# Effectiveness of Educational Guidelines on Post Mastectomy Women's Knowledge, Practices, and Psychological Stress Regarding External Breast Prosthesis

**1Badr Ibrahim Ahmed Abdou Abd El Rahman, 2Ebtesam Aly Abd el Fatah Aly, 3Mona Gamal Abd Elnaser Ahmed Elnabawey,** 4 **Manal Ibrahem Abd El Fatah Yassen**

(1) Fellow Medical-Surgical Nursing, University Student Hospital, Mansoura University
(2) Lecture of Medical-Surgical Nursing Faculty of Nursing Minia University
(3) Assistant Professor of Psychiatric and Mental Health Nursing- Faculty of Nursing - Zagazig University
(4) Lecturer in Medical-Surgical Nursing Department, Faculty of Nursing, Beni-Suef University

## Abstract

The knowledge that they have breast cancer and the loss of their physical attractiveness are two major concerns that women who have had a mastectomy for the disease contend with. Wearing an external breast prosthesis after a mastectomy is chosen to lessen psychological stress and replace the weight of the missing breast. **Aim:** To evaluate the effectiveness of educational guidelines on post-mastectomy women's knowledge, practices, and psychological stress regarding external breast prostheses. **Subjects and method: Design:** The goal of this study was accomplished by using a quasi-experimental research approach. **Setting:** The study was conducted in Minia Oncology Center's Inpatient and Outpatient clinics / Mania Governate/ Egypt. **Subjects**: A purposive sample of 50 post-mastectomy women were recruited in this study. **Four tools were used:** Tool (I) structured interviewing questionnaire, which included two parts: (a) demographic characteristics of post-mastectomy women; (b) post-mastectomy women's medical data, Tool (II) post-mastectomy women's knowledge regarding external breast prosthesis, Tool (III) post-mastectomy women 'practice regarding external breast prosthesis (pre/post), and Tool (IV) **Depression, Anxiety, and Stress Scale (DASS-21)** (pre/post). **Results**: The study's findings demonstrated that there were statistically significant differences and improvements in knowledge, practice, and psychological stress post-educational guidelines than pre-educational guidelines among post-mastectomy women. **Conclusion:** The results of the study concluded that the educational guidelines were effective in improving post-mastectomy women's knowledge, practice, and psychological stress regarding external breast prostheses. **Recommendations:** It recommended raising awareness of post-mastectomy women about external breast prostheses during follow-up by incorporating this information in their care and follow-up.

**Keywords:** External Breast Prosthesis, Knowledge, Practice, Post- Mastectomy women, Psychological stress.

## Introduction:

One of the most common diseases that women fear is breast cancer, which is also a major cause of death for women worldwide. Uncontrollably growing aberrant cells in the breast are the cause of breast cancer. The variable development and division of cells that start in the breast tissue is referred to as breast cancer. The most prevalent type of invasive cancer in women worldwide is breast cancer. 12% of women worldwide are impacted by it. As to **Khuwaja & Abu-Rezq (2019**), women who have experienced breast cancer are more likely to experience breast cancer in another breast.

Usually, breast cancer is treated with a mastectomy. A mastectomy is the medical word for the partial or total surgical removal of one or both breasts. Typically, a mastectomy is performed to treat breast cancer to stop the infection from spreading (**Wikipedia, 2022).**

Women who have undergone a mastectomy due to breast cancer must deal with two main issues: first, their malignancy, and second, their physical appearance. Consequently, the promotion of women's health necessitates rehabilitation following mastectomy. The majority of women choose external breast prostheses or breast reconstruction for breast restoration and symmetry. The availability of suitable prosthetic breast forms gives people the chance to select one and be happy with their decision. A suitable breast prosthesis can aid after a mastectomy to lessen associated emotional anguish and enhance one's sense of self-worth and body image (**Jetha, 2022).**

Replicating the appearance of the breast, enhancing symmetry and balance, safeguarding posture, boosting self-esteem, preventing shoulder drop, preventing issues with the curvature of the spine and causing back and neck pain, preventing ptosis of the contralateral breast, and enhancing quality of life are all goals of external breast prosthesis **(Wikipedia, 2019).**

The decision to wear an external breast prosthesis was made to replace the weight of the lost breast, restore self-esteem, create symmetry in clothes, adjust to the diagnosis and therapy, and possibly better handle the experience of having cancer. 2017's Cancer Council Victoria

An external breast prosthesis can be used to replace the natural breast following a full mastectomy, enhance a patient's posture, body image, and self-esteem, help women heal from wounds sustained only after a mastectomy, perform contralateral symmetry procedures, autofocus reconstruction, and enhance the physical and mental well-being of mastectomy survivors (**Cancer Council Victoria, 2020**).

Women may experience physical and psychological health problems following a mastectomy due to tissue removal. It may cause women's centers of gravity to change, which may have detrimental effects on their balance and posture. The prosthesis may assist in regaining poor posture and balance brought on by tissue excision. Breast prostheses give women a sense of femininity, which has psychological benefits as well (**Jetha, 2022).**

Nurses are crucial in teaching post-mastectomy women about the proper care of their external breast prostheses. Some of the tips they provide include hand washing the prosthesis after each use, washing it every day in warm, soapy water, and drying it with a towel. They also advise using a soft, fiber-filled form in saunas and spas to prevent silicone prosthesis from heating up against the skin, avoiding the use of perfumed deodorant, and being careful not to catch the prosthesis with sharp objects like rings or brooches, as these actions could damage the breast form and cause the silicone to leak. If it is damaged, it is typically possible to temporarily seal the year with a sticking plaster **(Guire et al., 2019)**

## Significance of the study:

Worldwide, 12% of women suffer from breast cancer. The usage of external breast prostheses serves as a reminder of the widespread issue of breast cancer. Women's sexual, psychological, social, and spiritual well-being have all improved after having a mastectomy. Wearing external breast prostheses can help them with their posture, self-esteem, and body image. An external breast prosthesis is a useful tool for helping women who have had mastectomies live better lives. Furthermore, not much is known about the education of underdeveloped

nations regarding external breast prostheses. It should be possible for nurses to educate women about the value of external breast prostheses while they are providing care **(Jetha, 2022).** As a result, this research was conducted. So, the present study will be conducted to evaluate the effectiveness of educational guidelines on post-mastectomy women's knowledge, practices, and psychological stress regarding external breast prostheses**.**

**Operational Definitions:**

An artificial breast that is worn beneath clothes to mimic the contour of the breast is known as an external breast prosthesis. Either a bra pocket or not will fit it in a bra cup. Wikipedia, 2019

**Aim of the study:**

To evaluate the effectiveness of educational guidelines on post-mastectomy women's knowledge, practices, and psychological stress regarding external breast prosthesis through:

- Determine how much post-mastectomy women know about external breast prosthesis
- Assess the level of external breast prosthesis practice among women who have had a mastectomy.
- Find out how anxiety levels post-mastectomy women concerning external breast prosthesis.
- -Determine the stress level of post-mastectomy women concerning external breast prostheses.
- Determine the depression level of post-mastectomy women concerning external breast prostheses.
- Provide and execute educational Guidelines that are based on the needs of women who have had mastectomy surgery.
- Examine the relationship between post-mastectomy women's demographic data and their Knowledge and Practices of external breast prostheses.
- Investigate how educational Guidelines affect women's Knowledge, Practices, and emotional status regarding External Breast Prosthesis.

**Research hypothesis:**

**H1:** The knowledge and practices of post-mastectomy women will improve with the use of educational guidelines about external breast prostheses, compared to before that.

**H2:** Post-mastectomy women who receive the educational guidelines are expected to experience improved emotional status with less anxiety, stress, and depression levels post-educational guidelines application than pre-application.

**Subjects and Methods**:

**Research design:**

The goal of this study was accomplished by using a quasi-experimental research approach.

**Setting:**

In the Mania Governate of Egypt, the study was carried out at the outpatient and inpatient facilities at the Minia Oncology Center. These settings were picked in part due to the large patient prevalence in the chosen setting and the fact that it provides care for the nation's most populous region.

**Subjects:**

A purposive sample of 50 post-mastectomy women was recruited in this study. The sample size calculation was done based on power analysis, as about 400 women in the year (2014-2015) were admitted to the previously mentioned setting. The test result was as follows: Type I error with significant level (α) = 0.5 Type II error by power test (1-B) = 90%. The minimum sample was (50) cases.

**Data collection tools:**

**Tool (I): A structured interview questionnaire** was created by the researchers following a survey of relevant literature and research papers; it has nine questions divided into two sections (Guire et al., 2019).

.

**Part (1): Demographic characteristics of post-mastectomy women**: It contained information on the age, education level, occupation, and place of residence of women who had post-mastectomy.

**Part (2): Post-mastectomy women's medical data:** It contained medical information about post-mastectomy women, including the type of tumor, the length of the illness, its phases, the

treatments administered, and family history.

**Tool (II): Post-mastectomy women's knowledge regarding external breast prosthesis assessment (Jetha, 2022; Khuwaja & Abu-Rezq, 2019; Guire et al., 2019):** It consists of ten multiple-choice questions that were created by the researchers. The purpose of its creation was to gather data on post-mastectomy women's knowledge of external breast prostheses, including definitions, goals, justifications for wearing them, indications, contraindications, types, materials that are readily available to them, weights, and shapes.

**Scoring system:**

The tool was given a score of 2 for correct answers and 0 for incorrect answers. The overall knowledge score ranged from 0 to 20, with 0 being the lowest and 20 being the highest. The knowledge score went from 0 to 9, was considered to have unsatisfactory knowledge (< 50%), and those who scored from 10 to 20 were considered to have satisfactory knowledge (≥50%).

**Tool (III): Post-mastectomy women's practice regarding external breast prosthesis assessment (pre/post) (Breast Prostheses from Wikipedia, 2019; Gallagher et al., 2019):** There were six steps in it. Its purpose was to evaluate the external breast prosthesis care practices of post-mastectomy women. These practices included cleaning the prosthesis after each use, washing it every day in warm, soapy water, and drying it with a towel. It also involved rinsing the breast immediately after swimming to remove any saltwater or chlorine, using a soft, fiber-filled form in a sauna or spa to prevent the silicone from heating up against your skin, avoiding the use of perfumed deodorant to prevent damage to the breast form, and being cautious not to catch the prosthesis with sharp objects like rings or brooches, as these could harm the silicone and cause it to leak. In the event of injury, it may typically seal the year temporarily with a sticking plaster.

**The scoring system**:

It was calculated as zero for "not done step", and one for "done step ". The total score was 0 – 6. The total score was categorized into "adequate and inadequate practices" as follows: inadequate less than 50% and adequate more than 50%.

**Tool (IV): Depression, Anxiety, and Stress Scale (DASS-21):**

The researchers used the Depression, Anxiety, and Stress Scale which was adopted from **Lovibond & Lovibond (1995).** The scale involved 21 items and consisted of a set of three self-report scales designed to measure the symptoms of the emotional state of depression, anxiety, and stress. Each of the three DASS-21 subscales contains seven items. The depression scale assesses hopelessness, dysphoria, devaluation of life, lack of interest/involvement, self-deprecation, anhedonia, and inertia. The anxiety scale measures autonomic arousal, skeletal muscle symptoms, subjective experience of anxious affect, and situational anxiety. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses nervous arousal, difficulty relaxing and being easily upset/agitated, irritable/over-reactive, and impatient. The rating scale responses ranged from (3) applied to me very much or most of the time; (2) applied to me to a considerable degree or a good part of the time; (1) applied to me some of the time or to some degree; and (zero) did not apply to me at all.

**Scoring system for Depression, Anxiety, and Stress Scale (DASS):**

The responses were categorized with the cutoff point adopted by Lovibond & Lovibond, **(1995)** to categorize stress, anxiety, and depression. Thus, the level of symptoms (extremely severe, severe, moderate, mild, and no symptoms) was as follows:

| Levels of DASS symptoms | Depression | Anxiety | Stress |
|---|---|---|---|
| Normal (no symptoms) | 0-9 | 0-7 | 0-14 |
| Mild | 10-13 | 8-9 | 15-18 |
| Moderate | 14-20 | 10-14 | 19-25 |
| Severe | 21-27 | 15-19 | 26-33 |
| Extremely Severe | 28+ | 20+ | 34+ |

**Validity of the tools:**
The content validity of the tools and the instructional instructions were evaluated by five academics, along with the tools' clarity, comprehensiveness, appropriateness, and relevance. Three experts in medical-surgical nursing and two experts in oncology and psychiatric health nursing assessed the content validity of the instruments and the instructional guidelines. To ensure sentence clarity and content appropriateness, no changes were made based on the panel's decision.

**Reliability of the tools:**
The Cronbach's test was used to examine the dependability of tools one, two, three, and four. Cronbach alpha coefficients for the first, second, third, and DAS scales were 0.96, 0.89, and 0.95, respectively, indicating strong reliability for the tools.

**Methods of data collection:**

**Filed work:**
The period covered by the data collection was from the start of February 2023 to the end of July 2023. The interventionist maneuver: The three phases of the current study were planning, carrying out, and assessing. The study had 50 participants in total. For six months, the researchers gathered data from women who had undergone mastectomy twice a week, on Sunday and Tuesday, during the morning shift, from 9 a.m. to 1 p.m. To complete the tools, each interview took about 35 to 45 minutes.

**A-Preparatory phase:**
The data collection instruments were given to the post-mastectomy women twice: once as a pre-test to gauge their understanding, behavior, and psychological strain before the adoption of instructional guidelines, and once as a post-test to gauge their understanding, behavior, and psychological strain following the implementation of the educational guidelines.
The simplified booklet, which covered all topics related to knowledge, practice, and psychological stress regarding external breast prostheses, was given to post-mastectomy women in Arabic after reviewing relevant literature and evaluating the needs of the actual study participants. Photographs, posters, talks, and lectures were all used as teaching tools.

**A pilot study**
To ensure that the research process was feasible and clear, a pilot study involving five post-mastectomy women, or 10% of the total sample, was carried out. The final version of the tools was developed without any alterations. The research study did not include the post-mastectomy ladies who participated in the pilot.

**Ethical considerations:**
The Dean of Minia University's Faculty of Nursing provided formal consent to perform this study in the form of a letter. To get their approval and to explain the purpose of the study, the researchers met with the directors of medicine and nursing in the selected setting. The post-mastectomy women were asked for their oral consent before cooperating. Authorization for data collection was obtained by outlining the goal of the study and the anticipated results of its execution. The ladies who had mastectomies were informed of the purpose of the study. The ladies who had undergone mastectomy were informed that they could choose not to participate in the trial at all. Women who have had breast cancer have the freedom to leave the study whenever they want and for any reason. Post-mastectomy women were told that their information would be kept private and only utilized for research.

**B-Implementation phase:**
Fifty post-mastectomy women participated in the study. The post-mastectomy ladies who visited previously chosen settings provided the researchers with data. Following their introduction, the researchers met post-mastectomy ladies one-on-one in the waiting area at the pre-selected settings and explained the purpose of the study.
The researchers developed and put into practice educational guidelines including both theoretical and practical aspects related to external breast prostheses. The theoretical and practical components took into account post-mastectomy women's knowledge and experience with external breast prostheses. It was put into practice using role-plays, educational movies, posters, lectures, and situations. Following a mastectomy, ladies received an educational brochure about external breast prostheses from the researchers.

The booklet was written in plain Arabic and included illustrative photographs.

The topic material was split into two sessions for the theoretical component, each lasting around 35 to 45 minutes. The whole thing took thirty minutes to finish. The instructional guidelines for external breast prostheses were introduced in the first session, and each following session started with a review of the feedback from the preceding session.

The practical part contained information regarding external breast prosthesis practices. The interview took approximately 20-30 minutes for each post-mastectomy woman to answer and fill out the questionnaire to assess the external breast prosthesis practices of women. It was implemented through lectures, posters, and educational films.

**The educational guidelines included knowledge and practice regarding external breast prosthesis as follows:**

This article covered the following topics:

- definition of an external breast prosthesis
- uses of an external breast prosthesis
- justifications for wearing one; indications and contraindications of an external breast prosthesis
- Types of external breast prosthesis; materials that are readily available for use in the market
- Weights of external breast prosthesis; and shapes of external breast prosthesis.
- Maintenance for an external breast prosthesis.
- Utilize a relaxing method like A pamphlet outlining the steps of relaxation techniques was included, along with images and videos showing progressive muscle relaxation for stress management.

**Educational guidelines:**

It was designed by the researcher and focused on the following sessions:

Session 1: Introduction to the aim of educational guidelines.

Session 2: Give knowledge about external breast prosthesis

Session 3: Effect of external breast prosthesis on post-mastectomy women's psychological stress.

Session 4: Practice relaxation training as a progressive muscle relaxation technique: The researcher asked post-mastectomy women to see progressive muscle relaxation. The researcher shows videos and photos that illustrate how to practice progressive muscle relaxation which is represented to mothers as videos and photos that illustrate how to practice progressive muscle relaxation.

**Evaluation**:

Each post-mastectomy woman was evaluated again three months later for knowledge, practice, and psychological stress using the same pre-test instruments that were scored using the same methodology as before the educational guidelines (II–III, and IV) were implemented.

**Administrative design:**

To carry out this study, administrative approval was acquired via a letter sent to the directors of the inpatient and outpatient clinic connected to Minia Oncology Center by the dean of the nursing faculty at Minia University.

**Statistical analysis:**

SPSS for Windows, version 20, was used for data entry and statistical analysis. Descriptive statistics included means and standard deviations for qualitative variables and frequencies, percentages, and means for quantitative data. The t-test—a comparison of the two means—was employed. To compare qualitative parameters, the chi-square (x2) test was employed. We employed Pearson's correlation coefficient (γ) test. P-value <0.05 was used to determine statistical significance.

**Results:**

Table 1 showed that 40–60 year old women made up 80% of the post-mastectomy study population. After having a mastectomy, 58% of the women had completed secondary education, 66% were unemployed, and 60% lived in metropolitan regions.

**Table (2):** Shows that (56%) of the studiedpost-mastectomy women had cancer for> one year, (40%) of them were in the third stage of breast cancer, and regarding types of treatment of cancer (36%) of them received chemotherapy andsurgery. **Also,** Illustrated that (82%) of post-mastectomy women had a non-spreading tumor and (66%) of post-mastectomy women had a family history of cancer.

It can be seen from Figure (1) that the majority of post-mastectomy women (66%) who were studied said that doctors were their primary source of information regarding implants.

In terms of known knowledge of external breast prosthesis prior to and following the adoption of educational guidelines, Table (3) demonstrates a highly statistically significant difference and improvement among all categories among the examined post-mastectomy women (P-value <0.001).

**Figure (**2**)** shows that most of the studied post-mastectomy women (90%) had an unsatisfactory level of knowledge regarding external breast prosthesis pre- educational guidelines implementation but post-educational guidelines implementation, (92%) of them had a satisfactory level of knowledge with highlystatistically significant differences.

Figure (3) demonstrates that, prior to the implementation of educational guidelines, the majority of the post-mastectomy women studied (86%) had inadequate practice levels regarding external breast prosthesis; however, following the implementation of educational guidelines, 90% of them had adequate practice levels with highly statistically significant differences.

Concerning the post-mastectomy women's total scores of depression, anxiety, and stress regarding external breast prosthesis, it was noticed from **Table** (4) that, the total post-mastectomy women's depression, anxiety, and stress scores were higher pre-educational guidelines implementation which reduced post- educational guidelines implementation. Also, there were highly statistically significant improvements were observed in the post-mastectomy women's total scores of depression, anxiety, and stress scores regarding external breast prosthesis at (P<0.001).

**Figure (4)** presents that 72% of the studied **post-mastectomy** women's pre-**educational guidelines implementation** had a severe level of stress, (63 %) of them had severe anxiety, and (52%) had severe depression moreover these percentages decreased to moderate among more than half of the studied **post-mastectomy** women's post-**educational guidelines implementation**.

Table (5): Indicates that the practice of women after the implementation of educational standards was positively correlated (P=0.003) with their overall knowledge ratings.

Table (6): Indicates a strong relationship between the post-mastectomy women's overall knowledge and their age, education, place of residence, and occupation. Additionally, there was a relationship between the residence and practice of post-mastectomy women.

**Table (1): Demographiccharacteristics of the studied post-mastectomy women (n=50)**

| Demographic characteristics | No. | % |
|---|---|---|
| **Age** | | |
| 21≤ 40 years | 10 | 20 |
| 40 ≤ 60 years | 40 | 80 |
| **Education** | | |
| Illiterate | 1 | 2.0 |
| Read and write | 4 | 8.0 |
| Secondary education | 29 | 58.0 |
| Higher education | 16 | 32.0 |
| **Occupation** | | |
| Working | 17 | 34.0 |
| Not working | 33 | 66.0 |
| **Residence** | | |
| - Rural | 20 | 40 |
| - Urban | 30 | 60 |

**Table (2): Medical data of the studied post-mastectomy women (n=50)**

| Medical data | No. | % |
|---|---|---|
| **Duration of disease:** | | |
| < one year | 20 | 40 |
| > one year | 30 | 60 |
| **Stages of breast cancer** | | |
| Stage 1 | 8 | 16 |
| Stage 2 | 12 | 24 |
| Stage 3 | 20 | 40 |
| Stage 4 | 10 | 20 |
| **Treatment received** | | |
| Radiotherapy | 4 | 8 |
| Chemotherapy | 12 | 24 |
| Chemotherapy and surgery | 19 | 38 |
| Surgery | 15 | 30 |
| **Type oftumor** | | |
| Spread | 9 | 18 |
| Not spread | 41 | 82 |
| **Family history** | | |
| Yes | 33 | 66 |
| No | 17 | 34 |

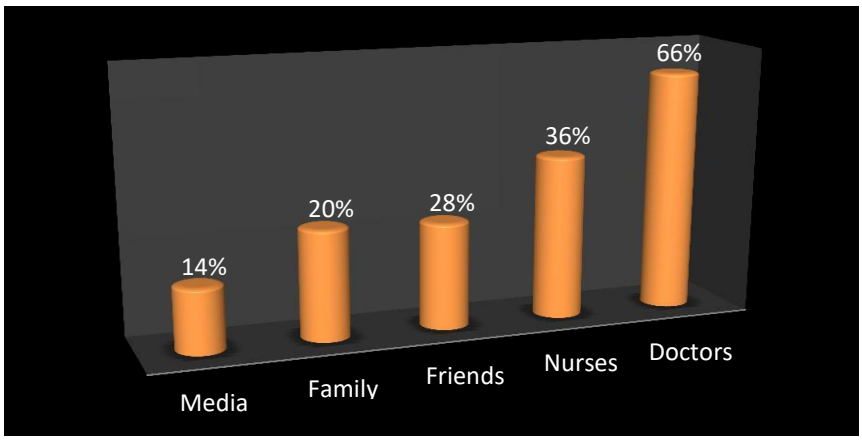


**Figure (1): Source of knowledge about external breast prosthesis among post-mastectomy women (n=50)**

**Table (3): Differences among post-mastectomywomen regarding known knowledge about external breast prosthesis pre and post-educational guidelines implementation**

| Items of knowledge about external breastprosthesis | Pre educational guidelines implementation | | Post educational guidelines implementation | | X 2 P-value |
|---|---|---|---|---|---|
| | No. | % | No. | % | |
| Definition of external breast prosthesis: | 17 | 34 | 49 | 98 | 15.0-0.001* |
| Purposes of external breast prosthesis: | 16 | 32 | 46 | 92 | 30.28-0.001* |
| Reasons for choosing to wear the external breast prosthesis | 13 | 26 | 40 | 80 | 16.46-0.001* |
| Indications of external breast prosthesis: | 18 | 36 | 46 | 92 | 17. 68-0.001* |
| Contraindications of external breast prosthesis | 13 | 26 | 45 | 90 | 22.16-0.001* |
| Types of external breast prosthesis | 20 | 40 | 47 | 94 | 32.26-0.001* |
| External breast prosthesis available materials in the market | 8 | 16 | 44 | 88 | 26.36-0.001* |
| Weights of external breast prosthesis | 11 | 22 | 45 | 90 | 22.42 -0.001* |
| Shapes of external breast prosthesis | 6 | 12 | 43 | 86 | 25.50 -0.001* |

X2: Value for comparing the pre and post P:**: Highly Statistically significant at p<0.001

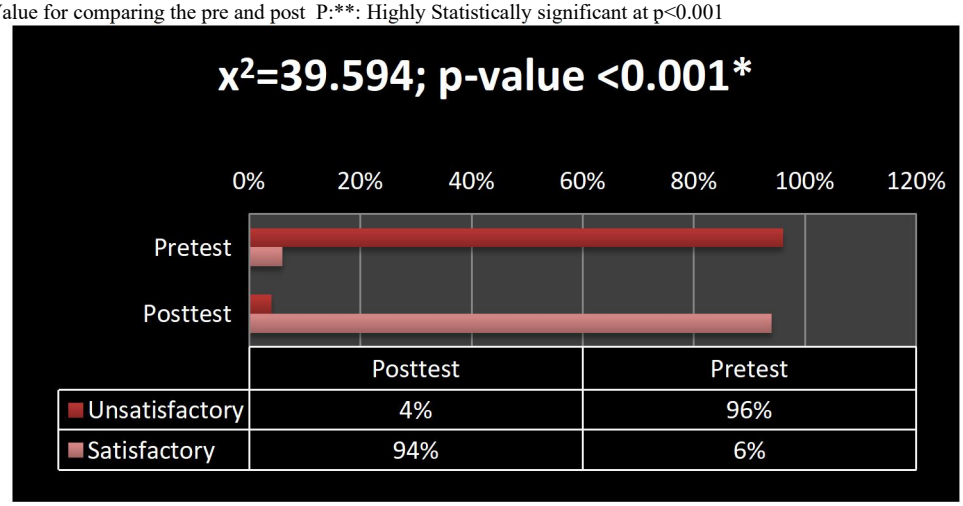


**Figure (2): Total knowledge levels regarding external breast prosthesis among post-mastectomy women pre and post-educational guidelines implementation (n=50)**

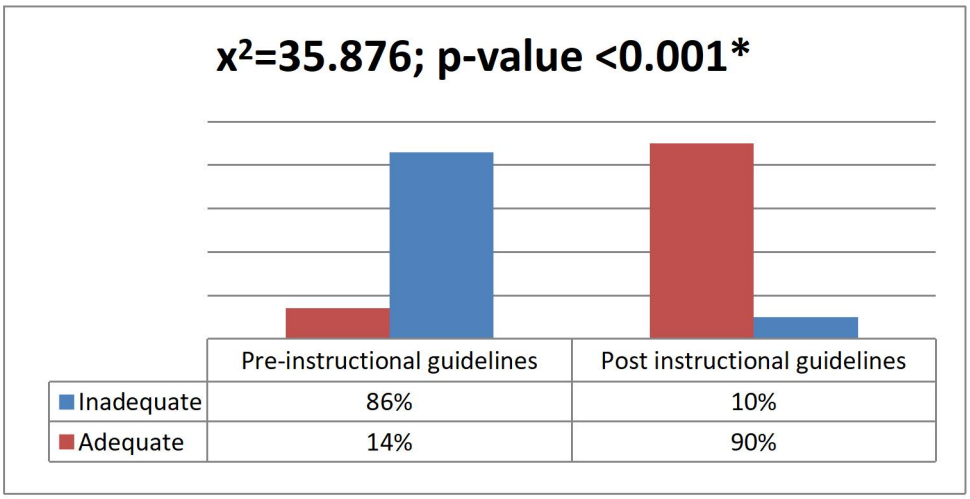


**Figure (3): Total practice levels regarding external breast prosthesis among post-mastectomy women pre and post-educational guidelines implementation (n=50)**

**Table (4): Total means scores of post-mastectomy women with psychological stress (depression, anxiety, and stress) regarding external breast prosthesis pre and post-educational guidelines implementation**

| DASS | No = (50) | | T-test | P-value |
|---|---|---|---|---|
| | Pre- Pre-educational guidelines implementation | Post-educational guidelines implementation | | |
| **Depression** | 26.60 ± 2.52 | 13.45 ± 1.43 | 23.319 | <0.001* |
| **Anxiety** | 17.72 ± 1.14 | 10.75 ± 1.13 | 111.834 | <0.001* |
| **Stress** | 32.60 ± 2.73 | 21.34 ± 3.68 | 94.145 | <0.001* |

t: paired sample t-test P: **: Highly statistically significant at p<0.001

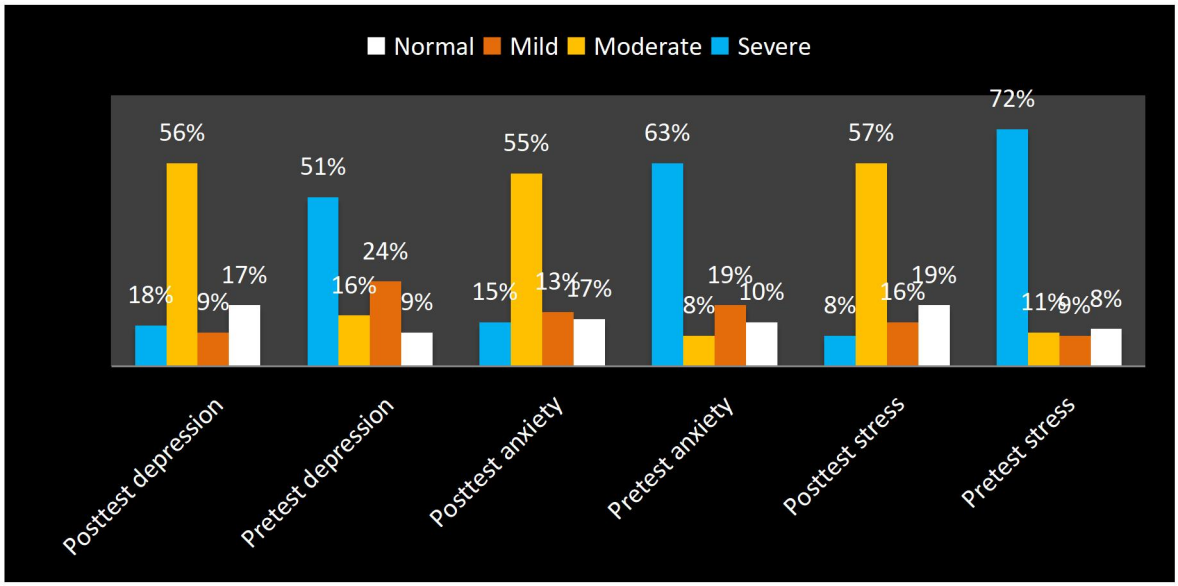


**Figure (4): The studied post-mastectomy** women's **psychological stress distribution (depression, anxiety, and stress level) regarding external breast prosthesis pre and post-educational guidelines implementation.**

**Table (5): Correlation between total knowledge and practice scores among post-mastectomy women pre and post-educational guidelines implementation**

| Knowledge | Practice | | | |
|---|---|---|---|---|
| | Pre educational guidelines implementation | | Post educational guidelines implementation | |
| | r | P | R | P |
| - Total knowledge pre-test | 0.037 | 0.856 (N.S) | --- | --- |
| - Total knowledge post-test | --- | --- | 0.438 | 0.003 |

**Table (6): Correlation between post-mastectomy women, total knowledge, practice, and their demographic data**

| Variables | | Total knowledge | Total practice |
|---|---|---|---|
| **Age** | **R** | 0.17 | 0.17 |
| | **P** | 0.39* | 0.24 |
| **Education** | **R** | .178 * | - |
| | **P** | .037 | - |
| **Residence** | **R** | 0.34* | 0.44** |
| | **P** | 0.002 | 0.001 |
| **Occupation** | **R** | .176 * | - |
| | **P** | .039 | - |

**Discussion:**

After a full or partial mastectomy, the natural breast is replaced with an artificial one called an external breast prosthesis. An external breast prosthesis gives the body symmetry, a more natural shape, and a better posture. Women's psychological stress following a mastectomy can be improved and reduced with the use of an external breast prosthesis. Hence, the researchers aimed to evaluate the effectiveness of educational guidelines on post-mastectomy women's knowledge, practices, and psychological stress regarding external breast prostheses.

According to the study's findings, most of the post-mastectomy women were between the ages of 40 and 60. Of these women, over half had completed secondary education, over two-thirds were unemployed, and three-fifths lived in metropolitan regions.

This outcome is comparable to that of a study conducted by **Saleh et al., (2022**) on "Upper limb lymphedema related to breast cancer therapy." and discovered that 48.65±8.17 year was the mean age of the women in the research. In terms of where they lived, over three-fifths of the participants in this survey were in metropolitan regions. This outcome is in line with the findings of research by **Sayed et al. (2021)** on the informational needs of women with newly diagnosed breast cancer.

Furthermore, the majority of participants with breast cancer reside in cities, which is in line with the results of the study "Assessment of health-related knowledge and behaviors among female cancer following mastectomy" conducted by **Hawash, (2022**). Contrary to the findings of a cross-sectional study by **Abo-Elazm et al. (2019)** titled "Trends in demography and reproductive variables in breast cancer in Egypt," this study's participant population was found to be slightly over half rural.

According to the current study's findings, over half of the post-mastectomy women who were studied had cancer for more than a year, and 25% of those women had breast cancer that was in the third stage. This result is consistent with a study conducted by **Saleh et al., (2022**) which said that women with breast cancer were undergoing stage III mastectomy. This result differs from that of research by **Hawash et al. (2022**) that was published at Alexandria University under the title "Effect of nursing rehabilitation program on the prevention of lymphedema among post-mastectomy women," which discovered that stage II breast cancer affected almost half of the women analyzed.

Approximately two-thirds of post-mastectomy women had a family history of cancer, according to the study's findings. The American **Saleh et al., (2022**) study, which found that a family history increases a person's risk of breast cancer, is consistent with this finding.

The current study's findings showed that doctors were the primary source of information for approximately two-thirds of the post-mastectomy women under investigation regarding external breast prostheses. According to the researchers, this indicated that the women under study had received adequate information on the subject from medical professionals and the appropriate source.

The present study's findings regarding the knowledge of post-mastectomy women showed that, about known knowledge about external breast prosthesis, there was a highly statistically significant difference and improvement between all items among the studied post-mastectomy women before and following the implementation of educational guidelines. As per the researchers' perspective, this outcome signifies the beneficial impact of implementing educational guidelines that fulfill the requirements of the post-mastectomy women and equip them with sufficient knowledge.

According to the study's findings, the majority of post-mastectomy women were found to have inadequate knowledge about external breast prostheses before the implementation of educational guidelines. However, following the implementation of educational guidelines, nearly all of these women possessed satisfactory knowledge, with significant statistical differences. The good impact of implementing educational guidelines that cater to the requirements of post-mastectomy women is evident in these outcomes. The relevance of implementing

instructional guidelines is further demonstrated by this finding, which also revealed that the post-mastectomy women under study needed to increase their knowledge and practice to improve their information.

**Mahon & Casey's (2019**) study on "Patient education for women being fitted for breast prostheses" verified the need to give patients assistance and information when they make decisions regarding external breast prostheses.

This finding supported the "KAP theory" study by **Fan et al. (2020**), which found that adopting healthy practices and acquiring the necessary information can alter behavior. Furthermore, a recent study by **Rana et al., (2020)** demonstrated the link between successful disease prevention, control, and promotion and adequate individual knowledge. A 2019 study by Ricardo et al. provided evidence that maladaptive disease and poor health are linked to a knowledge gap.

According to the results of the current study, most post-mastectomy women were not practicing external breast prostheses at an adequate level before the implementation of educational guidelines. However, following the implementation of educational guidelines, the majority of these women demonstrated adequate practices with highly statistically significant differences. From the perspective of the researchers, it demonstrated the effectiveness of implementing instructional guidelines and highlighted the significance of doing so, which enhanced their understanding and was linked to practice improvement.

It was found that the post-mastectomy women's overall scores for depression, anxiety, and stress related to external breast prosthesis were higher prior to the implementation of educational guidelines, which resulted in a decrease in the implementation of post-educational guidelines. Significant improvements were also noted in the post-mastectomy women's overall scores for depression, anxiety, and stress related to external breast prostheses. It demonstrated, in the researchers' opinion, the positive effects of implementing instructional recommendations about external breast prostheses. This may be explained by the multiple psychological issues brought on by the weight of the breast cancer, which produced anxiety and uneasiness owing to worry about potential complications.

The results of this study showed that less than 75% of the post-mastectomy women who were studied before educational guidelines were implemented had a severe level of stress, roughly 2/3 had severe anxiety, and more than half had severe depression. Furthermore, these percentages dropped to moderate among more than half of the post-mastectomy women who were studied after educational guidelines were implemented. From the perspective of the researchers, the results validated the research hypothesis, which showed that educational recommendations effectively reduce post-mastectomies women's tension and anxiety.

The coping component of the educational guidelines—which assisted post-mastectomies women in choosing the best course of action to reduce their stress—may be responsible for the effectiveness of their implementation. As per the researchers' perspective, this highlights the significance and efficacy of educational guidelines' execution, which is generally linked to enhanced knowledge and comprehension among the moms under study, hence facilitating their acquisition and application of quality knowledge. This correlation can be explained by the fact that the post-mastectomies ladies in the research had enough knowledge to enable them to cope with less stress.

The researchers view this as demonstrating the importance and effectiveness of following educational guidelines, which is generally associated with improved knowledge and understanding among the mothers in the study, hence assisting their acquisition and application of high-quality knowledge. It is possible to explain this correlation by pointing out that the women in the research who had mastectomies had sufficient knowledge to be able to manage their stress levels.

**Conclusion:**

Based on the current study's findings, the following conclusions can be drawn: The study's findings showed that post-mastectomy women's knowledge, use, and psychological

stress related to external breast prostheses were improved by the educational recommendations. The psychological stress levels of the post-mastectomy women under study showed both pre- and post-implementation improvements and variations in educational guidelines regarding external breast prostheses ($p<0.001$). A positive connection ($P=0.004$) was seen between the knowledge ratings of women and their practices before and following the adoption of educational guidelines.

**Recommendations**

The following suggestions are made in light of the findings of the current study:

- Educating post-mastectomy women about external breast prostheses during follow-up by integrating this information into their follow-up and care.
- It is advised to repeat the current study using a bigger probability sample to obtain generalizable conclusions.
- Post-mastectomy ladies should have access to an illustrated, simplified brochure about external breast prostheses for reference.

**References:**


- Abo-Elazm, O., Bilal, D., Gouda E., El Gammal, M., Salem, S. & Alieldin, N. (2019): Trends in Demographics and Reproductive Factors in Breast Cancer in Egypt, Journal of Dental and Medical Sciences, 17(15): 63-69.
- Cancer Council Victoria. (2020): Breast Prostheses, Available from https:// www. cancer Vic.org.au/living-with- Cancer/ common- side- effects/breast- prostheses-and-reconstruction/ breast- prosthesis-forms. html
- Fan, Y., Zhang, S., Li, Y., Li, Y., Zhang, T., Liu, W. (2020). Development and psychometric testing of the Knowledge, Attitudes, and Practices (KAP) questionnaire among student Tuberculosis (TB) Patients (STBP-KAPQ) in China. BMC Infect Dis [Internet]. 2018 [cited 2020 May 12]; 18(1). Available from: [Google Scholar]
- Gallagher, P., Buckmaster, A., O'Carroll, S., Kiernan, G., & Geraghty, J. (2019): Experiences in the provision, fitting, and supply of external breast prostheses: Findings from a national survey. Eur J Cancer Care (Engl); 18:556-68.
- Guire, A., Brown, J., Malone, C., Mc Laughlin, R., & Kerin, M., (2019): "Effects of age on the detection and management of breast cancer". Cancers, Vol. (7), No.(2), Pp.908-29.
- Hawash, M. (2022): Assessment of Health Related Knowledge and Practices among Female Patients with LE Post Mastectomy, Master thesis. Faculty of Nursing, Alexandria University, P. 75.
- Jetha, Z.A. (2022): Women experience of using external breast prosthesis after mastectomy. Asio-Pasific Journal of Oncology Nursing. Vol 4. Issue 3.
- Khuwaja G.A., & Abu-Rezq A.N. (2019): Bimodal breast Cancer Classification system. Pattern Analysis and Application.; 7:235-
- Lovibond, P.F., & Lovibond, S. H. (1995): The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories, Behavior research and therapy, 33(3), 335-343.
- Mahon, S.M., Casey, M. (2019): Patient education for women being fitted for breast prostheses. Clin J Oncol Nurs; 7:194-9.
- Rana, M., Sayem, A., Karim, R., Islam, N., Islam, R., Zaman, T.K. (2020). Assessment of knowledge regarding tuberculosis among non-medical university students in Bangladesh: a cross-sectional study. BMC Public Health [Internet], 2015 Dec [cited 2020 May 12]; 15(1). Available from: [Google Scholar]
- Ricardo, T., Bergero, L.C., Bulgarella, E.P., Previtali, M.A. (2018). Knowledge, attitudes, and practices (KAP) regarding leptospirosis among residents of riverside settlements of Santa Fe, Argentina.

Recuenco S, editor. PLoS Negl Trop Dis; 12:e0006470.

- Saleh, H., Rageh, T., Alhassanin, T. & Megahed, M. (2022): Upper limb lymphedema related to breast cancer therapy: incidence, risk factors, diagnostic techniques, risk reduction and optimal management. Int Surg J., 5:3633-9.
- Wikipedia (2019): Breast Prostheses from thefree encyclopedia. Available from https://en.m.wikipedia.org/wiki/Breast-Prosthese.
- Wikipedia, (2022): Mastectomy forms the free encyclopedia. Available from https://en. m. wikipedia. Org/wiki/Mastectomy.