

Effect Of Nursing Care Bundle on the Outcomes of Women Undergoing Breast Surgeries

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Abstract

Background, Breast surgery typically can be divided into three general categories, reduction, augmentation, and reconstruction. A care bundle is a structured way of improving the process of care and patient outcomes. The present study **aimed** to evaluate the effect of nursing care bundle on outcomes for women undergoing breast surgeries.

Research design, one shot case research design was utilized to conduct data of this study. **Samples**, the study was conducted on a convenience sample of available patients (30), female adult patients undergoing breast surgery.

Setting; the study was conducted at plastic surgical department in Assiut University Hospitals. **Tools**, data were collected through **four tools**; the structured interview questionnaire, Patient assessment sheet, Surgical site infection grading system, Nursing care bundle. **Results**, There were a statistical significant difference between total scores of knowledge level, practice pre and post-operative (after 4 weeks) after implementing nursing care bundle (P=0.001).

Conclusion, there is a significant differences improvements throughout implementation of nursing care bundle on outcomes for women undergoing breast surgeries. **Recommendations**, the study recommended that, pamphlets and simple illustration booklet should be available for women undergoing breast surgeries with simple explain how to safely live after breast surgery.

Keywords: Breast Surgery, Care Bundle, Nursing & Outcomes.

Introduction

Breasts are defining features of the female body and the basis upon which women's bodies are judged. They also are central to the identities of (some) women. The breast is the tissue overlying the chest (pectoral) muscles. Women's breasts are made of specialized tissue that produces milk (glandular tissue) as well as fatty tissue. The amount of fat determines the size of the breast (Merril & Smith, 2017).

Breast surgery typically can be divided into three general categories: reduction, augmentation, and reconstruction. Breast reduction surgery, is a procedure used to remove excess fat, tissue and skin from the breasts. If patient has large breasts, she might choose to have breast reduction surgery to ease discomfort or to achieve a breast size proportionate to her body. Breast reduction surgery might also help improve self-image and ability to participate in physical activities (Bromham et al., 2017).

Breast augmentation is performed to enhance the appearance, size and contour of a woman's breasts. Women consider breast augmentation for different reasons. Some women feel their breasts are too small in relation to their body contour. Some women desire augmentation after size loss associated with pregnancy and lactation. (Nichter et al., 2018).

Breast reconstruction seeks to recreate a breast with the desired appearance, contour and volume. The appearance, contour and volume of the breast can be recreated with implants or with a woman's own tissue. If an implant is used, the implant is sized to match the opposite breast. A breast also can be recreated using a woman's own tissues (Rabin & Roni, 2017).

A care bundle or evidence based practice protocol is a grouping of care elements for a particular symptom, procedure or treatment (Chumpia et al., 2019). A care bundle improves the quality of care when consistently applied to all patients to help health care providers more reliably deliver the best possible care for patients undergoing particular treatments with inherent risks. A bundle is a structured way of improving the processes of care and patient outcomes: a small, straight forward set of evidence-based practices generally three to five that, when performed collectively and reliably, have been proven to improve patient outcomes (Deedwania, 2015).

Preoperative care bundle includes; a nurse explain that the patient will most likely spend the first night after the operation in the hospital and she might have a surgical drain inserted. If a drain is inserted, she will probably have to go home with it. Information about drain care will be given before discharge. The patient will have limited arm mobility immediately after the surgery,

and she will be expected to perform arm exercises frequently. Lastly, reassure the patient that the post-operative pain will be addressed through analgesia and supportive measures (Khan et al., 2015).

Postoperative care bundle includes; patient may resume regular diet as soon as she can take fluids after recovering from anesthesia, nurse encourages 8 to 10 glasses of water per day, plenty of fruits and vegetables as well as lower fat foods. The elements of the bundle are perioperative antibiotic prophylaxis, hair removal before surgery, perioperative normothermia and discipline in the operating room. Those measures are considered evidence based for the prevention of surgical site infection. (Bayraktar, 2015).

Exercises after breast surgery; is an important part of recovery after surgery. It can reduce postoperative limitations in shoulder range of motion, regain and maintain normal movement in arms and shoulders, reduce pain in the chest wall, shoulders, neck and back, return to the daily activities faster such as dressing, bathing and driving, keep your muscles strong, improve overall well-being.. These exercises are to be done once daily, and each set of exercises is to be repeated 5 times (National Health Insurance Service, 2018).

Discharge instructions post-surgery; do not engage in any activity that will cause pain, pulling or tightness on affected upper extremity. Use non-involved side to assist in the stand, do not sit for more than two to three hours at a time, take short frequent walks, no driving while on pain medications, and keep incision clean and dry, no creams or lotions. A follow up appointment with surgeon should be made as soon as possible. Report signs and symptoms to notify surgeon as : oral temperature greater than (38.8° C) for more than 24 hours, redness or drainage from the incision with an odor, bleeding from incisions(s), extreme swelling, nausea and vomiting, pain that does not respond to medication, persistent constipation or rash (Powers et al., 2017).

Significance of the study

The breast is the most important external identification of femininity, and the loss of a breast can have bad psychological effects on a woman. A woman who lost a breast may feel, insecure, inferior to other women, or undesirable to men. This research studying the effect of a care bundle on outcomes for women undergoing breast surgery. According to Assiut University Hospitals report there were nearly 33 case cosmetic breast surgery performed in the year of 2019 .This research helped health care team to improve outcomes for patient with each type of breast surgeries (Unpublished).

Aim of the study

The aim of this study was to: Evaluate the effect of nursing care bundle on the outcomes of women undergoing breast surgeries

Research hypothesis

To fulfill the aim of the study the following research hypothesis was formulated :

The post mean knowledge scores of the study group patients who were exposed to implementation of nursing care bundle were higher than pre-implementation and will improve patient's outcomes.

Research design

One shot case research design was utilized to conduct data of this study. In this research design a single experimental group will be exposed to a treatment (intervention) and observations are made after implementation of treatment.

Setting

The study was conducted in the plastic surgical department at Assiut University Hospitals.

Subjects

Sample of 30 female adult patients underwent breast surgery, who distributed as the following (10 reduction, 10 augmentation and 10 reconstruction of breast surgery patients).

Sample size

This sample was selected by using the following equation according to (Steven and Thompson, 2012):

$$n = \frac{N \times p(1 - p)}{\left[\left[N - 1 \times (d^2 \div z^2) \right] + p(1 - p) \right]}$$

N = total patient population size of 32 who attended the plastic surgery department at Assiut university hospitals during year 2019- 2020.

Z = confidence levels is 0.95 and is equal to 1.96

D = the error ratio is = 0.05

P = the property availability ratio and neutral = 0.50

Note: selecting patient depended on the decreasing number of patients undergoing breast surgery per month in Assiut University Hospitals.

Inclusion criteria

- 18-65 years of age
- No contraindications for anesthesia
- Non-smokers
- No systemic diseases that may have influence on the breast surgery as diabetes mellitus
- Agree to participate in the study

Tools

Four tools were used to investigate the effect of nursing care bundle to improve outcomes for female undergoing breast surgeries. These tools were deducted by the researcher based on reviewing of related literatures; (Checketts et al., 2000), (Gould et al., 2001), and (Resar et al., 2005).

Tool I: The Structured Interview Questionnaire (SIQ); It was developed by the researcher based on current literature, to assess demographic data, clinical data and patient knowledge Pre & post, this tool was consisting of three parts:

Part 1: Socio demographic data; it included patient's name, age, sex, level of education, marital status and occupation ...etc.

Part 2: Clinical data; it included medical diagnosis, length of hospital stay and measurements of height, weight and BMI....etc.

Part 3: Pre & post-test patient knowledge assessment questionnaire: it included definition, indications, nutrition, postoperative exercise, wound care, complications and follow up.

Total scoring system of tool I:

According to total score of interview questionnaire knowledge of patients classified into:

- Satisfied more than 50%
- Unsatisfied less than 50%

Tool (II): Patient assessment sheet:

Part (1): Pain visual analogue scale (PVAS); is a measurement instrument developed by (Gould et al., 2001) that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured. It measures shoulder pain intensity. It is graduated on 10 cm line, with anchors at the end points of Zero that indicates (no pain at all) to 10 (worst pain) (Gould et al., 2001).

0 = No pain

2 = Discomfort or (mild pain)

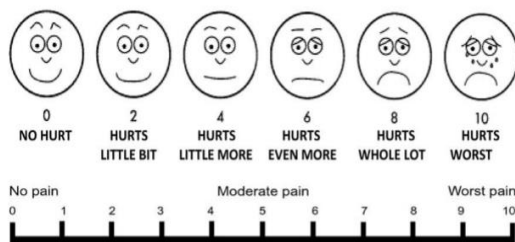
5 = Pain that interrupts your ability to relax and rest (moderate pain)

7 = Pain that wakes you up from a sound sleep (severe pain)

10 = Excruciating pain:

Scoring system of pain visual analogue scale:

According to score of pain visual analogue scale each category was observed, categorized, and scored into either yes = 1 or no = 0.



0 – 4 is generally considered the reasonable range for post-operative pain.

Tool (III): Surgical site infection grading system (SSIGS); although there is no standardized system for classifying surgical site infections, the Checketts-

Otterburn classification is commonly used and provides valuable information regarding treatment.

Scoring system of tool III:

According to total score of surgical site infection grading system each sign and symptom was observed, categorized, and scored into either present = 1 or not present = 0.

According to this system, surgical site infections are classified into two groups, minor (Grades 1–3) and major (Grades 4–6) (Checketts et al., 2000).

Tool (V): Nursing care bundle; care bundles originated in North America and are described best as groups of evidence-based practice interventions. The theory behind care bundles is that when several evidence based interventions are grouped together in a single protocol, it improved patient outcomes. (Resar et al., 2005), it included two parts:

Part 1: Preoperative care bundle; it is developed by the researcher based on literature review, it included: physical preparation, patient education (diet, mobility, exercises and medication).

Part 2: postoperative follow up observational checklist until patient discharge and follow up; it is developed by the researcher based on literature review, it included: pain management, surgical site infection, shoulder exercise and postoperative complications.

Operational design

The study was carried out on three phases:

The preparatory phase (assessment and planning phase)

Tools development

The researchers developed the study tools after extensive review of relevant literature of the current study, local & international, using text books, articles, and scientific magazines. This phase ended by a pilot study.

Content validity and reliability:

The content validity of study tools were checked by 5 expert professors in field of nursing they reviewed the instruments for clarity, relevance, comprehensiveness, understanding, applicability and easiness for administrative minor modifications that required. Correction was carried out accordingly and then the tools were designed in their final format and tested for reliability. As for the reliability tool (III) was confirmed for consistency by Cronbach's alpha coefficient (alpha=0.78).

A pilot study

A pilot study carried out in mid-January (2020) to test the feasibility and practicability of the study tools and conducted on (10%) of the sample (3 patients). It had also provided an estimate of time needed to fill out the tools.

Administrative design

An official permission to conduct the study was obtained by the researcher from the head of plastic

surgical department to collect the necessary data, after explain the aim of the study to them to obtain their cooperation. Also the researcher meet with the patient to explain the objectives and contents of these tools after obtaining the patient consent for this study.

Ethical Considerations

After a written approval of the research proposal by the Research Ethics Committee of the Faculty of Nursing, Sohag University is obtained; an official permission was taken from hospital administrators to conduct the study. The purpose and nature of the study as well as the importance was explained to the potential participants who meet the inclusion criteria. The investigator emphasized that anonymity and confidentiality were assured through coding the data and the data wasn't reused in another research without their acceptance. Signed consent was obtained from patients who accepted to be included in the study. Participants were assured that participation in this study was voluntary and they have the right to withdraw from the study at any time without any penalty.

Implementation phase

The nursing care bundle had been implemented for the pre-operative group in term of sessions. This sessions aimed to evaluate the effect of nursing care bundle to improve outcomes for women undergoing breast surgeries. The nursing care bundle was developed by the researchers based on the review of relevant literature and available resources.

- Data were collected from plastic surgical department at Assiut University Hospital for 6 months during the period from January 2020 to August 2020 .
- The study was carried out at morning shifts for all available patients and by telephone.
- At initial interview the researcher introduced herself to initiate line of communication, explained the nature and purpose of the study to the selected patients who are willing to participate in the study and filled out the questionnaire sheet tool (1) to assess the patient's demographic and clinical data.
- After assessment of the patients using the structured interviewing questionnaire sheet tool (1) that filled by the researcher to assess general knowledge of patient for breast surgeries. Assess pain level by using tool (2) that filled by the researcher.
- The researcher prepared booklet using simple language, contained diagram and illustrated photos. It has developed by research based on patients' needs and relevant literatures. It included all contents of nursing care bundle.

- The patients was divided into small group contain of (2-4 patients).
- The nursing education was conducted through (3interventions) and the duration of each session was around 20 to30 minutes include 10 minutes for discussion and feedback .
- Each of the following intervention usually started by a briefing about what had been discussed in the previous intervention, using simple Arabic Language .
- Each session ended by a summary of what has been taught during the previous session and the objectives of new topics.
- Feedback and reinforcement of teaching was performed according to patient's needs to ensure their understanding. Each patient in the preoperative group obtains a copy of the teaching booklet. The researcher used pictures for illustration, and diagram to educate the patient.

The first intervention included; information about breast surgery; definition, indications and contraindications of breast surgery.

The second intervention included theoretical part of nursing care bundle for patients: preoperative instructions, laboratory investigations and postoperative complications.

The third intervention included; preoperative preparation, postoperative diet and exercise, pain management, surgical site infection, pre &post-operative care bundle elements and instructions on discharge .Before discharge the investigator emphasized the importance of follow up visit for all subjects and arranged the time and place for follow up which were 4th week postoperatively in outpatient plastic surgical clinic at Assiut University Hospitals.

Evaluation phase (follow up phase)

The last phase of proposed nursing management is the evaluation phase. After implementation the patient knowledge and practices have been evaluated by the researcher. A line of contact was established between the investigator and subjects of both groups for feedback, monitoring, and provision of needed consultation and help. The patients was evaluated after 4 weeks from 1st interview post implementation of the nursing care bundle using tool V.

Statistical design

The data were tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by number and percent (N, %), where continuous variables described by mean and standard deviation (Mean, SD). Chi-square test and fisher exact test used to compare between categorical variables where compare between continuous variables by

independent t-test. A two-tailed $p < 0.05$ was considered statistically significant. All analyses were performed with the IBM SPSS 20.0 software.

Limitations of the study

1. Since the researcher was the only data collector, this study did not include patients monitoring for 24

hours. So, it was impossible to be sure if flap assessment sheet were properly applied.

2. Investigation findings are limited in Generalizability because the sample was selected from one geographical area in Arab Republic of Egypt (Assiut University Hospitals).
3. Patients flow was little.

Results:

Table (1): Frequency distribution of patient regarding demographic data (n=30)

Variables	N	%
Age by group		
48 - <58 y	13	43.3
28 - <38 y	16	53.3
18 - <28 y	1	3.3
Marital status		
Married	25	83.3
Widowed	5	16.7
Educational level		
Educated	30	100.0
Address		
Urban	30	100.0
Types of breast surgery		
Breast augmentation	10	33.3
Breast reduction	10	33.3
Bbreast reconstruction	10	33.3
Medical diagnosis		
Hypoplasia	10	33.3
Hypertrophy	10	33.3
Breast defect	10	33.3
Length of hospital stay		
One day less than three day	19	63.3
More than three days	11	36.6
Body mass index	30.40±2.89	

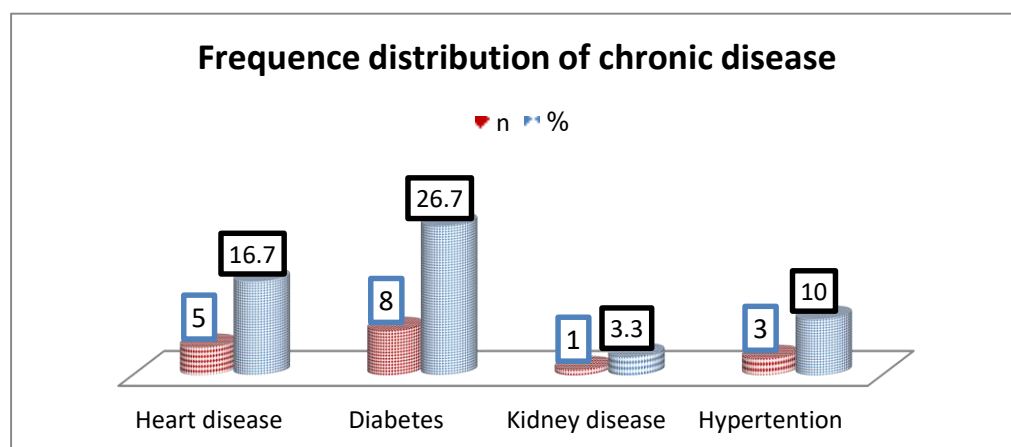


Figure (1): Frequency distribution of chronic disease among women participant

Table 2: Comparison between pre and post implementation of nursing care bundle regarding women knowledge (n=30)

Knowledge	Pre- implementation				Post- implementation				P.value
	know		Don't know		know		Don't know		
	N	%	N	%	N	%	N	%	
Knowledge about breast surgery									
know the meaning of breast surgery	1	3.3	29	96.7	30	100.00	0	0.00	001**
Do you know types of breast surgeries	2	6.7	28	93.3	30	100.00	0	0.00	001**
Do you know indications of breast surgery	0	0.00	30	100.00	30	100.00	0	0.00	001**
Do you know contraindications of breast surgery	0	0.00	30	100.00	30	100.00	0	0.00	001**
Do you know complications of breast surgery	0	0.00	30	100.00	30	100.00	0	0.00	001**
Do you know the necessary preparations before breast surgery	1	3.3	29	96.7	30	100.00	0	0.00	001**
Are you afraid to undergo the operation	3	10	26	86.7	0	0	30	100.00	001**
If yes from anesthesia	3	10	0	0.0	0	0	30	100.00	001**
Knowledge about exercises:									
Do you know that exercises are important after breast surgery	22	73.3	8	26.7	27	90.0	3	10.0	001**
Do you know types of shoulder exercises done postoperatively	0	0.00	30	100	30	100	0	0	001**
Do you know the deep breathing exercise?	16	53.3	14	46.7	21	70.0	9	30.0	001**
Knowledge about Nutrition									
What is the type of a good diet that must be eaten post-surgery to fasten recover	2	6.7	28	93.3	30	100	0	0.00	001**
Knowledge about medication									
Do you know what medications you should take after the operation	2	6.7	28	93.3	30	100	0	0	001**
Knowledge about wound care									
Do you know care of your wound after discharge from hospital?	24	80.0	6	20.0	30	100.0	0	0.00	001**
What are the symptoms and signs of infection that should be reported to your physician?	10	33.3	20	66.7	21	70.0	9	30.0	001**
Knowledge about follow up:									
Do you know first follow up visit?	0	0.00	30	100	30	100.00	0	0.00	001**
Do you know the instructions to be followed after discharge from the hospital	0	0	30	100	30	100	0	0.00	001**

Chi-Square with $P.value = 0.05 >$ not significance $p = <.05$ * significance $p = 0.001$ **highly significance

Table 3: Comparison between pre and post implementation nursing care bundle regarding total women knowledge (n=30)

Test used	Chi-Square and independent t-test with P.value =0.05> not significance p<.05 significance p=0.001 highly significance			
	Pre		Post	
Patient knowledge level	n	%	n	%
Satisfied	3	10.0	30	100.0
Unsatisfied	27	90.0	0	0.00
P.value	49.091		- 0.001	
Mean ± SD	1.53±1.88		10.00±0.00	
	.001			

Table (4): Assessment of Pain for women immediate post-operative and after 4 wks using visual Analogue Scale (n=30)

Follow up	Pain				X2	P.value
	mild N %	moderate N %	sever N %	Worst pain N %		
Post-operative	9 (30%)	18 (60%)	2 (6.7 %)	1 (3.3)	20.097 ^a	.001
after 4 weeks	17(56.7)	13 (43.3)	0(0.0)	0.0		

Fisher test p=0.001 **highly significance

Table (5): Comparison between nursing care bundle regarding breathing, shoulder exercise and wound care pre, post and 4wks post-operative (n=30)

Items	Preoperative				Post-operative				Follow up after four wks				X2	P.value			
	Done		Not done		Done		Not done		Done		Not done						
	t Correct	In correct			Correct	In correct			Correct	In correct							
	n	%	n	%	n	%	n	%	n	%	n	%	n	%			
Deep breathing exercise	1	3.3	9	30.0	20	66.7	20	66.7	8	26.7	2	6.7	21	70.0	3	10.0	44.06 .001*
Shoulder exercise	11	36.7	9	30.0	10	33.3	21	70.0	8	26.7	1	3.3	25	83.3	3	10.0	22.41 .001**
Wall hand climbing	2	6.7	9	30.0	19	63.3	12	43.1	8	23.3	10	33.3	14	46.7	6	20.0	15.522 .001**
Wound care	0	0	0	0	0	0	24	80.0	5	16.7	1	3.3	23	77.6	3	10.0	2.321 .313ns

Chi-Square with P.value =0.05> not significance p<.05* significance p=0.001 **highly significance

Table (6): Comparison between post-operative and after 4 weeks regarding Surgical Site Infection) (n=30)

Grades	Follow up	Present		Not present		X2	P.value
		n	%	n	%		
Grade 1 (Low risk)	Postoperative	11	36.7	19	63.3	4.356	.036*
	After4 weeks	2	6.6	28	93.4		
Grade 2 (Co-morbid)	Postoperative	0	0.0	0	0.0	0	0
	After4 weeks	0	0.0	0	0.0		
Grade 3 (Potentially contaminated)	Postoperative	0	0.0	0	0.0	0	0
	After4 weeks	0	0.0	0	0.0		
Grade 4 (Infected)	Postoperative	0	0.0	0	0.0	0	0
	After4 weeks	0	0.0	0	0.0		

Chi-Square Tests *=Significant difference *p≤0.05 ***= highly significance *p≤0.01 Ns= Non significant difference P>0.05

Table (7): Comparison between Postoperative and after 4 weeks regarding complications for breast surgery (n=30)

Postoperative complications	Follow up	Present		Not present		X2	P.value
		N	%	N	%		
Wound infection	Postoperative	11	36.7	19	63.3	4.356	.036
	After 4 wks.	2	6.6	28	86.7%		
Loss of sensation	Postoperative	30	100.0	30	100.0	----	---
	After 4 wks.	30	100.0	30	100.0		
Capsular contraction	Postoperative	30	100.0	30	100.0	---	---
	After 4 wks.	30	100.0	30	100.0		
Asymmetry	Postoperative	30	100.0	30	100.0	-----	-----
	After 4 wks.	30	100.0	30	100.0		
Abdominal wound dehision	Postoperative	30	100.0	30	100.0	----	----
	After 4 wks.	30	100.0	30	100.0		
Postoperative pain	Postoperative	30	100.0	0	0.0	18.261	0.001
	After 4 wks.	16	53.3	14	46.7		
Restricted range of movement	Postoperative	14	46.7	16	53.3	10.800	.001
	After 4 wks.	4	13.3	26	86.7		
Shoulder stiffness	Postoperative	14	46.7	16	53.3	7.937	.005
	After 4 wks.	4	13.3	26	86.7		

Chi-Square Tests * = Significant difference *p≤0.05

** = highly significance *p≤0.01 Ns = Non significant difference P>0.05

Table (1): This table demonstrates that; about half of the study group their age range between (28 - <38 y) years old, and about three quarter of the study group were married 83.3%, all patient are educated, live in urban and working. As regards type of surgery and medical diagnosis, the most common diagnoses were hypoplasia, hypertrophy and breast defect (33.3%) for each and 63% of patient stay in hospital from one day to three days.

Table (2): This table illustrates that, there was a statistically significant difference for the study group regarding knowledge pre / post 4 weeks after implementation of the nursing bundle care with *p≤0.01

Table (3): Pre- implementation of nursing care bundle, 90% of patients were in unsatisfied knowledge level compared to 100% of patients were in satisfied knowledge level after implementation of nursing care bundle (P. value =0.001**).

Table (4): This table show that; as regarded Pain Visual Analogue Scale, more than half of posttest sample suffered from moderate pain (60 %), After 4 weeks (56.7%) of sample suffered from mild pain, there is statistically significant difference regarded assessment of Pain Visual Analogue Scale.

Table (5): This table demonstrates that; there was a statistically significant difference between pre, post-operative and follow up after 4 weeks regarding items of nursing care bundle of regarding breathing, shoulder and hand exercise, but no significant difference regarding wound care.

Table (6): This table demonstrates that; as regarded Surgical Site Infection; the quarter of the sample was in

grade 1 (low risk) of surgical site infection (36.7 %). While than half of the sample haven't any risk of surgical site infection (63.3 %). There was statistically significant difference regarded Surgical Site Infection, post and 4 weeks after implementation of nursing care bundle.

Table (7): As regarded postoperative complications; there was highly significance difference of preoperative care bundle to prevent postoperative complications *p≤0.01

Fig. 1: This figure demonstrates that; as regarded chronic diseases, the quarter of the sample were diabetic patient (26.7 %).

Discussion

The breast plays a significant role in a woman's sexuality and identification of herself as a female. Although advances in the diagnosis and treatment of breast disorders are changing the prognosis for breast disease, women's responses to possible breast disease include fear of disfigurement and loss of sexual attractiveness and fear of death. The woman with breast disease may undergo diagnostic testing, surgery, radiation therapy, chemotherapy, and hormonal therapy. Thus, nurses caring for patients with breast disease must have an in-depth understanding of these treatment modalities and expert assessment and clinical skills to address the physical and psychological needs of patients facing breast surgery (Fazzino et al., 2017).

The present study findings that more than half of study sample, their age range between (28 - <38 y), this result agrees with (Jung et al., 2019) who mentioned that; younger patients (30–39 years of age) preferred for

those surgeries. Also this result disagrees with **(Korean Breast Cancer Society, 2018)** who mentioned that; sample rates by age, 48% of all patients who underwent breast cosmetic surgery in Korea were women aged 40–49 years old. As regarded marital status, the present study stated that the majority of sample was married. This result disagrees with **(Hong et al., 2018)** who mentioned that, the majority of sample was unmarried.

According to **(Rita et al., 2018)**, the result of his study not in the line of this study, he mentioned that regarding the demographic characteristics of the evaluated sample, it was verified that 71.1% of the women were over 50 years of age, with a mean of 56.99 years ($SD = \pm 10.45$). The majority were not married, and had completed at least elementary school.

The present study reported that the mean of body mass index was (30.40 ± 2.89) that the sample was respectively. This result agrees with the study of **(Dragun et al., 2013)** who mentioned that; patient who performed breast surgeries risk factors for overall surgical complication included smoking, higher body mass index. BMIs of 25 to 29.9, 30 to 34.9, and 35 and above were more likely to undergo breast cosmetic surgery than women with BMIs less than 25 **(Connor et al., 2016)**.

As regarded chronic diseases, the quarter of the sample were diabetic patient. This result agrees with **(Xie et al., 2015)** who mentioned that quarter of females who undergoing breast surgery suffering from diabetes (30%).

The result in the present study revealed that, a great improvement in the knowledge score levels obtained by patients after implementation of nursing care bundle, the majority of sample were poor before implementation nursing care bundle while after implementation of nursing care bundle, most of sample in study group were good. This finding was in the same lines of **(Steiner et al., 2016)** who stated that the nursing care bundle recommended before breast surgery as the most beneficial and cost effective management for motivated females with breast surgery. Also, it agrees with **(Ministry of Health and Welfare, 2018)** who mentioned that the majority of posttest breast surgery females answered all questions about breast surgery than pretest group and there was statistically significant difference as regarded pre and posttest total score for level of knowledge about breast surgery (P value = 0.001**). In researcher view that, the patient knowledge was improved due to providing information about breast surgeries and clarify all questions to the patient.

As regarded pre –implementation breathing exercise, the majority of sample didn't do the breathing exercise but after implementation nursing care bundle of patient done breathing exercise correctly. This result agrees

with **(Cheng et al., 2017)** who suggested that, the majority of sample did the breathing exercise correctly after implementation of nursing care bundle.

Preoperative shoulder range of motion exercise, less than half of the sample didn't do the shoulder range of motion exercise after shoulder range of motion exercise more than half of the sample did the shoulder range of motion exercise correctly. This result agrees with **(American Society of Plastic Surgeons, 2018)** who mention that, the exercises also promote circulation of the lymphatic system, thus preventing swelling of the affected arm. Over-strenuous activities are to be avoided in the first few weeks after discharge. These exercises are to be done once daily, and each set of exercises is to be repeated 5 times.

As regarded assessment of Pain Visual Analogue Scale, more than half of posttest sample suffered from moderate pain, but after 4 weeks more than half of sample suffered from mild pain, This result disagrees with **(Hong et al., 2018)** who suggested that, after four weeks of follow up the majority of posttest sample suffered from severe pain.

As regarded wound care before discharge and follow up, most of the sample did the steps correctly. This study agrees with **(Stuiver et al., 2015)** who mentioned that the majority of sample did the steps of wound care correctly after implementation of nursing care bundle.

As regarded Surgical Site Infection; the quarter of the sample was low risk of surgical site infection. This result agrees with **(Bayraktar et al., 2015)**, who mentioned that the importance of implementation of elements of care bundle to prevent postoperative infection as perioperative antibiotic prophylaxis, hair removal before surgery, perioperative normothermia and discipline in the operating room. In the researcher view, surgical site infection was prevented due to implementation of nursing care bundle,

This result stated that there were better outcomes after implementation of care bundle. This result is in the same line of **(Zhou et al., 2016)** who mentioned that; Exercise improves inspiratory muscle endurance, functional mobility, reduces postoperative pain scores and anxiety, and improves quality of life indicated that preoperative exercise facilitates immediate postoperative recovery following breast surgery. Patients who are provided with information booklets about exercise have low risk of postoperative complications.

In the researcher view, exercise is an important part of recovery after surgery for breast. It can help: reduce after surgery limitations in shoulder range of motion, regain and maintain normal movement in arms and shoulders, reduce pain in the chest wall, shoulders, neck and back, return to daily activities faster such as dressing, bathing and driving, keep muscles strong, improve overall well-being.

The present study showed that the importance of implementing nursing care bundle in improving postoperative outcomes for women undergoing breast surgery. This result agrees with (Potter et al., 2016) who mentioned that the effect of postoperative care bundle in improving postoperative complications, pain management and surgical site infection.

In the researcher view, patient's outcomes was improved, patient satisfaction was increased and quality of life was modified due to application of nursing care bundle by written booklet.

Conclusion

Based on the result of the present study, it can be concluded that; there was a significant improvements throughout implementation of nursing care bundle to improve outcomes for women undergoing breast surgeries.

Recommendations

Based on results of the present study, the following can be recommended:

I. For patients:

- Patients who have had breast surgery require additional verbal and written information about care bundle of diet and physical activity to improve postoperative outcomes.
- Pamphlets and simple illustration booklet should be available for illiterate patients to explain elements of care bundle should patient follow after breast surgery.
- Tell the patients about importance of regular follow up in regular time.
- Advice the patient regarding effective education and information are required to enhance understanding breast surgery.
- Preparation and provision of information should start from time of the surgeon's decision that surgery is required. The patients must visit the plastic surgery unit 2 weeks prior to surgery for the preoperative work up; to prepare them and provide information in the form of booklets, videos, and one to one counseling sessions.

II. For nurses:

- An in-service education center should be established within Assiut University Hospital to improve level of knowledge and performance of nurses. This department should be equipped with media and educational facilities.
- Systems for performance appraisal should be developed in order to periodically monitor the nurse's knowledge and performance.
- Encourage nursing staff in using new technologies as a new method of education such as computer, and

internet for acquiring up to date all information related to management of patients with surgery.

- Nurses must actively participate in orientation regarding health promotion program, conferences in order to discuss patient's condition and recognize the view issues related to management of patients with breast surgery.

III. For research (future study):

- Importance of doing separate studies of breast surgery will helpfully lead to more effective and preventive – based strategies for future.
- Survey of incidence of complications after breast surgery should be done in order to recognize the prevalence of the problem all over Egypt.
- Replication of the current study on larger probability sample is recommended to achieve generalized ability and wider utilization of the designed program.

References

- **American Society of Plastic Surgeons (ASPS). (2018):** Plastic Surgery Statistics Report [Internet]. Arlington Heights, IL, ASPS; c2018 [cited 2020 Mar 9]. Available from: <https://www.plasticsurgery.org/documents/News/Statistics/2018/plastic-surgery-statistics-full-report.pdf>
- **Bayraktar N., (2015):** Meme kanserinde cerrahi tedavi ve bakım. Türkiye Klinikleri J Surg Nurs-Special Topics; 1:7–12.
- **Bromham N., Schmidt-Hansen M., Astin M, Hasler E., & Reed MW (2017):** "Axillary treatment for operable primary breast cancer". The Cochrane Database of Systematic Reviews. 1: CD004561. doi:10.1002/14651858.cd004561.pub3. PMC 6464919. PMID 28052186.
- **Checketts RG., MacEachern AG., & Otterburn M., (2000):** Pin track infection and the principles of pin site care. In: Goldberg A, De Bastiani A, Graham Apley A, editors. Orthofix external fixation in trauma and orthopedics. Berlin, Heidelberg, New York: Springer; 2000. pp. 97–103. [Google Scholar]
- **Cheng KKF, Lim YTE, Koh ZM, Tam WWS. Cochrane Database Syst Rev. (2017) Aug 24; 8(8):CD011152. doi: 10.1002/14651858.CD011152.pub2. PMID: 28836379**
- **Chumpia MM, Ganz DA & Chang ET, (2019):** de Peralta SS. BMJ Jun 12; 8(2):e000426. doi: 10.1136/bmj-2018-000426. Collection 2019.
- **Connor AE., Baumgartner RN., Pinkston CM., Boone SD., & Baumgartner KB., (2016):** Obesity, ethnicity, and quality of life among breast cancer survivors and women without breast cancer: the

- long-term quality of life follow-up study. *Cancer Causes Control*. 2016; 27 (1): 115-24.
- **Deedwania P., (2015):** Gaps in guideline implementation: a cause for concern, time for action. *J Am Coll Cardiol*. 2015; 65(3):278–280. Doi: 10.1016/j.jacc.2014.10.049.
 - **Dragun A., Pan J., & Riley E., (2013):** Increasing use of elective mastectomy and contralateral prophylactic surgery among breast conservation candidates: a 14-year report from a comprehensive cancer center. *American Journal of Clinical Oncology*. 2013; 36(4):375–380. doi: 10.1097/jco.0b013e318248da47.
 - **Fazzino TL, Hunter RC, Sporn N, Christifano DN, Befort CA. (2017):** Weight fluctuation during adulthood and weight gain since breast cancer diagnosis predict multiple dimensions of body image among rural breast cancer survivors. *Psychooncology*. 2017; 26:392–9.
 - **Gould O., et al (2001):** Visual Analogue Scale (VAS). *Journal of Clinical Nursing* 2001; 10:697-706
 - **Hong K., Son Y., & Chang H. (2018):** Trends in breast reconstruction: implications for the National Health Insurance Service. *Arch Plast Surg* 2018; 45:239–45.
 - **Jung KW., Won YJ., & Kong HJ. (2019):** Prediction of cancer incidence and mortality in Korea, 2019. *Cancer Res Treat* 2019; 51:431–7.
 - **Khan, S., Smeulders, M., Van der H., Chantal M. (2015):** Cochrane Wounds Group (ed.). "Wound drainage after plastic and reconstructive surgery of the breast". *Cochrane Database of Systematic Reviews* (10): CD007258.
 - **Korean Breast Cancer Societ (2018):** Breast cancer facts & figures 2018. Seoul: Korean Breast Cancer Society; 2018.
 - **Merril D. (2017):** Cultural Encyclopedia of the Breast. Rowman & Littlefield. p. 71. ISBN 978-0-7591-2332-8. Retrieved 12 August 2017.
 - **Ministry of Health & Welfare (2018):** Details on the criteria and method of application of allowance of medical care revision [Internet]. Sejong, Ministry of Health and Welfare; [cited 2018 Mar 27]. Available from: <http://www.mohw.go.kr/react/index.jsp>.
 - **National Health Insurance Service (HNIS) (2018):** National Health Insurance Program in Korea [Internet]. Wonju, NHIS; c2010 [cited 2018 Sep 6]. Available from: <https://www.nhis.or.kr/static/html/wbd/g/a/wbdga0401.html>.
 - **Nichter., L., Hardesty, R., & Anigian, G. (2018):** "IDEAL IMPLANT Structured Breast Implants: Core Study Results at 6 Years". *Plastic and Reconstructive Surgery*. 142 (1): 66–75. doi:10.1097/PRS.0000000000004460. PMC 6045953. PMID 29489559.
 - **Potter, S., Conroy, E., Williamson, P., Thrush, S., Whisker, L., Skillman, J., Nicola L., Cutress, R., Elizabeth M.; Mills, N., Mylvaganam, S., (2016):** "The iBRA (implant breast reconstruction evaluation) study: protocol for a prospective multi-centre cohort study to inform the feasibility, design and conduct of a pragmatic randomised clinical trial comparing new techniques of implant-based breast reconstruction". *Pilot and Feasibility Studies*. 2: 41. doi:10.1186/s40814-016-0085-8. ISSN 2055-5784. PMC 5154059. PMID 27965859.
 - **Powers KL., & Phillips LG., (2017):** Breast reconstruction. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, eds. *Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice*. 20th ed. Philadelphia, PA: Elsevier; 2017: chap 35.
 - **Rabin, Roni (2017).** "After Mastectomies, an Unexpected Blow: Numb New Breasts". *The New York Times*. ISSN 0362-4331. Retrieved 2017-03-31.
 - **Resar R., Pronovost P., Haraden C., & Simmonds T. (2005):** Using a bundle approach to improve ventilator care processes and reduce ventilator-associated pneumonia. *Joint Commission Journal on Quality and Patient Safety*. 2005; 31(5):243-248.
 - **Rita Davai N., Ganji K., Kalantar-Hormozi A., & Abbaszadeh-Kasbi A., (2018):** The impact of cosmetic surgery on married women's marital satisfaction and self-concept. *World J Plast Surg*. 2018; 7:171–8.
 - **Steiner C., Weiss A., Barrett M., Fingar K., Davis P. (2016):** "Trends in Bilateral and Unilateral Mastectomies in Hospital Inpatient and Ambulatory Settings, 2005–2013" (PDF). *HCUP Statistical Brief #201: 1–14*. Retrieved 7 March 2016.
 - **Steven K., & Thompson S., (2012):** Sample size, pp.: 59-60
 - **Stuiver MM., ten Tusscher MR., Agasi-Idenburg CS., Lucas C, Aaronson NK., Bossuyt P. (2015):** *Cochrane Database Syst Rev*. 2015 Feb 13;(2):CD009765. doi: 10.1002/14651858.CD009765.pub2.PMID: 25677413
 - **Xie Y., Tang Y., & Wehby G., (2015):** Federal health coverage mandates and health care utilization: the case of the Women's Health and Cancer Rights Act and use of breast reconstruction surgery. *J Womens Health (Larchmt)* 2015; 24:655–62.
 - **Zhou K., Wang D., Huo L., Wang W., (2016):** An J., Li M., Li X. *BMC Cancer*. Aug 31; 16 (1):698. doi: 10.1186/s12885-016-2726-y.PMID: 27576298