Knowledge and Self-care Practices among Breast Cancer Patients Undergoing Chemotherapy

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Abstract

Breast cancer is a major health burden among women in both developed and developing countries. It is the second leading cause of death in women worldwide. Patient's knowledge regarding disease and self-care practices are important to achieve the desired treatment targets to help patients to improve their quality of life and ability to continue living independently. **Aim of the study:** To assess knowledge and self-care practices among breast cancer patients undergoing chemotherapy. **Research design:** A descriptive exploratory design was used. **Setting:** The study was conducted at oncology outpatient clinic in Fayoum University Hospital**. Methods:** A purposive sample of 60 adult breast cancer patients undergoing chemotherapy from previously mentioned setting. **Tools**: Three tools included: Structured Interview questionnaire, patient's knowledge assessment questionnaire and patient's self-care practice questionnaire. **Results:** There was un satisfactory level of knowledge and poor self-care practices among breast cancer patients undergoing chemotherapy. **Conclusion:** It can concluded that, the highest percentage of studied patients had poor knowledge and self-care practices related to physical activities, nutrition, exercise, sleeping and social role performance. **Recommendations:** Design and apply health education program for breast cancer patients undergoing chemotherapy to improve their knowledge and self-care practices .

Key words: Chemotherapy, Knowledge, Self-care practices.

Introduction

Breast cancer is one of the most serious health problems worldwide. That needs effective, and high-quality care, which necessitates the low and middle-income countries (LMICs) to develop strategic plans for its management **(Francies, et al., 2020 &Duggan, et al., 2020).** Breast cancer management initiatives includes early detection, diagnosis, treatment, and supportive care, all of which have the potential to improve patients' outcomes if done/delivered within a defined timeline **(Mutebi, et al., 2020).**

Patient knowledge regarding disease and self-care practices are found to be important for patients to achieve the desired treatment targets and contribute meaningfully in the management of their disease **(Niguse, et al., 2019)**. In health care, self-care means that patients and families should be allowed to make decisions and take initiative, responsibility and participate in matters regarding their own health.

Nurses are a perfect reference point for both patients and families when it comes to ensure knowledge of self-care and adaptation to the new situation with the highest possible quality of life. Hence, health professionals must dynamically and carefully intervene in improving patients' self-care ability through well-designed and effective caring systems **(Riegel et al., 2021)**.

Significance of the study:

Breast cancer is an important global public health problem due to high incidence and mortality rates. Breast cancer alone accounts for 30% of newly diagnosed invasive cancers in women in the US. Together, the 3 most common types of cancer in woman are breast, lung, and colorectal cancer, account for 50% of all new cases in women. An estimated 287,850 women will be diagnosed with invasive breast cancer in 2022. Incidence rates have increased slightly by about 0.5% a year on average since the mid-2000s. This may be due in part to increased obesity and women having fewer children or having their first child after age 30 **(American Cancer Society, 2023).**

the role of nurses is crucial in educating patients on self-care and in preparing them for the entire process by resolving their concerns as often as necessary, by involving their families, providing coping strategies, and monitoring them to ensure that patients' needs are met **(Capilla-Díaz et al., 2019)**. Patients and families must have sufficient knowledge to deal with this process, as well as all the support necessary to respond to any potential complications**.**

Aim of the study

The study aimed to assess knowledge and self-care practices among Breast Cancer Patients Undergoing Chemotherapy through:

- Assess patient's knowledge regarding breast cancer and chemotherapy.
- Assess patient's self-care practices regarding physical activities, nutrition, exercise, sleeping and social role performance.

Research question:

What are the level of knowledge and self-care practices among breast cancer patients undergoing chemotherapy?

Subject and Method

Research Design:

A descriptive exploratory research design was utilized to conduct the study**.**

Setting:

This study was conducted at Oncology Outpatient Clinic at Fayoum University Hospital . It is the only educational university hospital in Fayoum and it receives patients from all areas of Fayoum governorate. The Oncology Outpatient Clinic consists of three sections: the first section consists of physician office and examination room, the second section for female patients receiving chemotherapy and the third section for male patients receiving chemotherapy. Each section furnished with recliners in which patients comfortably sit during chemotherapy, beds for severely fatigued patients and chairs.

Subject:

Based on sample size equation **(Steven, 2012)**, 60 adult breast cancer patients(females) undergoing chemotherapy. They were recruited from the previously mentioned setting was participated in this study. The sample size was calculated by adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted, adjusted to 5%.

$$n = \frac{N \times p(1-p)}{\left[\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

- P= 0.5
- N= Total population
- Z= Z value "1.96"
- D= Standard Error
- n= sample size

Inclusion criteria:
- Adult Patients agree to participate in the study.
- Breast cancer patients undergoing chemotherapy pre and post-surgery (Patient who received the first, second or third session).
- Patient able to communicate verbally.

Tools of Data Collection:

Three tools were used to collect the data according to the following :

Tool I: Structured Interview questionnaire

It developed by the researcher based on relevant, current national and international literature **(Avancini, 2020)** and consists of two parts that were fulfilled by the researcher and it's includes: demographic characteristics (age, marital status, education, occupation, economic status and residence). Health related data which include the following items: medical diagnosis, stage of breast cancer, total chemotherapy treatment cycles, recent treatment cycle, Chemotherapy treatment regimen currently received.

Tool II: patients knowledge assessment questionnaire.

This tool was developed by the researcher based on relevant, current literature **(Bhore & Mahadalkar, 2018)**. including the following: Patients' knowledge regarding definition of breast cancer , signs and symptoms of breast cancer, risk factor for breast cancer , treatment of breast cancer, chemotherapy and it is side effects. It consists of 8 true and false questions and 8 multiple choice question (MCQ).

Scoring system: patient's knowledge assessment questionnaire consisting of 16 questions, the correct answers were predetermined according to literature review, a correct answer was scored one point and incorrect answer was scored zero point and satisfactory level was detected based on statistical analysis as following :

Satisfactory knowledge level ≥70 %

Unsatisfactory knowledge level <70 %

Tool (III): Patient's Self-care Practice Questionnaire.

This tool was developed by the researcher based on relevant, current literature **(Lin, 2016)** based on Pender's model to assess the self-care practices of patients including the following: life style, health behavior, physical activities, nutrition and social role performance .

Scoring system: the total items of questionnaire were (17), each item has 2 levels of answers (not done, done). These were respectively scored (0, 1). The score of the items were summed up and the total divided by the number of items, giving a mean score. These scores were converted in a percent score, and means and standard deviations were computed. Competent practice level was detected based on statistical analysis as following :

Competent practice level ≥ 65 %
Incompetent practice level < 65 %

Validity:

The content validity of the tools was done by a panel of 5 experts in nursing and medicine, who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance and applicability. Suggestions were given and modifications were done.

Reliability:

Reliability of the tool was tested to determine the extent to which the questionnaire items are related to each other. The Cronbach's alpha model, which is a model of internal consistency, was used in the analysis. Statistical equation of Cronbach's alpha reliability coefficient normally ranges between 0 and 1. Higher values of Cronbach's alpha (more than 0.7) denote acceptable reliability

Ethical consideration:

An official permission was obtained from the administrative authority of the selected setting for the current study. The researcher obtained consent from the studied patients, explaining the purpose and nature of the study, stating the possibility to withdraw at any time. Confidentiality of data assured by using codes to identify participants.

Pilot study:

A Pilot study was carried out with 10% (not less than 10 patients) of the sample under study to test the applicability, clarity and efficiency of the tools , then the tools modified according to the results of the pilot study. Modifications included: rephrasing and rearrangement of some questions. After modification, the final form of the tools were developed. Patients who shared in pilot study excluded from the study sample.

Field Work:

- Study was conducted within three months from August 2022 to the end of October 2022.
- Before starting in data collection; the purpose of the study was simply explained to the patients and their families who agree to participate in the study prior to any data collection.

- An oral and written informed consent was obtained from each participant prior to data collection

- the researcher visited the selected setting regularly, four days per week, select patient according to inclusion criteria

- Structured interview schedule was done with every participant alone to assess his/her knowledge and self-care practices.

Results:

Table (1): Frequency and percentage distribution of socio-demographic characteristics for breast cancer Patients Undergoing Chemotherapy (N: 60).

Variable	Studied patients (n=60)	
	N	%
Age group:		
• **20-29 Yrs**	7	11.6
• **30-39 Yrs**	10	16.6
• **40-60 Yrs**	43	71.6
Mean ± SD	44.60±9.72	
Marital Status:		
• **Single**	6	10
• **Married**	42	70
• **Widow**	10	16.6
• **Divorced**	2	3.3
Level of Education:		
• **Not read and write**	35	58.3
• **Read and write**	6	10
• **Primary education**	0	0
• **Preparatory education**	6	10
• **Secondary education**	12	20
• **University**	1	1.6
Occupation:		
• **Not Employee**	53	88.3
• **Employee**	7	11.6
Economic Status:		
• **Sufficient**	9	15
• **Insufficient**	51	85
Place of residence:		
• **Rural**	51	85
• **Urban**	9	15

Table (1) illustrates that, as regarding demographic characteristics, the mean age of the studied patients was 44.60±9.72. Added, four quarters of them 70% were married, added more than four quarters of the studied patients were not employee and lives in rural area with insufficient economic status.

Table (2): Frequency and percentage distribution of health related data for breast cancer Patients Undergoing Chemotherapy (N: 60).

Present health history	Studied patients (n=60)	
	N	%
Length of time since diagnosis:		
• **<5 months**	43	70
• **≥5 months**	27	30
• **>1 year**	5	0
Stage of disease:		
• **Stage I**	3	6.7
• **Stage II**	24	43.3
• **Stage III**	21	26.7
• **Stage IV**	12	23.3
Chemotherapy regime currently received		
• **FAC(Fluorouracil, Adriamycin, and Cytoxan)**	1	3.3
• **AC(Adriamycin,Cychlophosphamide)**	48	76.7
• **Gemzar& Carboplatin**	8	13.3
• **Taxol**	3	6.7
Recent treatment cycle:		
• **1st**	16	33.3
• **2nd**	37	66.7
• **3rd**	7	0

Table (2) illustrated that there was about three quarters of the studied patients were diagnosed since less than five months (70%) and more than three quarters of them(76.7%), were receiving AC as a chemotherapy treatment.

Table (3): Frequency and percentage distribution of knowledge levels for breast cancer Patients Undergoing Chemotherapy (N: 60).

Variables	Studied patient (N=60)	
Knowledge	**No.**	**%**
Unsatisfactory level	37	62 %
Satisfactory level	23	38 %

Table (3) showed that; there was a high percentage of breast cancer patients had unsatisfactory level of knowledge 62 % regarding to breast cancer and chemotherapy.

Table (4): Frequency and Percentage distribution of practice levels for breast cancer Patients Undergoing Chemotherapy (N: 60).

Variables	Studied patients (N=60)	
Self-care practice	**No.**	**%**
Incompetent	**38**	**63.5 %**
Competent	**22**	**36.5 %**

Table 4: illustrates that, 63.5 % of the studied patients had poor level of self-care practice regarding physical activities, nutrition, exercise, sleeping and social role performance.

Table (5): Correlation between total knowledge score and total self-care practices among breast cancer Patients Undergoing Chemotherapy (N: 60).

Variable	Total knowledge score	
	Correlation	**P-value**
Total self-care practice score	**0.145**	**0.267**

Table (5): illustrates that, there was a highly statistically significant positive correlation between total knowledge and total self-care practices among breast cancer Patients Undergoing Chemotherapy with p-value 0.267.

Discussion

Breast cancer is the most common type of malignancy among women worldwide. Breast cancer is an important global public health problem due to its high incidence and mortality. Breast cancer treatment options based on type of breast cancer, its stage and grade, size, and whether the cancer cells are sensitive to hormones and most women undergoing surgery also receive additional treatment before or after surgery, such as chemotherapy, hormone therapy or radiation therapy **(WHO, 2022).** chemotherapy is a method of treatment option for most types of breast cancer. It can cause undesirable side effects for breast cancer patients, including nausea and vomiting, dry mouth, taste changes, loss of appetite, constipation, diarrhea, weight changes, alopecia, infection, and fatigue. These side effects can influence patients' self-care abilities, causing them to neglect their physiological and psychological welfare **(Smith, et al., 2019).**

The present study findings revealed that, the mean age of the studied patients was 44.60±9.72 . Added, majority of the studied patients were married, added more than four quarters of the studied patients were not employee and lives in rural residence with insufficient economic status.

This finding was supported by **Khater, et al., (2019)** who conducted a study about "Health Related Quality of Life among Egyptian Female Beast Cancer Patients at the National Cancer Institute, Cairo University". Who mentioned that the majority of studied patients were old age and nearly half of them were not educated (cannot read and write).

This result was supported by the study conducted by **Brown, etal., (2015)**, titled "Association between lymphedema self-care adherence and lymphedema outcomes among women with breast cancer-related lymphedema."**,** and in The same line with **El-Araby, et al., (2020)** who conducted a study about "Knowledge and Self Care Practices for Women with Breast Cancer Related Lymphedema", mentioned that insufficient patient education result in reduced patients self-care practices.

The findings of the present study demonstrated that the highest percentage of the studied patients had unsatisfied level of knowledge and self- care practices. According to the opinion of the researcher, the level of knowledge and self- care practice was insufficient due to low educational level that the majority of the studied patients cannot read and write. Also may be due to unavailability of training programs for patients, lack in continuous education and most health care providers did not routinely counsel women or providing them with written information about breast cancer, chemotherapy side effects ,its management and self- care practice.

This explanations was in the same line with **Mehejabin & Rahman, (2022)** who conducted a study about "Knowledge and Perception of Breast Cancer among Women of Reproductive Age in Chattogram, Bangladesh: A cross-sectional survey " revealed that, the majority of the studied women had unsatisfactory knowledge about breast cancer related to lack in continuous patients education.

In addition, this findings also agree with **El-Araby, et al., (2020)** who reported that, the majority of the studied women had unsatisfactory knowledge about breast cancer, and self-care practices. This could be interpreted by that, the lack of knowledge about breast cancer among health care providers, as the physician and the nurse focused on providing brief guidelines just before discharge and most of nurses didn't have insufficient knowledge about chemotherapy side effects, its prevention and management

In that context, **Chen, et al.(2020)** who stated that, Patients' knowledge may influence both self-care and self-efficacy, as poor knowledge regarding the condition may result in difficulty recognizing and evaluating symptoms, leading to poorer confidence (self-efficacy) in acting upon symptoms and less self-care.

The present study findings indicated that, there was a statistical significant positive correlation between knowledge score and practice score, which indicated that an increase in knowledge level will associated with an increase in practice level. The findings was supported by **Tsai & Wang, (2021)** who stated that, self-care behavior was positively and significantly correlated with disease knowledge and Poor disease knowledge contributes to inadequate self-care behavior.

Conclusion

Based on the current findings, it can be concluded that: unsatisfactory level of knowledge and poor self-care practices were reported by a high percent of participants.

Recommendations

Based on the findings of the present study, the following are recommended:

- Implementing self-care practice educational program for Breast Cancer Patients regarding side effects of chemotherapy.
- Apply designated nursing guidelines to Breast Cancer Patients Undergoing Chemotherapy.
- Simple booklet written in simple Arabic language recommended to developed, and be available for all breast cancer patients Undergoing Chemotherapy included all information about breast cancer, chemotherapy side effects ,its management and self- care practice.

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