Self-Care Practices Related to Lymphedema Post Radical Mastectomy

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Abstract

Lymphedema is a life-long condition, so patient education in self-management is very important ,moreover to reduce the risk of developing lymphedema or having lymphedema worsen, all patients with lymphedema or at ‑ risk for lymphedema should be instructed in essential self-care. Importantly, with the early identification and management of lymphedema, we can help many of our patients maintain their quality of life by minimizing cosmetic, functional, psychoemotional, and potentially life-threatening complications. ***Objective:*** *Assess self-care practices regarding lymphedema after radical mastectomy.* ***Settings:*** *The study was conducted at the Main University Hospital and Gamal Abd-Elnaser Hospital in Alexandria.* ***Subjects:*** *The study was conducted on 50 adult female patients who had unilateral mastectomy with Axillary's Lymph Node Dissection.* ***Tools:*** *Two tools were used to collect data; Patient's Sociodemographic and Clinical Data Tool and Lymphedema's Knowledge and Self-care Structured Interview Schedule.* ***Results:*** *Concerning type of surgery, 40% and 44% were treated by Modified radical mastectomy and Radical mastectomy respectively. In relation to post operative period; it is noticed that 80% of the studied patient were post operative <15 weeks. 82% of the studied patients showed unsatisfactory self-care practices regarding following principles and practicing self-care of affected limb after radical mastectomy such as skin care, exercises, using garment and close observation of the limb as compared with 18% who had satisfactory scores.* ***Conclusion:*** *It is apparent from the present study that the majority of women who are developing post-radical mastectomy lymphedema did not practice self-care at the time of surgery and it is related to a lack of knowledge on lymphedema care amongst breast cancer patients.* ***Recommendations:*** *In order to improve patients' level awareness of lymphedema self- care, the provision for systematic and comprehensive patient education, including management protocols for lymphedema, need to be addressed. Education and training will be essential components of efforts to ensure appropriate care for lymphedema patients in all community health resources and hospitals.*

Keywords: Self-care practices, Lymphedema, Radical mastectomy.

Introduction

Breast cancer is the most commonly diagnosed cancer in women and accounts for approximately 15% of all cancer deaths in women in the United States. Breast cancer (BC) is the most common malignancy and the second most common cause of cancer death after lung cancer in women worldwide. In Egypt, about of 9,587 female cancers cases registered in the last 10 years by the Alexandria Cancer Registry, 33.0% of them were breast cancer[(1)]. Breast cancer treatment includes radiotherapy, chemotherapy, hormonal therapy and surgery. Although these treatments have improved patient outcomes, they have been associated with substantial adverse effects[(2)]. Lymphedema, a sequel of breast cancer and breast cancer therapy, changes functional abilities and may affect a patient's psychosocial adjustment and overall quality of life[(3,4)].

Lymphedema is the accumulation of lymph fluid causing persistent swelling of the affected body part due to obstruction of the flow of fluid in the lymphatic system. In the oncology setting, the most common causes of lymphedema are radiation therapy and lymph node dissection. Lymphedema can occur in one or more extremities and can involve the corresponding quadrant of the trunk. Lymphedema is most often reported in the upper extremities of women with breast cancer associated with axillary lymph node dissection and fibrosis after radiation therapy, however it can also affect the head and neck, breast, genitalia and lower limbs, depending upon surgeries and radiation therapy performed. Upper extremity lymphedema occurs in 15-28% of breast cancer survivors, and is most common in those who had axillary lymph node dissection and can present a few days or 6-8 weeks after surgery or radiation therapy[5,6].

There are two general classifications of lymphedema: primary and secondary. Primary lymphedema develops as a consequence of a pathologic congenital and/or hereditary etiology. Significantly secondary lymphedema is more common than primary lymphedema. It is caused by mechanical insufficiency due to surgery, radiation, trauma, infection, tumor blockage, chronic venous insufficiency, immobility, or tourniquet effects[6,7] .Once damage has occurred to the lymphatic system, transport capacity is permanently diminished in the affected region, thereby predisposing that region to lymphedema. Secondary lymphedema is considered the most problematic and dreaded complication of breast cancer treatment[6].

Patients with lymphedema may report symptoms such as; a sensation of arm fullness and mild discomforts, which are seen in the early stages of the condition. Arm swelling, is usually unilateral and may include the dorsum of the hand. Joint immobility, pain, and skin changes are noted frequently in the later stages of lymphedema. Patients also may be predisposed to infections involving the affected extremity[8].

The evaluation and diagnosis of lymphedema should begin through medical, surgical history, physical examination and nursing assessment of the patient including observation of the limb, inspection of the skin and palpation should be performed and the presence or absence of fibrosis, as well as whether the edema is pitting or non pitting. Pain level should also be noted and assessed[9]. Physical examination techniques include sequential circumferential measurements of the arm, water displacement volumetry, and tissue tonometry. Circumferential arm measurement is used most frequently, although water displacement volumetry has been shown to be more accurate[10]. Other quantitative measures involve radiological imaging studies such as computed tomography, magnetic resonance imaging, ultrasonography, lymphoscintigraphy, and lymphangiography. Both computed tomography and magnetic resonance imaging show a distinctive honeycomb pattern within the lymphatic system that helps differentiate lymphedema from other potential cancer-related causes of edema such as deep venous thrombosis[11,12].

Progressive lymphedema is complicated by recurrent infections, non‐healing wounds, discomfort or pain, difficulty with daily tasks, emotional and social distress[13]. Effective treatment for lymphedema is available but early diagnosis is important since treatment is most effective when lymphedema is diagnosed at the earliest stage. Every patient with lymphedema should have access to established effective treatment for this condition. Lymphedema has no cure but can be successfully managed when properly diagnosed and treated[14].

The treatment of lymphedema associated with breast cancer can include combined modality approaches, compression therapy, pharmacotherapy and

therapeutic exercises[11]. One of the most common forms of treatment consists of a multimodality approach called complex decongestive physiotherapy or complete decongestive therapy (CDT) which is the gold standard treatment for lymphedema. This therapy involves various techniques such as manual lymphatic drainage, external compression devices, and exercises administered by well-trained therapists[15]. Following achievement of maximal volume reduction with CDT, patients should be fitted with a compression therapy. Compression therapy includes compression bandages, compression garments, gradient compression devices, or pneumatic compression devices to mobilize the lymph fluid[16].

Another approach for the treatment of lymphedema is pharmacological interventions which are used to treat lymphedema and include; antibiotics for treatment of infections, benzopyrones, flavonoids, diuretics, hyaluronidase, pantothenic acid, and Selenium. Finally, specific exercise is beneficial for all patients and is recognized as a treatment of lymphedema[25]. Although heavy activity may temporarily increase fluid load, appropriate exercise enables the person with lymphedema to resume activity while minimizing the risk of exacerbation of swelling. These include; remedial exercises that aid lymph flow through repeated contraction and relaxation of muscles. These exercises should be individualized and should be performed while the edematous arm is bandaged. Ideally, these exercises are initiated by well-trained therapists and then continued at home[18].

Meticulous hygiene is recommended to decrease the amount of fungus and bacteria on the skin. Low pH moisturizers should be applied to keep skin from drying and cracking. Cracks and dry areas of the skin are entry points for bacteria and fungus, which can result in infections and wounds[19,20].

Surgery for lymphedema is not curative, but it has been used in specific circumstances for control of a severe condition. Circumstances where surgery may be considered are; reducing the weight of the affected limb, minimizing the frequency of inflammatory attacks, improving cosmetic appearance, or fitting the limb into garments. As with all surgical procedures, the risks and benefits must be weighed against the individual needs of the patient, and the expertise of the surgical team. Surgery is usually only considered when adequate trials of all usual methods of treatment have failed. There are several types of surgical procedures available that have been used for lymphedema as; excision operations (including debunking and liposuction), tissue transfers, and microsurgical lymphatic reconstruction[21,22].

Since lymphedema is a life-long condition, patient education in self‐management is very important and here the role of the nurse becomes magnified[23]. To reduce the risk of developing lymphedema or having lymphedema worsen, all patients with lymphedema or at‐risk for lymphedema should be instructed in essential self care. The important areas of education include risk‐reduction practices, self-lymph drainage, skin care, signs and symptoms of infection, proper fit and care of garments, and the importance of good nutrition, exercise and weight control. Lymphedema risk increases with obesity, so weight loss should be a part of lymphedema treatment in overweight individuals, as well as maintenance of optimal weight in normal-weight individuals[24]. In one study, weight loss alone was shown to reduce arm volume in the lymphedema arm more than the uninvolved arm of obese women with post‐mastectomy lymphedema[25].

Lymphedema is a public health issue deserving greater attention. More systematic surveillance for earlier detection and the potential benefits of physical activity to

prevent lymphedema and mitigate symptoms warrant further clinical integration and research[26]. There are numerous informational resources available to educate practitioners and patients about lymphedema and to help find reputable lymphedema management specialists. Importantly, with the early identification and management of lymphedema, we can help many of our patients; maintain their quality of life by minimizing cosmetic, functional, psycho-emotional, and potentially life-threatening complications[27].

Aim of the Study

The aim of the study was to explore self-care practices regarding lymphedema post radical mastectomy.

Research Questions:

1. Do post radical mastectomy women perform Self-Care Practices related to lymphedema?
2. Is there a relationship between knowledge and self-care practice related to lymphedema?

Materials and Method

Materials

Design: Descriptive research design.

Settings: The study was conducted at the general surgical units and oncology departments at the Main University Hospital (MUH) and Health Insurance Hospital (HI).

Subjects: Fifty adult female patients (25 from each setting) who had unilateral mastectomy with Axillaries' Lymph Node Dissection (ALND) had an established diagnosis of lymphedema and attended the hospital for follow up care were included in the study and the exclusion criteria were any other health problems as; heart conditions and D.V.T, bilateral mastectomy, primary lymphedema or history of chest radiotherapy.

Tools: Two tools were used to collect data:

Tool I: Patient's Sociodemographic and Clinical Data Tool

It included the socio-demographic data of the patients as; age, level of education, marital status, income/ month and insurance system. It also included some medical information as hospital name, diagnosis, duration since diagnosed as breast cancer, type of surgery, duration after surgery and any other treatment received after surgery.

Tool II: Lymphedema's Knowledge and Self-care Structured Interview Schedule

It was developed by the researcher and included two parts:

Part I: it was used to assess patient's knowledge about arm lymphedema; it included information related to definition, causes, clinical data and management of secondary lymphedema. Complaining of lymphedema before, sources of knowledge related to lymphedema. The women response was evaluated as one to each correct answer and Zero for incorrect answer, the total score of the items were summed-up then converted and categorized into percentage as the following: the total women's knowledge was considered satisfactory if the percent score was 60% and more, and unsatisfactory if less than 60%.

Part II: used to assess patient's self-care practices regarding lymphedema. It included 22 statements related to self-care practices, participants responded with done or not done answers to confirm whether the listed statements have been practiced daily or not. The women responses was evaluated as score one for practice done and zero for mot done, the total score of the items were summed-up then converted into percentage as the following: the total women's self-practice was considered satisfactory if the percent score was 60% and more, and unsatisfactory if less than 60%.

Method

- An official approval of the research title was taken from the ethical committee of the Faculty of Nursing, Alexandria University to conduct the research.
- Approval from administrative authorities of the selected settings was taken to start data collection.
- Review of literature was done to collect the required data to construct the tools.
- The used tools were developed by the researchers after completed literature review and supported by evidence base.
- The tool was tested for content validity by a jury of 5 experts in Medical-Surgical Nursing field and modification was done accordingly.
- After completing the tools, content reliability was done using Cronbach's Alpha test, the result was 0.937 that indicated high reliability of the tool.
- A pilot study was carried on 10% (5 patients) to assess the feasibility and applicability of the tool. No modification was done.
- The tool was developed and translated to Arabic language and used by the researcher.
- Every female who attended the previously selected settings and followed the inclusion criteria, was recruited and a written oral consent was taken after informing her with the aims of the study and ensuring her about the confidentiality of the data.
- They were interviewed individually whether in the surgical unit or in a private room in the oncology unit to maintain the patient's privacy. Every female patient took about 30 to 45 min. to complete the interview.
- Data collection lasted about six months (from March 2012 to September 2012).

Ethical considerations:

Confidentiality and privacy of patient's data were asserted. Participation in the study was voluntary, with the patient right to withdraw at any time.

Statistical Analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. Qualitative data were described using number and percent. Quantitative data were described using range (minimum and maximum), mean, and standard deviation. Significance of the obtained results was judged at the 5% level. The used tests were: Chi-square test, for categorical variables, to compare between different groups. Student t-test, for normally quantitative variables, to compare between two studied groups. Spear man coefficient to correlate between knowledge and practice.

Results

Table (1a) shows distribution of the studied patients according to sociodemographic data.

As regards to age, it was observed that 42%-48% of the studied patients were in the age group of 40-50 and over 50 years old respectively.

The main age score and median was 49.30±7.93, and 49.50 respectively. As regards to level of education, 36% of the studied patients were illiterate while 10% of them had university level of education. Also it was found that 72% of the studied patients were married. Moreover, concerning income 64% of the studied patients had an income ranging between 500-1000 pounds monthly. The main income score and

median was 705.0± 308.82, and 660.0 respectively.

Table (1b) shows distribution of the studied patients according to clinical data.

As regarded to duration since diagnosis as breast cancer 74% of the studied patients were diagnosed for more than 30 days. The main duration score and median was 111.52±107.61, and 61.50 respectively

Concerning type of surgery, 40% and 44% were treated by Modified radical mastectomy and Radical mastectomy respectively. In relation to post operative period; it is noticed that 80% of the studied patient were<15 weeks. The main duration score and median was 10.42±11.06, and 7.0 respectively. In addition 68% of studied patients not received any treatment post surgery while 32% of them received chemotherapy.

Table (2) shows distribution of the studied patients according to sources of knowledge. It can be noticed that 38% of the studied patients did not have information on prevention of lymphedema. While 28%, 24% and 26% said that physician, nurse and other patient are the major sources of their knowledge. Moreover, only 4% of the studied patients reported that their source of knowledge was social media.

Table (3) shows distribution of the studied patients according to lymphedema knowledge. The table represented that 78%, 68% and 66% of the patients had satisfactory score regarding causes, manifestation and prevention of lymphedema. On the otherwise: 50%, 50% of the studied sample reported satisfactory and unsatisfactory regarding definition of lymphedema respectively.

Table (4) illustrates distribution of the studied patients according to total score of knowledge. The table represented that, regarding knowledge score 52% of the studied patient showed unsatisfactory knowledge regarding definition, causes, manifestation management and prevention of lymphedema as compared with 48% who had satisfactory scores.

Table (5) illustrates percentage distribution of the studied patients according to lymphedema self-care practices. The studied patients 58%, 58% reported that they do not clean or dry their arm respectively. While 64% do not use antiseptic solution in caring for the limb. Also, 70%, 74% of the studied patient reported that they did not care about sunburn or extreme temperature respectively.

Moreover, 100%, 100%, 100% do not apply bandage or garment during day or at night respectively. However, 84% reported that they did not avoid over tightness clothes, in contrast 94%, 98% of the studied sample observed their arm for redness and swelling respectively. While 92%, 82% of the studied sample did not follow isometric exercises or massage for the affected arm respectively.

In addition, this table shows that 50%, 50% of the studied sample was reported that they did not treat any infection in the arm by using antibiotics as prescribed by the physician or avoid left heavy objects with affected arm. Finally 68% of the studied patients reported that they maintain balanced nutritional diet.

Table (6) shows distribution of the studied patients according to total score of practice. This table illustrated that 82% of the studied patients showed unsatisfactory self-care practices regarding following principles and practicing self-care of affected limb after radical mastectomy such as skin care, exercises, using garment and close observation of the limb as compared with 18% who had satisfactory scores.

Table (7) represents the relation between level of knowledge with sociodemographic characteristics in total sample (n=50). It can be seen in this table that there is significant difference between knowledge and sociodemographic data regarding level of education were

(χ^2=10.175 and MCp=0.016) while the rest of sociodemographic characteristics as age, marital status, income shows no significant differences.

Table (8) represents relation between level of practice with sociodemographic characteristics in total sample (n=50). It can be seen in this table that there is significant difference between level of self-care practice and sociodemographic characteristics data regarding level of education and income were (χ^2=9.518, MCp=0.010 and χ^2=18.726, MCp=<0.001 respectively).

Table (9) shows comparison between the two hospitals according to mean % score of knowledge and practice. The results in this table reveal that, the mean knowledge score and median was 58.40±35.55 and 69.60±35.65 in relation to Main University and Gamal Abd-Elnaser hospitals respectively. While, the mean of self-practices level was 23.09±9.99 and 58.18±12.59 in relation to Main University and Gamal Abd-Elnaser hospitals respectively. There is significance difference between two hospital regarding level of practice were (P<0.001).

Table (10) shows correlation between knowledge and practice in total sample. It can be seen in this table that a correlation exist between patients knowledge and performed self-care practices rs (p) 0.383* (0.006*).

Discussion

Breast cancer is the most important cancer in women and there is increasing incidence in developing countries Lymphedema is a common debilitating complication of cancer therapy. It can occur anywhere that lymph nodes have been surgically removed or lymph flow has been disturbed. Typically, lymphedema is diagnosed only when it is visually apparent, at which point treatment is often ineffective. The occurrence of lymphedema after breast cancer treatment varies greatly, from 5% to 60% depending on the predisposing factors and on the diagnostic criteria[28].

Regarding age, the results of the present study indicated that about near half of the studied women were in the age group from forty to fifty years. This finding was goes in contrast with Chu et al. (2008) and Beaulac et al. (2008) who discovered that, breast cancer can occur at any age adjusted breast cancer mortality and morbidity rate between females similar among this group less than 40 years of age[29,30].

In relation to level of education, the current results revealed that, more than one third of the women were illiterate. This is congruent with Ali (2010) who found that more than one quarter of the study sample was illiterate[31]. Also, the current results revealed that, the highest percent of the study sample were married. This comes in agreement with Abd El-Razik (2010) who mentioned that Egyptian cultures encourages early marriage and lots number of children especially among rural areas[32].

Regarding duration of the occurrence of lymphedema after surgery, the current results denoted that the majority of the women had lymphedema at a period of less than fifteen weeks post-surgery. These results were concurrent with the results of Diaconu et al. (2012) in their study about identification of the risk of lymphedema after breast cancer surgical treatment, they found that early lymphedema occurring in the first fourteen postoperative days or between day fourteen and day twenty one. On the other hand, late lymphedema, occurring up to twelve months or more after surgery[33].

In relation to the women sources of knowledge regarding lymphedema; the findings of the current study indicated that, more than one third of the study sample didn't received information regarding lymphedema and mentioned that they don't have any source of knowledge to them regarding arm lymphedema. This goes in the same line with Paskett and Stark (2008)

who found that most physicians reported that they didn't routinely counsel women or provide written information on lymphedema prevention to their women, and the extent to which women's daily living was affected by the condition was not always recognized. These findings have implications for interventions aimed at educating women and providers about lymphedema[34].

On the other hand, it was found that half of the women had satisfactory as well as unsatisfactory knowledge regarding the definition of lymphedema, while the majority of them had satisfactory knowledge only regarding causes, manifestation, management and prevention of arm lymphedema. This result was in line with women's view who said that; it is the first time facing the word lymphedema; otherwise, regarding causes and manifestation, they now suffer from its troubles. These conclusions can be analyzed that those women were accepted their disease as it is and begin to survive and adapted with it. These results were in contrast with the results of Mahdy and Ali (2012) who illustrated that none of their women had adequate knowledge regarding arm lymphedema prevention[1,23].

"Self-care" is the general term for everything patient will need to do at home to prevent lymphedema; to reduce the risk of it from coming back or getting worse in the future. In addition lymphedema self-care, sometimes referred to as "risk-reduction involves specific behaviors and activities undertaken on a regular basis by the individual, with or without the assistance of others. The involvement in self-care by those with lymphedema is necessary to manage swelling and other symptoms and to reduce the risk of infection[35]. In the present study the findings highlighted that the majority of the women were not done all the recommended aspects of self-care practices as; keeping their arm clean and dry all the time, following healthy diet, Avoiding sunburn and extremes of temperature, wearing compression garments, intensive skin care, infection risk-reduction, keeping the affected arm elevated above the heart level most of time, and avoiding measuring blood pressure from the affected arm. These results were evaluated by Ridner et al. (2012) who concluded in their systematic review of literature in relation to the Self-management of lymphedema that the recommended self-care behaviors can be time-consuming and labor intensive[36].

However, FU et al. (2010) who pointed that often the major barrier to self-care was not being unawareness about how to perform the self-care techniques as suggested by others , but rather the pull the participants felt to put others' needs first[37].

In relation to comparison between the two hospitals in the present findings showed that the women from Gamal Abdel Nassar Hospital had higher mean score regarding women' knowledge and practice than the Main University hospital. These finding may be due to that women in Gamal Abdel Nasser had be oriented regarding their condition and its sequences from the hospital staff in comparison to the Main University hospital.

Regarding the correlation between knowledge and self-care practices in total sample, the findings revealed that the majority of the studied women had unsatisfactory knowledge as well as self-care practice. These results were in line with the results of Mahdy and Ali (2012) who found that all of the studied women had inadequate knowledge about arm lymphedema and self-care practices regarding prevention of arm lymphedema[1].

Based on the previous results early detection and management of lymphedema, help women to maintain their quality of life by minimizing cosmetic, functional, psychoemotional, and potentially life-threatening complications.

Conclusion

Based on the findings of the current study, it can be concluded that:

1. The majority of women who are developing post-radical mastectomy lymphedema did not practice self-care at the time of surgery.
2. There is correlation between patient's knowledge and performed self-care practices.
3. There were statistical significance differences between income, level of education and self-care practices.
4. In addition statistical significance difference was found between Main University and Gamal Abdel Nassar hospitals.

Recommendations

- In-service training program for nurses working in hospital; and especially in oncology units to upgrade their knowledge about mechanism of lymphedema formation and prevention.
- Developing simple educated booklets containing relevant information and simple figures about self-care practices for patient.
- Comparison between rural areas and urban area to explore the difference.

Table (1a): Distribution of the studied patients according to sociodemographic data

Sociodemographic data	No.	%
Hospital		
Main university hospital	25	50.0
Gamal Abd-Elnaser	25	50.0
Age		
<40	5	10.0
40 – 50	24	48.0
>50	21	42.0
Range	29.0 – 63.0	
Mean ± SD	49.30 ± 7.93	
Median	49.50	
Level of education		
Illiterate	18	36.0
Read & write	6	12.0
Primary	9	18.0
Secondary	6	12.0
Diploma	6	12.0
University	5	10.0
Marital Status		
Single	5	10.0
Married	36	72.0
Divorced	6	12.0
Widow	3	6.0
Income		
<500	13	26.0
500 – 1000	32	64.0
>1000	5	10.0
Range	250.0 – 1600.0	
Mean ± SD	705.0 ± 308.82	
Median	660.0	
Insurance system		
None	25	50.0
Yes	25	50.0

Table (1b): Distribution of the studied patients according to clinical data

Clinical data	No.	%
Duration since diagnosis as breast cancer (days)		
<15	5	10.0
15 – 30	8	16.0
>30	37	74.0
Range	7.0 – 365.0	
Mean ± SD	111.52 ± 107.61	
Median	61.50	
Type of surgery		
Modified radical mastectomy	20	40.0
Radical mastectomy	22	44.0
Others	8	16.0
Duration after surgery (weeks)		
<15	40	80.0
15 – 30	8	16.0
>30	2	4.0
Range	0 – 60.0	
Mean ± SD	10.42 ± 11.06	
Median	7.0	
Type of treatment now		
No	34	68.0
Chemotherapy	16	32.0
Have lymphedema before		
No	50	100.0
Yes	0	0.0

Table (2): Distribution of the studied patients according to sources of knowledge

Sources of knowledge	No.	%
Don't have knowledge	19	38.0
Physician	14	28.0
Nurses	12	24.0
Another patient	13	26.0
Social media	6	12.0
Others	2	4.0

Table (3): Distribution of the studied patients according to lymphedema knowledge

Lymphedema knowledge	No.	%
Definition of lymphedema		
Unsatisfactory	25	50.0
Satisfactory	25	50.0
Causes		
Unsatisfactory	11	22.0
Satisfactory	39	78.0
Manifestation		
Unsatisfactory	16	32.0
Satisfactory	34	68.0
Management		
Unsatisfactory	21	42.0
Satisfactory	29	58.0
Prevention		
Unsatisfactory	17	34.0
Satisfactory	33	66.0

Table (4): Distribution of the studied patients according to total score of knowledge

Total score of knowledge	No.	%
Knowledge score		
Unsatisfactory (<60%)	26	52.0
Satisfactory (≥60)	24	48.0

Table (5): Distribution of the studied patients according to lymphedema self-care practices

Items of self-care practices	Not done (score 0)		Done (score 1)	
	No.	%	No.	%
Keep your arm clean all the time	29	58.0	21	42
Keep your arm dry all the time	29	58.0	21	42.0
Use antiseptic in cleaning your arm	32	64.0	18	36.0
Bandage arm at night	50	100.0	0	0.0
Wear compression garment during day	50	100.0	0	0.0
Wear compression garment at night	50	100.0	0	0.
Avoid sunburn	35	70.0	15	30.0
Avoid extremes of temperature (too hot or too cold)	37	74.0	13	26.0
Avoid cuts or wounds or scratches	26	52.0	24	48.0
Treat infections early and throughout with antibiotics prescribed by your doctor	25	50.0	25	50.0
Don't lift heavy objects	25	50.0	25	50.0
Avoid dependency on the affected arm	33	66.0	17	34.0
Perform isometric exercises for limb daily.	46	92.0	4	8.0
Perform self-massage.	41	82.0	9	18.0
Observe redness of the affected arm.	3	6.0	47	94.0
Use mild detergent for clothes washing.	1	2.0	49	98.0
Eat a balanced nutritional diet.	16	32.0	34	68.0
Keep the affected arm elevated above the heart level most of time.	32	64.0	18	36.0
Avoid intra-venous or injecting of the affected arm.	21	42.0	29	58.0
Avoid measuring blood pressure from the affected arm.	23	46.0	27	54.0
Avoid over tightness of the affected arm.	42	84.0	8	16.0
Call doctor if arm becomes hot or red.	7	14.0	43	86.0

Table (6): Distribution of the studied patients according to total score of self-care practices

Score of Self-care practices	No.	%
Self-care practices		
Unsatisfactory (<60%)	41	82.0
Satisfactory (≥60)	9	18.0

Table (7): Relation between level of knowledge with Sociodemographic characteristics in total sample (n=50)

Sociodemographic characteristics	Level of knowledge				χ^2	^{MC}p
	<60% Unsatisfactory (n=26)		60≥% Satisfactory (n=24)			
	No.	%	No.	%		
Age						
<40	2	7.7	3	12.5		
40 – 50	16	61.5	8	33.3	3.974	0.145
>50	8	30.8	13	54.2		
Level of education						
Illiterate	13	50.0	5	20.8		
Basic	9	34.6	6	25.0	10.175*	0.016*
High	4	15.4	8	33.3		
University	0	0.0	5	20.8		
Marital Status						
Single	2	7.7	3	12.5		
Married	17	65.4	19	79.2	6.790	0.070
Divorced	6	23.1	0	0.0		
Widow	1	23.1	0	0.0		
Income						
<500	5	19.2	8	33.3		
500 – 1000	20	76.9	12	50.0	4.225	0.124
>1000	1	3.8	4	16.7		
Duration since diagnosis as breast cancer (days)						
<15	1	3.8	4	16.7		
15 – 30	4	15.4	4	16.7	2.302	0.386
>30	21	80.8	16	66.7		
Duration after surgery (weeks)						
<15	19	73.1	21	87.5		
15 – 30	5	19.2	3	12.5	2.161	0.474
>30	2	7.7	0	0.0		

χ^2: Chi square test

*: Statistically significant at $p \leq 0.05$

Table (8): Relation between level of self-care Practices with Sociodemographic characteristics in total sample (n=50)

Sociodemographic characteristics	Level of self-care Practices				χ^2	^{MC}p
	<60% Unsatisfactory (n=41)		60≥% Satisfactory (n=9)			
	No.	%	No.	%		
Age						
<40	5	12.2	0	0.0		
40 – 50	20	48.8	4	44.4	1.131	0.656
>50	16	39.0	5	55.6		
Level of education						
Illiterate	17	41.5	1	11.1		
Basic	14	34.1	1	11.1	9.518*	0.010*
High	8	19.5	4	44.4		
University	2	4.9	3	33.3		
Marital Status						
Single	4	9.8	1	11.1		
Married	29	70.7	7	77.8	2.047	0.577
Divorced	6	14.6	0	0.0		
Widow	2	4.9	1	11.1		
Income						
<500	13	31.7	0	0.0		
500 – 1000	28	68.3	4	44.4	18.726*	<0.001*
>1000	0	0.0	5	55.6		
Duration since diagnosis as breast cancer (days)						
<15	4	9.8	1	11.1		
15 – 30	6	14.6	2	22.2	0.845	0.836
>30	31	75.6	6	66.7		
Duration after surgery (weeks)						
<15	32	78.0	8	88.9		
15 – 30	7	17.1	1	11.1	0.410	1.000
>30	2	4.9	0	0.0		

χ^2: Chi square test
*: Statistically significant at $p \leq 0.05$

Table (9): Comparison between the two hospitals according to mean % score of knowledge and self-care practices

% score	Main university hospital (n = 25)	Gamal Abd Elnaser (n = 25)	t	p
Total Knowledge				
Min. – Max.	20.0 – 100.0	20.0 – 100.0	1.112	0.272
Mean ± SD.	58.40 ± 35.55	69.60 ± 35.65		
Total self-care Practices				
Min. – Max.	13.64 – 54.55	18.18 – 81.82	10.920*	<0.001*
Mean ± SD.	23.09 ± 9.99	58.18 ± 12.59		

t: Student t-test
*: Statistically significant at $p \leq 0.05$

Table (10): Correlation between knowledge and self-care practices in total sample

Self-care practices in total sample	Knowledge				χ^2	p
	Unsatisfactory (n= 26)		Satisfactory (n= 24)			
	No.	%	No.	%		
Practice						
Unsatisfactory	25	96.2	16	66.7	7.352*	0.009*
Satisfactory	1	3.8	8	33.3		
r_s (p)	0.383* (0.006*)					

χ^2: Chi square test
*: Statistically significant at $p \leq 0.05$

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