (10 patients). It was conducted to evaluate the applicability and clarity of the tools, assessment of feasibility of fieldwork and identification of a suitable place for interviewing patients and also to detect any possible obstacles that might be faced by the researcher or that might interfere with data collection. Necessary modifications were done based on the pilot study findings such as (omission of some questions from tool) in order to strengthen their contents or for simplicity and clarity. The pilot sample was excluded from the main study sample.

***d) Field work***

An official permission was obtained from the directors of Port Said General Hospital oncology outpatient clinic through an official formal letters from the dean of The Faculty of Nursing, Port Said University.

The tools were tested for their content validity and clarity by seven experts in nursing and medical pediatrics and oncology for face and content validation. The tools were then adjusted based upon their recommendations.

Informed consent was obtained from each patient in the study after explaining its purpose and importance. Confidentially of the information was assured by the researcher.

A pilot study was carried out after review of data collection tools by seven experts. It was applied on 10% of study sample (ten cases with cancer attending the Oncology clinic). The purposes of the pilot study were to test the applicability, clarify, and feasibility of the data collection tools.

The actual study was conducted through four phases: assessment phase, guidelines development phase, implementation phase and evaluation phase.

***Assessment Phase (Pretest):*** This phase-involved preparation of the tools and assessment of the patient knowledge and practice regarding the care of their children with cancer undergoing chemotherapy and assessment of children health status. After obtaining the cases consent, the researcher conducted an individual interview with them in the study setting according to hospital policy. Each interview questionnaire took approximately 30 to 40 minutes.

***Planning Phase:*** the researcher developed the educational guidelines using the baseline information gathered in the assessment phase. The guidelines aimed at improving patients' knowledge and reported practice for provision of self-care and evaluate the effectiveness of the guidelines on patients' health status. The guidelines included materials to improve patients' knowledge regarding the definition of cancer, its types, clinical manifestations, predisposing factors, investigations and treatment. It also covered instructions concerning the preparation of the cases before, during and after chemotherapy doses and the precautions to protect other children at home. The guidelines also included reported practice related to care of chemotherapy side effects such as disturbances of bone marrow, gastrointestinal tract, respiratory system, hair and skin, urinary system, musculoskeletal system, nervous system, and psychological impairment.

***Implementation phase:*** The implementation of the guidelines was carried out at out-patient departments in the study setting. The guidelines was administered in five sessions; the duration of each session lasting for 40 to 60 minutes. The sample was divided into 10 groups; each session of the guidelines included ten patients. At the beginning of the first session of the guidelines, patients were given an idea regarding program objectives, contents, and procedures. The program was implemented two days per week for a period of 6 months from August 20th, 2017 up to February 1st, 2018 for 3day per week for 4hours /day.

The educational program was presented in a clear and concise form, following the principles of adult learning, focusing on interactive learning and active participation. It was implemented using different teaching methods such as short lectures, group discussion, practice, demonstration and re-demonstration. In addition, different audiovisual materials were used as pamphlets, pictures, posters and video to facilitate the teaching of each topic.

***Evaluation Phase:*** The effectiveness of the guidelines was based on assessing the improvement in patient's knowledge along with reported practice and in the improvement of patient's health status. This was achieved through comparing the pre-test with post-test immediately after the implementation of the guidelines, and the follow-up test carried out three months later.

## Ethical considerations:

Informed consent was obtained from participant after explaining the purposes of the study, no harmful methodology used with participant; they had right to withdrawal from the study at any time.

## Statistics Analysis

Descriptive data were presented as absolute numbers, percentages for demographic parameters. Data from TRSC and SCM of each cycle were collected in OMERET program and Cronbach alpha at value of 0.80 was applied for accuracy of measurement. One-way analysis of variance (one-way ANOVA) was used. Multivariate analysis using logistic regression analysis was performed to identify the independent factors that influenced patients in applying symptom management strategies during chemotherapy treatment. All statistical analyses were performed using SPSS for Windows, version 10.0 (Statistical Package for Social Science).

## RESULTS

The sample included a 100 cancer patients. All of the subjects maintained the Self-Care guidelines Log through their first chemotherapy treatment. With more females (64%) and a mean age of 50.5 years (SD=10.2), ranging from 23 to 73 years. Most of the participants were married (83%) and lived in urban areas (100%). In addition, 82% of the patients had less than University level of education and majority of them (86%) have no enough income (Table 1).

***Table 1: Distribution of the studied cases according to***

| Socio demographic characteristic | % |
|---|---|
| **Age (years)** | |
| 20 – <30 | 16 |
| 30 –<40 | 29 |
| 40 – <50 | 33 |
| 50–= 60 | 22 |
| Min. – Max. | 23.0 – 73.0 |
| Mean ± SD. | 50.53 ± 10.22 |
| **Sex** | |
| **Male** | 35 |
| **Female** | 64 |
| **Educational level** | |
| Less than University | 82 |
| University or above | 18 |
| **Living Situation** | |
| with Spouse/Family | 66 |
| **Alone** | **34** |
| **Marital status** | |
| Single | 6 |
| Married | 83 |
| Divorced / Widowed | 11 |
| **Place of residence** | |
| Urban | 100.0 |
| **Income** | |
| Not enough | 86 |
| Enough | 14 |

Table 2 shows the distribution of the studied cases according to cancer history. It reveals diagnoses of cancer consisted of breast cancer (32%), lung cancer (10%), genital tract cancer (16%), gastric cancer (17%), and others (3%) head and neck cancer respectively. Staging of cancer showed stage1 (5%), stage2 (54%), stage3 (30%), stage4 (11%). The subjects received a variety of chemotherapy regimens for varying lengths of time from thirty to sixty days. All of the subjects received these specific chemotherapy drugs for the first time.

***Table 2: Distribution of the studied cases according to cancer history (n = 100)***

| Current cancer | % | Min. – Max | Mean ± SD. |
|---|---|---|---|
| **Type of cancer** | | | |
| G.I.T | 17 | | |
| lung cancer | 10 | | |
| Breast cancer | 32 | | |
| Genital tract cancer | 16 | | |
| Leukemia | 10 | | |
| Bone cancer | 12 | | |
| **Others** | 3 | | |
| **Stage of cancer** | | | |
| Stage 1 | 5 | | |
| Stage 2 | 54 | | |
| Stage 3 | 30 | | |
| Stage 4 | 11 | | |
| **Duration of disease (months)** | | | 7.95 ± 10.10 |
| **Duration of treatment (months)** | | 1.0 – 60.0 | 7.91 ± 8.33 |
| **Number of doses per month** | | | 1.85 ± 2.31 |
| **Number of remaining doses** | | 2.0 –17.0 | 6.78 ± 3.52 |

Figure 1 shows the distribution of the studied sample according to level of total knowledge regarding chemotherapy pre and post guideline implementation (*n*=100). It reveals that there were highly significant improvement in total knowledge scores of studied sample regarding cancer (Definition, causes and treatment methods) and chemotherapy (Definition, aim, methods of administration and self-care measures to overcome chemotherapy side effects cancer) during post test after intervention as compared to pretest $p<0.001$.

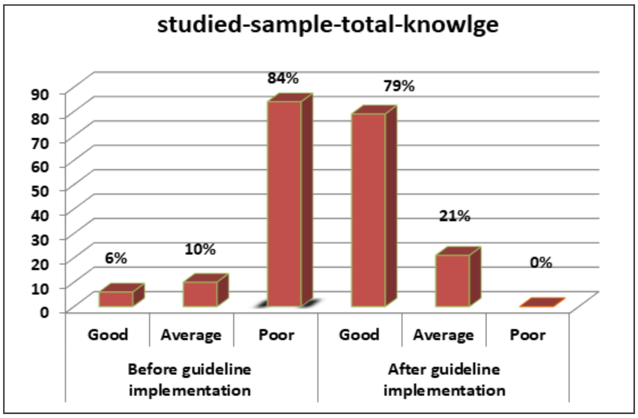

***Figure 1:Distribution of the studied sample according to level of total knowledge regarding chemotherapy pre and post guideline implementation (n=100).***

Table 3 outlines the side effects and the frequency in which they were experienced by the subjects. Nausea (91%), fatigue and hair loss (84%) were reported most frequently.

***Table 3: The most frequently reported Symptoms among participants after receiving chemotherapy n=100)***

| Side Effect Symptoms | Yes % | No % | *Z* score / *p* value |
|---|---|---|---|
| Increased heart rate | 16 | 84 | -9.6167 /0.000* |
| Shortness of breathing | 48 | 52 | -0.5657 / 0.56868 |
| Fatigue | 85 | 15 | 9.8995/0.000* |
| Drowsiness | 67 | 33 | 4.8083/0.000* |
| Pain | 82 | 18 | 9.051/0.000* |
| Hyperthermia ± infection | 38 | 62 | -3.3941/0.0007* |
| Nausea | 91 | 9 | 11.5966/0.000* |
| vomiting | 81 | 19 | 8.7681/0.000* |
| Anoxia | 49 | 51 | -0.4243/ 0.67448 |
| Change in urination habits | 24 | 76 | -7.3539/0.000* |
| Constipation | 53 | 47 | 0.8485/ 0.39532 |
| bleeding | 43 | 57 | -1.9799/0.0477 |
| ulcers of mouth | 72 | 28 | 6.2225/0.000* |
| Diarrhea | 24 | 76 | -7.3539/0.000* |
| skin changes | 24 | 76 | -7.3539/0.000* |
| Hair loss | 84 | 16 | 9.6167/ 0.000* |
| depression | 38 | 62 | -3.3941 / 0.0007* |

Table 4 shows self-care behaviors (actions) initiated by the patients to alleviate or lesson the side effects of chemotherapy treatment using suggested medication, changing nutrition and lifestyle choices (e.g. refraining from eating meat), doing nothing and hoping circumstances will get better, adapting mental and physical behavior such as practicing meditation and praying at temple, engaging in general activities such as craftsmanship and reading books, using biological therapy such as massage with or without hot press, sipping water and exercise, using herbal therapy. There was statistically significant difference after intervention (0.000*).

***Table 4: The self-care behaviors after guidelines implementation that the patients performed for the most frequently experienced side effects are identified chemotherapy treatment***

| Symptoms | | cases number of Symptom management strategies | | | | | $X^2$ *p* |
|---|---|---|---|---|---|---|---|
| | | Life style | Mind/body control | Exercises | Prescribed medication | Herbal | |
| Ulcer of mouth | yes | 73 | 13 | 1 | 36 | 6 | 182.975 |
| | no | 27 | 87 | 99 | 64 | 94 | 0.000* |
| Nausea | yes | 28 | 5 | 0 | 17 | 3 | 57.532 |
| | no | 72 | 95 | 100 | 83 | 97 | 0.000* |
| Vomiting | yes | 25 | 3 | 0 | 57 | 0 | 301.931 |
| | no | 75 | 97 | 100 | 43 | 100 | 0.000* |
| Weight loss | yes | 80 | 13 | 0 | 3 | 1 | 300.402 |
| | no | 20 | 87 | 100 | 97 | 99 | 0.000* |
| Diarrhea | yes | 28 | 7 | 0 | 37 | 4 | 82.454 |
| | no | 72 | 93 | 100 | 63 | 96 | 0.000* |
| Anoxia | yes | 49 | 9 | 0 | 9 | 7 | 120.289 |
| | no | 51 | 91 | 100 | 91 | 93 | 0.000* |
| pain | yes | 27 | 11 | 14 | 69 | 62 | 127.269 |
| | no | 73 | 89 | 86 | 31 | 38 | 0.000* |
| Shortness of breath | yes | 16 | 44 | 22 | 13 | 5 | 54.375 |
| | no | 84 | 56 | 78 | 87 | 95 | 0.000* |
| Increased heart rate | yes | 15 | 9 | 6 | 16 | 14 | 7.008 |
| | no | 85 | 91 | 94 | 84 | 86 | 0.1355 |
| Fatigue | yes | 19 | 51 | 6 | 15 | 35 | 67.524 |
| | no | 81 | 49 | 94 | 85 | 65 | 0.000* |
| Depression | yes | 16 | 49 | 3 | 8 | 4 | 109.077 |
| | no | 84 | 51 | 97 | 92 | 96 | 0.000* |
| Drowsiness | yes | 17 | 66 | 0 | 2 | 8 | 197.036 |
| | no | 83 | 34 | 100 | 98 | 92 | 0.000* |
| Bleeding | yes | 20 | 6 | 0 | 23 | 35 | 55.718 |
| | no | 80 | 94 | 100 | 77 | 65 | 0.000* |
| Hair loss | yes | 35 | 12 | 0 | 3 | 14 | 67.625 |
| | no | 65 | 88 | 100 | 97 | 86 | 0.000* |
| Skin Change | yes | 7 | 3 | 15 | 21 | 21 | 23.026 |
| | no | 93 | 97 | 85 | 79 | 79 | 0.0001 |
| Change in urination habits | yes | 0 | 2 | 0 | 33 | 19 | 90.392 |
| | no | 100 | 98 | 100 | 67 | 81 | 0.000* |
| Constipation | yes | 62 | 3 | 14 | 26 | 5 | 135.781 |
| | no | 38 | 97 | 86 | 74 | 95 | 0.000* |

Table 5 depicts the rate of intensity of the most frequently reported side effects. Subjects rated the intensity of the experienced regarding the side effect on a scale of 1 to 5 with 1 qualified as barely noticeable and five as most severe. The scale was regrouped into categories of low, medium, and high intensity at the time of data analysis. Subjects rated the intensity of the side effects that they were experiencing as low and medium more frequently than high intensity.

***Table 5: Intensity rating of the most frequently reported side effects after guidelines implementation***

| Side Effect | Total No pre guidelines | Program phases pre | | | Total No POST guidelines | Program phases FU | | | $\chi^2$ | $p$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Percent | | | | Percent | | | | |
| | | Low 1-2 | Medium 3 | High 4-5 | | Low 1-2 | Medium 3 | High 4-5 | | |
| Increased heart rate | 16 | 4 | 2 | 10 | 10 | 8 | 2 | 0 | $11.269^*$ | $^{MC}p=0.003^*$ |
| Shortness of breathing | 48 | 4 | 4 | 40 | 28 | 25 | 3 | 0 | $62.622^*$ | $^{MC}p<0.001^*$ |
| Fatigue | 85 | 2 | 3 | 80 | 85 | 82 | 3 | 0 | $201.403^*$ | $^{MC}p<0.001^*$ |
| Drowsiness | 67 | 3 | 4 | 60 | 50 | 46 | 4 | 0 | $120.217^*$ | $^{MC}p<0.001^*$ |
| Pain | 82 | 10 | 30 | 42 | 42 | 42 | 0 | 0 | $87.940^*$ | $<0.001^*$ |
| Hyperthermia ±infection) | 38 | 3 | 7 | 28 | 12 | 10 | 2 | 0 | $28.111^*$ | $^{MC}p<0.001^*$ |
| Nausea | 91 | 15 | 30 | 45 | 22 | 20 | 2 | 0 | $45.818^*$ | $<0.001^*$ |
| vomiting | 81 | 15 | 31 | 45 | 30 | 29 | 1 | 0 | $62.784^*$ | $<0.001^*$ |
| Anoxia | 49 | 3 | 6 | 40 | 9 | 4 | 5 | 0 | $23.211^*$ | $^{MC}p<0.001^*$ |
| Change in urination habits | 24 | 2 | 2 | 24 | 12 | 10 | 2 | 0 | $29.010^*$ | $^{MC}p<0.001^*$ |
| Constipation | 53 | 5 | 20 | 28 | 10 | 8 | 2 | 0 | $21.449^*$ | $^{MC}p<0.001^*$ |
| bleeding | 43 | 1 | 40 | 2 | 13 | 10 | 3 | 0 | $29.844^*$ | $^{MC}p<0.001^*$ |
| ulcers of mouth | 72 | 0 | 0 | 72 | 27 | 20 | 7 | 0 | $19.927^*$ | $^{MC}p<0.001^*$ |
| Diarrhea | 24 | 2 | 2 | 20 | 9 | 9 | 0 | 0 | $23.891^*$ | $^{MC}p<0.001^*$ |
| skin rash | 24 | 2 | 2 | 2 | 16 | 14 | 2 | 0 | $7.080^*$ | $^{MC}p=0.014^*$ |
| Hair loss | 84 | 4 | 8 | 72 | 72 | 60 | 12 | 0 | $121.596^*$ | $<0.001^*$ |
| depression | 38 | 4 | 4 | 30 | 12 | 10 | 2 | 0 | $27.618^*$ | $^{MC}p<0.001^*$ |

Table 6 shows quality of life of chemotherapy patients before and after the self-care symptom management (SSM). The results of the statistical tests were significant at $p$=0.000* for each variable, and those for the functional scale included factors such as the global quality of life scale, the symptom scale, the single item of dyspnea, sleep disturbance, loss appetite, constipation, diarrhea, and financial difficulties.

***Table 6: Quality of life of chemotherapy patients before and after the Self-care symptom management (SSM) guidelines (n=100)***

| **Variable** | **Mean ±SD** | | **Paired *t* test** | |
|---|---|---|---|---|
| | Before | After | *t* | *p* |
| Functional Mean ±SD<br>Min-max | 83.9022±8.42338<br>(69.31-99.91) | 77.6722 ±4.2<br>(63.08-93.68) | -16.214 | 0.000* |
| QOL scale overall Mean ±SD<br>Min-max | 68.1938 ±7.05828<br>(52.43-87.53) | 63.8351 ±8.326<br>(49.41-63.83) | -11.385 | 0.000* |
| Symptoms scale Mean ±SD<br>Min-max | 20.4245±9.86542<br>(5.85-39.33) | 43.6045 ±9.865<br>(29.03-62.51) | 143.289 | 0.000* |
| Shortness of breath Mean ±SD<br>Min-max | 10.3545 ±7.88<br>(1.1-26.85) | 7.5545 ±5.1659<br>(0.2-19.85) | -6.05 | 0.000* |
| Sleep disorders Mean ±SD<br>Min-max | 33.3224 ±17.2201<br>(8-62.45) | 9.9917 ±7.1497<br>(0.25-26.85) | -16.999 | 0.000* |
| Loss of appetite Mean ±SD<br>Min-max | 26.8505 ±11.68<br>(11.85-51.25) | 31.2105 ±11.64<br>(16.21-55.61) | 9.165 | 0.000* |
| Constipation Mean ±SD<br>Min-max | 15.0758 ±4.39<br>(7.85-25.45) | 20.6758 ±4.9<br>(13.45-31.05) | 90.343 | 0.000* |
| Diarrhea Mean ±SD<br>Min-max | 7.8653 ±1.58 | 14.922 ±1.425 | 1.008 | 0.000* |
| Financial difficulties<br>Mean ±SDMin-max | 48.3649 ±23.1239<br>(4.7-86.96) | 35.8261 ±20.12<br>(0.75-72.71) | -25.189 | 0.000* |

## DISCUSSION

In the overall QOL scale, there were a significant differences in the cancer patients' side effects management (relieving chemotherapy side effects and severity) quality of life or ($p$=0.000*) after they had participated in the guidelines. Teaching patients about self-care when encountering adverse symptoms is vital to enhance a patient's affliction and optimize their quality of life (QOL) during the period of chemotherapy (Phongnopakoon *et al.*, 2015). The present study was carried out to evaluate self-care guidelines for symptom management of patient with caner receiving chemotherapy and improvement of their QOL. This research was carried out on 100 patients suffering from cancer and undergoing chemotherapy. The sample had a higher percentage of female. In agreement with this, Park (2016) reported that the incidence of cancer among male was higher for about 1.2 times in females, which is opposite to our ratio. On the same line, Darre *et al.*, (2016), in Togo, found that the male /to female ratio of cancer was 1:4. More than two-third of the patients in the present study were with spouse or family with low income. Research provides strong evidence of a relation between living conditions and the occurrence of cancer symptoms (Schuz *et al.*, 2015).

The findings revealed major deficiencies in patient's knowledge concerning cancer as well as the various aspects of chemotherapy pre guidelines. This lack of information would pose threats on the care of patients, in addition to being stressful for the patients who were unaware of the coping strategies. Similar results were identified by Van Dijk-Lokkart *et al.*, (2015) who highlighted the importance of improving patients' knowledge about cancer, treatment and giving importance to potential late effects. This study was in line with the work of Gorete *et al.*, (2007). Rodrigues *et al.*, (2010) demonstrated a lack of patients ' information about cancer, and noticed a lack of educational intervention based on pretest. While post test showed highly significant improvement of patients' total knowledge about cancer, and self-care measures. Similarly, El-Nemer *et al.*, (2015) studied effect of instructional guideline for relieving chemotherapy side effects on women with ovarian cancer. He reported increase in mean score of knowledge after implementing instructional guideline. Similar successes of educational interventions targeting patients with cancer were reported from Iran (Hashemi & Sokrpour, 2010), Malaysia (Othman *et al.*, 2010), Sweden (Ringner *et al.*, 2015). This may be attributed to the efficacy and importance of patient education of different modalities in managing side effects of chemotherapy to improve QOL.

The problems resulting from dealing with cancer was evident in and/or its treatment by chemotherapy that affected all body systems. The result is also in partial agreement with a study in Sweden, which demonstrated the impact of chemotherapy physically and emotionally (Ringner *et al.*, 2014). Other studies reported severity of side effects of chemotherapy such as gastrointestinal, respiratory, neurological and psychological disturbance (Duignan *et al.*, 2014; Long *et al.*, 2014; Santa Maria *et al.*, 2014).

Understanding the self-management strategies used by patients to cope with cancer treatment-related symptoms is important for symptom management. Fatigue often occurs concurrently with other symptoms, such as nausea and vomiting (NV), sleep disorder and depression. Self-management strategies for reducing these symptoms were reported. For example, changing nutrition and lifestyle choices (e.g. refraining from eating meat), doing nothing and hoping circumstances will get better, adapting mental and physical behavior such as practicing meditation and praying at temple, engaging in general activities such as craftsmanship and reading books, using biological therapy such as massage with or without hot press, sipping water, and exercise, using herb therapy. Our finding is in line with other studies (Piamjariyakul *et al.*, 2010; Williams *et al.*, 2010) to cope with fatigue. Some Filipino patients used talking to someone or crying as methods to deal with depression (Williams *et al.*, 2010). In addition, some Thai and Filipino patients reported using massage (Williams *et al.*, 2010). Similarly, some Taiwanese and British patients reported taking hot baths to relieve fatigue (Lee *et al.*, 2008).

Our results demonstrated significantly low level symptom severity after patients used self-care guidelines particularly in using suggested medication. This finding was comparable to the study of Phongnopakoon *et al.* (2015) who studied cancer therapy-related symptoms and self-care in Thailand. Our study populations have various ways to take care of themselves. Researchers support patients self-care when they experienced unfavorable symptoms associated with chemotherapy which results in relieving or lowering levels symptom severity. The current study also was aimed at improving the side effects symptom of patients suffering from cancer and receiving chemotherapy as a consequence of their improved knowledge and practice. The results of the study actually demonstrated significant improvements in their side effect. The findings are in agreement with the study done in Germany, which demonstrated significant improvements in the physical and psychological aspects of patients with cancer after the implementation of guidelines (Beulerz *et al.*, 2016). On the same line, a randomized clinical trial conducted in Hong Kong reported the effectiveness of a health education program in enhancing improvements of chemotherapy side effect (Chung *et al.*, 2015). Similarly, finding of study were found in the Netherlands (Van Dijk-Lokkart *et al.*, 2015)

## CONCLUSION

In the light of the study findings, some important facts can be concluded into: self-care education give further insight into one's being, one's own life's purpose and one's position in life. These three aspects help an individual to locate oneself (even in the middle of environmental chaos and personal mental conflicts); promote acceptance of ones' situation; opens doors to personal quality of life and add supports to one's self taking into consideration fatigue, nausea, vomiting, mouth sores, hair loss and changes in skin in the present study. The applied self-care guidelines improved the knowledge and practice of cancer patients to great extent regarding side effects of chemotherapy and procedures to alleviate them.

## RECOMMENDATIONS

- Appling self- care educational program in all Egyptian Oncology Centers.
- The nurse being a key person in the care of cancer patient during the different phases of treatments, needs a special preparation to this important specialty, as educational strategies should include not only the advanced technology in nursing but also the communication and counseling skills needed for caring for cancer patients and their families.
- Provide the patient with information regarding chemotherapy, its purpose, side effects and self- care strategies to alleviate side effects of chemotherapy.
- Pre-service and in-service training program for the purpose of refreshing and updating the knowledge of nurses working with patients receiving chemotherapy about self-care strategies to alleviate side effects of chemotherapy.
- Electronic disseminated information regarding chemotherapy side effects self-care strategies must be employed to alleviate side effects of chemotherapy.
- Periodic assessments of the quality of life are needed to be done for several weeks after the patient receives chemotherapy, or when the patient’s condition improved.

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