



**The Effect of Structured Training Program on Health Needs and Practices of Women
Undergoing Modified Radical Mastectomy**

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ABSTRACT

Background: Breast cancer is now regarded as the main health concern worldwide and among Egyptian women. Addressing the unfulfilled needs of the women with mastectomy is essential as neglecting their needs during different stages of the treatment have a negative impact on the women's health system. **Aim:** evaluate the effect of structured training program on health needs and practices of women undergoing modified radical mastectomy. **Design:** A quasi experimental research design (pre and post-test) was utilized. **Setting:** the general surgery Departments and outpatient breast clinic at Oncology and Nuclear Medicine Center affiliated to Ain Shams University Hospitals. **Subjects:** A purposive sample of 120 women. **Tools for data collection:** 1) A structured interview questionnaire; it included three parts: (a) Socio-demographic characteristics; (b) Medical history; (c) Women's Health Needs. 2) An observational checklist to evaluate practices of the studied women. **Results:** The study revealed a statistical significant difference between total needs pre / post and follow up the structured training program implementation with $p < 0.001$. As well there were a statistical significant differences between pre / post and follow up structured training program implementation among the studied women's satisfactory practices level with $p < 0.001$. **Conclusion:** It concluded that, structured training program had a positive effect on meeting health needs and improving practices level. **Recommendation:** Conduct complete health assessment & regular follow – up for all women after mastectomy to identify unmet needs and early detection of the complications.

Key words: Health Needs, Modified Radical Mastectomy & Structured Training Program.

Introduction

Breast cancer (BC) is the most commonly diagnosed malignant tumor among women worldwide with an estimated 268,600 newly diagnosed women with invasive disease according to the National Cancer Institute and Surveillance, Epidemiology, and End Results Program in 2019, accounting for approximately 15–30% of all new cancer cases among women, depending on the data sources (**National Cancer Institute, 2020 ; and Siegel, Miller& Jemal, 2019**).

According to the latest global burden disease (GBD) report, breast cancer is still the most common type of cancer among women and the second common

type of cancer among all types of cancers in the United States and the world. According to the latest statistics in 2021, the incidence and mortality of breast cancer in 2020 was 2.1 million new cases and 684, 996 deaths (**Siegel et al., 2021**). Today, surgery for cancer treatment is increasingly popular, so it is predicted that cancer-related surgeries will increase from 9,065,000 surgeries in 2018 to more than 13, 821, 000 surgeries in 2040, breast cancer surgery is performed in both partial (lumpectomy) and complete (mastectomy) forms (**Perera et al., 2021**).

Risk factors for breast cancer incidence are classified as modifiable and non-modifiable.

Modifiable factors are those in which a direct or indirect action becomes possible to minimize the risk of development of the disease such as obesity, sedentary life, alcohol and tobacco consumption, in addition to the use of hormone replacement therapy and, more recently, the administration of hormones with the objective of gender transitioning. On the other hand, non-modifiable factors like age, family history and hereditary aspects are the ones on which no action can be taken in order to have a significant impact over the individual **(Rodrigues, 2019 ; and Feng, et al., 2018)**.

Although there are many factors in daily life that can become the risk factors of breast cancer, some unhealthy behaviors can be prevented to reduce the risk of breast cancer. The methods and measures to prevent breast cancer include receiving breast cancer screening in hospitals, maintaining a healthy diet, keeping a reasonable weight, drinking moderately and limiting food consumption, exercising the body at least once a week, preventive medications and preventive surgery among people with high risk of breast cancer, and everyone can follow these to prevent the occurrence and the risk of breast cancer **(Temple et al., 2020)**.

The modern approach to breast cancer management is multidisciplinary; it includes surgery, radiotherapy, hormonal therapy and chemotherapy. However; surgical management is the hallmark treatment of breast cancer. Among the surgical procedures modified radical mastectomy (MRM) is the most commonly performed procedure of treatment in breast cancer management **(Shao et al.,2021; and Chandrakar & Shinde, 2019)**.

Modified radical mastectomy is still a common surgical procedure used for breast cancer management especially in developing countries. It involves eradication of the whole breast, including the nipple, areola, skin and the fatty tissue underneath the skin, and

axillary lymph nodes Mastectomy is very safe surgery but there are some risks as wound infection, bleeding, hematoma, lymphedema, numbness in the upper-arm and pain **(Soliman, El Gahsh & Shehata, 2018; and Hawash et al., 2018)**.

Women treated for breast cancer frequently experience numerous disease- or treatment-related adverse outcomes (physiologic, psychosocial, or both) and poorer mental well-being. Side effects that appear with adjuvant cancer treatment differ depending on the mode of treatment, which is radiotherapy, chemotherapy, hormonal, surgical or antibody therapy. In addition, these unwanted effects can be prolonged after completion of active treatment and may hinder the woman's return to normal life **(Moo et al., 2018)**.

According to the report of the American Cancer Society, providing optimal care and treatment services to cancer patients requires examination and recognition of their needs. Therefore; assessing the needs is a strategy for identifying the unresolved concerns experienced by these patients and determining their needs in order to help them in various parts of the care chain. Further, the needs of every patient should be followed to achieve good and efficient quality care and assessing the needs of cancer patients should cover all important aspects of their life such as physical, emotional, and spiritual dimensions, as well as social functions **(Mirzaei et al., 2019)**.

The nurse is the key member of the professional health team, who provide Women care and play an important role in identifying support requirements. Nurses have a major role in managing Women with mastectomy before and after the operation and later on at the follow-up. Preoperative nursing care includes providing education and preparation for surgical treatments, reducing fear and anxiety, improving the coping ability of the women, and promoting decision-

making ability. The postoperative nursing interventions include relieving pain and discomfort, managing postoperative sensations, promoting positive body image, promoting positive adjustment and coping, improving sexual function, monitoring and managing potential complications, home- and community-based care, teaching Women's self-care and maintain patients' satisfaction with care (**Ahmed & Dawood, 2017**).

SIGNIFICANCE OF THE STUDY

In Egypt, breast cancer occupied the second rank type of cancer. According to age-standardized incidence rates per 100.000 were 166.6 for both sex, it was found that it accounts for 15.4% for all breast cancer cases among both sex and represented 33% of female cancer cases and more than 22,000 new cases diagnosed each year. , it has been estimated that by 2050, the incidence of breast cancer will be 3-folds than in 2013 (**Ibrahim et al.,2020**).This is expected to rise exponentially over the next years given the enlarging population, changes in the population pyramid and adopting the westernized lifestyle (**Abdelaziz et al., 2021**).

From the researchers' practical experience, it could be found that a woman who suffers from breast cancer and undergoes a mastectomy has many needs and requirements, including psychological, physical and aspects related to the occurrence of the disease again and the extent of its impact on the family as a whole, in addition to sexual education and assistance in the daily task of the house. Hence, the unfulfilled needs of the women who undergo mastectomy is essential since neglecting their needs during different stages of the treatment is associated with mental and psychological complications, physical loss and a reduced quality of life; which can itself have a negative impact on the women's health system due to the overuse of the healthcare services and increased costs.

So the aim of this study was to evaluate the effect of structured training program on health needs and practices of women undergoing modified radical mastectomy.

AIM OF THE STUDY

This study aimed to evaluate the effect of structured training program on health needs and practices of women undergoing modified radical mastectomy through the following:

1. Assessing the health needs of women undergoing modified radical mastectomy.
2. Assessing practices of women undergoing modified radical mastectomy.
3. Developing structured training program for women undergoing modified radical mastectomy based on women's assessed needs.
4. Implementing structured training program for women undergoing modified radical mastectomy.
5. Evaluating the effect structured training program on health needs and practices level.

RESEARCH HYPOTHESES

- H1.** The health needs of women undergoing modified radical mastectomy will be improved post structured training program implementation.
- H2.** Practices of women undergoing modified radical mastectomy will be increased post structured training program implementation.
- H3.** There will be a relation between health needs and Socio-demographic characteristics of women undergoing modified radical mastectomy.

Operational definition:

Health needs: the term used to determine women's needs which included physical needs (including assessing pain level), psychological, social, spiritual, and educational needs of women undergoing modified radical mastectomy.

SUBJECTS AND METHODS

Research design:

A quasi experimental research design (pre and post-test) was utilized to achieve the aim of the study .Quasi-experimental research involves the manipulation of an independent variable without the random assignment of participants to conditions or orders of conditions (Thomas, 2021).

Technical design:

The technical design included research setting, subjects, and tools for data collection.

Setting:

The study was conducted at the general surgery Departments and outpatient breast clinic at Oncology and Nuclear Medicine Center affiliated to Ain Shams University Hospitals. Outpatient breast clinic was on the ground floor and it consisted of two rooms, one room contained a bed, an office, three chairs and a bathroom and another room contained two offices, a bed with curtain, six chairs and weight and height measurement scales. The outpatient breast clinic received women daily except Friday and radiotherapy sessions were taken in 3 days (Saturday, Monday and Wednesday).

Subjects:

A purposive sample of 120 women undergoing modified radical mastectomy during six months period from the above-mentioned setting. They were selected according to the sensitive analysis in relation to the number of women undergoing modified radical mastectomy within the year (2018- 2019) at Ain Shams University Hospitals according to the statistical department flow rate which was 172 women during this

year . The sample size calculation done according to this formula (Steven &Thompson, 2012).

$$n = \frac{NP(1-P)}{(N-1)\left(\frac{d}{Z_{1-\alpha/2}}\right)^2 + P(1-P)} = 120 \text{ women}$$

N= population size

z= confidence level at 95 %(1.96)

d=error proportion (0.05)

p= probability (50%)=0.50

Inclusion criteria were adult women with age between 18 years to 60 years who undergoing modified radical mastectomy and accepted to participate in the study.

Tools of Data Collection:

Tool (1): A Structured Interview Questionnaire (pre /post and follow up tests): This tool was developed by the researchers in simple Arabic language to assess the needs of women undergoing modified radical mastectomy. It was developed after reviewing the recent and relevant literature (Hinkle & Cheever (2014) ; Abo-Elazm et al.,(2018); it included the following 3 parts:

Part (1): Socio-demographic Characteristics:

It covered women's characteristics which included (age, level of education, marital status, working status, place of residence and monthly income according to women's opinion).

Part (2): Medical History: (It consisted of 6 closed ended and MCQ questions which was used to cover past, present medical and family history and included duration of disease, methods of disease discovery , signs and symptoms, family history , malignant type in family and degree of relation .

Part (3): Women’s Health Needs: This part included the following;

- **Physical needs:** it included two parts; part (1) questions related to activities of daily living, fatigue and lymphedema which included (11) question. part (2) Numerical Pain Scale which was developed by **Compbell (1995)** to measure pain severity.
- **Psychological needs:** it included four questions about self-confidence, body image, overcome sadness and reduce anxiety.
- **Social needs:** it included five questions about increase social support/ relations, improve social role, participating in social activities, increase recreational activities, and work adjustment
- **Spiritual needs:** it included four questions about improve spiritual activities, hope to recover, positive vision for the future and increase satisfaction.
- **Educational needs:** the needs concerned with women knowledge about breast cancer and included 28 questions about information about breast cancer, treatment, prognosis, mastectomy surgery, wound care, arm exercises, chemo-radiotherapy and its side effects, and follow up visits.

Scoring System for Part (3):

a) For questions used to assess physical, psychological, social and spiritual needs of the women:

- It included 24 closed ended questions in a form of yes /no question. Women answers were scored as one mark for yes and zero for no. Yes, means there is a need for the women to be covered, and no means there is no needs for such point.

- More than 20% of yes responses for any items should be considered as identified needs for such group of women.
- b) **Part (2) of physical needs (Numerical Pain Scale):** It was developed by **Compbell (1995)** to measure pain severity among women post modified radical mastectomy. It was consisted of a line divided by numbered points from (0-10). women’s responses were categorized and adapted as follows: no pain (zero), mild pain (0 - less than 4), moderate pain (4-less than 7) and severe pain (7 - 10).
- c) **For questions used to assess educational needs of the women:** It consisted of 28 closed ended questions related to definition, signs & symptoms, diagnosis and, treatment of breast cancer, preoperative educational instructions, postoperative educational instructions, side effects of radical mastectomy, lymphedema causes and treatment, discharge instructions, chemotherapy and radiotherapy. Knowledge obtained from studied women was checked with a model answer and scored as one mark for yes and zero for no. The satisfactory level was 60 % & more. Meanwhile, unsatisfactory level less than 60%.

Tool (II) An observational checklist (pre/post and follow up tests): It was developed based on reviewing related literatures (**American Nurses Association, 2010**; and **Hinkle & Cheever, 2014**) to assess women practices. It included breast self-examination (12 question), deep breathing exercise (4 questions), arm exercises (48 question), dry dressing (14 question), hand washing (8 questions) and oral care (10 questions). It was filled in by the researchers.

Scoring System:

This part consisted of 106 questions related to women practices and was rated on a three-point rating

scale of performance as “Done correctly” took three grades, “Done incorrectly” took two grade and “Not done” took one. The total score of this part was 318 grades. The higher scores indicated higher practices level. They were categorized as scores equal to or more than 70% were considered as satisfactory while scores lower than 70 % were considered as unsatisfactory level of practice.

Operational Design:

The operational design included preparatory phase, content validity and reliability, pilot study and field work.

Preparatory Phase:

It included reviewing current and past available literature and theoretical knowledge of various aspects of the study using the booklet, articles, internet, periodicals and magazines to develop the data collection tools.

Tools Validity:

The tools were revised by a panel of 7 experts from Faculty of Nursing, Helwan University (six Professors and assistant professors from Adult Health Nursing), and one medical consultant of the Oncology Departments at Ain Shams University Hospitals. The experts reviewed content of the tools for comprehensiveness, accuracy, clarity, relevance, scoring and items recording. Minor modifications of tools were done according to the panel's judgment.

Tools Reliability:

The Cronbach's alpha model which is a model of internal consistency was used in the analysis. Statistical equation of Cronbach's alpha reliability coefficient normally ranges between 0 and 1, higher values denote acceptable reliability. Tools showed good internal

consistency and good reliability. The first tool (Structured interview questionnaire) was reliable at (0.722), the second tool (An observational checklist) was reliable at (0.739).

Ethical considerations:

An informed consent from each participant in the study was obtained prior to data collection. Each participant was informed about the purpose of the study and its significance. They were assured that anonymity and confidentiality would be guaranteed and the right to withdraw from the study at any time without giving any reason. Ethics, values, culture and beliefs were respected.

Pilot study:

It was applied on 10% of the studied women (12 woman) to test the applicability and clarity of the tools, as well as to estimate the time needed to fill in the tools. and no modifications were done to the study tools. So, women who participated in the pilot study were included in the main study sample as no major modifications were done.

Field work (Procedure):

- This study was started and completed within 6 months from the beginning of January 2019 till the end of June 2019.
- The purpose of the study was explained by the researchers to women who agreed to participate in the study before any data collection.
- The study tools were filled in and completed by the researchers in 3 stages (pre structured training program, one month, and after three months of structured training program implementation.

- Researchers were available at general surgical departments and outpatient breast clinic three days from Sunday to Wednesday during morning shifts (9.00 am to 2.00 pm).
- Data were collected throughout 4 phases (Assessment, Planning, Implementation and evaluation phase).

Phase I: Assessment phase:

During this phase, the researchers collected data from studied women. It was begun by the structured interview questionnaire which included socio-demographic characteristics and medical history as well as assessment of the actual health needs (physical needs including assessing pain level, psychological, social, spiritual and educational needs after that assessing women's practices level. The tools took about (30-40) minutes for each woman to fulfill. The data that was obtained during this phase was considered the basis for the structured training program (pre-test).

Phase II: Planning phase:

Structured training program was designed based on analysis of the actual women's needs in assessment phase. The content was written in simple Arabic language, consistent with the related literatures. It was designed to meet women's health needs and improve their knowledge and practices according to their level of understanding.

Proposed Structured Training Program for women undergoing modified radical mastectomy was a package composed of a simple Arabic language booklet with illustrated photos. The booklet was designed and prepared by the researchers based on women's need assessment after analyzing the pre assessment data collection and related literature reviewing (Mohammed, 2016; and Hussein, Zatoon & Mahmoud, 2018) aiming to improve knowledge and practices level of women as

well as meeting their health needs. The booklet included two parts ; theoretical part which was simple explanation of knowledge about the breast cancer covering the following items, definition, causes and risk factors , stages, signs & symptoms, diagnosis and treatment of breast cancer as well as information related to mastectomy operation (definition, indications, types, pre and post-operative educational guidelines and complications) and the second part was about different practices including procedures of breast self-examination, deep breathing exercise, arm exercises, dry dressing , hand washing and oral care; each procedure included purpose and steps . Moreover, the studied women were provided with videos illustrated these practices application.

Phase III: Implementation phase:

In this phase, the studied women were interviewed by the researchers, and the aim of the study was explained for each woman. The structured training program was presented in theoretical and practical sessions. Studied women was divided into small groups (10 groups) each group included (12) women, each group obtained 5 sessions (2 theoretical and 3 practical).

During sessions (theoretical and practical) ; The researchers distributed booklet and provide each group of women a simple written instructions and then orientation about the objectives, and explaining contents of booklet which included information about breast cancer, treatment, prognosis , mastectomy surgery, chemo-radiotherapy and it's side effects ,activities of daily living , body image changes and follow up visits , wound care, breast self-examination , breathing exercise , arm exercises and oral care. Each session took about (20-30 min) to accomplish its contents and ended with a summary and feedback from the women through open ended questions, discussion

and re-demonstration. Different teaching & learning methods as lectures, discussion, colored booklet, poster and videos were used during the sessions. Finally, women were encouraged to communicate with the researchers by telephone for answering any questions related to their condition.

Phase IV: Evaluation phase:

In this phase, the effect of structured training program on the studied women was evaluated through interviewing them at the outpatient breast clinic using the same pretest tools. Evaluation was done one month post structured training program implementation and after three months later (follow-up).

Administrative design:

Prior conducting the study, the necessary official approvals were obtained from the Heads of the surgical departments and Outpatient Clinic of breast surgery, and from the general directors of El-Demerdash Hospital and the Radiotherapy and Nuclear Medicine Department, affiliated to Ain Shams University Hospitals. Official letters were issued to them from the Faculty of Nursing at Helwan University explaining the aim of the study.

Statistical design:

The collected data were organized, categorized, tabulated and analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Data were presented in tables and charts using Suitable descriptive statistics such as frequency, percentage, mean and standard deviation, A paired (t) test was used to compare the mean score between both studied variables. Also, the correlation coefficient (r) test was used to estimate the closeness association between variables, alpha cronbach test, independent ANOVA (F) test was used to compare more than two means scores of studied variables. The p-value is the

probability that an observed difference is due to chance and not a true difference. A significant level value was considered when the p-value < 0.05 and a highly significant level value was considered when p-value< 0.001, while p-value > 0.05 indicates non-significant results.

RESULTS:

Table(1):Percentage Distribution of Socio-demographic Characteristics of the Studied Women (N=120).

Items	No	%
Age / yrs		
<40-	42	35.0
>41	78	65.0
Mean ± SD	38.65±4.76	
Marital status		
Married	100	83.3
Unmarried	20	16.7
Education		
Illiterate	36	30.0
Essential	28	23.3
Secondary	32	26.7
University	24	20.0
Work Status		
Work	52	43.3
Not work	68	56.7
Place of residence		
Urban	76	63.3
Rural	44	36.7
Income according to women's opinion		
Sufficient	32	26.7
Insufficient	88	73.3

Table (1) Shows that 65% of the studied women were aged >41years and the mean age was 38.65±4.76. Regarding marital status 83.3% were married. Concerning the educational level, 30.0% were illiterate. As well as 56.7% of women were not working and 63.3% of studied women were from urban area. In relation to income 73.3% of studied women had insufficient income according to their opinion.

Table (2): Percentage Distribution of Medical History among the Studied Women (N=120)

Items	No	%
Duration of illness		
< one year	116	96.7
- More than one year	4	3.3
Method of disease discovery		
- Accidental	100	83.3
- Signs and symptoms	20	16.7
Signs and symptoms:		
- Painless mass.	72	60.0
- Nipple discharge	40	33.3
- Changes in shape and size of nipple or breast.	8	6.7
Family history		
- Negative	72	60.0
Positive	48	40.0
Malignancy type in the family		
- Breast	24	50.0
- Ovary	18	37.5
Others	6	5.1
Degree of relationship		
- First	22	45.8
- Second	18	37.5
Third	8	16.7

Table (2) Clarifies that 96.7% of the studied women had duration of illness less than one year and 83.3% had accidental disease discovery. Moreover, 60.0% had painless mass as sign and symptom. Regarding family history the same table reveals that 40.0% had positive family history to cancer and breast cancer was represented 50.0 %. In addition, 45.8% were first degree relation.

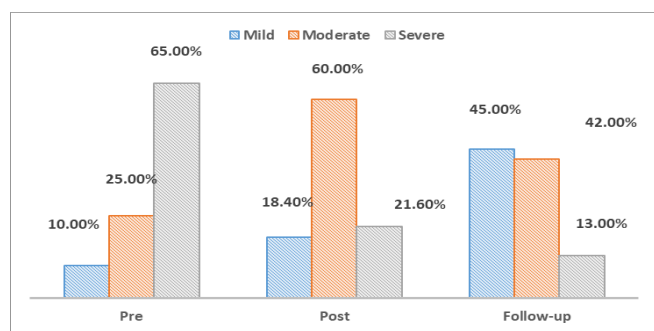


Figure (1): Distribution of studied women's physical needs as regards pain Severity Pre- Post and Follow-up Period of The Structured Training program implementation.

Figure (1): clarifies that (65.0%) of studied women had severe pain pre the structured training program; while changed to be (21.6 %) post the structured training program and after 3 months decreased to be 13.0% had severe pain.

Table (3): Distribution of Women's Total Health Needs Pre& Post and follow up The Structured Training Program implementation (N=120)

Health Items	Pre		Post		Follow up		F- test	p- value
	Mean	± SD	Mean	± SD	Mean	± SD		
Physic	55.16	± 2.8	9.5	± 3.86	5.83	± 1.47	74.169	0.000*
Psychologic	54.35	± 2.5	8.33	± 1.55	6.66	± 2.08	121.42	0.000*
Soci	48.25	± 4.05	17.75	± 3.68	9.4	± 2.19	43.290	0.000*
Spiritu	48	± 2.1	12	± 2.64	6.33	± 2.5	82.664	0.000*
Education	3.1	± 2.72	53.2	± 4.04	48.8	± 2.25	79.681	0.000*
Total ne	41.77	± 2.83	20.16	± 3.15	15.40	± 2.10	39.530	0.000*

**** Highly statistically significant at p-value <0.001**

Table (3) Shows a statistical significant difference between total needs pre / post and follow up structured training program implementation among the studied women, whereas improvement was indicated post and follow up training program as compared to pre training program (mean = 41.77± 2.83, 20.16 ± 3.15 & 15.40 ± 2.10 respectively).

Table (4): Distribution of Women's Educational Needs Pre / Post & Follow-up Structured Training Program implementation (N=120).

Items	Pre		Post		Follow up	
	No	%	No	%	No	%
Definition of breast cancer	4	3.3	104	86.6	92	76.7
Signs &Symptoms of breast cancer	8	6.7	100	83.3	98	81.7
Diagnosis of breast cancer	4	3.3	88	73.4	100	83.3
Treatment of breast cancer	6	5.0	112	93.3	106	88.3
Preoperative educational instructions	20	16.7	108	90.0	96	80.0
postoperative educational instructions	4	3.3	114	95.0	96	80.0
Side effects of radical mastectomy.	2	1.7	110	91.7	90	75.0
Lymphedema causes and treatment	0	0.0	108	90.0	100	83.3
Discharge instructions	6	5.0	116	96.7	98	81.7
Chemotherapy	8	6.7	104	86.6	100	83.3
Radiotherapy	0	0.0	88	73.3	72	60.0
Mean ±SD	3.1±2.72		53.2±4.04		48.8±2.25	
T1 (pre & post)	79.681*					
T2 (post & follow up)	7.370*					

*** Significant**

Table (4) Clarifies a statistical significant difference between women's educational needs pre /post and follow-up structured training program implementation among the studied women, whereas improvement was indicated post and follow up training program compared to pre training program (mean = 3.1±2.72, 53.2±4.04 & 48.8±2.25 respectively).

Table (5): Distribution of Practices Level among Studied Women Pre / Post & Follow up The Structured Training Program implementation (N=120)

Items	Pre		Post		Follow up	
	No	%	No	%	No	%
- Breast self-examination	20	16.6	84	70.0	78	65.0
- Deep breathing exercise	4	3.3	112	93.3	104	86.6
- Arm exercises	4	3.3	116	96.6	104	86.6
- Dry dressing	8	6.7	100	83.3	90	75.0
- Hand washing	6	5.0	112	93.3	106	88.8
- Oral care	24	20.0	110	91.7	98	81.6
Mean ±SD	4.2 ± 3.34		52.4 ± 6.54		48.2 ± 6.05	
T1 (pre & post)	50.842*					
T2 (post & follow up)	3.652*					

* Significant

Table (5) Explains a statistical significant differences between pre / post and follow up structured training program implementation among the studied women's satisfactory practices level as regards the following items (breast self-examination, deep breathing exercise, arm exercises, dry dressing, hand washing and oral care), with $p < 0.001$, whereas more improvement was indicated post & follow up training program compared to pre training program (mean = 4.2 ± 3.34, 52.4 ± 6.54 & 48.2 ± 6.05 respectively).

Table (6): Relation between Studied Women's Age as Regards their Health Needs

Women's Needs	Women's age		r – test
	<40 Mean ±SD	≥40 Mean ±SD	
Physical	7.08±1.64	9.37±1.19	3.532*
Psychological	9.57±2.45	8.65±2.35	1.475
Social	19.29±2.09	17.64±1.67	3.400*
Spiritual	11.4±2.17	11.0±1.96	0.748
Educational	51.12±3.97	54.38±3.22	2.435*
Total needs	16.33±1.4	20.08±2.34	3.375*

* Significant

Table (6) Presents a statistical significant relation between women age as regards their physical, social and educational needs ($r = 3.532, 3.400$ & 2.435 respectively). Meanwhile, insignificant relation was indicated as regards psychological and spiritual needs (1.475 & 0.748 respectively).

Table (7): Relation between Studied Women's Educational Levels as Regards their Health Needs

Women's Needs	Educational levels				
	illiterate Mean ±SD	Essential Mean ±SD	Secondary Mean ±SD	University Mean ±SD	Test ANOVA
Physical	10.24±2.78	9.15±2.80	8.75±1.12	7.65±1.68	3.711*
Psychological	8.15±1.73	7.98±1.02	6.57±2.11	10.37±2.13	5.808*
Social	17.74±2.46	18.45±3.29	17.3±2.74	17.68±2.62	0.435
Spiritual	12.45±2.09	11.84±2.07	12.78±1.83	11.74±1.77	1.057
Educational	54.65±2.78	53.2±3.10	52.74±2.01	50.97±3.03	4.508*
Total needs	22.67±2.43	21.45±2.03	20.41±1.87	18.67±1.68	6.214*

* Significant

Table (7) Clarifies a statistically significant relation between studied women's educational levels (illiterate, essential, secondary & university) as regards their health needs (physical, psychological and educational), whereas illiterate women had a higher mean (ANOVA = 3.711, 5.808 & 4.508 respectively). Meanwhile insignificant relation was indicated as regards social and spiritual needs (ANOVA = 0.435 & 1.057 respectively).

DISCUSSION

Breast cancer is a major health problem; modified radical mastectomy is performed to treat invasive breast cancer. Diagnosis and treatment of breast cancer are stressful events and may result in various physical, psychological, behavioral, social, and spiritual concerns, which are often experienced after treatment. Breast cancer women's need not only medical therapy but also psychological, spiritual, and

social support. In this respect, the main concern of the present study was to assess the effect of the structured training program on health needs and practices of women undergoing modified radical mastectomy (Soliman et al., 2018).

Part I: Socio-Demographic Characteristics & Medical History of study women

Regarding age of the studied women, the present study results illustrated that about two thirds of them were aged more than 40 years and the mean age was 38.65 ± 4.76 years. This finding near to the results of the study conducted in Egypt by Hashem et al., (2020) titled "Effect of Educational Nursing Program on Performance and Self-efficacy of Females Undergoing Mastectomy" who reported the mean age of the study women was 48.77 ± 9.1 years. Also, Nessa et al., (2018) reported that the highest percentage of studied women was above 40 years. This from the researchers' points of view reflected that aging process is one of the most important risk factors of breast cancer because of the longer life expectancy, changes in reproductive patterns in women over 40 years, menopausal hormonal use, rising prevalence of obesity and genetic damage (mutations) in the body at this age.

Regarding marital status, the results of the study revealed that the majority of the studied women were married. These results were supported by Türk & Yılmaz (2018) in the study of "The Effect on Quality of Life and Body Image of Mastectomy Among Breast Cancer Survivors" and stated that majority of their studied women (84.2%) were married. Also Hamed et al., (2019) discovered that, the majority of women in their study were married, while these results inconsistent with Soliman et al., (2018) who found that half of the study women were widow (50.0%). This from the researchers' points of view in Egyptian culture at age of 40 the majority of females were married.

Concerning educational level, the results of the present study clarified that one third of the studied women were illiterate and the minority of them had university education. These findings in agreement with Aboul-Enien et al., (2018) in a study about "Health-related quality of life: impact of surgery and treatment modality in breast cancer" who found that, about one half of studied subjects couldn't read and write. However, these findings in contrast with El-Araby et al., (2019) who revealed that more than one third of study women had middle education.

As regards to working status, it is noticed from the study results that more than half of the studied women were not working. This finding was in the same line with study conducted by Ahmed & Dawood (2017) on "Effect of an Educational Supportive Program on Mastectomy Patients' Satisfaction" and reported that most of the overall sample (80%) were not employed. Moreover Hawash, et al., (2018) mentioned that most of the studied women were housewives. However, these results incongruent with Hussein, Zatoon & Mahmoud (2018) who reported that slightly more than half of their study subjects were working (52.2%). According to researcher s' opinion this could be due to in ability of women to work because of signs and symptoms of disease and side effects of treatment modalities.

Regarding residence, more than two thirds of the studied women were living in urban area. This finding was consistent with El-Araby et al., (2019) in the study about "Effect of Educational Instructions Regarding Self Care of Women with Breast Cancer Related Lymphedema" who stated that more than two thirds of studied women were from urban areas. This finding was in disagreement with a study of Abo-Elazm et al., (2018) who conducted a cross-sectional study titled "Trends in demographics and reproductive factors in

breast cancer in Egypt" and found that, slightly more than half of the studied women were from rural areas, also Soliman et al., (2018) observed that two thirds of the study group lived in rural areas (60%).

In relation to the monthly income, more than two thirds of studied women had insufficient monthly income to their lives and their treatment according to their opinions, these findings go in the same line with Rastegar et al., (2020) in a study entitled "The Effect of Health Literacy Counseling on Self-Care in Women after Mastectomy" and reported that more than two thirds of studied women had not enough income. In the same context Mirzaei et al., (2019) in the study of "Supportive Care Needs in Females with Breast Cancer", who found that three - quarters of studied women had insufficient income status (75.0%). However, this result was in disagreement with Türk & Yılmaz (2018) who mentioned that the majority of studied women had medium income rate 89.5%. From the researchers' opinion this variation of results between studies is probably due to differences in the study design, study women's criteria, sample size, and techniques used for conducting the study.

Concerning medical history, the results revealed that, the majority of the studied women had duration of illness less than one-year, accidental disease discovery and painless mass. This result in agreement with Obadiel, Noaman & Hayel (2020) in the study of "Early Complications Following Modified Radical Mastectomy among Breast Cancer Patients" who mentioned that chief complaint of the studied subjects was painless mass in breast. On the same line Hashem et al., (2020) showed that the duration of illness was less than one year. Also; this findings were in accordance with Wachira et al., (2017) who mentioned that the majority of the studied sample reported having felt a breast lump. In the same context Tawfik &

Yakout (2016) in a study of "Self-Care Practices Related to Lymphedema Post Radical Mastectomy" reported that three - quarters of the studied patients were diagnosed for less than one year. While these results were inconsistent with Ahmed & Dawood (2017) who stated that more than half of the sample had the cancer disease from 1 to 5 years.

In relation to family history of the studied women, the results of the present study revealed that, more than one third of studied women had positive family history to cancer as well as half of them had breast cancer with first degree relation. According to researchers' point of view this means that specific genetic abnormalities that contribute to the development of breast cancer have been inherited (passed from parent to child). This finding goes in the same line with the findings of Brewer et al., (2017) in a study of "Family History and Risk of Breast Cancer: An analysis Accounting for Family Structure" who reported that there was a strong risk in relation to family history of breast cancer, with a twofold increase in risk of developing the disease for women with breast cancer in their first-degree family, and a larger increase in risk among women with a first-degree relative diagnosed before age 50 compared with after age 50 years .

On the same line, Hashem et al.,(2020) showed that the majority of the study subjects had a positive family history of breast cancer with first degree relation (mother). However, these results were inconsistent with Hawash et al., (2018) in a study of "Effect of Nursing Rehabilitation Program on the Prevention of Lymphedema among Post Mastectomy Women" who stated that the highest percentage of the studied women had a negative family history.

Part II: Effect of structured training program on health needs of studied women

It is noticed that the current study supported the current study hypothesis H1 whereas improvement in total needs post training program implementation with a statistical significant difference between women's total needs pre / post and follow-up structured training program among the studied women.

Concerning women's physical needs, the study results showed a statistical significant difference between women's physical needs pre /post and follow-up structured training program. This result in agreement with Türk & Yılmaz (2018) who reported that the women had a low mean score for general physical well-being preprogram implementation. As well Mohammed (2016) in a study entitled "Effects of Exercise Intervention on Pain, Shoulder Movement, and Functional Status in Women after Breast Cancer Surgery" concluded that there was a statistically significant improvement in the total functional status scores among patients over time ($p < 0.010$). This improvement was demonstrated by personal care activities, and household activities. From the researchers' point of view increased women's physical needs preprogram could be due to pain and fatigue that affect women ability to perform activities of daily living as well as household activities, while; after program those needs were decreased as a result of effective women training on applying non-pharmacological interventions and energy conservation technique for relieving pain and reducing fatigue which intern improve physical needs.

As regarding pain severity, the study results revealed that two thirds of the women had severe pain preprogram implementation while; post structured training program severity of pain was decreased to one fifth, and after three months the minority of them had severe pain which indicated significant improvement and decrease in pain severity level. This result was in

agreement with Taha et al., (2013) in the study of "Effect of Educational Program Regarding Therapeutic Exercises on Women's Pain, Fatigue and Shoulder Function Undergoing Mastectomy" who noticed that there was a highly significant difference in women's pain intensity of the intervention group post program and after one month ($p < 0.001$). This could be explained as pain is an unpleasant sensation, often associated with surgical procedures such as a mastectomy. Acute post-mastectomy pain is short in duration and mostly a direct result of the mastectomy procedure, this interpretation was supported by Claassens (2018).

In the same line Mandlik et al., (2019) stated that there was significant improvement in pain reduction among women with breast cancer after intervention. Moreover, this was supported by Mahdy & Ali (2012) who illustrated that about one quarter of the study sample had moderate pain at one-month post-discharge and the majority of them had no pain and only one fifth of them had mild pain at three months post discharge. According to researchers' opinion, Women have the potential to develop pain as a side effect of specific surgical procedures, chemotherapeutic agents, and radiation therapy. Acute post-surgical pain is initially intense and gradually lessens over time as healing occurs as well as teaching women non pharmacological methods help in reducing pain.

Concerning educational needs, the present study findings clarified an improvement in women knowledge and educational needs post and follow-up training program compared to pre training program with a statistical significant difference between women's educational needs pre / post and follow-up structured training program among the studied women. The previous results were supported by Hashem et al.,(2020) who clarified that, the majority of women in

their study had an unsatisfactory level of knowledge before the application of the nursing educational program, while they had a highly significant improvement regarding all items of knowledge after implementing the program.

According to the opinion of the researchers the level of knowledge was insufficient preprogram due to unavailability of training programs, lacking continuous educations and most health care providers did not routinely counsel women or providing them with written information about mastectomy and self-care practices. However, the improvement post training implementation might be due to health instructions given to studied women using different teaching strategies as lectures, discussion, and colored booklet. Also, the researchers emphasized the importance of the women's knowledge.

This study result was in agreement with Gamee , Shaaban & Ali (2019) in a study titled "Effect of Pre-discharge educational Interventions on Women's' Knowledge and Self-Care Practices Related to Arm Lymphedema Prevention Post mastectomy" and showed a highly statistical significance difference between pre and post intervention in relation to total knowledge score and the implementation of the educational intervention had a positive effect on the improvement of women's educational needs. Likewise (Soliman et al., 2018) supported the previous findings as they proved that there was a statistically significant difference regarding the mean knowledge score at three different intervals pre, post and follow up intervention regarding breast cancer as a disease as well as post mastectomy.

Regarding women's psychological needs the study results revealed a statistically significant improvement post and follow-up training program. This result was supported by Hamed et al., (2019) in the

study of "Impact of Psycho-educational Program on Body Image Concerns and Mental Adjustment among Post Mastectomy Women", who indicated that the difference between pre and post-test scores of the studied women were significant in domains of mental adjustment including less hopelessness, less helplessness and less anxious , also they revealed that there was significant decrease in the mean score of post mastectomy body image concerns of the studied women after the psycho educational program, and there was a statistically significant difference between levels of body image concerns before and after the psycho educational program.

It could be proved that, participation in group discussion, learning women to transform negative thoughts about their bodies into positive thoughts to improve their negative perception of their bodies can increase their self- esteem and self-confidence and improve their adaptation of actual/altered body image disturbance and reduce the negative feelings of stigma and loss of breast. In contrast, Andreis (2018) in a study of " Impact of a Psycho-Educational Team in early Breast Cancer Patients' Coping Strategies" found that there was no significant effect on body image after psycho- educational program for women with mastectomy.

Concerning social and spiritual needs, the study results indicated improvement in women's social and spiritual needs post and follow-up training program compared to pre training program with a statistical significant difference pre/post and follow-up structured training program among the studied women. This results goes in the same line with Wei et al., (2016) who clarified that social support is useful for patients with cancer, and emotional support from family members is positively correlated with physical and psychological adjustment to cancer.

In the same context Rezki , Erika & Rachmawati (2020) in the study of "Spiritual Care Nurse to Patient With Breast Cancer", illustrated that spiritual support from health care teams or religious communities is associated with higher quality of life scores , positive effect to patient welfare, decrease the emotional disturbances, , better social support and increase health behaviors and life spans.

These results from the researchers' field experience could ensure that meeting the spiritual needs of women is still unnoticed by health care providers which may be caused by many factors including the unavailability of resources and the lack of care from health workers for the spiritual needs of women which increase their needs pre - program. While post program encouraging women to participate in social activities and reinforcement of positive energy increased women satisfaction regarding spiritual and social needs.

Part III: Effect of structured training program on studied women practices

Regarding observational practices among studied women, the results revealed that there was a statistical significant differences between pre / post and follow up structured training program implementation among the studied women’s satisfactory practices as regards the following breast self-examination, deep breathing exercise, arm exercises, dry dressing, hand washing and oral care. Moreover, more improvement was indicated post training program compared to pre training program. These results supported the research hypothesis (H2) which stated that practices of women undergoing modified radical mastectomy will be increased post structured training program implementation. This could ensure the success of the structured training program on the improvement of women practices level which included continuous demonstration, re-demonstration, follow up and

effective practical content in learning materials (booklet, poster and videos), which was given to the studied women with continuous explanations, reinforcement and feedback.

In the same context Hashem et al., (2020) revealed that the majority of the study women had an inadequate level of practice before application of the educational nursing program, while showed significant compliance at a two-period interval of follow up; before discharge and 3 months post-program. As well Soliman et al., (2018) supported these results as they demonstrated that the majority of the women had adequate self- care practices including deep breathing and arm exercise as well as arm morbidity minimized during the follow-up period.

In the same line these findings were congruent with Mohammed (2016) who revealed that there was improvement in the shoulder range of motion exercise post program implementation. As well; this results were supported by Martínez, Huitzache & Raygoza (2018) in a study of " Nursing intervention in women who developed lymphedema after undergoing a modified radical mastectomy" who stated that therapeutic self-care demand scores including skills score of women were statistically significant when comparing the median of the differences before and after the nursing intervention.

The present study confirmed that there was a was a statistical significant relation between women age and educational level regarding their physical, social and educational needs which supported the current study hypothesis (H3) which stated a relation between health needs and Socio-demographic characteristics. While insignificant relation was indicated as regards psychological and spiritual needs. These results were supported by Türk & Yılmaz (2018) who revealed that there was a highly significant relationship between age

of the women and physical and educational needs as well; there was moderate relationship between education level and physical and educational needs, while the same study was in disagreement with the same results as regard emotional and social needs. From the researchers' point of view this could be interpreted as educational level can highly affect women's perception of the tumor, thus influencing the level of early detection, diagnosis, and treatment, also the educated women can get more information about their condition through different sources such as the internet or media than illiterate women.

In the same point, Dubashi et al., (2010) concluded that a statistical significant relation was found between age and women's' needs as younger breast cancer women were in need of interventions that significantly target their needs and also programs to help them deal with body image and physical concerns.

Finally, the results of this study justified the hypotheses that the structured training program will have a positive effect on meeting the health needs, added to improving practices of women undergoing modified radical mastectomy.

Conclusion

On light of the current study results, it can be concluded that, majority of the studied women had physical, psychological, social, spiritual and educational needs. Meanwhile, the structured training program had a positive effect on meeting their health needs, and improving practices levels. Moreover, statistically significant relations were found between women's physical, social and educational needs, and their demographic characteristics including age and educational level.

Recommendations

The following recommendations were inferred from the study:

- Conduct complete health assessment & regular follow – up for all women after mastectomy to identify unmet needs and early detection of the complications.
- Integrate interdisciplinary care approach for care of women post mastectomy focusing on overall health.
- Conduct instructional guidelines for women after mastectomy to manage symptoms such as pain, lymphedema and ROM limitation.
- Further research studies are needed to focus on measuring quality of life (QOL) for the studied women longitudinally.
- Replication of this study on a large probability sample to achieve more generalization.

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