

## Strategies to Enhance Empowerment among Newly Diagnosed Breast Cancer Women: An Intervention Study

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### Abstract

**Background:** Breast cancer ranks as the second leading cause of death among women globally, and it can lead to various physical and psychological effects. One of the key factors influencing the survival and quality of life of breast cancer patients is the promotion of their empowerment, particularly as the incidence of the disease continues to rise worldwide. Therefore, **the objective of this study was to** assess the impact of strategies aimed at enhancing empowerment in women who have recently been diagnosed with breast cancer. **Research design:** This investigation employed a quasi-experimental research design featuring a single group that underwent both pre- and post-testing. **Subjects:** A convenient sample comprising 200 women newly diagnosed with breast cancer was included in this study over a period of six months. **Setting:** The research was conducted at the Sohag City Oncology Institution within the breast clinics. **Tools for data collection:** Two instruments were utilized for data gathering; Tool (I) consisted of an assessment sheet for newly diagnosed breast cancer women, while Tool (II) was the Patient Empowerment Scale. **Results:** The findings of this study indicated a highly statistically significant difference and improvements in knowledge and practices related to strategies for enhancing empowerment among newly diagnosed breast cancer women following the intervention ( $p < 0.01$ ) when compared to the pre-intervention phase. **Conclusions:** The results of the current study suggest that the implemented strategies positively influence the empowerment of women newly diagnosed with breast cancer. **Recommendations:** It is recommended to provide effective strategies for empowering women with breast cancer, which can be categorized into five main areas: financial support, informational support, interaction with healthcare providers, occupational support, and complementary therapies. The application of these strategies by stakeholders could significantly enhance the quality of life and empowerment of the patients.

**Keywords:** Empowerment status, Newly diagnosed breast cancer women, Strategies.

### Introduction:

Breast cancer (BC) is the most widespread oncological condition globally, with an estimated 2.3 million diagnoses in 2020, accounting for 11.7% of all cancer cases. The diagnosis of BC, the treatment process, and the subsequent adjustments to the changes encountered can adversely affect quality of life (QoL), impacting physical, emotional, social, and functional domains (Clougher et al., 2023). However, various psycho-oncological interventions have demonstrated their effectiveness in alleviating emotional distress, fear of recurrence, and post-traumatic symptoms, while also promoting improved psychosocial adaptation to the diagnosis and enhancing health-related QoL. A shared characteristic among some of these interventions is the inclusion of a group component (Ziegler et al., 2022); during the oncological journey, social support becomes a vital element. Research indicates that patients without a social support network face more difficult healthcare experiences (Liu & Wang, 2021).

Cancer ranks among the primary causes of disorders, mortality, and disability on a global scale and has seen a concerning rise over the past two decades, being recognized as a pressing health issue of contemporary society. Its detrimental effects invariably influence the physical, psychological, social, and economic dimensions of human existence and remain a significant concern for professionals in the field. Among all types of cancer, breast cancer is the most prevalent malignancy among women in developed nations. It is

the most frequently diagnosed cancer in women aged 40 to 44 and is the leading cause of cancer-related mortality in women, accounting for 19% of cancer deaths (Global Cancer Observatory, 2020).

Currently, one in nine women in developed countries has faced a breast cancer diagnosis in her lifetime, whereas in less developed nations, the ratio is one in 20. According to the most recent statistics from the Cancer Research Center in Iran, approximately 8,500 new breast cancer cases are reported annually in the country and 1400 women die due to the illness. Upon receiving the diagnosis and undergoing breast cancer treatment, women endure significant vulnerability characterized by feelings of insecurity, anxiety, depression, anger, and fear of the treatment, femininity weakness, worry about survival and health, and loss of control, which cause severe psychological effects, and they need to be supported (Ciria-Suarez et al., 2021).

Breast cancer affects the women's appearance, distorts their self-image, and influences their personal-family and social interactions; thus, it is necessary to help these patients by empowering them to adapt and meet their impaired needs. Considering the increase in the number of women suffering from breast cancer all over the world, improving the empowerment of these patients is one of the important factors affecting their survival. Also, due to the important role of women in development, empowering women with breast cancer, as a relatively large group, is necessary for the

sustainable development of a country (Mokhatri-Hesari et al., 2020).

Empowerment serves as the primary practical approach to enhancing the health status of patients and their families. It is characterized by the involvement of patients and their families in the decision-making processes regarding their health and well-being. The process of patient empowerment enables individuals to augment and fortify their necessary resources, thereby gaining the capacity to manage their lives, fulfill their needs, and address their challenges. An empowered patient is one who is well-informed and feels a strong sense of responsibility for their own health (Monfared et al., 2023).

Furthermore, empowerment facilitates access to suitable and high-quality care, enhances the quality of life, boosts responsiveness, fosters better interactions with healthcare professionals, increases satisfaction, improves therapeutic responses, prevents complications, and cultivates a positive outlook towards the illness. Consequently, the development and execution of an empowerment program aimed at enhancing patients' awareness, knowledge, and self-efficacy can lead to improved behavioral self-regulation and the adoption of preventive measures, ultimately resulting in a better quality of life (Taleghani et al., 2024).

A multitude of studies has been conducted regarding the empowerment of breast cancer patients to date. Findings from research on the factors influencing empowerment indicated that the application of a family-centered empowerment model was effective in enhancing the functional aspects of life quality for breast cancer patients undergoing chemotherapy (Shirvani et al., 2019). Additionally, another study identified three primary categories of empowerment needs from the patients' perspective, which included access to information through initial empowerment programs (encompassing timely and comprehensive information, coordination and continuity of information, and easy, full-time access to information), the formation of new beliefs regarding the implementation of empowerment programs, and the acquisition of new skills necessary for the effective execution of empowerment initiatives (such as communication skills, expressing needs and feelings, and utilizing the Internet) (Padmaja et al., 2020).

It was indicated in a separate study that breast self-examination is among the most effective techniques for the early detection of breast cancer, facilitating timely treatment, which can be accomplished through education and the enhancement of women's skills. Moreover, participation in a support group on Twitter social media has been shown to increase the perceived knowledge of breast cancer patients while simultaneously reducing their anxiety (Garland et al., 2020).

In terms of empowerment effects, research findings revealed that empowering breast cancer survivors had a

significant impact on their quality of life, and involvement in a self-help group greatly influenced their sense of empowerment, which subsequently affected their quality of life (Przybył, 2018).

Despite empowerment being a crucial approach in the care of patients, particularly those with breast cancer, there has been a lack of comprehensive research aimed at identifying the empowerment needs of these patients to develop strategies for addressing such needs (Shin & Park, 2019).

The empowerment of breast cancer patients has been extensively studied to date. The implementation of a family-centered empowerment model has been shown to improve the functional aspects of life quality for breast cancer patients undergoing treatment, as indicated by a study examining the factors that influence the empowerment of breast cancer patients receiving chemotherapy (Shirvani et al., 2019). Additionally, another study highlighted the patients' views on three primary categories of empowerment needs: new beliefs regarding the implementation of empowerment programs; and the development of new skills for the effective implementation of these programs (Taleghani et al., 2024).

According to Lange (2018), one of the main objectives of nursing is to educate breast cancer patients about various risk factors while also encouraging them to adopt healthy lifestyle habits. These habits encompass learning how to enhance restful sleep, maintaining a nutritious diet, particularly during chemotherapy, and quitting smoking or alcohol, engaging in physical activity, receiving massages, and prioritizing self-care are essential practices. Additionally, Briggs et al. (2020) highlighted that nurses significantly influence the coping strategies of breast cancer patients by fostering their sense of autonomy and mastery over their roles. This can be achieved through social skills training, which includes techniques such as meditation, visualization, and mindfulness exercises, along with training in assertiveness, time management, prioritization, and social interaction.

### Significance of the Study:

To enhance the health outcomes of patients and their families, empowerment emerges as the most effective approach. Empowerment refers to the process of involving patients in decision-making regarding their health and well-being in collaboration with their families. This process entails equipping patients with greater and more robust resources, enabling them to take control of their lives, address their needs, and find solutions to their challenges. An empowered patient is one who feels informed and assumes full responsibility for their health (Taleghani et al., 2024). Therefore, the development and implementation of an empowerment program aimed at increasing patients' self-efficacy, awareness, and knowledge could lead to improved behavioral self-regulation and the adoption of preventive measures, ultimately enhancing their quality of life (Monfared et al., 2023).

Enhancing the empowerment of breast cancer patients is vital for their survival, especially as the incidence of the disease among women globally continues to rise. Furthermore, given that women are pivotal to development, the sustainable progress of a nation is contingent upon the empowerment of its significant population of breast cancer patients (Taleghani et al., 2024). Thus, the study aimed to evaluate the effect of strategies to enhance empowerment among newly diagnosed breast cancer women.

#### **Aim of the study:**

This study aimed to evaluate the effect of strategies to enhance empowerment among newly diagnosed breast cancer women.

#### **Research Hypotheses:**

H1: Strategies implementation is expected to enhance empowerment among newly diagnosed breast cancer women post implementation compared to pre-implementation.

H2: Total mean scores of newly diagnosed breast cancer women's knowledge regarding empowerment dimensions expected to be improved post implementation compared to pre-implementation.

#### **Subjects and method:**

##### **Research design:**

This research employed a quasi-experimental design involving a single group that participated in both pre- and post-testing.

##### **Subjects:**

A convenient sample of all 200 newly diagnosed breast cancer women was included in this study within six months.

##### **Study setting:**

This study was conducted at the oncology institution in Sohag City, in the breast clinics. The institution provides both therapeutic and diagnostic services for cancer patients, along with a chemotherapy administration unit located on the second floor of the oncology facility.

#### **Data Collection Tools:**

**Tool I: Newly diagnosed breast cancer women assessment sheet:** this sheet was developed by the researcher based on pertinent literature (Ilie et al., 2024; Jablotschkin et al., 2022; Global Cancer Observatory, 2020). It consists of four parts:

**Part I:** Included data pertinent to the newly diagnosed breast cancer women's personal data including; age, level of education, occupation, and residence.

**Part II:** Included data related to newly diagnosed breast cancer women's medical history including; current stage of breast cancer, family history of breast cancer, and treatment.

**Part III: Newly diagnosed breast cancer women's knowledge regarding breast cancer and empowerment dimensions:**

To assess newly diagnosed breast cancer women's knowledge regarding breast cancer and empowerment dimensions. This questionnaire involved 20 questions covering the following areas: general knowledge about breast cancer and empowerment dimensions as meaning, symptoms, stages, causes, diagnostic testing, and treatment. This questionnaire was developed in Arabic language.

##### **Scoring system:**

It consisted of 20 short questions (closed ended). Each correct answer was given score (1) and the wrong answer was given zero. The total score of the questionnaire was 20. The total score was considered "satisfactory" if it equals or more than 70% and "unsatisfactory" if it less than 70%.

**Part IV: Newly diagnosed breast cancer women's reported practice questionnaire:** it was used to assess newly diagnosed breast cancer women's level of practice. This tool was used to assess women self-care practices. It was developed by the researcher in Arabic language based on reviewing the related literatures (Donmez & Kapucu, (2016), Regional Cancer Care (2019), American Cancer Society (2020). It included 10 parts as follow; self-care practices including general practices to reduce BCRL (7 items), skin care (10 items), skin wound care (8 items), control of pain (4 items), healthy nutrition (7 items), safe drug use (3 items), use of compression bandages (4 Items) general exercises (7 Items) sexual relation (8 Items) controlling of psychological pressures (9 Items).

##### **Scoring system:**

The responses for the previous 63 items were scaled either "yes" or "no", the yes answer has got "one score" while the no answer has got "zero". The total score was classified as adequate if the score  $\geq 80\%$  while inadequate if the score is  $< 80\%$ .

##### **Tool (II): Patient Empowerment Scale:**

Patient Empowerment Scale was developed by (Bulsara et al., 2006), The empowerment status of women diagnosed with breast cancer was assessed quantitatively. A total of 28 items constituted the scale, which encompassed 14 dimensions (each comprising two items). These dimensions included information, resources, participation in decision-making, support from friends and family, interaction with the physician, the patient's perception of the physician's ability to manage the illness, the patient's view of the healthcare providers' willingness to involve them in the decision-making process, complementary therapies, spiritual beliefs, acceptance and adaptation to illness, and how patients perceive their value to friends, family, and their employment.

Items based on a 3-point Likert scale as "item is necessary," "item is useful but not necessary," and "item is not necessary." All items had CVR  $> 0.62$ , and a total CVR score of 0.78 was obtained. The reliability was confirmed using Cronbach's alpha coefficient ( $\alpha = 0.89$ ).

**Scoring system:**

The overall mean score for the items was 84. Items that had a mean score lower than the mean score of 50 were classified as having an "unacceptable status" and served as the foundation for identifying the empowerment needs of the research sample in the subsequent phase. Conversely, items with a mean score exceeding the mean score of 51 were designated as having an "acceptable status".

**Validity and Reliability of Tools:**

A panel of five experts—comprising two oncologists, one general surgeon, one community health nurse, and one medical-surgical nurse—was consulted to assess the face validity of the questionnaire. Additionally, the content validity ratio (CVR-0.897) was employed to evaluate the content validity of the questionnaire. The reliability was determined using Cronbach's alpha coefficient, which yielded a value of ( $\alpha = 0.89$ ) for tool I and 0.879 for tool II.

**Procedures:****Preparatory phase:**

The process involved conducting an extensive search on the internet for books, articles, periodicals, and other pertinent resources to examine recent, local, international, and historical literature, as well as theoretical insights regarding strategies for newly diagnosed breast cancer patients and the contributions of medical-surgical and community health nursing. The data collection instruments were designed and developed by the researchers.

**Administrative and Ethical Considerations**

Approval was secured from the ethical committee of the nursing faculty at Sohag University to carry out this study. Prior to administering the questionnaire, the researcher informed the newly diagnosed breast cancer patients that participation in the study was voluntary, that they could decline to participate at any point, and that they could withdraw from the study at any time without needing to provide a reason. Oral consent was obtained from the newly diagnosed breast cancer patients. They were assured that their information would remain confidential and would be used exclusively for research purposes. An official letter was sent to the director of the selected setting in Sohag City from the nursing faculty of Sohag University, detailing the study's purpose and requesting permission to collect data.

**Pilot Study:**

Before initiating the main study, a pilot study was conducted involving 20 newly diagnosed breast cancer patients, representing approximately 10% of the total sample, to ensure that the questions were comprehensible, the data collection methods were reliable and applicable, and to assess the feasibility of the research process. The primary study sample included all participants from the pilot study.

**Fieldwork:**

The techniques were implemented within six the duration for each of the three phases of empowerment strategies (pre-, during, and post-program implementation) spanned several months, commencing from September 2023 and concluding in April 2024.

- Prior to the initiation of the strategies, all participant understudies conducted a baseline assessment aimed at evaluating the impact of the strategies designed to enhance empowerment among women newly diagnosed with breast cancer.

- Data were gathered from women recently diagnosed with breast cancer, who were instructed to complete the assessments by selecting only one response that accurately represented their situation. The researchers provided assistance to these women in filling out the questionnaires.

- The strategies were developed by the researchers, taking into account the results of the assessment prior to their implementation for the new breast cancer patients.

- The researchers visited the designated setting twice a week, from 8 a.m. to 12 p.m., to execute the program. Twenty subgroups were formed, each consisting of ten participants from the newly diagnosed breast cancer patients. Each group received a total of twelve sessions, lasting between 35 to 40 minutes, which included two theoretical sessions and six practical sessions.

- During the implementation of the strategies, the researchers employed a range of instructional methods and materials, such as colored handouts, brainstorming sessions, demonstrations, and lectures.

**Contents of the strategies implementation:**

The implementation of strategies was segmented into two distinct parts, which comprised:

**Part I: Theoretical Component (2 sessions);**

General information concerning breast cancer was provided, including its definition, symptoms, stages, causes, diagnostic tests, and treatment options.

**Part II: Practical Component (6 sessions):**

The strategies were employed to instruct women with breast cancer on coping skills related to various facets of empowerment, such as access to information, available resources, participation in decision-making, support from friends and family, communication with healthcare providers, patients' perceptions of their doctors' competence in managing the illness, patients' views on the willingness of medical professionals to involve them in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to the illness, patients' perceptions of their usefulness to friends, patients' perceptions of their usefulness to family, and the importance of employment.

**Evaluation phase:**

The researchers used the same tools as the pre-test; post one month to evaluate the effect of strategies to enhance empowerment among newly diagnosed breast cancer women.

### Statistical Analysis:

The Excel software and the SPSS 23.0 statistical package for social sciences were employed for data entry and statistical analysis. For categorical data, frequencies and percentages were utilized as descriptive statistics in the presentation of data. To summarize continuous data, ANOVA tests, Mena Whiten, Pearson correlation, paired sample t-tests, means, and standard deviations (SD) were applied. A p-value of less than 0.05 was used to assess statistical significance in a group both prior to and during the implementation of the psycho-educational program. A significant threshold of less than 0.05 was established.

### Results:

As indicated in **Table (1)**, the mean age of women newly diagnosed with breast cancer was  $43.22 \pm 7.65$  years. 55% of these women were literate, while three-fifths (60%) resided in rural regions. In terms of occupation, 80% of the women newly diagnosed with breast cancer were housewives.

**Table (2)** indicates that 68% of women newly diagnosed with breast cancer had a family history of the disease, and 55% of these individuals were in the second stage of the illness. Additionally, the present study found that fewer than two-thirds (62%) of newly diagnosed breast cancer women were receiving treatment through radiation therapy and hormonal therapy.

**Figure (1):** shows that all (100%) of the studied newly diagnosed breast cancer women didn't have previous training about strategies to enhance empowerment

**Figure (2):** illustrates that the main sources of knowledge among the newly diagnosed breast cancer women about breast cancer were from doctors (79%). **Table (3):** depicts that there were significant differences in the mean difference scores of newly diagnosed breast cancer women regarding knowledge about breast cancer and strategies to enhance empowerment before and after implementation. This indicates that the knowledge level of newly diagnosed breast cancer women improved after implementation in all domains. This demonstrated that post implementation, the studied newly diagnosed breast cancer women had the highest mean scores compared to pre- implementation.

**Figure (3):** illustrates that the total level of knowledge concerning to breast cancer and strategies to enhance

empowerment among newly diagnosed breast cancer women was satisfactory among 14% of studied newly diagnosed breast cancer women pre- implementation, while it became satisfactory level among 90 % post - implementation.

It's cleared from **Table (4)** that there was a highly statistically significant difference at ( $p = <0.001$ ) and improvement in the newly diagnosed breast cancer women's reported practices mean scores regarding strategies used to enhance empowerment pre and post-one month of implementation. Additionally, the total newly diagnosed breast cancer women reported practices mean score improved from  $6.37 \pm 2.05$  pre-implementation to  $13.45 \pm 2.23$  post- implementation with statistically significant differences.

**Figure (4)** indicates that the total level of reported practices regarding strategies used to enhance empowerment among newly diagnosed breast cancer women were adequate level of reported practices among 6% of them pre- implementation while post implementation 87% of them had adequate level of reported practices.

**Table 5** demonstrates a statistically significant enhancement in the post-implementation phase ( $p < 0.001$ ) when compared to the pre-implementation phase regarding empowerment dimensions among newly diagnosed women with breast cancer. These dimensions include information, resources, involvement in decision-making, support from friends and family, interaction with the doctor, the patient's perception of the doctor's capability to manage the disease, the patient's view on the willingness of healthcare providers to involve the patient in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to illness, and the patient's perception of their usefulness to friends and family, as well as their occupation.

**Table (6):** Illustrates that there was a highly statistically significant positive correlation between total knowledge scores and total practices scores pre and post implementation regarding strategies used to enhance empowerment among newly diagnosed breast cancer women.

**Table (7):** Illustrates that there was a statistically significant relationship between the educational level of the studied newly diagnosed breast cancer women's and overall knowledge, practices, and demographic data throughout the phases of implementation at  $p < 0.001$ .

Table (1): Distribution of newly diagnosed breast cancer women according to their personal data (n=200).

Items	No.	%	
<b>Age (Years):</b>			
<30	26		13
30< 60	146		73
60+	28		14
<b>Mean <math>\pm</math> SD</b>	<b>(43.22<math>\pm</math>7.65)</b>		
<b>Residence:</b>			
Rural	120		60
Urban	80		40
<b>Level of Education:</b>			
Read & Write	110		55
Primary Education	50		25
Secondary Education	40		20
<b>Occupation:</b>			
Housewife	160		80
Work	40		20

Table (2): Distribution of newly diagnosed breast cancer women according to medical history (n=200).

Items	No.	%
<b>Stage of Breast Cancer:</b>		
1 <sup>st</sup> Stage	45	15
2 <sup>nd</sup> Stage	110	55
3 <sup>rd</sup> Stage	34	17
4 <sup>th</sup> Stage	26	13
<b>Family History of Breast Cancer:</b>		
Yes	136	68
No	64	32
<b>Type of treatment:</b>		
Surgical Intervention	20	10
Chemotherapy	56	28
Radiation Therapy and Hormonal Therapy	124	62

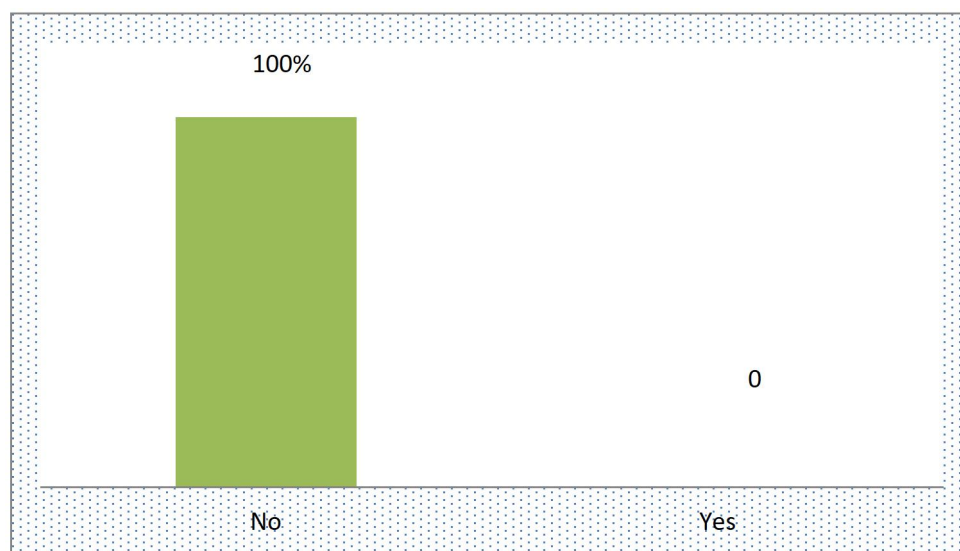


Figure (1): Previous training about strategies to enhance empowerment among newly diagnosed breast cancer women (n=200).

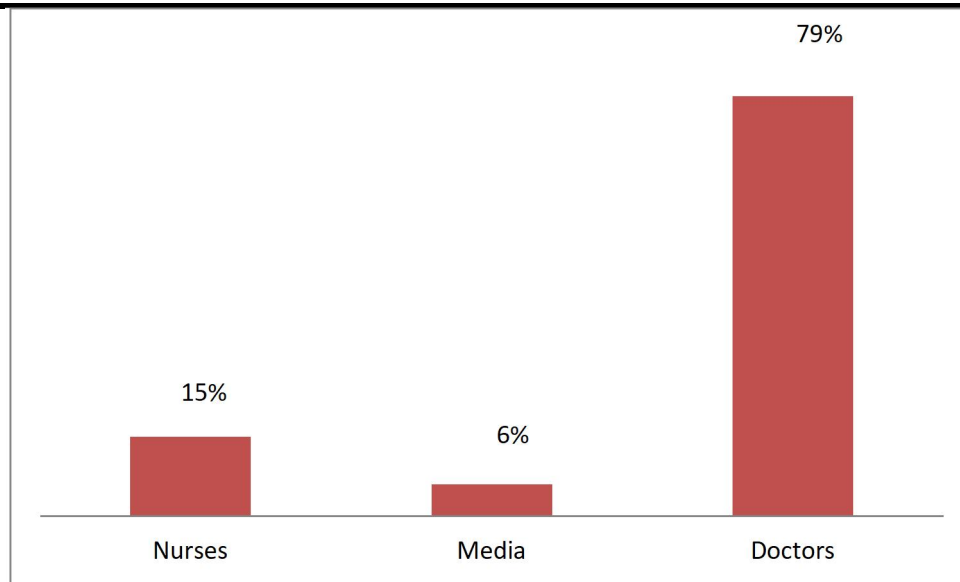


Figure (2): Sources of knowledge among the newly diagnosed breast cancer women about breast cancer (n=200).

Table (3): Newly diagnosed breast cancer women's total knowledge mean scores differences related to breast cancer and strategies to enhance empowerment pre- and post-one month of implementation (n=200)

Items	Pre	Post	t-test	P-value
Newly diagnosed breast cancer women's total knowledge mean scores	7.56±2.33	17.21 ±1.45	23.65	<0.001

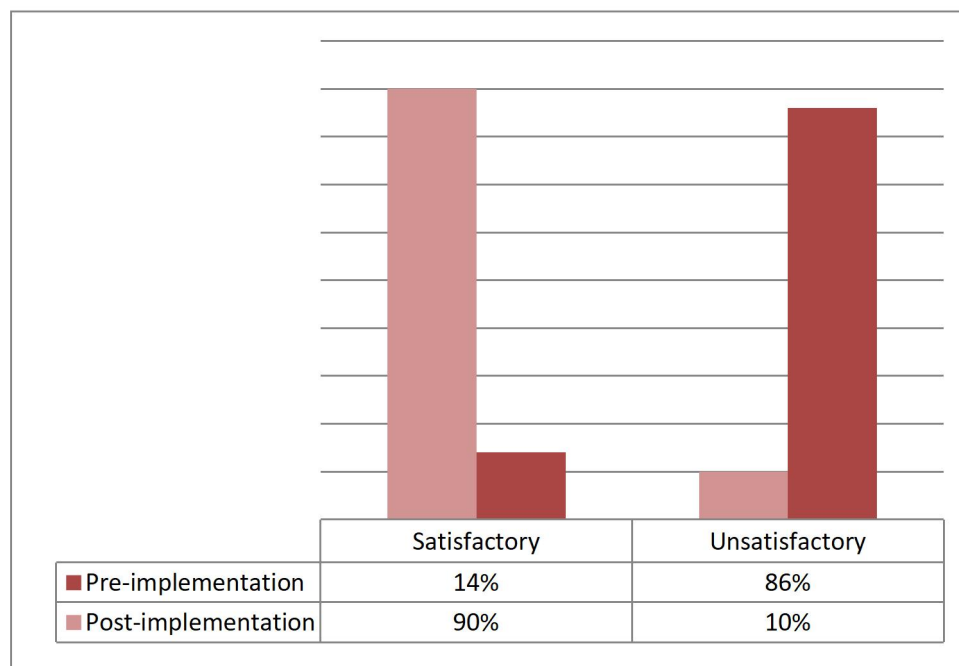


Figure (3) Total newly diagnosed breast cancer women's knowledge level concerning to breast cancer and strategies to enhance empowerment pre and post one month of implementation (n=200).

Table (3): Newly diagnosed breast cancer women's total reported practices mean scores differences related to strategies to enhance empowerment pre- and post-one month of implementation (n=200)

Items	Pre	Post	t-test	P-value
Newly diagnosed breast cancer women's total reported practices mean scores	6.37 ±2.05	13.45±2.23	35.22	<0.001

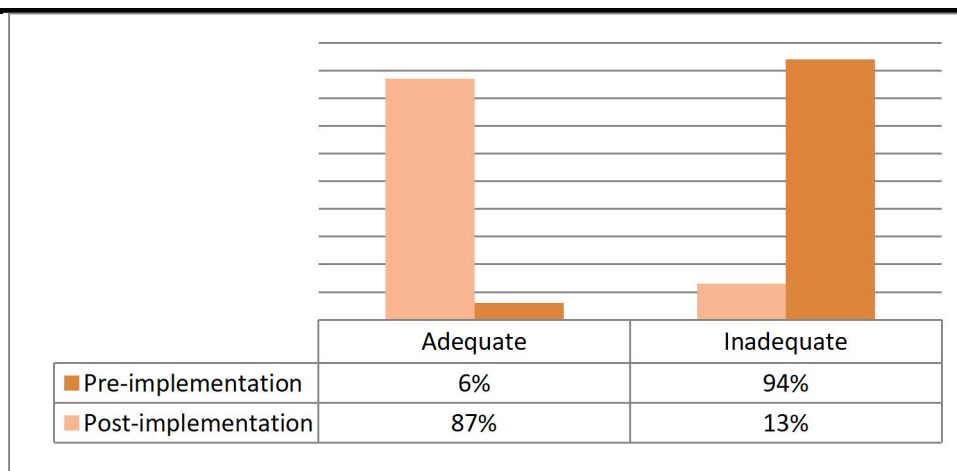


Figure (4) Total newly diagnosed breast cancer women's reported practices level concerning to strategies used to enhance empowerment pre and post one month of implementation (n=200).

Table (5): Comparison of the mean scores for dimensions of empowerment among women with breast cancer before and after the intervention (n=100).

Dimensions of empowerment	Pre		Post (n=200)		X <sup>2</sup>	P-value
1Recourses	24	12	152	86	12.33	<0.001**
2Information	20	10	154	87	15.44	<0.001**
3Participation in decision-making	30	15	158	79	7.55	<0.001**
4Family support	36	18	162	81	15.33	<0.001**
5Support of friends	28	14	120	60	6.66	<0.001**
6Interaction with the physician	34	17	140	70	11.77	<0.001**
7Patient perception of the physician's ability to manage the disease	46	23	150	75	12.88	<0.001**
8Patient perception of health professionals' willingness to let him/her participate in decision-making	38	19	110	55	7.89	<0.001**
9Complementary therapies	42	21	160	80	6.67	<0.001**
10Spiritual beliefs	40	20	164	82	11.45	<0.001**
11Acceptance and adaptation to disease	32	16	144	72	12.23	<0.001**
12Patient perception of usefulness to friends	44	22	186	83	6.86	<0.001**
13Patient perception of usefulness to family	48	24	180	90	11.38	<0.001**
14Having a job	74	37	176	88	12.76	<0.001**

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

Table (6): Correlation between total knowledge and total practices pre and post implementation regarding strategies used to enhance empowerment among newly diagnosed breast cancer women (n=200)

Items	Total Knowledge scores			
	Pre- implementation		Post implementation	
	R	p-value	R	p-value
Total Practices scores	0.72	0.001**	0.43	0.002**

\*\* Correlation is significant at the  $< 0.01$  level

Table (7): Correlations between maternity nurses' knowledge, practices, and demographic data (n=200).

Scores	Spearman's rank correlation coefficient (r)	
	Knowledge	Practices
Pre-intervention		
Age	-.122	.079
Education	.132	.175
Residence	-.105	-.169
Post-intervention		
Age	-.204	-.268*
Education	.304**	.379**
Residence	-.155	-.046

(\*) Statistically significant at  $p < 0.05$  (\*\*) statistically significant at  $p < 0.01$



**Discussion:**

Women diagnosed with breast cancer often face anxiety that impedes their ability to seek essential support during critical times. They also experience considerable changes in their relationships and physical health, which encompasses irregular sleep patterns and modified eating habits, as well as psychological health issues, including altered body image and diminished self-esteem, along with their daily activities (**World Health Organization, 2021**).

**Cancer Council Australia (2023)** offered further insights into the factors affecting newly diagnosed women with breast cancer. These factors included a decline in quality of life, insufficient healthcare, low self-esteem, and poor decision-making skills. A lack of understanding about cancer and its treatment options, coupled with the expectation of a swift recovery, added to emotional turmoil and a sense of lost control. Furthermore, **Ilie et al. (2024)** highlighted that poor communication with healthcare providers, limited involvement in the decision-making process regarding cancer treatment, and a scarcity of easily accessible information about diagnosis and treatment are primarily associated with suboptimal patient outcomes and ineffective coping strategies. Hence, the study was conducted to evaluate the effect of strategies to enhance empowerment among newly diagnosed breast cancer women.

Concerning the demographic information of women recently diagnosed with breast cancer, the average age was found to be  $(43.22 \pm 7.65)$  years, based on the results. Most of these women were housewives, with three-fifths residing in rural areas, and over half were literate. A similar demographic group, primarily aged between 40 and 50 and having only finished elementary education, was part of **Padmaja et al.'s (2020)** research on the effectiveness 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 study, divided into two primary sections, suggests that hormonal fluctuations, particularly those related to progesterone and estrogen during middle age and prior to menopause, may play a role. It was explained that factors such as early onset of menstruation, late menopause, older age at first pregnancy, and never having given birth contribute to prolonged and/or significant exposure to these hormones.

The current research indicates that most newly diagnosed cases of breast cancer among women are housewives. This may stem from various issues, including insufficient funding and resources for regular screening mammograms, a lack of awareness about breast cancer—especially in women with lower educational attainment—and a general public unawareness regarding the importance of breast care precautions. Additional risk factors include obesity and

not breastfeeding. The findings of this study align with those of **Asad et al. (2021)**, which revealed that women from lower socioeconomic backgrounds and with limited education are at a higher risk for breast cancer. This is particularly evident among those who are overweight, smokers, or have a history of health issues. It has been noted that low-income and uneducated women are more susceptible to breast cancer due to their limited awareness of the disease and their financial inability to access regular breast screenings or perform routine self-examinations without government support.

The findings of the current study indicate that over two-thirds of the participants had a positive family history of breast cancer, with more than half of them being in the second stage of the disease. This situation arises from the impact of hereditary and genetic predisposition to breast cancer. **El Haidari et al. (2020)** observed that a woman's risk of developing breast cancer is heightened if she has several family members on either her father's or mother's side who have experienced breast or ovarian cancer, as well as if she has a first-degree relative—such as a mother, sister, or daughter—who has been diagnosed with breast cancer, which aligns with the results of this study.

According to the current study's findings, it was observed that all of the studied newly diagnosed breast cancer women didn't have previous training about strategies to enhance empowerment. From the researchers' point of view, it confirmed the need of the studied newly diagnosed breast cancer women to be engaged in this study.

The current study findings illustrated that the main sources of knowledge among the **newly diagnosed breast cancer women** about **breast cancer** were from doctors. From the researchers' point of view, it explained that **newly diagnosed breast cancer women** acquired their knowledge from the confident sources.

According to the current study's findings, there were significant differences in the mean difference scores of newly diagnosed breast cancer women regarding knowledge about breast cancer and strategies to enhance empowerment before and after implementation. This indicates that the knowledge level of newly diagnosed breast cancer women improved after implementation in all domains. This demonstrated that post implementation, the studied newly diagnosed breast cancer women had the highest mean scores compared to pre-implementation. From the researchers' point of view, it conflicts the positive effects of strategies used to enhance empowerment.

According to the current study's findings, it was obvious that the total level of knowledge concerning to breast cancer and strategies to enhance empowerment among most of newly diagnosed breast cancer women was satisfactory post -implementation. From the researchers' point of view, it confirmed the effectiveness of strategies used to enhance empowerment implementation and the desire of the studied newly diagnosed breast cancer women to improve their knowledge about these strategies. In the line of findings of **van Uden-Kraan et al., (2019)**

found that the strategies used to enhance empowerment most reported was “being better informed and participation help in the exchange of information, encompassing the sharing of knowledge related to the disease, treatment methods, or recommendations .

According to the current study's findings, there was a highly statistically significant difference and improvement in the newly diagnosed breast cancer women's reported practices mean scores regarding strategies used to enhance empowerment pre and post-one month of implementation. Additionally, the total newly diagnosed breast cancer women reported practices mean score improved from  $6.37 \pm 2.05$  pre-implementation to  $13.45 \pm 2.23$  post- implementation with statistically significant differences. This could be explained by acquiring knowledge about empowerment strategies help and reflected on newly diagnosed breast cancer women good practices.

According to the current study's findings, the total level of reported practices regarding strategies used to enhance empowerment among newly diagnosed breast cancer women were adequate level of reported practices among the majority of them post implementation. This result may due to the success of the implementation that firstly causes knowledge improvement and secondly associated with practices improvement among the studied newly diagnosed breast cancer women. These findings are consistent with a study by **Ziegler et al. (2022)**, which discovered a statistically significant increase in reported practices following the implementation.

According to the findings of the current study, there is a highly statistically significant improvement in the post-implementation phase compared to the pre-implementation phase regarding empowerment dimensions among newly diagnosed women with breast cancer. These dimensions include information, resources, involvement in decision-making, support from friends and family, interaction with the doctor, the patient's perception of the doctor's ability to manage the disease, the patient's view of healthcare providers' willingness to involve them in decision-making, complementary therapies, spiritual beliefs, acceptance and adaptation to illness, and the patient's perceived usefulness to friends and family, as well as their occupation (**WHO, 2021**). From the researchers' perspective, this confirms that enhancements in knowledge and practices among newly diagnosed breast cancer women are linked to positive empowerment growth.

On the other hand, the average and standard deviation of the empowerment items among the newly diagnosed breast cancer women in the study revealed that most believed their doctors were competent and trustworthy, and that their families had provided support. While a majority of these patients adhered to their doctors' recommendations, they showed reluctance towards adopting complementary therapies. This aligns with the findings from studies by **Lotfian et al. (2020)**, **Rostami**

**et al. (2020)**, and **Elhani et al. (2023)**, which indicated that the mean dimensions of patient empowerment suggest that spiritual beliefs, family support, and trust in the doctor can influence the empowerment of women with breast cancer.

**Davarpanah et al. (2023)** discovered that the items on the empowerment scale did not fall within an acceptable range. The ability of women newly diagnosed with breast cancer to make health-related decisions, their willingness to engage in the decision-making process regarding their condition, their capacity to do so, the management of their illness by physicians outside of hospital settings, the application of complementary therapies, the importance of these therapies for newly diagnosed breast cancer patients in alleviating discomfort, and their sense of value despite job loss were all considered.

The findings of the current study revealed that one aspect with a low average was the involvement of patients in their treatment process. This underscores the importance of providing patients with all available treatment options and empowering them to make informed decisions regarding their care. Among the issues raised by the medical professionals involved in this study was the importance of women's appearance and the need to provide newly diagnosed breast cancer patients with a comprehensive explanation of this before undergoing mastectomy. According to **Street & Voigt (2020)**, patients who actively participated in consultations and discussions to determine their treatment path felt more in control of the process compared to those who were passive. Consequently, these patients reported a better quality of life related to health after treatment.

Moreover, the women newly diagnosed with breast cancer had a positive perception of their doctors' ability to manage their illness outside of the hospital and their willingness to involve them in clinical decision-making. This emphasizes the critical need for effective communication between doctors and patients, a factor that breast cancer treatment facilities should prioritize. Furthermore, the results from the interview phase and scoping review indicated that financial support, informational assistance, doctor engagement, occupational aid, and complementary therapies were the five categories into which empowerment initiatives for women diagnosed with breast cancer were classified. From the participants' perspective, the most crucial financial assistance strategies for newly diagnosed women included bank loans, discounts on medical services, provision of credit cards, and continuing treatment in their local area. The utilization of various support groups, health insurance coverage, donations, integration of all treatment procedures at the clinic, government financial support for cancer patients in their plans, appropriate distribution of medical centers across cities, internet services, and financial assistance. Cost reductions can also be realized by broadening insurance coverage for medical services, especially for chemotherapy drugs. The financial empowerment of

women with breast cancer can also be facilitated through donor support for patients, government policies that provide credit cards, financial exemptions, and lending, promoting donor involvement, and distributing medical services across various cities and locations. However, the capacity of newly diagnosed women with breast cancer may be influenced by their awareness of breast cancer and available treatment options. Providing reliable and accurate information is vital for empowering women with breast cancer. This can be accomplished by organizing educational programs, supplying training materials in the form of brochures and animations from health centers, counseling the families of patients, allowing doctors sufficient time to provide patients with adequate information, teaching patients how to navigate social media and the Internet, forming online or in-person self-care groups, and instructing community-oriented service providers in the local language and culture. Implementing educational programs focused on empowering individuals regarding breast cancer screening, along with organizing educational sessions at national, local, and personal levels, which include teaching self-assessment skills and encouraging patient participation in self-help groups.

Another strategy suggested by participants was to enhance empowerment through the establishment of online support groups in the local language, aimed at increasing patients' physiological, biological, functional, experiential, ethical, social, and financial knowledge, ultimately leading to improved self-management.

In their research, **Kondylakis et al. (2020)** highlighted the necessity of developing information and communication technology (ICT) infrastructures to empower cancer patients. They concluded that these features could be integrated into platforms designed for cancer patients' empowerment, enhancing their resilience and coping abilities. A separate study indicated that creating an information counseling system could grant cancer patients greater control. This system would provide patients with tailored information relevant to their conditions, alleviating confusion caused by the overwhelming amount of information available online (**Iatraki et al., 2018**). Consequently, similar systems could be established for breast cancer patients to ensure access to reliable, essential, and adequate health information (**Molina et al., 2018; Kaur & Bisht, 2024**).

The research conducted by **Moradi Manesh & Babakhani (2018)** also revealed that cognitive-behavioral empowerment significantly improved the quality of life and self-efficacy among breast cancer patients. Furthermore, the findings from the study by **Hassanpour & Alami (2019)** corroborate that training in breast self-assessment and breast cancer screening can effectively reduce the onset and progression of the disease. These results further validate the conclusions drawn in the current study. Additional research has shown the positive effects of self-help groups on the

empowerment of breast cancer patients (**Stang & Mittelmark, 2019; Stang & Mittelmark, 2020**).

Interactive empowerment and perceived social support emerged as two of the most vital strategies for women with breast cancer seeking informational assistance. The study by **Abadi Babil & Dolatian (2018)** highlighted that social support plays a critical role in helping individuals adapt to and manage life-threatening illnesses such as cancer. Additionally, the mental health of patients was greatly affected by their social support networks. The research findings also indicated a positive correlation between social support and the trajectory of breast cancer treatment and recovery, as it encouraged compassionate communication and created a safety network for patients, thereby enhancing their ability to cope with chronic conditions like cancer. From the researchers' perspective, this confirmed the significant impact of strategies aimed at enhancing empowerment.

Patients who received social support were better equipped to handle their illness and reported improved self-esteem. In addition to enhancing mental health, quality of life, and fostering a sense of optimism and self-worth, social support also contributed to increased survival rates. A related study by **Firoozi et al. (2020)** found a significant correlation between the quality of interpersonal connections and self-empowerment skills, suggesting that these elements could be instrumental in predicting emotional disturbances in breast cancer patients.

Furthermore, a study by **Lee (2018)** revealed that renal patients who participated in disease management meetings, discussion groups, and phone consultations experienced improvements in their quality of life, self-management, and self-efficacy. According to research by **Sharf (2017)**, online communities play a crucial role in decision-making, social support, information exchange, and preparing patients for breast cancer. In their study, **Zorrilla et al. (2020)** introduced an empowerment model for patients, noting that breast cancer patients could also gain from the six training sessions included in the model. In alignment with the findings of the current study, the sessions included mindfulness training, self-forgiveness, and forgiveness of others, enhancing patients' understanding of their illness, lifestyle modifications, and participation in self-help groups.

Numerous studies have shown the advantages of family-based empowerment in mitigating the adverse effects of illnesses and enhancing the quality of life for patients; notable examples include research by **Tozan et al. (2021)** and **Etemadifar et al. (2018)**. The concept of family-centered empowerment could be utilized to support patients with breast cancer, although it has been more prominently emphasized in the context of other chronic diseases (**Akbari et al., 2021**). Given that a family member's illness affects the quality of life of others, it is crucial to educate family members on how to care for and manage the sick individual. This underscores the significance of this approach. Another

suggested strategy is the spiritual empowerment of breast cancer patients; however, this has primarily been investigated in relation to empowering the staff rather than the patients themselves (Marami et al., 2020).

According to the results of this study, patients require employment to afford their medical expenses and obtain financial assistance; however, many struggle to secure jobs. To assist breast cancer patients in fulfilling their spiritual and financial needs and to enhance their sense of worth, prioritizing job placement for those willing to work is essential. Employers can support their cancer-affected employees by implementing strategies such as providing sick leave, assigning tasks that align with their physical and mental capabilities, and fostering a stress-free work environment. Additionally, considering telework options for these patients could be beneficial. More research is necessary to explore the effects of employment on the lives and treatment of chronic patients, including those with breast cancer.

To further empower women newly diagnosed with breast cancer, it is advisable that the conditions for the effective use of these strategies be established under the guidance of their healthcare providers. Based on these insights, van den Bergh et al. identified psychological empowerment as a key method for supporting newly diagnosed breast cancer patients, referencing Zimmerman and including aspects of interpersonal, behavioral, and interactive empowerment. They observed that empowering these women could primarily take the form of patient education, as well as through personal websites, peer support groups, survivorship counseling, and professional self-help organizations (van den Berg et al., 2023; Zimmerman, 2021).

The study by Van Uden-Kraan et al. (2018) emphasized the advantages of support groups, concluding that these platforms could serve as a source of entertainment, experience sharing, information exchange, and emotional support for women newly diagnosed with breast cancer. Participation in online support groups is likely to enhance these women's self-confidence, hope, and understanding of their condition, while also increasing their sense of control over their lives and their overall performance, as they improve communication with healthcare providers, fellow patients, and their surroundings.

The present study's findings demonstrated there was a highly statistically significant positive correlation between total knowledge scores and total practices scores pre and post implementation regarding strategies used to enhance empowerment among newly diagnosed breast cancer women. From the researchers' point of view, it reflected that the aim of strategies used was achieved and help to enhance empowerment.

For women newly diagnosed with breast cancer to successfully complete their treatment and rehabilitation and return to their everyday lives, Chan et al. (2020) emphasized the necessity of guidance and support. One effective intervention that can enhance the quality of

care provided and assist patients in their adaptation is a multidisciplinary clinical care session, as highlighted by Zamanian et al. (2021). Furthermore, Okati-Aliabad et al. (2022) stated that educating breast cancer patients on the effective application of positive techniques would improve their emotional regulation and foster a healthy emotional balance by enabling them to manage their emotions during stressful circumstances.

The development of health strategies is shaped by individual characteristics, previous experiences, and a broader context that encompasses social, cultural, economic, and subjective elements. Furthermore, figuring out the coping methods employed by newly diagnosed breast cancer women may aid in the development of plans to enhance their quality of life and enhance empowerment, and lessen anxiety and sadness (Li, et al., 2020).

The present study's findings illustrated that there was a statistically significant relationship between the educational level of the studied newly diagnosed breast cancer women's and overall knowledge, and practices throughout the phases of implementation. These elements also had a considerable impact on the average total empowerment score, suggesting that individuals with higher education levels demonstrated greater capability compared to those with lower education levels. This could stem from enhanced awareness, understanding, and knowledge regarding the illness and self-care, along with a pursuit of more precise information to better grasp the illness and its treatment. The results of Stang & Mittelmark's study (2020) reinforce these findings.

### Conclusions:

According to the findings and hypotheses of the present study, the results indicate that the research hypothesis is supported, demonstrating that strategies positively influence the empowerment of women who have recently been diagnosed with breast cancer.

### Recommendations:

This research presents the following recommendations based on the current findings:

- To empower women with breast cancer, it is essential to provide effective strategies, which can be categorized into five main areas: financial support, informational support, physician interaction, occupational support, and complementary therapies. The implementation of these strategies by stakeholders could enhance the quality of life for patients while also fostering their empowerment.
- A counseling clinic should be established to offer educational guidance to newly diagnosed breast cancer women, focusing on strategies that can enhance their well-being and recovery rates.
- Additional research is necessary involving a larger sample of women to allow for generalization of the findings.

Lastly, future studies should explore the relationship

between the application of empowerment strategies and the outcomes for newly diagnosed breast cancer women.

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