Effectiveness of Standard Post-operative Wound Care After LSCS Among Women: An Original Article

Prabha Kumari[1], Dr. Maharaj Singh[2*], Dr. Bani Sarkar[3]

[1] *Ph.D. Nursing scholar, Nims University Rajasthan, Jaipur*
[2] *Professor Cum Vice-Principal, Nims Nursing College, Nims University Rajasthan, Jaipur. Email Id: maharaj2009@yahoo.com*
[3] *Professor &; Ex. HOD, Department of Obstetrics and gynecology, Dr. RML Hospital, New Delhi*
** Corresponding Author: Dr. Maharaj Singh*

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ABSTRACT
Introduction: A wound develops when the normal structure and function of skin and soft tissue are disrupted as a result of many etiology and causes. Surgical site infection (SSI) is the most common complication after any operative procedure. So functional outcome leads to prolonged hospitalization, direct cost-associated readmission. SSI preventable advocate standard post-op care and participation in self-management wound care post-operative women. The aims of this study is effectiveness of standard post-operative wound care after LSCS among women. The Objective is to assess the effectiveness of post-operative care on post-operative outcomes among women regarding wound care who had undergone LSCS.
Material and methods: A time series research design was used to assess the effectiveness of standard care among 24 women (12 in the control and 12 in the experimental group) admitted in the ward. This study has selected non-probable purposive sampling to choose women. Self-structured and standard tools were used to collect the data. Data analysis was performed in SPSS version 21.
Result: The study findings revealed that there was a significant improvement in experimental group in terms of wound care.
Conclusion: From this study, it can be concluded that standard post-operative care after LSCS plays an important and beneficial role in improving the biophysiological health parameters of postnatal mothers.

1. Introduction

In recent decades, caesarean births have grown to be a significant global public health concern. The most prevalent surgical treatment in the world that successfully reduces mother and infant mortality when performed for medically necessary reasons is the caesarean section (CS)[(1)]. A significant public health hazard arises as the rate of CS delivery increases. This is due to the fact that CS delivery has been linked to both immediate and long-term health issues for mothers, infants, and their families when compared to vaginal birth[(2)]. In addition to long-term hazards that can last for years after the current birth and impact the health of the woman, the child, and subsequent pregnancies, CS is linked to short-term dangers include blood transfusions, anaesthesia difficulties, organ damage, and infection[(3)]. Despite the increase in rates, the single most significant factor linked to a 5–20 times increase in postpartum infection compared to vaginal birth is caesarean delivery. Similarly, research in Ethiopia revealed that 11–15% of women who had CS gave delivery with surgical site infections, which subsequently resulted in a delayed recovery[(4,5)].

Furthermore, there is a dearth of data, especially in the research region, about the quality of the service as determined by prompt recovery. Therefore, this study evaluated predictors and the duration to recovery following caesarean section delivery among women who gave birth at Hawassa University Comprehensive Specialised Hospital (HU-CSH), located in southern Ethiopia. Wound care is one of the primary and routine duties of nurses who concentrate on re-establishing the structural and functional integrity of the skin. High-quality wound care requires a comprehensive or in-depth wound assessment. Complex wound assessments require a wide variety of clinical abilities and expertise.[(6)] Wound assessment must be thorough, organised, and supported by research. It ought to give healthcare professionals a starting point of knowledge against which they may describe and document the current state of the wound, define reasonable treatment objectives, and track advancement over time with the help of suitable interventions.[(7)]

The ability of nurses to understand the physiology and process of wound healing, as well as the nursing treatments that follow, is essential to wound healing. A nurse may conduct a thorough and comprehensive patient evaluation and spot potential wound issues early on if they have enough information about wound healing.[(8)]

Planned surgical births are preferred by around 32% of moms. Therefore, either a vaginal birth or a C-section might result from a normal pregnancy. Mothers may suffer different levels of discomfort following a caesarean birth due to the Lower Segment caesarean Section. Wound healing is essential to a mother's overall health and postpartum experience.

2. Need of the Study

A Caesarean section is a medical operation in which the uterus and abdomen are cut to deliver the baby. An alternative to vaginal birth is a C-section. Depending on the woman and child's condition at the time of labour, this other approach may be used.

Planned surgical births are preferred by around 32% of mothers. Each woman may suffer different levels of discomfort following a lower segment Caesarean section.

3. Methodology

A quasi-experimental, time series research design was conducted on women who had undergone LSCS. The sample size taken for study was 12 in each control and experimental group. Non-probability purposive sampling technique was used to select the subjects. The inclusion criteria were mothers between 18-45years of age, elective or emergency LSCS and who had undergone general or spinal anesthesia. Ethical permission was taken from institutional ethical committee (339/57/2020/IEC/ABVIMS/RMLH/734). Women with high risk pregnancies and unwilling to participate in the study were excluded from the study. Data were collected for 2 months.

The instruments used in this study include a self-structured sociodemographic data sheet containing 10 questions about age of mother, education qualification, occupation, place of residence, religion, period of gestation, primary indication of LSCS, type of LSCS and weight of women at the time of LSCS. Section-2 contains REEDA scale. Data was collected from each subject for 5 post operative days.

The study was conducted in three stages:

A) The stage before intervention:

Once receiving approval from the institute's ethics committee. Using a purposive sample strategy, subjects who met the inclusion criteria were chosen from the postnatal ward of Dr. RML Hospital. Twelve of the twenty-four participants were assigned to the control group, and the remaining sixty to the experimental group. After getting to know the individuals, the researcher gave an introduction, outlining the objectives of the investigation, significance, and methodology. Informed written consent was then acquired, guaranteeing the confidentiality of the data.

B) The stage of intervention:

In this study standardised post-operative care was used to achieve the objectives. A series of intervention was developed after reviewing literatures, books and booklets and pamphlets available from various sources. A booklet was developed, which includes standard protocol of care to protect morbidity in women. Interventions according to that were given to women in experimental group and control group women received routine ward care. The data were collected from both experimental and control groups for 5 days. Data were statistically analyzed using SPSS version 21.

3.1 Statistical analysis

Individual characteristics were analysed using the Chi-square test and descriptive statistics (percentile, arithmetic mean, standard deviation [SD], minimum–maximum, and Chi-square test). Additionally, the Bonferroni test was used to assess the intervention's efficacy. Every study finding was evaluated at the significance level of ($P < 0.05$).

3.2 Ethical considerations

Ethical clearance was taken from ethical committee of Dr RML Hospital, Delhi. Before signing the consent forms to participate in this study, participants were informed of the study aims, timeframe, contents, group methods, and other ethical issues. Written consent was taken from all the participants.

4. Results

Table 1 shows the socio-demographic variables of the experimental and control groups. Both groups were found to be homogeneous.

Table 2 describes the frequency and percentage distribution of post operative outcome of LSCS women in control and experimental group.

Table 3 findings highlighted that intervention has no significant effect on wound healing on first 4 days but on day 5th, the difference between experimental and control group was significant ($p<0.05$). The difference in terms of duration was also not significant (>0.05) in early days. Therefore, it can be stated that intervention was significantly effective on wound healing in experimental group in later days.

Table 1: Description of socio-demographic variables of women

S. No.	Demographic Variables	Experimental group (n-12)		Control group(n-12)		Homogeneity	
		f	Percentage	f	percentage	x2	P value
1	Age (in year) (a)18-25 (b)25-30 (c)30-35 (d)35&above	 6 4 1 1	 50 33.3 8.3 8.3	 3 4 4 1	 25 33.3 33.3 8.3	2.8	.4355
2	Education (a)Illiterate (b)10th (c)12th (d)Graduate &above	 2 7 2 1	 16.7 58.3 16.7 8.3	 3 4 4 1	 25 33.3 33.3 8.3	1.68	.6403
3	Occupation (a)Home maker (b) Employed	12	100	8 4	66.7 33.3	0.6857	.4076
4	Residence (a)Urban (b)Semi urban (c) Rural	 8 1 3	 66.7 8.3 25	 11 1	 91.7 8.3	0.5496	.2459
5	Religion (a)Hindu (b) Muslim (c) Christian (d)Other	 9 3	 75 25	10 1 1	83.3 8.3 8.3	1.2222	.5427
6	Duration of pregnancy (in weeks) Less than 37 37-41 weeks More than 41 weeks	 2 9 1	 16.7 75 8.3	 2 10	 16.7 83.3	.2588	.8786
7	Indication of LSCS (a)Maternal (b)Fetal (c)Maternal & fetal	 4 4 4	 33.3 33.3 33.3	 6 3 3	 50 25 25	.6857	.7097
8	Type of LSCS (a)Elective (b)Emergency	 2 10	 16.7 83.3	 4 8	 33.3 66.7	.8889	.3457
9	Birth of baby (a)Live (b)Still birth	 11 1	 91.7 8.3	 10 2	 83.3 16.7	0.381	.5370
10	Weight at time of LSCS (a) Less than 55kg (b) 55-65kg (c) More than 65kg	 1 7 4	 8.3 58.3 33.3	 3 5 4	 25 41.7 33.3	1.333	.5134

Table 1 shows the socio-demographic variables of the experimental and control groups. Both groups were found to be homogeneous.

Table 2: Frequency and percentage distribution of post operative outcome of LSCS women

S. No.	Variables/Baseline data	Experimental group (N=12)		Control group (n=12)	
		Frequency(f)	Percentage(%)	Frequency(f)	Percentage(%)
1	Vital Signs temperature				
	(a) Normal	10	83.3	12	100
	(b) Abnormal	2	16.7	0	0
2	Pain (incisional pain)				
	(a)Mild 1-3	8	66.7	2	16.7
	(b) Moderate.3-6	4	33.3	10	83.3
	(c) Sever 7-10	0	0	0	0
3	Lochia				
	(a)Moderate	1	8.3	0	0
	(b)Heavy	10	83.3	8	66.7
	(c)Excessive	1	8.3	4	33.3
4	Wound healing				
	(a)Normal	0	0	0	0
	(b)Good healing	8	66.6	1	8.3
	(c)Average healing	4	33.3	10	83.3
	(d) Poor healing	0	0	1	8.3
5	Fundal palpation				
	(a)Normal	12	100	12	100
	(b)Abnormal	0	0	0	0
6	Activity of daily living				
	(a)Fully dependent on health team	1	8.3	3	25
	(b)Partially dependent on health team	7	58.3	9	75
	(c) self-dependent	4	33.3	0	0
7	Bowel condition				
	(a)No problem	0	0	0	0
	(b)Mild problem	5	41.7	9	75
	(c)moderate problem	7	58.3	3	25
8	Bladder condition				
	(a)No problem	2	16.7	1	8.3
	(b)Mild problem	8	66.7	8	66.7
	(c) Moderate problem	2	16.7	3	25
9	Breast feeding				
	(a)Partially established	3	25	9	75
	(b)Fully establishment	9	75	3	25

Table 3: Comparison between experimental and control group in terms of wound healing

Dependent Variable	(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.b
day1	control	experimental	.917	.564	.118
	experimental	control	-.917	.564	.118
day2	control	experimental	.667	.607	.284
	experimental	control	-.667	.607	.284
day3	control	experimental	-.083	.288	.775
	experimental	control	.083	.288	.775
day4	control	experimental	.500*	.195	.018
	experimental	control	-.500*	.195	.018
day5	control	experimental	.667*	.188	.002
	experimental	control	-.667*	.188	.002

Note: level of significant at p< 0.05 based on marginal mean (Bonferroni test)

5. Discussion

Despite the fact that delivery is a generally cherished natural occurrence, the overmedicalization of the body is making it a concern for lakhs of Indian women. The birth via caesarean section is one contemporary illustration of this. According to studies, medical technology has had a greater impact on delivery in recent decades. To properly manage wounds, the nursing and treating medical teams must work together. One of the main reasons for higher morbidity and longer hospital stays is inadequate wound care. In order to provide nursing care, wound evaluation and treatment are therefore essential.[9]

Nurses and other healthcare providers must possess the necessary knowledge and abilities to effectively manage wounds in order to optimise favourable health outcomes.[10] With an emphasis on their sources of best practice guidelines, this study sought to investigate the efficacy of routine post-operative care while providing wound care. Unofficial information sources, such as intuition and experience education, are crucial for developing competency in wound care treatment, according to a research conducted among medical professionals. They also recognised the necessity of a methodical approach and limitations on the use of evidence-based practice.[11] In line with a study by Gillespie BM et al., this study shows that standard post-operative care was effective in terms of wound healing ($p<0.005$). It also emphasises the importance of practice-based expertise, showing that while nurses had a foundation of knowledge regarding wound assessment, they lacked the ability to use clinical guidelines to inform other aspects of wound care practice.[12]

After the SSI preventative care package was put into place, the incidence of sepsis, SSI reoperation, and hospital readmission also decreased with time. SSI gradually decreased with the addition of chlorhexidine ($\chi^2 = 22.1$, $P < 0.001$). Additionally, the inclusion of each care bundle component was associated with a comparable decrease in any complications (sepsis, reoperation, or readmission for SSI): f ($\chi^2 = 90.1$, $P < 0.001$).[13] These outcomes were consistent with the findings of this study. In order to provide the best possible care for wounds, interprofessional teamwork is necessary. The foundation of both evidence-based wound care procedures and high-quality performance is a well-coordinated multidisciplinary unit approach.[14] Teshager et al. found that structured wound care training significantly improved clinical outcomes and professional competency.

The implications of these findings are significant for clinical practice. The reduction in infection rates and enhanced wound healing suggest that current standard post-operative wound care protocols are highly effective. This means that healthcare providers can confidently implement these protocols, ensuring better health outcomes for women post-LSCS. Additionally, this study reinforces the importance of inter-professional collaboration among nursing and medical teams to effectively manage wounds.

From a theoretical perspective, our study adds to the body of knowledge concerning post-operative care in obstetrics. It highlights the critical role of structured strategies and evidence-based practices in wound care while also acknowledging the contribution of experiential education and intuition, as reported by other studies among health professionals.

6. Limitations

Despite the strengths of this study, including a robust sample size and comprehensive data collection, several limitations must be acknowledged. One major limitation is the study's observational nature, which may affect the generalizability of the results. Another limitation is the lack of long-term follow-up, suggesting that while our findings are promising, they should be interpreted with caution.

Additionally, methodological limitations such as reliance on self-reported data from patients may be subject to recall bias. These limitations indicate that while the findings provide valuable insights, further research is needed to confirm and extend these results.

7. Recommendation

Based on the findings and limitations of this study, several avenues for future research are recommended. Firstly, further studies could explore the effectiveness of different wound care protocols, providing more insights into their potential outcomes and benefits. For instance, randomized controlled trials comparing standard wound care with advanced wound care techniques could provide more definitive evidence. Secondly, research focusing on the long-term outcomes of wound care post-LSCS would help to establish more comprehensive guidelines for post-operative care.

Moreover, future research should consider randomized controlled trials to enhance the robustness of the findings. Additionally, exploring the impact of demographic variables, such as age and comorbidities, on wound healing could provide a more nuanced understanding of the factors influencing post-operative recovery.

8. Conclusion

From this study, it can be concluded that standard post-operative care after LSCS plays an important and beneficial role in improving the biophysiological health parameters of postnatal mothers. Our findings demonstrate that these care protocols are generally effective in promoting wound healing and reducing infection rates, which supports the effectiveness of standard post-operative wound care strategies.

The implementation of these protocols can facilitate early post-cesarean recovery of postnatal mothers, thereby indirectly reducing hospital stay and the cost of hospitalization. This is particularly significant in the context of the increasing medicalization of childbirth in India, where effective wound management is critical to mitigating morbidity and prolonged hospital stays.

Furthermore, standard post-operative wound care can be safely practiced in hospital settings, benefiting both patients and healthcare team members. Thus, wound assessment and management are critical to providing nursing care.[9] It ensures that healthcare providers have a reliable, evidence-based approach to managing post-operative wounds, thus enhancing overall patient outcomes.

In light of these findings, it is important to consider the study's limitations and the need for further research. By addressing these limitations and exploring new directions, future studies can build on the foundation laid by this research, ultimately enhancing our understanding and practices in post-operative care for women undergoing LSCS.

9. Declarations

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Conflict of Interest- There are no conflicts of interest

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