Effect of Postpartum Standardized Care Guidelines to Caesarean Section Women on Pain Relief and Satisfaction: Comparative Study

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ABSTRACT

Background: Postpartum care standards have demonstrated to enhance clinical outcomes for women who have caesarean delivery, as decrease pain, complications, hospital stays and improve clinical practice. Women's satisfaction is a key indicator of how well guidelines are implemented. **Aim:** This study aimed at assess the effect of postpartum standardized care guidelines to caesarean section women on their pain relief and satisfaction. **Subjects and method: Design:** Quasi-experimental study design was used. **Setting:** The study was conducted at obstetric and gynecologic department, Alazher university hospital in Damietta governorate. **Subjects:** A total of 125 women underwent cesarean section operation divided into two groups were recruited. **Tools of data collection:** Structured interviewing questionnaire, follow-up observation checklist and women's satisfaction Likert scale were used. **Results**: Statistically significant differences observed between study group and control group ($p = 0.001$), as the study group were more likely to start early oral fluid, initiate regular diet, less exposed to complications and more likely to mobilize less than 6 hours (100.0%). Mean scores of pain in first 24 hours were lower in the study group (2.46±1.58) than in the control group (3.50±1.76). In addition, women in the study group were more satisfied with all aspects of postpartum guidelines (64.35±13.67) than women in the control group (63.34±12.67). **Conclusion:** Implementation of postoperative guidelines among caesarean delivery women was found to be beneficial in relief postoperative pain, complications and increase women's satisfaction. **Recommendations:** Postpartum standard care guidelines should be incorporated into the postoperative management protocol at all government hospitals.

Keyword: Caesarean Section, Postpartum guidelines, Pain relief, Satisfaction.

INTRODUCTION

The cesarean section (CS) is one of the most popular surgical procedures. The caesarean rate has increased dramatically over the world, and now exceeds 30%. The caesarean birth rate in Egypt has risen dramatically from 27.6% in 2010 to 55% in 2016. (Martin, 2016 ; Al-Rifai & Aziz, 2018).

In Egypt, the use of C-sections has increased significantly. A C-section is estimated to be used in one out of every six births in Egypt nowadays. This amount is about three times larger than it was in the early 1990s, and it poses a number of therapeutic, moral, and financial concerns (Awadalla, 2016).

Pain, wound separation/infection, gastrointestinal dysfunction, and deep venous thrombosis are the most common CS consequences. Pain is one of the most serious effects since it is a risk factor for other problems and the leading cause of worry and depression in patients (Quinlan & Murphy, 2015). In addition, poor post-operative acute pain management can lead to the development of chronic pain; this happens in 10%–50% of patients following various common operations, and 2%–13% of patients are still in pain two years later (Meissner et al., 2015).

Postpartum care standards have been demonstrated to enhance clinical outcomes for women who have had a caesarean delivery, such as decrease pain, shorter hospital stays, less complications, lower morbidity, and fewer readmissions. Improve the health-care system's benefits, such as clinical practice and cost reduction (Macones et al., 2019).

Postpartum care guidelines are effective tools that have been adopted by hospitals and healthcare systems around the world to increase patient safety and surgical treatment quality. Early mobilization, early reintroduction of nutrition, and speedy discharge have all been demonstrated to be feasible and advantageous for a substantial percentage of postoperative patients (Brindle, Nelson, Lobo, Ljungqvist & Gustafsson, 2020).

Women's satisfaction throughout their hospital stay could be used to analyze the impact of the postpartum care guidelines on them (Cabellos et al., 2018). Women's satisfaction with medical services is an important measure of healthcare service quality and monitoring. Women's satisfaction with healthcare services is regarded an essential component of health policies, and it plays a critical role in improving healthcare services. Furthermore, due to the indirect influence of psychological and mental variables in

supporting good healthcare, patient satisfaction gives the necessary information to improve care services (Varghese, Rajagopal, 2013).

The impact of postpartum care standards on pain treatment and women's satisfaction, on the other hand, is yet unknown, and few research have looked into it (Aljabri et al., 2020). An increasing body of evidence, including randomized controlled studies Adamina et al. (2011), has shown that following postpartum care guidelines speeds recovery and saves morbidity and expense while maintaining women's satisfaction and quality of life. Few studies have assessed postpartum care guidelines in caesarean section surgery, and the majority of cohorts were small and only included women who had postpartum problems (Heeba, Nasr & Ali Abou Elsadat, 2019).

Nursing staff serves as essential coordinators in the enhancement of hospital efficiency and resource optimization. The role of the maternity nurse in the creation and implementation of postpartum care guidelines is crucial (Smeltzer et al, 2010). Therefore, this study was conducted to assess the effect of postpartum care guidelines on pain relief for women undergoing caesarean section and their satisfaction.

Significance of study:

Following postpartum standardized care guidelines, which might be administered by a maternity nurse after caesarean section surgery, could enhance postoperative outcomes significantly. These include a faster recovery of gastrointestinal function, better pain relief with less opiate prescriptions, a shorter hospital stay, and high woman satisfaction with significant cost savings while reducing level complication and readmission rates (Aljabri et al., 2020)..

Few studies have examined at postpartum standardized care guidelines in women who have had caesarean sections, and the majority of cohorts were small and only included women who experienced postpartum problems (Heeba, Nasr & Ali Abou Elsadat, 2019). In the meantime, no research has been done on this topic at the Alazher university hospital in Damietta. Therefore, this study aims to assess the effect of postpartum standardized care guidelines to caesarean section women on their pain relief and satisfaction at Alazher university hospital located in Damietta.

AIM OF STUDY

The aim of the present study is to; assess the effect of postpartum standardized care guidelines to caesarean section women on their pain relief and satisfaction.

Specific Objectives

- Implementing postpartum standardized care guidelines on caesarean section women with pain.
- Assess the effect of postpartum standardized care guidelines on pain relief of caesarean section women's.
- Explore satisfaction of caesarean section women's with postpartum standardized care guidelines.

Research Hypothesis

- Women who received the standardized care guidelines following CS experience less postoperative pain and more satisfaction than those who only received routine nursing care of the hospital.

SUBJECTS AND METHOD

(I) Technical Design:

- **Research design:-**

Quasi-experimental study design was used in this study.

- **Study setting:-**

The research was conducted at obstetric and gynecologic department of Alazher University Hospital located in Damietta. This hospital was chosen because it offers both low-cost and high-cost health care to women with obstetrical difficulties, and the study's delivery turnover is adequate.

Target population:-

All parturient women whose underwent caesarean section were eligible to recruiting in the study

Sample size

A total of 125 women were purposively recruited in the study according the following criteria.

Inclusion criteria:-

Full-term pregnancy (36-40 W) at reproductive age 20-35 years, elective caesarean birth, no medical, obstetrical, or gynecological history.

Sample technique

The sample size was determined using the following formula.

$$N = \frac{2Pq\ (ZQ\backslash 2 + ZB)\ 2}{(P1 + P2)\ 2}$$

Where:-

N = Sample size

P = (P1 + P2) /2

Q = 1- P

Z Q = 1.96

Z B = 0.84

As a result, the sample size is expected to be 57 women. The sample size was raised to 63 women each group after adjusting for a 10% dropout rate. The sample size was expected to be 125 women in order to detect a difference in postoperative complication rates for women receiving CS (P1=25%) and applying the calculation for the differences between two proportions, the predicted rate in the clinical guidelines (P2= 10%) with a 95 percent degree of confidence (& error = 5%) and a research power of 80 percent (B error = 20 percent) (Schlesselman , 1982).

The study participants were divided into two equal groups, each with 63 parturient women:

Group A (the study group); who are given postoperative standardized care guidelines on feeding, nausea and vomiting avoidance, postoperative analgesia, nutritional care, glucose management, thrombosis prevention, early mobilization, urinary drainage, and discharge counseling.

Group B (the control group); who had a caesarean section and received routine hospital care afterward.

- **Tools for data collection:-**

Three tools were used by researcher for data collection:-

The first tool: structured interviewing questionnaire

It was created by researcher primarily for women in order to acquire the essential data from both groups. It includes:

- Socio-demographic data such as: - women's name, age, education, occupation, address and telephone number.
- Obstetric history which included :- Gravidity , parity , number of living children, number of abortions, type of previous deliveries, history of present pregnancy and delivery.
- History of previous labor such as: type of last delivery, place of delivery, occurrence of complications and its types (as: obstructed labour, premature membrane rupture, antenatal hemorrhage, septicemia, perineal tear and stillbirth).

The second tool: follow up observation checklist

It was adopted from Heeba, Nasr & Ali Abou Elsadat (2019) in English language and modified by researcher to assess effect of postpartum standardized care guidelines on their pain relief of caesarean section women's. It divided into four parts:

(1) Postoperative physical care:-

This was utilized to document of the post-cesarean physical care given to the women's by the study group's researcher. Checking vital signs, recording intake and output, starting a regular diet, elimination, uterine status, and the need for extra analgesics on the first and second days post caesarean were all covered. Also, in the control group, document of the hospital's postoperative physical care provided to the women's.

(2) Postoperative physical activity:-

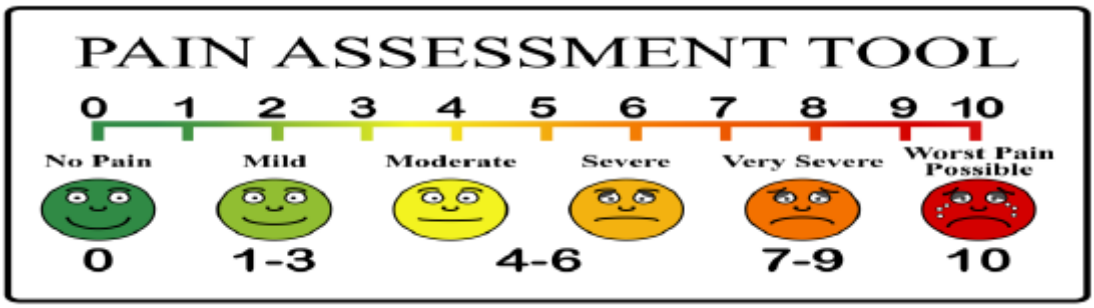
This was required to document women's postoperative practices, such as the first time they sit, body cleansing and mobilization, the start of breast feeding, emotional interaction, and exercise after caesarean delivery.

(3) Postpartum complications and length of hospital stay:-

In order to document postoperative women's health problems in both groups, this was important. Such as nausea, vomiting, urinary retention, wound bleeding, vaginal bleeding, breast engorgement, sub involution, pulmonary difficulties, stomach distension and constipation, hemorrhoid, D.V.T, and any other small or significant problems during the first and second days after caesarean delivery. Also, document length of hospital stay.

(4) Visual Analogue Scale (VAS): for measuring pain after a caesarean section it consists of a 10-cm line with statements such as (no pain) and (worst agonizing pain possibly) attached at each end. The line can be vertical or horizontal. The pain score is the precise length in cm of the segment between zero and the checked point. The researchers utilized a scale created by Crichton (2001) that was separated into three colours according to the degree of pain severity;

mild pain was coloured green, moderate pain was coloured orange, and severe pain was coloured red to make it easier for parturient women to understand. The researcher measured pain in 24h and 48h post caesarean at rest and motion.



Crichton, N. (2001). Visual analogue scale (VAS). *J Clin Nurs*, *10*(5), 706-6.

Scoring system:

For the control and study groups, a correct response was scored 1 and an incorrect response was scored zero for each part, the scores of the items were added up, and the total was divided by the number of items, yielding a mean score for the part. The mean and standard deviations of these scores were calculated after they were transformed to a percent score. If the percent score was 60% or more, the skill performance was regarded satisfactory; if it was less than 60%, it was considered unsatisfactory.

The third tool:- women's satisfaction likert scale

This tool provides a satisfaction survey for postpartum care guidelines for women. It was created in English by Rajeswari (2011) and used for the study group at the end of the program. It contains 38 items that evaluate seven domains, including the surrounding environment, cleanliness, communication, physical care, care maintenance, psychological care, and patient approval in procedures.

Scoring system:

Each item was graded on a 3-point Likert scale, with satisfied receiving a 3, uncertain receiving a 2, and unsatisfied receiving a 1. (1). The responses range from 38 to 114. According on the total women's responses on the sheet, a total women satisfaction score will be calculated. If the women's overall score ranged from 77 to 114, they were deemed satisfied. If the women's overall score is 76, their stratification will be considered questionable. It was judged dissatisfied if the total number of women scored 75 or less.

B- Administrative design:

The director of the chosen topic of study received an official letter from the dean of the nursing faculty. The director of the chosen setting was contacted and informed in order to gain permission to use the patients and nurses in this study. Participants were promised that any information acquired would be kept private.

(II) Operational Design:

The researcher read local and worldwide literature to learn more about the study during this phase. This also aided in the creation of the research instruments.

Validity:

The content validity of the tools was tested by a panel of 9 specialists in the field of Obstetrics and Gynecological Medicine, as well as nursing faculty staff. There were two parts to it:

A- Expert comments were recorded on a two-point scale for each item: relevant, not relevant, and clear, not clear.

B- The general or overall impression of the form.

They were asked to share thoughts and comments on the tool, as well as any suggestions for item additions or exclusions. Then the appropriate changes were made. Based on their judgment, changes were made where needed.

Reliability:

Cronbach's Alpha coefficient test found r = 0.73 for interviewing questionnaire, r = 0.87 for observation checklist, and r = 0.92 for satisfaction likert scale, which indicate that more reliable tools were utilized.

Ethical consideration

During all phases of the study, all ethical issues were considered, and the subjects' anonymity and confidentiality were protected. Before participating in the study, the researcher introduced herself to the women and briefly discussed the nature and purpose of the investigation. Women were told that the study maneuver would cause no actual or possible harm to them. They were also guaranteed that professional assistance would be provided for her whenever she needed it. Women were also promised that any information they provided throughout the study would be kept private and utilized specifically for research purposes.

*** Pilot study:-**

A ten percent sample of women's was used in a pilot research. The major goal of the pilot study was to see if the tools were clear, feasible, and applicable, as well as to see if they were intelligible, and to figure out how long it would take to fill them out. The tool was completed and collected by the researcher. It took me between 20 and 30 minutes to finish the questionnaire form. This was a women's group. The time it took to complete the questionnaire sheet was between 20 and 30 minutes. This group of women was not included in the study.

Field study of this work was carried out through five phases:

Review of literature and data gathering tools, as well as monitoring and evaluating women's performance using a follow-up sheet.

*** Phase (1):- planing.**

In addition, the researcher made a comprehensive search of the literature review, primarily governmental papers, with an emphasis on caesarean section and its complications.

*** Phase (2):- Interviewing schedule for the mother:-**

From 2:00 p.m. to 9:00 p.m., the researcher visited the inpatient unit. This was done four times a week until the sample size reached 125 women. At the time of admission to the inpatient ward, each woman was interviewed. Before instructing, the investigator introduced her to the mothers and explained the study's purpose in a simple manner. The interview, which lasted about 20 minutes, was began by the researcher. The research was carried out between October 2020 and March 2021.

The researcher followed up with the women every day until they were discharged to look for any problems, particularly pain that might occur during their stay in the hospital. The women were followed up on using a checklist, which was completed for each mother on the first and second days after the caesarean section.

*** Phase (3):- Nursing intervention booklet: -**

Cesarean section nursing booklet was created and given to study group during the last month of pregnancy, at antennal visit. It contains information about the following topics: definition of cesarean section, indications, types, the benefits, dangers, and complications, as well as immediate and long-term medical and psychological treatment following the procedure.

*** Phase (4):- Implementation phase**

Women who met the sample inclusion criteria were assigned to the control group and received routine hospital treatment. The intervention group was then assigned to women who

met the inclusion criteria and received standard guidelines of postpartum care following the operation. According to the aforementioned schedule, physical assessments, care offered, complications and pain faced were all recorded for women's in both groups.

*** Phase (5):- Evaluation phase:-**

This phase began immediately following the operation and after standard guidelines of postpartum care provided for study group. All parameters of the standard guidelines management, as well as their impact on the postoperative pain, were recorded for comparison between the study and control groups.

Statistical design

SPSS for Windows version 20.0 was used for all statistical analyses (SPSS, Chicago, IL). Prior to any calculations, the data were checked for normality of distribution. Because all continuous data were normally distributed, they were reported in mean standard deviation (SD). Numbers and percentages were used to express categorical data. For variables with continuous data, the comparisons were made using the Student's t test, whereas for variables with categorical data, the chi-square test was utilized. The baseline for statistical significance was established at p0.05.

RESULTS

The results reveal that women in the study group had a mean age ± SD of 25.6 ± 5.6, compared to 27.2 ± 3.9 in the control group. Meanwhile, less than half of the women in the study group (42.8%) had a university or higher education, and less than a third of the women in the control group had a secondary education (28.6%).

Also, majority of women in the study group (98.4%) and the control group (100%) were married. More than a third of the women in the research and control groups were housewives (77.8% and 66.7%, respectively) and lived in rural areas (65.1% vs. 66.7% respectively). Furthermore, more than a third of them in both groups (61.9%) had enough family income, with a statistically significant difference between the two groups.

Distribution of the studied caesarean section women according to their history of previous labor between study and control group was shown in **table 1.** It indicates that the majority of women in the study and control groups (88.6% and 85.0 percent, respectively) had CS and delivered birth in a hospital (74.3% & 72.5% respectively). Furthermore, more than a third of women in both the study and control groups (40.0% vs. 42.5%, respectively) had

previous labour complications, the most common of which were obstructed labour (64.4% vs. 17.6%, respectively) and premature membrane rupture (21.4% vs. 70.6% respectively).

Table (2): shows the caesarean section women vital signs at first day between study and control group. It reveals that between the study and control groups, women's temperature, pulse, respiration, and blood pressure were all within normal ranges on the first day. However, women in the control group were more likely than typical to have a diastolic decline in the first hour (60.50 ± 11.69). There was also a statistically significant difference in pulse rate, systolic and diastolic blood pressure between the two groups.

The results of care provided for caesarean section women in both study and control groups**,** are shown in **table 3**. It indicates that women in the study group were significantly (P=0.001) more able than those in the control group to start oral fluid intake within the first two hours after surgery (55.6% vs. 11.1%, respectively).

Meanwhile, more than half of the women in the study group (57.2%) start a regular diet within the first 24 hours following surgery, compared to 19.0 percent in the control group, a highly significant difference (P=0.001*). In addition, the majority of women in the study group were less likely to be subjected to difficult elimination than those in the control group, with a highly significant difference between the two groups (P=0.001*).

Table (4): points distribution of the studied caesarean section women according to their examinations of uterus condition. It’s evident that uterine condition, fundus level and blood loss was partially similar between both groups at first, second day after cesarean with statistical significant difference.

Distribution of the studied caesarean section women according to their physical activity**,** are shown in **table 5**. It shows that over two-thirds of women in the study group (60.0%) started sitting for the first time in less than two hours, compared to only one-fourth (25.5%) of the control group with a statistically significant difference (P=0.001). In addition, women in the study group were more likely to get out of bed after the surgery in less than 2 hours (100.0%) than women in the control group (60%). Meanwhile, more than half of women in the study group (58.7 percent) start breastfeeding within two hours post C/S, compared to 6.3 percent in the control group with a statistically significant difference (P=0.001).

At the same table, women in the study group had more emotional contact with their newborn babies (73.1 percent vs. 7.9 percent), with a statistically significant difference

(P=0.001). The majority of women in the study groups (92%) exercised regularly, compared to 50.7 percent in the control group, which was statistically significant (P=0.001). The most common exercises in the study group were respiratory, pelvic floor, and leg exercises, with a higher percentage in the study group than the control group (98.2%, 91.4%, 17.2% vs. 6.3%, 25%, 0.0% respectively).

Table (6): shows distribution of the studied caesarean section women according to their complications during the follow up schedule and length of hospital stay. Its evident that, When compared to the study group, the control group had a higher rate of postpartum complications on the first day. Meanwhile, nausea and vomiting (84.1% & 38.1% vs. 60.3% & 23.8%, respectively), abdominal distension & constipation (73.0 % vs. 33.3%), wound bleeding (6.3% vs. 4.8 %), and D.V.T. (1.6% vs. 0.0%). All had statistically significant differences (P=0.001).

In the same table, the control group had a higher rate of postpartum complications on the second day than the study group. Abdominal distension and constipation (46% vs. 22.2%), hemorrhoid (17.5% vs. 14.3%), breast engorgement (12.7% vs. 4.8%), pulmonary complication and D.V.T. (3.2% vs. 0.0%), and wound bleeding (1.6% vs. 0.0%) with statistically significant differences (P=0.001). Furthermore, the average length of hospital stay in the control group (1.8±0.6) was significantly longer than in the study group (1.2±0.5), with a statistically significant difference (P=0.001).

Table (7): shows distribution of the studied women according to their pain experienced between the study and control group. It's evident that both at rest and on motion, the study group's VAS pain scores levels were significantly lower than the control group's at 24 and 48 hours after surgery. Because just one patient in each group required additional analgesics, the difference in the need for further analgesics was not significant.

Table (8): Describes distribution of the studied caesarean section women according to their satisfaction mean about care provided. It is clear that women in study group were satisfied more with all seven aspects of standardized care guidelines with a mean of 64.35 ± 13.67 compared to 63.34 ± 12.67 in control group who receive routine care and there were statistically significant improvement (P=0.0002).

Table 1: Distribution of the studied caesarean section women according to their history of previous labor (n = 75)

Variables	Study (n=35)		Control (n=40)		X^2	P value
	No	%	No	%		
Mode of last delivery						
Vaginal	4	11.4	6	15.0	3.902	0.142
Cesarean section	31	88.6	34	85.0		
Place of delivery						
Hospital	26	74.3	29	72.5	1.348	0.246
Private clinic	9	25.7	11	27.5		
History of complications						
Yes	14	40.0	17	42.5	4.660	0.324
No	21	60.0	23	57.5		
Type of complications	[n=14]		[n=17]			
Obstructed labor	9	64.4	3	17.6		
Premature rupture of membrane	3	21.4	12	70.6	5.308	0.151
Intranatal hemorrhage	1	7.1	2	11.8		
Septicemia	1	7.1	0	0		
Perineal tear	0	0.0	0	0		
Stillbirth	0	0.0	0	0		

X2: Chi-Square test *** Significant at P ≤0.05**

Table 2: Distribution of the studied caesarean section women according to their vital signs on first day (n = 125)

Vital signs	Group A (n=63)	Group B (n=63)	t	P value
	Mean ± SD	Mean ± SD		
Temperature				
Mean ± SD.	36.96 ± 0.27	37.10 ± 0.27	0.175	0.761
Respiratory rate (c/m)				
			0.266	0.691
Mean ± SD.	18.09 ± 1.46	17.55 ± 1.76		
Pulse rate (b/m)				
			2.931	0.004*
Mean ± SD.	78.38 ± 7.43	77.72 ± 7.06		
Blood Pressure (mmHg)				
Systolic				0.001*
			12.674	
Mean ± SD.	113.1 ± 15.10	112.04 ± 13.63		
Diastolic				
			25.243	0.001*
Mean ± SD	72.24 ± 10.56	. 60.50 ± 11.69		

t values for Student t-test for comparing between the two groups

***: Statistically significant at p ≤ 0.05**

Table 3: Distribution of the studied caesarean section women according to their results of care provided to them (n = 125)

Results of observation		Study (n=63)		Control (n=63)		X^2	P value
		No	%	No	%		
Onset of fluid intake							
<2 hours from C/S		35	55.6	7	11.1	48.913	0.001*
2+ hours from C/S		28	44.4	56	88.9		
Onset of regular diet							
<12 hours from C/S		23	36.5	2	3.2		
12-24 hours from C/S		36	57.2	12	19.0	70.862	0.001*
>24 hours from C/S		4	6.3	49	77.8		
Elimination							
1st	Non	61	96.8	63	100		
day	Difficult	1	1.6	0	0.0	MCP=0.219	0.001*
	Easy	1	1.6	0	0.0		
2nd	Non	2	3.2	1	1.6		
day	Difficult	32	50.8	61	96.8	MCP<0.0001	0.001*
	Easy	29	46	1	1.6		

X2: Chi-Square test MCP: Monte Carlo test * Significant at P ≤0.05

Table 4: - Distribution of the studied caesarean section women according to their examinations of uterus condition (n = 125)

Results of observation		Study (n=63)		Control (n=63)		X^2	P value
		No	%	No	%		
Uterus condition							
1st day	Contracted	62	98.4	61	96.8	1.211	0.041*
	Un-contracted	1	1.6	2	3.2		
2nd day	Contracted	63	100	61	96.8	1.0	0.021*
	Un-contracted	0	0	2	3.2		
Funds level condition							
1st day	Normal	62	98.4	61	96.8	1.211	0.041*
	Abnormal	1	1.6	2	3.2		
2nd day	Normal	63	100	61	96.8	1.00	0.021*
	Abnormal	0	0	2	3.2		
Blood loss (pads/ day)	No of pads						
1st day	2-3	22	34.9	19	30.1	0.26	0.017*
	4-5	41	65.1	42	66.7		
	5+	0	0.0	2	3.2		
2nd day	2-3	59	93.7	60	95.2	0.26	0.006*
	4-5	4	6.3	3	4.8		

X2: Chi-Square test *** Significant at P ≤0.05**

Table 5: Distribution of the studied caesarean section women according to their physical activity (n = 125)

Results of observation	Group A (n=63)		Group B (n=63)		X^2	P value
	No.	%	No.	%		
First time of sitting (hours)						
<2	38	60	16	25	22.294	0.001*
2-4	25	40	33	52		
>4	0	0	14	23		
First time of ambulation out of bed/ mobilization (hours)					27.378	0.001*
<6	63	100	38	60		
6-12	0	0	22	34.4		
>12	0	0	3	5.6		
Onset of breast feeding (hours)						
<2 hours from C/S	37	58.7	4	6.3	13.306	0.001*
2+ hours from C/S	23	36.5	52	82.5		
No breast feeding	3	4.8	7	11.2		
Onset of emotional contact (hours)						
<2 hours from C/S	46	73.1	5	7.9	1.211	0.001*
2+ hours from C/S	13	20.6	14	22.3		
No contact	4	6.3	44	69.9		
Practice exercise after cesarean section						
No	5	8.0	31	49,2	212.962	0.001*
Yes	58	92.0	32	50.7		
Type of Exercises	n=58		n=32			
Respiratory	57	98.2	2	6.3		
Pelvic floor	53	91.4	8	25	103.306	0.001*
Leg exercise	10	17.2	0	0		
Regular walking	1	1.7	0	0		

X2: Chi-Square test *** Significant at P ≤0.05**

Table 6: Distribution of the studied caesarean section women according to their complications during the follow up schedule and length of hospital stay (n = 125)

Results of observation	Study (n=63)		Control B (n=63)		X^2	P value
	No.	%	No.	%		
Complications At 1st day						
Nausea	38	60.3	53	84.1	6.146	0.001*
Vomiting	15	23.8	24	38.1	193.14	0.001*
Urine retention	0	0.0	1	1.6	0.498	0.001*
Wound bleeding	3	4.8	4	6.3	1.211	0.001*
Vaginal bleeding	0	0.0	1	1.6	0.048	0.001*
Breast engorgement	6	9.5	6	9.5	0.489	0.001*
Sub-involution	0	0.0	2	3.1	0.467	0.010
Pulmonary complications	0	0.0	2	3.1	0.122	0.43
Abdominal Distension& Constipation	21	33.3	46	73.0	23.56	0.001*
Hemorrhoid	1	1.6	3	4.8	0.498	0.03
Complications At 2nd day						
UTI	0	0.0	1	1.6	0.048	0.498
Wound bleeding	0	0.0	1	1.6	0.456	0.026*
Breast engorgement	3	4.8	8	12.7	4.98	1.0
Abscess	1	1.6	1	1.6	2.294	0.029*
D.V.T	0	0.0	2	3.2	3.306	1.0
Pulmonary complications	0	0.0	2	3.2	0.421	0.029*
Abdominal Distension& Constipation	14	22.2	29	46	13.03	0.001*
Hemorrhoid	9	14.3	11	17.5	0.476	0.247
Length of hospital stay (days)					T	p
Mean ± SD	1.2±0.5		1.8±0.6		4.911	0.001*

X2: Chi-Square test *** Significant at P ≤0.05**

Table 7: Distribution of the studied caesarean section women according to their pain VAS experienced between the study and control group (n = 125)

Results of observation	Group A (n=63) mean ± SD	Group B (n=63) mean ± SD	t	P value
Rest in 24 h	2.46 ± 1.58	3.50 ± 1.76	1.211	0.001*
Motion in 24 h	3.38 ± 2.10	4.74 ± 1.90	1.211	0.001*
Rest in 48 h	2.00 ± 1.65	2.60 ± 1.57	1.00	0.007*
Motion in 48 h	2.77 ± 2.01	3.50 ± 1.65	1.00	0.007*
Requirement of extra analgesics	1 (0.89%)	1 (0.96%)	0.26	1.000

t values for Student t-test for comparing between the two groups

*** Significant at P ≤0.05**

Table 8: Distribution of the studied caesarean section women according to their satisfaction mean about care provided (n=63)

Variable	Group A (n=63)	Group B (n=63)	t	P value
First: Surrounding Environment				
Range.	8.0 – 24.0	8.0 – 23.0		
Mean ± SD.	16.20 ± 4.55	15.20 ± 4.55	3.50	0.0007*
Second: Cleanliness				
Range.	4.0 – 12.0	4.0 – 11.0	5.02	.0001*
Mean ± SD.	5.56 ± 2.27	5.50 ± 2.29		
Third: Communication Item				
Range	7.0 – 21.0	7.0 – 20.0	6.48	.0001*
Mean ± SD.	10.62 ± 3.66	10.52 ± 3.46		
Forth: Physical care				
Range	6.0 – 16.0	6.0 – 15.0	5.15	.0001*
Mean ± SD.	10.26 ± 2.35	9.20 ± 2.36		
Fifth: Care maintenance				
Range	4.0 – 13.0	4.0 – 12.0	3.38	.0001*
Mean ± SD.	6.05 ± 2.04	5.03 ± 2.04		
Sixth: Psychiatric care:				
Range	4.0 – 13.0	4.0 – 12.0	2.99	0.0037*
Mean ± SD.	7.12 ± 2.32	6.10 ± 2.32		
Seventh: Patient approval in procedures				
Range	5.0 – 15.0	5.0 – 14.0	2.87	.0052*
Mean ± SD.	8.63 ± 2.30	7.53 ± 2.20		
Overall satisfaction				
Range	52.0 – 11.0	42.0 – 10.0	3.96	.0002*
Mean ± SD.	64.35 ± 13.67	63.34 ± 12.67		

DISCUSSION

In CS, postpartum standardized care guidelines were helpful in reducing postoperative pain, reducing the incidence of postoperative complications like nausea, improving maternal satisfaction, and lowering the average inpatient cost. Furthermore, following the postpartum care guidelines minimizes on the length of hospital stay and the occurrence of other postoperative problems (Pan et al., 2020).One of the major concerns of women undergoing surgery is pain. Poor post-operative acute pain management can lead to the development of chronic pain; this happens in 10%–50% of patients following various common operations, and 2%–13% of patients are still enduring pain two years later (Meissner et al., 2015). Therefore, the present research was based on study hypothesis that women who received the standardized care guidelines following CS experience less postoperative pain and more satisfied than those who only received routine nursing care of the hospital.

According to the current study, the history of previous labor of studied women showed that majority of women in two groups had CS, delivered birth in a hospital and more than a third of women in both the study and control groups had previous labour complications, the most common of which were obstructed labour, premature membrane rupture and antepartum hemorrhage. This may be due to the fact that there was a growth in the number of in vitro fertilization (IVF) pregnancies, altered family patterns, demanding patients, institutional births and referrals from rural hospitals or private clinics to tertiary care facilities.

In agreement with this, Patel et al. (2020), mentioned that in modern obstetrics, a caesarean section delivery is considered standard care. Institutionalization of childbirth has ostensibly made childbirth safer during the previous 70 years. Furthermore, it's possible that this is owing to the fact that the most notable rate of CS in recent years has been high (Ali, 2014).

The current study results revealed that, during the first day, nearly all of the women's vital indicators were within normal limits, including their heart rate, respiratory rate, and blood pressure Women in the control group, on the other hand, were more likely than typical to have a diastolic decrease. This could be linked to nursing interventions such as the use of cold compresses to treat fever and the provision of oral fluids. The most common type of anesthesia used for caesarean sections is spinal anesthesia. However, maternal hypotension is frequently connected with spinal anesthesia (Betrán et al, 2016).

Ali (2014) stressed the importance of appropriate fluid intake following surgery to replace blood lost during the operation as well as to maintain blood pressure and renal function. Women who have had CS should eat a good diet and drink plenty of water to recover quickly. Also, Gong et al. (2015) observed that the complete study group that began early feeding saw a rapid recovery of bowel function, as shown by the passage of flatus and bowel movement.

According to the findings of this study, women in the study group were significantly (P=0.001) more likely than those in the control group to start oral fluids within the first 2 hours after surgery. There was less vomiting and easier elimination in the intervention group than control (P=0.0001*). This may be due to the fact that, early hydration following a simple surgery CS is a risk-reduction strategy that does not raise the likelihood of gastrointestinal problems. In agreement with Wijk et al. (2014) who mentioned that the rate of ileus symptoms, the mean time gap between bowel movements, and the duration of IV fluid were all reduced by early hydration. Meanwhile, it leads to less thirst and hunger, successful breastfeeding, fewer side effects, faster wound healing, and a shorter hospital stay, all of which save money.

In this study, the majority of women in the study group were less likely to experience difficult elimination than those in the control group, with a very significant difference between the two groups (P=0.001*).This might be due to the fact that more than half of women in study group start oral fluid intake in less than two hours, great majority of them practice exercise and follow post operative guidelines. In the same line a study conducted in the Kingdom of Saudi Arabia about the effect of early oral hydration on post-cesarean outcomes, Sahar, Eman, and Haifa (2013) found that the experimental group had significantly earlier initiation of bowel sounds, with a median value of 3 hours vs. 6.5 hours in the control group. As a result, the bowel movement returned substantially earlier in the study group, with a median duration of 29 hours compared to 54 hours in the control group.

In the current study, the study group had better uterine contraction, normal fundal level, and lochia than the control group, with a significant difference between the two groups in favor of the former. This could be attributed to the fact that early mobilization and pelvic floor exercise practice. In addition, Robertson (2011) found a connection between uterine health and the risk of postpartum bleeding and puerperal infection during the postoperative period.

According to the findings of this study, over two-thirds of women in the study group started sitting for the first time in less than two hours, compared to only one-fourth of women

in the control group, a statistically significant difference (P=0.001). In agreement with the previous mentioned finding, failure to mobilize is a common cause of postpartum guidelines deviation, according to Vlug et al., (2012), and is related to increased length of stay.

Kim et al. (2013), on the other hand, found that early ambulation was not related to length of stay (LOS).The disparity between the previous research and the current one could be related to changes in hospital facilities, nursing staff knowledge, and practices.

The current study results revealed that, more than half of the women started lactating within the first two hours after C/S in the study group, compared to less than one-six in the control group. This may be due to nurse's rules in application of post cesarean section guidelines. This is supported by Hassan, Eldin, and Abd-Allah (2019) reported that more than half of the women in the study group started breastfeeding and bonding within four hours following the caesarean section.

Also, Barbara (2011) further mentioned that women who have undergone CS require ongoing counselling, support, and encouragement in the areas of postoperative care, food, exercise, wound care, and breast feeding during the postpartum period. This is congruence with the current study results that showed after the operation, there was a highly significant difference in favor of the study group in terms of the practice of respiratory, abdominal, and pelvic floor exercises (P= 0.001*). Since doing exercises like evidence based practice can help decrease postoperative problems like pulmonary troubles, DVT, elimination issues, and genital tract displacement and it's a good idea to do them (Ali, 2014).

Regarding postoperative complications, the current study found that women in the study group were less likely than those in the control group to had complications. In comparison to the control group, Modesitt et al. (2016) found that the study's complications rate in study group was lower those in control group. This conclusion is consistent with the current finding that women in the study group were less likely than those in the control group to experience problems such as stomach cramps, distension, and constipation.

However, Varadhan et al. (2010), on the other hand, found no significant variations in the rates of problems between the two groups. Wijk et al., (2014) reached the same conclusion, indicating that there was no difference in the incidence of postoperative problems between the improved recovery and control groups. The differences between the above-mentioned research and the current one could be attributable to differences in sample design and sample selection procedures.

In regards of length of stay (LOS), the current study found that the study group's average hospitalization time was significantly lower than that of the control group. This is

may be due to the fact that standardized care guidelines were successful in improving women's health and resulting in early hospital discharge. This is in line with the study of Masoud & Ayat (2013) which conducted in Assuit-Egypt, "postpartum health problems encountered among women undergoing cesarean section and nursing implications," and found that majority of women stayed less than two days in the hospital.

Evidence shows that improper postoperative pain relief has negative physiological and psychological consequences for patients, increases morbidity, mortality, and re-admission for pain management, prolongs hospitalization, and delays patients' return to normal activities, all of which result in higher costs (Cadavid-Puentes et al., 2013). In line with this, Modesitt et al. (2016) observed that on postoperative, the median pain scores were deceased in study group (5 compared to 3.7) in the control group, p=.001.

Also, Ramdan (2014) explored postoperative pain following CS and discovered that it is frequently overestimated, despite the fact that it might be easily relieved with evidence based pain treatment techniques. This is corroborated by the current study, which found that the study group's visual analogue scale (VAS) pain scores were significantly lower than the control group's, both at rest and on motion, at both 24 and 48 hours after CS operation. This could be due to the fact that standardized care guidelines were effective in reduce post operative pain and enhance women's outcomes.

Finally, the current study's findings observed that women were satisfied more with all seven dimensions of standardized care guidelines provided in study group compared to control group who receive routine hospital care. This might be due to the fact that standardized care guidelines were successful in relief pain, increase women's outcomes and consequently enhance satisfaction. Minig et al., (2009) indicated that post-operative satisfaction was considerably higher in the study group (82.8 vs. 71.7, p=0.001) than in the control group, and recommended that postpartum clinical guidelines should be implemented following surgery.

Moreover, Women's satisfaction with clinical interventions are important factor to consider while evaluating them. Women's satisfaction might be lowered due to a variety of causes. Aside from pain, adverse reactions, and wound healing, mother concerns include family and medical support, breastfeeding success, and skin-to-skin contact with the newborn. The application of postpartum clinical guidelines is a desirable and comprehensive answer to these issues (Moore, Bergman, Anderson & Medley, 2016).

CONCLUSION

In conclusion, implementing postpartum standard care guidelines in women undergoing elective CS were effective in relief postoperative pain, enhanced pain management, decreased the incidence of postoperative problems, duration of hospital stay and increased women satisfaction.

RECOMMENDATIONS

- Successful postpartum standard care guidelines should be incorporated into the postoperative treatment protocol at the study site and in other government hospitals.
- Health care settings should emphasize the importance of coordination amongst health care personnel relating to the use of the evidenced core parts of standard care guidelines management.
- More study utilizing alternative protocols is suggested.

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تأثير إرشادات رعاية ما بعد الولادة على النساء اللاتي يخضعن لعمليات الولادة القيصرية على تخفيف الآلام والرضا: دراسة مقارنة

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الخلاصة

أثبتت إرشادات الرعاية بعد الولادة أنها تعزز النتائج السريرية للنساء اللاتي خضعن لعملية الولادة القيصرية ، مثل تقليل الألم والمضاعفات ومدة الإقامة في المستشفى وتحسين الممارسة السريرية للتمريض. رضا المرأة هو مؤشر رئيسي على مدى جودة تنفيذ تلك المعايير. هدفت هذه الدراسة إلى تقييم تأثير إرشادات الرعاية بعد الولادة على النساء اللاتي يخضعن لعمليات الولادة القيصرية على تخفيف الآلام والرضا. نوع الدراسة: تم استخدام دراسة شبه تجريبية. المكان: أجريت الدراسة بقسم أمراض النساء والتوليد بمستشفى الأزهر الجامعي بمحافظة دمياط. عينة البحث: إجمالى عدد السيدات 125 سيدة اللاتي خضعن لعملية الولادة القيصرية تم تقسيمهن إلى مجموعتين. أدوات جمع البيانات: تم استخدام استبيان المقابلات المنظم وقائمة ملاحظة و متابعة السيدات ومقياس ليكرت لرضا النساء. النتائج: لوحظ وجود فروق ذات دلالة إحصائية بين مجموعة الدراسة والمجموعة الضابطة ($p = 0.001$) ، حيث بدأت مجموعة الدراسة في تناول السوائل عن طريق الفم مبكرًا ، ونظام غذائي منتظم ، وأقل تعرضًا للمضاعفات ، وبدء في الحركة أقل من 6 ساعات (100.0 ٪). كان متوسط درجات الألم في الـ 24 ساعة الأولى أقل في مجموعة الدراسة (2.46 ± 1.58) مقارنة بمجموعة التحكم (3.50 ± 1.76). بالإضافة إلى ذلك ، كانت النساء في مجموعة الدراسة أكثر رضا عن جميع جوانب إرشادات ما بعد الولادة (64.35 ± 13.67) من النساء في المجموعة الضابطة (63.34 ± 12.67). الخلاصة: تنفيذ إرشادات ما بعد الولادة للسيدات الخاضعات لعملية الولادة القيصرية وجد أنه مفيد في تخفيف آلام ما بعد الولادة ، والمضاعفات وزيادة رضا السيدات. التوصيات: ارشادات رعاية ما بعد الولادة يجب أن تدمج في بروتوكولات رعاية جميع المستشفيات الحكومية.

الكلمات المرشدة: الولادة القيصرية ، إرشادات ما بعد الولادة ، تخفيف الآلام ، الرضا.