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Effect of Strategies Implementation on Anxiety Level and Promoting Empowerment Status among New Breast Cancer Women

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ABSTRACT

Background: Breast cancer, the second-leading cause of mortality worldwide for women, involves several psychological and physical side effects. Physicians are now considering nonclinical strategies like patient empowerment in addition to clinical therapy. Promoting the empowerment of breast cancer patients is crucial for their survival and quality of life, as the number of women with the disease is rising globally. Therefore, the current study aimed to determine the effect of strategies implementation on anxiety levels and promoting empowerment status among new breast cancer women**. Research design:** This study used a quasi-experimental research design

with one group undergoing pre-and post-testing. **Subjects:** The study participants were one hundred new breast cancer women approved to participate in the program for six consecutive months. A convenient sample of all new breast cancer women who were available during the study period was used to create the study subjects. **Setting:** This investigation was carried out at the Sohag City oncology institution in the breast clinics. **Tools for data collection;** the data was collected using; **the 1)** Women's Interview Questionnaire; to assess the demographic characteristics and medical history of women. **2)** Hospital Anxiety and Depression Scale (HADS), and **3)** Cancer-Related Patient Empowerment Scale. **Results:** This study showed a highly statistically significant difference regarding reduction in total anxiety & depression and promoting empowerment status among new breast cancer Women in the post-intervention ($p<0.01$) as compared to the pre-intervention. It indicates a highly statistically significant improvement in the post-intervention phase ($p<0.01$) when compared to the pre-intervention phase in terms of empowerment dimensions, such as information, resources, involvement in decision-making, support from friends and family, interaction with the doctor, patient perception of the doctor's ability to manage the disease, patient perception of the willingness of healthcare providers to allow the patient to participate in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to illness, patient perception of usefulness to friends, patient perception of usefulness to family, and occupation. Also, it demonstrated a highly significant statistical correlation between the empowerment dimensions of women, the overall anxiety and sadness, and the overall generalized anxiety disorder in women newly diagnosed with breast cancer. **Conclusions:** The current results concluded that strategy implementation has positive effects on anxiety level reduction and promoting empowerment status among new breast cancer women. **Recommendations:** According to this study, a counseling clinic should be established to give women with breast cancer educational instruction for the application of Strategies that will improve their well-being and rate of recovery.

Keywords: Anxiety level, Empowerment status, New breast cancer women, Strategies implementation.

Introduction:

According to **Mirzaei et al. (2019**), cancer is a major global cause of illnesses, mortality, and disability. Its rate of increase has been alarming in the past 20 years, and it is now regarded as an urgent health issue for the modern world. Its adverse impacts consistently impact the physiological, psychological, social, and economic facets of human existence, and specialists are still deeply concerned about them (**Vakili et al., 2022**). The most prevalent cancer among women in developing nations is breast cancer, out of all cancer types. At 19% of all cancer-related fatalities in women, it is the most common kind of cancer among those between the ages of 40 and 44 and the leading cause of death from cancer in women. According to **Fitzmaurice et al. (2018**), one in nine women in wealthy nations has had breast cancer at some point in their lives, compared to one in twenty women in less developed nations. The Cancer Research Center in Iran has released statistics showing that 1400 women pass away from breast cancer each year, accounting for roughly 8500 new cases of the disease in the nation (**Shayegan et al., 2018**).

In both industrialized and developing nations, breast cancer is the most frequent cancer among women. Compared to other malignancies, its survival rate is higher (1–5). Advancements in early diagnosis and adjuvant therapy have been linked to a rise in the survival rate of breast cancer in recent years. Globally, 685,000 people died from breast cancer in 2020, with 2.3 million women receiving a diagnosis. Breast cancer is the most common cancer worldwide; as of the end of 2020, 7.8 million women were living and had received a diagnosis within the previous five years. Every nation on earth has females getting breast cancer at any age after adolescence, while the incidence rises with age (**WHO, 2021).**

Women become extremely vulnerable when they are diagnosed with breast cancer and must endure treatment. Because of the serious psychological effects of these emotions—insecurity, anxiety, despair, rage, fear of medical intervention, and loss of control—they require help. **According to Stange et al. (2020**), breast cancer patients must be empowered to adjust and satisfy their damaged needs because the disease alters the look of the affected

women, distorts their self-image, and affects their interactions with family, friends, and the community.

Increasing the empowerment of breast cancer patients is crucial for their survival, as the number of women worldwide who are afflicted with the disease is rising. Moreover, because women play a crucial role in development, a nation's ability to develop sustainably depends on the empowerment of its relatively large population of breast cancer patients (**Taleghani et al., 2024).**

As per **Kang et al. (2020**), women who receive a breast cancer diagnosis may experience stress, worry, despair, a feeling of being in control of their lives, fear, and helplessness due to their illness. Choosing and experiencing complex treatments for breast cancer exacerbates these sentiments. They also have a higher incidence of sadness and anxiety associated with dread of dying, recurrence of cancer, and pain.

According to **Torralba-Martínez et al. (2022**), anxiety is a common symptom connected with the impression of a genuine or imagined threat. It is an unpleasant subjective experience. According to **Aly et al. (2017),** anxiety is primarily associated with not knowing the diagnosis, experiencing side effects from radiation or chemotherapy, feeling helpless in social or personal situations, experiencing bodily decline that doesn't stop, and having thoughts of passing away. On the other hand, excessive emotions and anxiety that persist for more than six months are characteristics of generalized anxiety disorder. Additional signs of generalized anxiety disorder include tenseness in the muscles, a fast heartbeat, perspiration, dizziness, difficulty concentrating or sleeping, restlessness, exhaustion, or irritability.

To improve the health status of patients and their families, empowerment is the most practical solution. Making decisions about a patient's health and well-being in consultation with their families is known as empowerment. The process of patient empowerment involves giving patients more and stronger resources so they may take charge of their lives, take care of their requirements, and find solutions to their problems. A patient who feels knowledgeable and takes maximum responsibility for their health is said to be empowered **(Taleghani et al., 2024)**. Hence, creating and executing an empowerment program to raise patients' self-efficacy, awareness, and knowledge might result in behavioral self-control and the adoption of preventative behaviors, which will enhance their quality of life (**Monfared et al., 2023).**

The empowerment of breast cancer patients has been the subject of numerous studies up to this point. Implementing a family-centered empowerment model enhanced the functional aspects of life quality for breast cancer patients receiving treatment, according to the findings of a study on the factors influencing the empowerment of breast cancer patients undergoing chemotherapy (**Shirvani et al., 2019**). In another study, the patients' perspectives on three main categories of empowerment needs were: new beliefs about how empowerment programs are implemented; and development of new skills for how empowerment programs are implemented effectively (**Taleghani et al., 2024**).
According to **Lange (2018**), one of the primary goals of nursing is to educate patients with breast cancer about all those risk factors in addition to encouraging them to adopt healthy habits. These habits include learning how to improve restful sleep, eating a healthy diet, especially while undergoing chemotherapy, quitting smoking or alcohol, exercising, getting a massage, and practicing self-care. Furthermore, **Briggs et al. (2020)** pointed out that nurses have a significant impact on the coping mechanisms of breast cancer patients by enhancing their sense of autonomy and role mastery. It can be attained through social skills training, such as meditation, visualization, and mindfulness exercises, as well as training in assertiveness, time management, setting priorities, and social interaction.

Significance of the Study:

In addition to being frightened and dismayed by their diagnosis, newly diagnosed women with breast cancer sometimes choose to ignore it to cope with the burden of their condition. All breast cancer patients experience anxiety, depression, and generalized anxiety disorder to varying degrees, albeit (**Cohn & Linehan, 2020**). To

ensure the psychological and physical well-being of women diagnosed with breast cancer and to support them in coping with the illness, an interventional program is needed. This will lessen anxiety, generalized anxiety disorder, and depressive symptoms in breast cancer patients, according to **Guarino et al. (2020**).

As for the effects of empowerment, a study's findings revealed that women who had survived breast cancer felt significantly more empowered and that being a part of a self-help group significantly increased their sense of empowerment, which in turn had an impact on their quality of life **(Padmaja et al., 2020; Garland et al., 2020; Vakili et al., 2022).**

While patient empowerment is crucial while providing care, particularly for those with breast cancer, no thorough study has been done to pinpoint the patients' needs for empowerment and provide recommendations for how to meet those needs. Hence, the current strategies implementation was to determine the effect of strategies implementation on anxiety levels and promoting empowerment status among new breast cancer women.

Aim of the study:

This study aimed to determine the effect of strategies implementation on anxiety levels and promoting empowerment status among new breast cancer women.

Research Hypotheses:

New breast cancer women will exhibit a reduction in anxiety levels post-empowerment strategies implementation compared to pre-empowerment strategies implementation level.

New breast cancer women are expected to utilize more positive strategies post-empowerment strategies implementation compared to the pre-empowerment strategies implementation.

Research design:

This study used a quasi-experimental research design with one group undergoing pre- and post-testing

Subjects:

The study participants were one hundred new breast cancer women for six consecutive months. A convenient sample of all new breast cancer women who were available during the study period was used to create the study subjects.

Study setting:

This investigation was carried out at the Sohag City oncology institution in the breast clinics. It offers cancer patients therapeutic and diagnostic services, as well as a chemotherapy administration unit on the second floor of an oncology facility.

Tools of Data Collection:

Tool one: Women Interview Questionnaire: It consists of three parts:

Part I: Included data pertinent to the women's demographic characteristics including; age, breastfeeding, level of education, occupation, and residence.

Part II: Included data related to women's medical history of illness including; duration of symptoms, current stage of breast cancer, family history of breast cancer, signs and symptoms of breast cancer upon diagnosis, history of chronic illness, type prescribed treatment, and negative impact of breast cancer on intimate relationship

Part III: Included data related to the history of the current treatment side effects such as; GIT problems, arms and shoulder pain, loss of hair, fertility problems, sexual problems, lymphedema, and itching or skin cracks.

Tool two Hospital Anxiety and Depression Scale (HADS):

The researchers used this scale, which was created in English by Zigmond and Snaith in 1983, to measure the

anxiety, generalized anxiety disorder, and depressive symptoms of non-psychiatric individuals in healthcare facilities. The 14-item HADS is divided into 7 items for generalized anxiety disorder and 7 items for anxiety and depression. A 4-point Likert scale was used to grade the scores for each subscale's items; 0 represented not at all, 1 occasionally, 2 consistently, and 3 frequently. For every subscale, the total score ranged from 0 to 21. A greater score corresponded to a higher degree of sadness, anxiety, and GAD. According to the expert evaluating the validity and reliability of HADS, the anxiety and depression subscales' respective Cronbach alphas were 0.84 and 0.89. It finished in around ten to fifteen minutes.

Tool three: Cancer-Related Patient Empowerment Scale:

Using the Cancer-Related Patient Empowerment Scale (Bulsara et al., 2006), the empowerment status of women with breast cancer was quantitatively determined. 28 items made up the scale, which had 14 dimensions (each with two items). These dimensions included information, resources, involvement in decision-making, support from friends and family, contact with the physician, the patient's opinion of the physician's capacity to control the illness, the patient's opinion of the healthcare providers' readiness to let them take part in the decision-making process, complementary therapies, spiritual beliefs, acceptance and adjustment to illness, How patients view their usefulness to friends, family, and their employment (Dellicour et al., 2020). They were then asked to rank the items as "item is necessary," "item is useful but not necessary," or "item is not necessary" on a 3-point Likert scale. With CVR > 0 62 for every item, a total CVR score of 0.78 was attained [Lawshe, 1975, Gilbert & Prion, 2016).

Tools Validity and reliability:

Five experts—two oncologists, one general surgeon, one psychiatry specialist, and one obstetrician—were consulted to verify the questionnaire's face validity. The content validity ratio (CVR-0.897) was also utilized to verify the questionnaire's content validity.

Utilizing Cronbach's alpha coefficient (α = 0 89), the dependability was ascertained. Using a five-point Likert scale, where 1 represents "very low" and 5 represents "very high," the participants answered the questionnaire's items. Following questionnaire completion, the mean score for every item and the mean score for all of the items were determined. In the second phase, the elements whose mean score was less than the overall mean score were referred to as "unacceptable status" and served as the foundation for identifying the research sample's needs in terms of empowerment. The expert has verified and evaluated HADS's dependability. For the anxiety and depression subscales, the Cronbach alphas were, respectively, 0.84 and 0.89.

Procedures:

Preparatory phase:

It involved searching the internet for books, articles, periodicals, and other relevant resources to review recent, local, international, and historical literature as well as theoretical knowledge about strategies among newly diagnosed breast cancer patients and the role of medical-surgical, obstetric, and psychiatric nurses. The instruments for gathering data were created and developed by the researchers.

Administrative and ethical considerations

Approval was obtained from the ethical committee of the faculty of nursing, at Sohag University to conduct this study. Before beginning the questionnaire, the researcher told the new breast cancer women that the study was optional, that they might refuse to participate at any time, and that they were withdrawn from the study at any time without giving a reason. Oral consent was obtained from the new breast cancer women. They were reassured that their information was kept private and solely utilized for research purposes. The director of the cancer facility in Sohag City received an official letter from the Sohag University nursing faculty outlining the purpose of the study and asking for their consent to gather data.

Pilot Study:

Before performing the real study, a pilot study was conducted on 10 newly diagnosed breast cancer patients, or around 10% of the total sample, to check that the questions were clear, the data collecting techniques were reliable

and applicable, and the study would not take too long to complete. In addition to evaluating the research process' viability. The primary study sample comprised every participant from the pilot study.

Fieldwork:

• The techniques were implemented over six consecutive months for each of the three **empowerment** strategies phases (pre-, during, and post-program implementation). The time frame from October 2023 to March 2024 was when it started.

• Before the **empowerment** strategies started for the entire month of October 2023, all participant understudies performed a baseline evaluation to ascertain the impact of **empowerment** strategies implementation on anxiety levels and promoting empowerment status among new breast cancer women. Individual data-collecting instruments were given to each lady, who was instructed to fill them out by marking only one response that accurately reflected the circumstances. Inquiring about any challenges they had while completing the questionnaires, the researchers assisted the individuals.

• The **empowerment** strategies were created by the researchers and changed before their implementation for the new breast cancer patients in November 2023, taking into account the results of the assessment.

The researchers visited the chosen location three days a week, from 8 a.m. to 2 p.m., to carry out the program, starting in December 2023 and ending in February 2024. Ten subgroups, with nine to eleven participants in each, were formed from newly diagnosed breast cancer patients. A total of twelve sessions, ranging in length from 45 minutes to an hour, were given to each group: two introductory/theoretical sessions and ten practical sessions.

When the **empowerment** strategies were being implemented, the researchers employed a variety of instructional techniques and media, including colored handouts, brainstorming sessions, demonstrations, and lectures.

Contents of the empowerment **strategies implementation:**

The **empowerment** strategies implementation was split into two primary sections, which included:

Part I: Theoretical & introductory Part (2 sessions);

General information regarding breast cancer was given, such as its definition, symptoms, stages, causes, diagnostic testing, and treatment options. Information is also provided regarding the emotional, psychological, and social pressures that women with breast cancer must deal with, as well as how their ability to effectively cope with the disease is affected.

Part II: Practical Training Part (10 sessions):

The empowerment strategies were used to teach the breast cancer patients coping skills to help them minimize their anxiety about the various aspects of empowerment, such as information, resources, involvement in decision-making, support from friends and family, interaction with the doctor, patient perception of the doctor's ability to manage the disease, patient perception of the willingness of medical professionals to allow the patient to participate in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to the disease, patient perception of usefulness to friends, patient perception of usefulness to family, and having a job.

Evaluation phase:

The post-test was completed in full in March 2024. Using the same instruments as the pre-test, it took about 30 to 35 minutes to complete the data-collecting tools to ascertain the impact of strategy implementation on anxiety levels and promoting the status of empowerment among newly diagnosed breast cancer patients.

Statistical Analysis:

The Excel program and the SPSS 23.0 statistical package for social science were used for data entry and statistical analysis. For the categorical data, frequencies, and percentages were used as the form of descriptive statistics in the data presentation. ANOVA tests, Mena Whiten, Pearson correlation, Paired sample, t-test, means and standard deviations (SD), and ANOVA tests were used to summarize continuous data. A p-value of less than 0.05 was utilized to determine statistical significance in a group both before and during the execution of the

psychoeducational program. A significant value of less than 0.05 was established.

Results:

According to **Table (1),** the average age of the women with breast cancer who were studied was 41.33±8.87 years. Seventy percent of them could read and write, the majority (75%) were from rural areas and 62% were nursing. Seventy percent of the patients examined had a household occupation.

Table (2) shows that (70%) of women had a positive family history of breast cancer and 58% of them were in the second stage of the disease. Because of their larger breast masses and increased auxiliary lymph nodes, 60% of patients were diagnosed with breast cancer. Furthermore, the current study discovered that around two-thirds (65%) of women undergoing chemotherapy said that their intimate relationships with partners were negatively impacted by the treatment (66%).

According to **Table 3,** 90% of newly diagnosed breast cancer patients experience adverse effects from their treatments, such as gastrointestinal issues (80%), discomfort, hair loss (75%), infertility (70%), and sexual issues (68%). After a mastectomy, 30% of patients experienced lymphedema.

Table (4) demonstrates a significantly significant difference ($p<0.01$) between the pre-and post-intervention phases in terms of reducing overall anxiety and depression, generalized anxiety disorder, and total distress.

Table 5 indicates a highly statistically significant improvement in the post-intervention phase ($p<0.01$) when compared to the pre-intervention phase in terms of empowerment dimensions, such as information, resources, involvement in decision-making, support from friends and family, interaction with the doctor, patient perception of the doctor's ability to manage the disease, patient perception of the willingness of healthcare providers to allow the patient to participate in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to illness, patient perception of usefulness to friends, patient perception of usefulness to family, and occupation.

Table (6) demonstrated a highly significant statistical correlation between the empowerment dimensions of women, the overall anxiety and sadness, and the overall generalized anxiety disorder in women newly diagnosed with breast cancer.

According to **Table (7),** there was a highly significant ($p<0.05$) correlation between the age, occupational level, and occupation of women and their perceptions of empowerment. However, among breastfeeding women, there was no statistically significant correlation found between the degree of education and the empowerment attributes ($p<0.05$).

Table (8) demonstrates that women's mean scores for depression, their ages, and their educational attainment were all significantly correlated with their overall anxiety ($p<0.05$). However the mean scores for total anxiety and despair among newly diagnosed breast cancer patients did not show any statistically significant correlation with their amount of breastfeeding or occupation ($p<0.05$).

Table (1): New breast cancer women distribution according to their demographic data (n=100).

Items	No.	%	
Age (Years):			
<30	12		12
30< 60	75		75
60+	13		13
Mean ± SD	**(41.33±8.87)**		
Residence:			

Rural	75		75
Urban	25		25
Breastfeeding			
Yes	62		62
No	38		38
Level of Education:			
Read & Write	70		70
Primary Education	18		18
Academic Education	12		12
Occupation:			
Housewife	75		75
Work	25		25

Table (2): New breast cancer women distribution according to medical history (n=100).

Items	No.	%
Duration of Symptoms Before Diagnosis:		
Week-< Month	20	20
Month-< 3 Months	58	58
+ 3 Months -< 6 Months	22	22
Current Stage of Breast Cancer:		
1st Stage	14	14
2nd Stage	58	58
3rd Stage	16	16
4th Stage	12	12
Family History of Breast Cancer:		
Yes	70	70
No	30	30
Signs and Symptoms of Breast Cancer upon Diagnosis:		
Breast Mass& Enlarged Auxiliary Lymph Nodes	60	60
Nipple Discharges and Inversion	40	40
History of Chronic Physical Illness (Comorbidity):		
Yes	72	72
No	28	28
Type of prescribed treatment (Answers are Not Mutually Exclusive):		
Surgical Intervention		
Chemotherapy	25	25
Radiation Therapy and Hormonal Therapy	65	65
	10	10
Negative Impact of Breast Cancer on Intimate Relationships:		
Yes	66	66
No	34	34

Table (3): New breast cancer women distribution regarding to current history of treatment side effects (N=100).

Types of Treatment Side Effects	No.	%
GIT problems	90	90
Arm and Shoulder Pain	80	80
Loss of Hair	75	75
Fertility Problems	70	70
Sexual problems	68	68
Lymphedema	30	30
Itching or skin cracks	10	10

Answers are not mutually exclusive

Table (4): Differences between total new breast cancer women's anxiety and depression mean score pre-and-post intervention (n=100).

Total Anxiety & Depression And Generalized Anxiety Disorder	Distress Score (max=100) Pre		Post		(p-value) Pre-post
	Mean ±SD	Median	Mean ±SD	Median	
Anxiety and depression	93.8±16.7	42.00	29.0±17.5	80.00	p <0.001**
Generalized anxiety disorder	76.1±25.9	30.58	26.6±16.1	71.33	p <0.001**
Total: Higher distress +50%	82.7	32.2	27.12	72.5	p <0.001**
Lower distress <50%	17.2	65.8	75.8	29.7	

(*) Statistically significant at p<0.05, (**) statistically highly significant at p<0.001

Table (5): Differences between new breast cancer women's dimensions of empowerment mean score pre-and-post intervention (n=100).

Dimensions of empowerment	Pre (n=100) %	Post (n=100) %	Paired t-test	p-value
1 Recourses	23	85	12.248	<0.001**
2 Information	21	88	15.834	<0.001**
3 Participation in decision-making	35	77	7.050	<0.001**
4 Family support				
5 Support of friends	84	37	6.920	<0.001**
6 Interaction with the physician	27	74	11.532	<0.001**
7 Patient perception of the physician's ability to manage the disease	33	78	12.541	<0.001**
8 Patient perception of health professionals' willingness to let him/her participate in decision-making	79	53	7.667	<0.001**
9 Complementary therapies	23	88	6.920	<0.001**
10 Spiritual beliefs	21	86	11.532	<0.001**
11 Acceptance and adaptation to disease	35	78	12.541	<0.001**
12 Patient perception of usefulness to friends	21	86	6.920	<0.001**

13 Patient perception of usefulness to family	34	97	11.532	<0.001**
14 Having a job	37	94	12.541	<0.001**

(*) Statistically significant at p<0.05, (**) statistically highly significant at p<0.001

Table (6): Correlations matrix between dimensions of empowerment, anxiety & depression, and total generalized anxiety disorder among new breast cancer women (n=100).

Dimensions of empowerment	Total Anxiety and depression		Total Generalized anxiety disorder			Total
	r- test	p-value	r- test	p-value	t-test	p-value
1 Recourse	0.5	0.001**	0.5	0.001**	0.4	0.001**
2 Information	0.9	0.001**	0.5	0.001**	0.5	0.001**
3 Participation in decision-making	0.5	0.001**	0.5	0.001**	0.5	0.001**
4 Family support	0.3	0.001**	0.5	0.001**	0.5	0.001**
5 Support of friends	0.6	0.001**	0.8	0.001**	0.5	0.001**
6 Interaction with the physician	0.5	0.001**	0.5	0.001**	0.7	0.001**
7 Patient perception of the physician's ability to manage the disease	0.7	0.001**	0.5	0.001**	0.3	0.001**
8 Patient perception of health professionals' willingness to let him/her participate in decision-making	0.7	0.001**	0.5	0.001**	0.5	0.001**
9 Complementary therapies	0.5	0.001**	0.5	0.001**	0.5	0.001**
10 Spiritual beliefs	0.7	0.001**	0.5	0.001**	0.3	0.001**
11 Acceptance and adaptation to disease	0.6	0.001**	0.8	0.001**	0.5	0.001**
12 Patient perception of usefulness to friends	0.7	0.001**	0.5	0.001**	0.3	0.001**
13 Patient perception of usefulness to family	0.5	0.001**	0.6	0.001**	0.5	0.001**
14 Having a job	0.3	0.001**	0.5	0.001**	0.5	0.001**
Total	0.5	0.001**	0.8	0.001**	0.8	0.001**

(*) Statistically significant at p<0.05, (**) statistically highly significant at p<0.001

Table (7): Association between the demographic data of new breast cancer women and dimensions of empowerment pre and post-program implementation (n=100).

Demographic data	Dimensions of Empowerment pre %	Post %	X2	p-value
Age (Years):				
<30	50	79		
30< 60	42	65	0.08	0.05*
60+	28	46		
Breastfeeding				
Yes	69	88	3.31	0.763
No	87	90		
Level of Education:				
Read & Write	65	76		
Primary Education	91	92	3.91	0.05*
Academic Education	23	90		
Occupation:				
Housewife	44	76		
Worked	56	87	4.37	0.05*

(*) Statistically significant at p<0.05, (**) statistically highly significant at p<0.001

Table (8): Association between demographic data of new breast cancer women and total anxiety and depression mean score pre and post-program implementation (n=100).

Demographic data	Total anxiety and depression pre-post Mean ±SD	Mean ±SD	Mann Whitney test	p-value
Age (Years):				
<30	62.6±14.6	42.6±14.6		
30< 60	92.6±7.1	32.6±7.1	0.39	0.05*
60+	87.4±8.1	87.2±3.1		
Breastfeeding				
Yes	88.9±12.1	46.9±12.1	0.05	0.82
No	83.9±3.4	63.9±3.4		
Level of Education:				
Read & Write	91.2±3.9	51.2±8.9		
Primary Education	88.6±15.3	68.6±15.3	1.93	0.05*
Academic Education	90.4±2.6	50.4±12.6		
Occupation:				
Housewife	91.4±8.7	31.4±8.7		
Worked	71.0±21.6	26.0±21.6	0.18	0.67

(*) Statistically significant at p<0.05, (**) statistically highly significant at p<0.001

Discussion:

Furthermore, **Farbood et al. (2020**) demonstrated that individuals with depression may also experience difficult-to-palliate bodily symptoms, which may go well as long as their anxiety is properly managed. According to **Elsheshtawy et al. (2019**), women diagnosed with breast cancer frequently experience anxiety which hinders their capacity to gather crucial support when needed most. They also suffer from a significant shift in their relationships, physical health, which includes irregular sleeping patterns and changed eating habits, psychological health, which includes altered body image and low self-esteem, and daily activities.

Cancer Council Australia (2023) provided additional explanations for the causes of anxiety in female breast cancer patients. These included low life quality, inadequate healthcare, low self-esteem, and poor decision-making abilities. Limited knowledge about cancer and its treatment options, as well as the expectation of a rapid recovery, contributed to emotional distress and a loss of control. Additionally, **Gröpper et al. (2019**) noted that

inadequate communication with medical staff, limited participation in the decision-making process regarding cancer treatment, and a dearth of easily accessible information regarding diagnosis and treatment are primarily linked to subpar patient outcomes and inadequate coping mechanisms.

Regarding the demographic traits of the women with newly diagnosed breast cancer who were studied, the mean age of the newly diagnosed breast cancer women in this study was (41.33±8.87) years, according to the findings. Most of them were housewives, from rural areas, and read and wrote. Patients with similar demographics—the majority of whom were between the ages of 40 and 50 and had only completed elementary school—were included in **Padmaja et al.'s (2020**) study on the efficacy of empowerment programs for breast cancer patients.

According to a study by **Alagizy et al. (2020**), endogenous estrogen and progesterone, or the estrogen and progesterone produced by the ovaries, account for 1 in 173 of the average risk of breast cancer in women over 40. This research, which was split into two main sections, indicates that it might be brought on by hormonal changes, especially those about progesterone and estrogen in middle age and before menopause. They clarified that early menarche, delayed menopause, advanced age at first pregnancy, and never having given birth were all factors in the long-term and/or high-level exposure to these hormones.

The majority of newly diagnosed instances of breast cancer in women were housewives, according to the current study. It could result from several factors, including inadequate financing and resources for routine screening mammography, a lack of understanding about breast cancer, especially among women with lower levels of education, a lack of awareness among the public about the importance of taking precautions with breast care, and other risk factors including obesity and not nursing. This study's findings were supported by **Asad et al.'s (2021**) findings, which showed that women from low socioeconomic classes and lack of education were more likely to get breast cancer. This was especially true for those who were overweight, smokers, or had a history of physical disease. It was said that because they are less likely to be aware of the illness, low-income and illiterate women are more likely to get breast cancer and have the financial means to undergo routine breast screenings or even the ability to make regular breast self-examination in absence of the governmental support.
According to the current study's findings, the majority of participants had a positive family history of breast cancer, and less than three-fifths of them were in the second stage of the disease. This is because of the influence of hereditary and genetic predisposition to breast cancer. **El Haidari, et al. (2020**), noted that a woman's risk for breast cancer is increased if she has multiple family members on her father's or mother's side of the family who have had breast or ovarian cancer, as well as if she has a mother, sister, or daughter (first-degree relative) who has had breast cancer, agreed with these study results.

According to the most recent study on treatment side effects, the majority of newly diagnosed breast cancer patients experience symptoms such as gastrointestinal disorders, pain in the arms and shoulders, hair loss, infertility issues, and sexual dysfunctions (anorgasmia, decreased discharge, lack of desire for sexual activity). It may result from the widespread effects of chemotherapy, which attack both abnormal and normal body cells in an attempt to eradicate the malignant tumor while negatively affecting every function in the body. The findings of this study are consistent with **Mario & Eric's (2018)** explanation that the use of chemotherapy to treat breast cancer raises concerns about long-term side effects.

According to the current study's findings, there was a significant difference ($p<0.01$) between the pre- and post-intervention phases in terms of lowering overall anxiety and depression, generalized anxiety disorder, and overall distress. This could be explained by how empowerment techniques help people feel less anxious. These findings conflict with those of **Nasr (2017),** who discovered that social support, learning problem-solving techniques, and spiritual devotion reduced anxiety and depression in female breast cancer patients.
In support of this theory, **Wyld et al. (2018**) discovered a connection between psychological maladjustment—such as a poor internal locus of control and feelings of helplessness and hopelessness in reaction to the diagnosis—and high anxiety levels. Therefore, to decrease the detrimental effects of anxiety and generalized anxiety disorder on the healing process, psychological intervention was required.

Furthermore, **Costa et al. (2017**) showed how patients with cancer who experience depressive and/or generalized anxiety disorder diminish their resilience and make the entire cancer experience more challenging. It can also jeopardize a patient's life, test their bravery, and make it imperative that they confront their cancer and get the appropriate medical care. Additionally, it was mentioned by **Borré-Ortiz et al. (2018)** that women's long-term survival has improved due to cancer treatment with breast cancer; however, women continue to suffer substantial psychological distress (symptoms of depression, anxiety, and major depressive disorder) during treatment that influence cancer recovery significantly.

This study's findings indicate that all dimensions of empowerment—information, resources, decision-making participation, family and friend support, interaction with the doctor, patient perception of the doctor's ability to manage the disease, patient perception of the willingness of other health professionals to let him/her participate in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to disease, patient perception of usefulness to friends, family, and employment—showed a significant improvement in the post-intervention phase ($p<0.01$) when compared to the pre-intervention phase.

Conversely, the average and standard deviation of the empowerment items among the patients under study indicated that the majority of them thought their doctors were doing a good job and were trustworthy, and that their family had helped them. While most of these patients complied with their doctors' orders, they were hesitant to adopt complementary therapies. Consistent with the findings of studies conducted by **Lotfian et al., (2020), Rostami et al., (2020), Davarpanah et al., (2023), and Elhani et al., (2023)**, the mean dimensions of patient empowerment also indicated that spiritual beliefs, of family support, and trust in the doctor could impact the empowerment of women with breast cancer.

Eleven of the empowerment scale's items were not in an acceptable range. The patient's ability to make decisions about their health, their willingness to participate in decision-making about their condition, their ability to do so, the physician's management of their illness outside of the hospital, the use of complementary therapies, the significance of complementary therapies for patients to manage their discomfort, and the patient's sense of usefulness despite losing their job were all included.

In the initial part of the study, one of the elements with a low mean was the patients' involvement in the treatment process. This indicates the significance of offering patients all available treatment techniques and empowering them to make treatment decisions. Among the concerns raised by the medical professionals included in this study were the significance of women's attractiveness and the necessity of providing patients with breast cancer with a thorough explanation of it before mastectomy. According to **Street & Voigt, (2020**), patients who actively engaged in visits and consultations to decide on their course of treatment felt more in control of the process than did passive patients. As a result, these patients reported improved health-related quality of life following treatment.

Additionally, the patients thought well of the doctors' capacity to manage the illness outside of the hospital and their readiness to include them in clinical decision-making. This highlights how crucial it is for doctors and patients to communicate well, something that breast cancer treatment facilities should take into account. The outcomes of the interview phase and scoping review also demonstrated that financial support, informational support, engagement with the doctor, occupational support, and complementary therapies were the five categories into which empowerment initiatives for women with breast cancer were divided. The most essential financial assistance techniques for breast cancer women from the participant's point of view included bank loans, discounts on medical services, granting credit cards, and continuing the treatment in the city of residence. The use of various support groups, health insurance coverage, contributions, integration of all treatment procedures at the clinic, financial support from the government for cancer patients in their plans, appropriate distribution of medical centers across cities, internet services, and financial support.

Reduced costs can also be achieved by expanding insurance coverage for medical services, particularly for chemotherapy medications. The financial empowerment of breast cancer women can also be achieved through donor assistance for patients with the disease, government policies that offer credit cards, financial exemptions, and lending, encouraging donor participation, and distribute of medical services throughout many cities and places.

However, the patient's ability may be impacted by their level of awareness of breast cancer and its treatment options. Providing trustworthy and accurate information is essential to empowering women with breast cancer. This can be achieved by organizing educational programs, offering training materials in the form of brochures and animations from health centers, counseling families of patients, prescribing doctors enough time to give patients adequate information, teaching patients how to use social media and the Internet, forming online or in-person self-care groups, instructing community-oriented service providers in the local language and culture, putting educational programs based on the empowerment effective on breast cancer screening, and organizing educational sessions at the national as well as local and personal levels, teaching self-assessment skills, and patients'participation in self-help groups. Empowerment through theformation of online support groups in the local language was another strategy proposed by the participants to increase the patients' physiological and biological, functional, experimental, ethical, social, and financial knowledge, which could leadto increased self-management.

According to this, **Ekaterini et al., (2019)** conducted research on the empowerment of diabetic patients and suggested that patients receive self-management training to control their medical problems and enhance their quality of life which is in line with the findings of the current investigation. In their study, **Kondylakis et al., (2020**) discussed the need to develop information and communication technology (ICT) infrastructures for cancer patients' empowerment. They concluded that these features could be included in platforms for cancer patients' empowerment to boost their capacity for resilience and coping. According to a different study, developing an information counseling system can provide cancer patients more control. With the use of this system, patients would receive the necessary information according to their illnesses, and confusion resulting from the vast amount of information available on the Internet (**Iatraki et al., 2018**). Accordingly, similar systems can be developed for breast cancer patients to access reliable, necessary, and sufficient health information [M**olina et al., 2018, Kaur & Bisht, 2024].**

The study by **Moradi Manesh & Baba-khani, (2018**) also demonstrated that breast cancer patients' quality of life and self-efficacy increased with cognitive-behavioral empowerment. Additionally, the results of the study by **Hassanpour & Alami, (2019**) confirm that breast self-assessment training and breast cancer screening can help reduce the onset and progression of this disease. These findings also support the conclusions of the current study. Similar studies have demonstrated the beneficial impact of self-help groups on breast cancer patients' empowerment (**Stang & Mittelmark, 2019; Stang & Mittelmark, 2020).**

Interactive empowerment and perceived social support were two of the most significant empowering tactics for breast cancer women seeking informational help. According to the findings of the study conducted by **Abadi Bavil & Dolatian, (2018**) stated that social support was crucial in helping people adjust to and deal with life-threatening conditions like cancer. Furthermore, the patients' mental health was significantly influenced by their social support system. The findings also revealed that social support was positively correlated with the course of breast cancer treatment and recovery, as it fostered compassionate communication and a network of safety for the patients, enhancing their capacity to cope with long-term conditions like cancer.

Patients who had social support were also able to cope with their illness and felt better about themselves. Along with improving mental health, quality of life, and patients' sense of optimism and self-worth, it also raised survival rates. In a related study, **Firoozi et al., (2020**) concluded that interpersonal connection quality and self-empowerment abilities were significantly correlated, and that these factors may be useful in predicting emotional disturbance in breast cancer patients.

According to the findings of a study conducted by **Lee, (2018**) providing renal patients with disease management meetings, discussion groups, and phone consultations improved their quality of life, self-management, and self-efficacy. Online communities have an important role in decision-making, social support, information sharing, and patient preparedness for breast cancer, according to a study by **Sharf, (2017).**

In their research, **Zorrilla et al., (2020**) presented an empowerment model for patients, adding that breast cancer patients could also benefit from the six training sessions in the model. Consistent with the current study's findings, the sessions covered mindfulness training, self- and other-forgiveness, updating patients' knowledge about the illness, changing lifestyles, and attending self-help groups.

Several research has also demonstrated the benefit of family-based empowerment in lowering the negative impacts of illnesses and improving patients' quality of life; these studies include those conducted by **Tozan et al., (2021); and Etemadifar et al., (2018**). The family-centered empowerment concept could be applied to empower patients with breast cancer, although it has been stressed more in other chronic diseases (**Akbari et al., 2021**). Because a family member's disease impacts the quality of life of others, it is important to instruct family members on how to care for and manage the ill person. This is why this strategy is important Spiritual empowerment of breast cancer patients was another proposed strategy; however, this approach has mainly been studied on the empowerment of the staff instead of the patients (**Marami et al., 2020**).

Based on the findings of this study, the patients needed to have work to pay for their medical care and receive financial support; however, many of them were unable to find employment. To help breast cancer patients meet their spiritual as well as financial requirements and feel more valuable, finding jobs for them if they are willing to work should be a top priority. Employing tactics including granting sick leave, assigning work that is appropriate for their physical and mental capacities, and creating a stress-free work atmosphere are ways that employers can support their cancer patients who are still working during their illness. Additionally, they can think about the teleworking plan for the patients. Further studies are needed on the impact of employment on the life and treatment of chronic patients, including breast cancer ones.

The results of this study showed that, despite the importance of complementary therapies, a large number of patients had never used psychiatric services, rehabilitation services, dietary counseling, exercise, or conventional medicine. Therefore, to further empower the patients, it is recommended that the conditions for the proper use of these approaches be supplied under the supervision of their physicians. According to these findings, van den Bergh et al. presented psychological empowerment as one of the methods for empowering cancer patients, citing Zimmerman and encompassing interpersonal, behavioral, and interactive empowerment. They noted that empower- ing breast cancer patients might be largely in the form of online patient education and through personal websites, peer groups, survivorship counseling, and professional self-help groups **(van den Berg et al., 2023; Zimmerman, 2020].**

Van Uden-Kraan et al., (**2018)** study highlighted the benefits of online support groups and came to the conclusion that these platforms might be used by breast cancer patients to amuse themselves, gain experience, share information, and receive emotional support. Patients' self-confidence, hope, and comprehension of the disease, as well as their sense of control over their lives and performance, would all rise as a result of participating in online support groups and improving their communication with doctors, other patients, and the environment.

The present study's findings demonstrated a highly statistically significant correlation among newly diagnosed breast cancer patients between the dimensions of empowerment, total anxiety and sadness, and total generalized anxiety disorder among women. It makes sense because the six-month empowerment tactics included a gradual reduction in the indications and symptoms of anxiety and depression through the successful use of constructive coping mechanisms and a healthy lifestyle. **Hu et al.'s (2021)** findings, which showed that the psychological intervention helped women with breast cancer reduce their anxiety and sadness by teaching them stress-reduction skills and how to regularly engage with others, corroborated this outcome. Furthermore, **Ellawindi et al. (2021**)

reported that the majority of breast cancer patients suffered anxiety and depression after three months of their initial surgery, which lends further credence to the study results. They also found that during the first three months following their initial surgery, 49% of women with breast cancer had anxiety disorders, and 37.2% had depressive illnesses.

For women with breast cancer to complete treatment and rehabilitation and return to their normal lives, **Chan et al. (2020**) noted that these women require guidance and support. One intervention that can increase the efficacy of care given and aid in patients' adaption is a multidisciplinary clinical care session, according to **Zamanian et al. (2021**). According to **Okati-Aliabad et al. (2022)**, training breast cancer patients on the efficient use of positive techniques would increase emotional control and produce effective emotional balance by helping them control their emotions in stressful situations.

The process of developing health strategies is influenced by a person's traits, past experiences, and a larger environment that includes social, cultural, economic, and subjective factors. Furthermore, figuring out the coping methods employed by breast cancer patients may aid in the development of plans to enhance their quality of life, enhance the prognosis of their disease, and lessen anxiety and sadness (**Li, et al., 2020).**

The study's findings demonstrated a strong statistically significant correlation between women's empowerment dimensions and their age, educational attainment, and occupation. These factors also significantly influenced the mean total empowerment score, indicating that those with higher education levels were more capable than those with lower education levels. This may be the result of improved awareness, understanding, and information on the illness and self-care, as well as an effort to gain more accurate information to improve comprehension of the illness and its treatment. The findings of **Stang & Mittelmark's investigation, (2020**) support these conclusions.

The current study's findings indicated that women's mean depression score, total anxiety, age, and educational attainment were all very statistically significantly correlated. Nonetheless, there was no statistically significant correlation found between the mean scores for depression and anxiety among newly diagnosed breast cancer patients and their occupation or ability to breastfeed. **Fasano, et al. (2020),** who found that using cognitive defensive coping methods to deal with breast cancer was associated with both a lower age and a higher educational level, concur with the findings of this study.

Conclusions:

Based on the findings and hypotheses of the current study, the study findings concluded the results support the research hypothesis in which strategies implementation has positive effects on anxiety level reduction and promoting empowerment status among new breast cancer women.

Recommendations:

This study suggests the following in light of the existing findings:

According to this study, a counseling clinic should be established to give women with breast cancer educational instruction for the application of Strategies that will improve their well-being and rate of recovery.

Further researches are required on a larger sample of women to be generalized.

Finally, future studies can be conducted to determine theimpact of the strategies mentioned on the women' outcomes; and the potential challenges of implementing such strategies.

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