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Assessment of Physical and Emotional Status and Fear among Women with Breast Cancer in Mosul City

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Abstract

Breast cancer is a significant health issue that affects patients› physical, emotional, and financial well-being as well as the health of their families. This study aimed to assess the physical, emotional, and fear of women with breast cancer. A descriptive cross-sectional study was carried out from November 2023 until July 2024. Ninety patients were selected from a purposive sample taken from the Nuclear Medicine Oncology Hospital in Mosul City. The study instrument includes questions about demographic and clinical data, physical and emotional health, and fear. Three response alternatives for each item (always, sometimes, never). Both descriptive and inferential statistics, such as chi-square tests, were used to examine the data, and the reliability estimate of the questionnaire was 0.89 breast cancer in women between the ages of 40 and 49 years. The affected women›s physical and emotional states were moderately impacted (46.7% and 51.5%, respectively). The responses from the participants indicated that their level of fear was between moderate and high. Additionally, there are worries about the disease›s potential to manifest and spread throughout the body. The study recommends that cancer patients benefit from good physical and emotional support to enhance their health, reduce their worry and fear through the use of coping strategies.

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Introduction

Breast cancer is a significant health issue that affects patients' physical, psychological, and financial well-being [1,2]. It is the second most common cancer worldwide and the most common cancer among women; it also ranks as the fifth leading cause of cancer-related death overall [3]. It is linked to a 7% death rate, with an estimated 2.3 million new cases per year [4, 5]. Cells proliferate and become uncontrolled in breast cancer and can become deadly if they spread throughout the body and are not treated [6,7]. Age, family history, being white, and unidentified causes are some of the factors that affect the severity of cancer. Because of better treatment options and earlier disease detection in women, the survival rates of patients with breast cancer have increased. Treatment for breast cancer includes surgery to remove the tumor; adjuvant therapies, including hormone therapy and biological agents; and systemic therapies, such as chemotherapy and local irradiation [8]. Psychological stress is a significant risk factor for approximately 25% of patients with breast cancer who also exhibit symptoms such as anxiety and depression [9]. Longer survival times for cancer patients are linked to higher quality of life [10,11]. Patients who are receiving chemotherapy may experience worsening emotional, cognitive, and social functioning [12] as a reaction to treatment and illness. According to other studies, patient-reported outcomes can offer extra information to support treatment approval, payment, and selection/dosing decisions. They can also be used to manage drug side effects and track patient health [6,13,14]. Breast cancer causes extreme negative emotional reactions, such as worry, distress, and terror, in addition to causing irreparable disability and body disfigurement [15]. The patient may feel more powerless due to a variety of factors, including a sense of risk, uncertainty about the near future, losing control over their own life, and ignorance about the illness and available treatments. A person's psyche is profoundly harmed by leaving their job, even for a brief period, which can lead to social disengagement and retreat [16].

Objectives of the Study

1. To assess the physical and emotional status and level of fear among women diagnosed with breast cancer in Mosul City.
2. To determine the relationship between women's physical and emotional status and their level of fear in relation to selected demographic and clinical characteristics.

Methods

Design of the Study: A descriptive cross-sectional study was conducted. This was done to survey patients with breast cancer. The study was conducted from November 2023 until July 30, 2024, in Mosul city.

Ethical Approval

The ethical approval clearance was secured by the nursing scientific committee in the clinical science department No. 217 on 14 November 2023. Approval was also obtained from the Research Ethics Committee of the Nineveh Health Department in 2023. Patients were informed that participation was voluntary and that the confidentiality of the information was kept confidential.

Sample of the Study: A purposive sample consisted of 90 patients diagnosed with breast cancer during the study period. This sample was taken from the Nuclear Medicine Oncology Hospital in Mosul City; specifically, women diagnosed with breast cancer at stages 0, I, or II were reviewed. Patients who met the inclusion criteria and were informed about the purpose of the study were invited to participate. Those who agreed and completed the research questionnaire were included in the sample. Patients who participated in the pilot study, refused to participate, did not complete the questionnaire, or were unavailable during data collection were excluded. The sample size was calculated via the Yamane (1967) formula for a finite population. where (n) represents the required sample size, (N) represents the total population size, and (e) represents the margin of error. During the study period, the total population consisted of 250 breast cancer patients. The calculated sample size was approximately 100 patients. After excluding 10 patients, the final sample included 90 patients who met the inclusion criteria and completed the questionnaire.

Instrument of the Study: The questionnaire used in this study was adapted [17, 18], with modifications to suit the objectives and cultural context of the current study. Three components made up the study instrument. The first section consisted of nine questions covering demographic and clinical data, including age, place of residence, marital status, degree of education, employment, cancer site, type of treatment (radiation taken from other cities in Iraq), mastectomy, and length of treatment. There were six questions in the second section about physical status and seven about emotional condition. In addition, eight questions about fear were asked. Three options were available for answering the questions: always, sometimes, and never. The first option denotes frequent use; the second, average use; and the third, never, very little use. There are eight questions in the third section that address related fear. Each question has three possible answers (always, sometimes, never). The options are interpreted as follows: "always" indicates frequent or heavy occurrence, "sometimes" indicates moderate occurrence, and "never" indicates rare or no occurrence. It never denotes extremely little use; it always indicates heavy use, occasionally moderate use. The data coding included levels (always = 1, sometimes = 2, never = 3) to facilitate data entry, analysis, and statistical processing. The coding reflects the intensity of the phenomenon being measured, which is consistent with the design of the questionnaire. On this basis, the physical and emotional states as well as the fear associated with cancer were divided into three levels as follows: low level = 1.00-1.66, medium level = 1.67-2.33, and high level = 2.34-3.00.

Setting of the Study: The Nuclear Medicine Hospital in Mosul is managed by the Nineveh Health Directorate and is currently located on the left side of the city. It provides services

to oncology patients at the governorate level related to laboratory examinations, radiology, and treatment.

Validity and Reliability: A panel of nine experts was convened to evaluate the questionnaire and ensure the content validity of the study instrument. On the basis of their feedback, several modifications were made to improve clarity and relevance. Following these revisions, the questionnaire was considered valid by the experts. Reliability was assessed via Cronbach's alpha coefficient of 0.89, which indicates a high level of internal consistency for the instrument.

Pilot Study: A pilot study was carried out in hospitals located in Mosul city from January 18 to 30, 2024. Ten patients who were not included in the overall sample used for the study made up the sample. The purpose of the pilot study was to determine any potential roadblocks to the research process and to estimate the time required for data collection.

Data collection: The approved form, including the patients' consent to participate, was shown to the study participants, who provided data. Every interview took place for approximately twenty-to-five minutes, and the study questionnaire was distributed. The statistics were gathered between February 5th and April 30th, 2024.

Statistical analysis: The collected data were entered, organized, stored in a computer file, and then analyzed via the Statistical Package for Social Sciences (SPSS, Version 26). Statistical significance was set at a P value ≤ 0.05. Descriptive statistics, including frequency distributions and percentages, were used to summarize the data. In addition, inferential statistics, including the Cronbach's alpha coefficient, standard deviations, and the chi-square (χ^2) test, were applied to examine relationships between variables and assess the strength and significance of associations.

Results

Table 1 : Descriptive demographic and clinical information for patients (n=90)

Demographic information		Frequency	Percent
Age	Year 30-39	18	20.0
	Year 40-49	**36**	**40.0**
	Year 50-59	24	26.7
	and more year 60	12	13.3
Residence	Rural	**52**	**57.8**
	Urban	38	42.2
Marital Status	Single	11	12.2
	Married	**79**	**87.8**
Educational Level	Primary Certificate	**27**	**30.0**
	Secondary Certificate	14	15.6
	Intermediate Certificate	24	26.7
	Diploma Certificate	10	11.1
	Bachelor Certificate and more	15	16.7
Occupation	Employer	13	14.4
	House wife	**77**	**85.6**
Site of Cancer	Right Breast	**50**	**55.6**
	Left Breast	40	44.4
Treatment Type	Chemotherapy	**58**	**64.4**
	Radiation	32	35.6
Mastectomy	Yes	**85**	**94.4**
	No	5	5.6
Time of Treatment	From 1-6 Months	**48**	**53.3**
	From 7-12 Months	16	17.8
	More than 12 Months	26	28.9

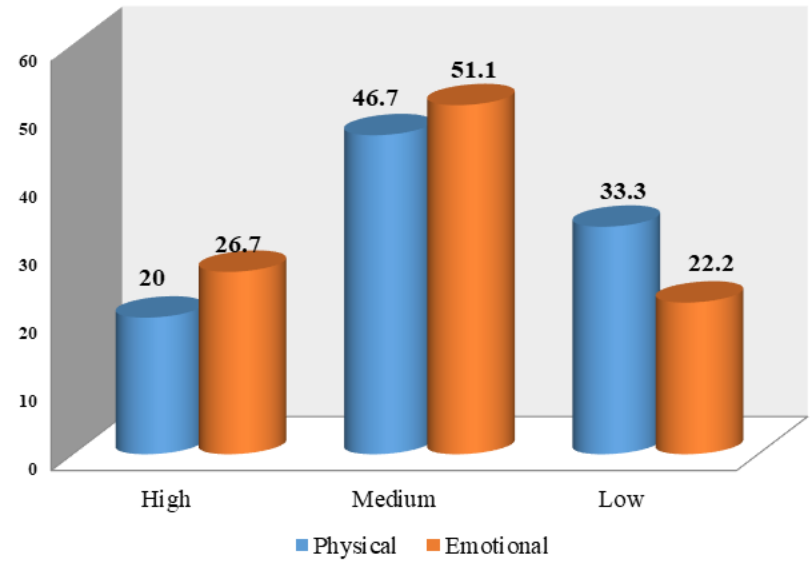

Figure (1) Displaying a medium to low level of physical and emotional status among patients with breast cancer in hospitals

Table (2): Distribution level of fear associated with patients with breast cancer

Level of Fear	Frequency	Percent
Low Level	26	28.89
Medium Level	**41**	**45.56**
High Level	23	25.56
Total	**90**	**100**

Table (3): Relationships between the physical and emotional status and fear level of patients and their demographic and clinical information.

Variables	Physical status			Emotional status			Fear level		
	X^2	P.value	.Sig	X^2	P.value	.Sig	X^2	P.Value	.Sig
1. Age	2.341	0.886	N.S.	2.997	0.809	N.S.	5.855	0.440	N.S.
2. Residence	0.755	0.686	N.S.	0.082	0.960	N.S.	1.256	0.534	N.S.
3. Marital Status	3.433	0.180	N.S.	12.517	**0.002**	**S.**	1.663	0.435	N.S.
4. Educational Level	3.796	0.875	N.S.	7.389	0.495	N.S.	9.653	0.290	N.S.
5. Occupation	1.130	0.568	N.S.	7.990	**0.018**	**S.**	6.232	**0.044**	**S.**
6. Site of Cancer	0.296	0.863	N.S.	0.746	0.689	N.S.	0.044	0.978	N.S.
7. Treatment Type	0.388	0.824	N.S.	0.568	0.753	N.S.	1.148	0.563	N.S.
8. Mastectomy	5.929	**0.050**	**S.**	2.108	0.348	N.S.	2.204	0.332	N.S.
9. Time of Treatment	10.476	**0.033**	**S.**	2.768	0.597	N.S.	1.781	0.776	N.S.

X^2: Chi-Square, Sig.: Significance, N.S.: Not significant, S.: Significant

Table (4): Relationships between physical and emotional status and the level of fear related to patients' breast cancer

Items	Fear level			
	Value	D.f	.Sig	
Physical status	23.242	4	**0.000**	**H.S**
Emotional status	11.846	4	**0.019**	**.S**

D.f: degree of freedom, Sig.: Significance, H.S.: Highly significant, S.: Significant

Discussion

In the study of breast cancer, information is crucial, and having to live with it is an extremely stressful situation that can significantly impact a patient's life in many ways and even cause long-term effects [3]. According to Danhauer et al. (2019), cancer patients bear a heavier load of symptoms than noncancer patients do, which might result in diminished function and increased impairment [19]. Similarly, Anggraeni et al. (2023) reported that patients with breast cancer may experience disruptions in their capacity to lead a normal lifestyle, which may affect their physical and emotional well-being [1]. The results show that over 25% of the sample fell within the 40–49 age range. The majority of participants were housewives, were married, had an elementary education, and approximately half of the sample lived in the city. A clinical description of the cancer site revealed that most patients were receiving chemotherapy and had undergone a mastectomy due to cancer in their right breast. The proportion of patients who received treatment for one to six months seemed to be greater. Similarly, Al-Abbody & Al-Attar (2017) reported that the majority of women aged 40–50 years were married, had low educational levels, and were housewives [20]. Chemotherapy is a type of treatment that might negatively impact a patient by causing both physical and psychological issues. Many cancer patients experience uncertainty regarding their condition while adjusting to their diagnosis [21]. The results of the present study refer to the fact that half of the participants experienced moderate (46.7%) to low (33.3%) physical status. The emotional state was higher (51.1%) or lower (22.2%) than the physical state. Approximately half of the participants reported fear related to breast cancer, whereas the remaining participants reported low (28.89%) or high (25.56%) fear levels. Fear is associated with breast cancer for several reasons, including the patient's fear of the unknown and complications of treatment. Hassan Sallam et al. (2022) explained that patients may experience concerns throughout different stages: diagnosis, primary treatment, psychological support, survivorship, and palliative care [22]. The current study revealed that mastectomy affected physical status (p=0.050) but not fear. This may be because mastectomy directly influences bodily functions, physical limitations, and pain, which are reflected in physical status measures, whereas fear is more influenced by psychological, social, and existential factors that may not be directly impacted by the surgical procedure itself. Similarly, occupation influenced both emotional status (p=0.018) and fear (p=0.044). This can be explained by the fact that employment affects social roles, financial stability, and daily routines, which in turn impact emotional well-being and anxiety levels. Women who are employed may face additional stress from balancing work responsibilities with treatment, thereby increasing emotional distress and fear related to the disease. The study participants' marital status (0.002) and length of treatment (0.033) also had impacts on their emotional and physical conditions. Al-Abbody & Al-Attar (2017) reported a significant association between physical and psychological problems ($p \leq 0.01$) [20]. Londoudi et al. (2024) reported a significant effect of occupation on fear [23]. Similarly, van Linde (2020) noted that emotional status is a critical component of breast cancer treatment [24]. According to previous studies, fear of breast cancer is significantly correlated with both emotional and physical health. In addition to pathological changes that impact patients' physical, emotional, and emotional states, patients suffer fear. Research highlights that to assist patients in controlling their expectations and anxiety, it is critical to recognize and address these problems at different stages of therapy [25].

This study has several limitations. Given its cross-sectional design, which collects data at a single point in time, it is unable to establish causal relationships between variables. In addition, the small sample size limits the generalizability of the findings to the broader population of women with breast cancer in Mosul city or other regions. From the current study we recommend to 1. Promote regular breast cancer screening and educational programs for women over forty years to ensure early detection and timely intervention.

2. Provide integrated physical and emotional support for women following mastectomy, including physiotherapy, pain management, counseling, and family support, to reduce stress and improve coping.

3. Further research with larger samples should be conducted to obtain more generalizable findings on the impact of breast cancer on physical, emotional, and psychological well-being.

Conclusions

Breast cancer was observed among women aged over forty years, with the majority of the study sample having undergone mastectomy. The physical and emotional states of the patients were found to be moderate. Patients with breast cancer-related concerns presented moderate to high levels of concern about the disease. The study revealed a relationship between the physical condition of patients following mastectomy and the duration of treatment. Furthermore, emotional status was found to be influenced by marital status and oc-

cupation. The results also indicated a relationship between breast cancer-related fear and occupation, as well as a significant association between fear and both physical and emotional states.

Author Declarations

Funding Statement

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Conflict of Interest Statement

The author declares that there are no conflicts of interest regarding the publication of this paper.

Ethics Statement

Ethical approval for this study was obtained from the Nursing Scientific Committee, Clinical Science Department, College of Nursing, University of Mosul (Approval No. 217; 14 November 2023). Additional approval was granted by the Research Ethics Committee of the Nineveh Health Department. The study was conducted in accordance with institutional ethical standards and the principles outlined in the Declaration of Helsinki.

Consent for Publication

Written informed consent was obtained from all participants prior to data collection. This manuscript does not contain any individual-level identifying data, images, or personal information requiring additional consent for publication.

Data Availability Statement

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Author Contributions

Hanaa Hussein Mukhlif was solely responsible for the study conception and design, data collection, data analysis and interpretation, manuscript drafting, revision, and final approval of the submitted version.

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