



## A Study To Assess The Effect Of Planned Nursing Intervention On Biophysiological Health Parameters Among Mothers After Elective Caesarean Section

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### Abstract

Effectiveness of planned nursing intervention on selected bio physiological health parameters among mothers after elective cesarean section.

**Materials and Methods:** A quasi-experimental research design with control and experimental groups was adopted and used on 60 mothers which includes Experimental group of 30 mothers and Control group of 30 mothers. The study was conducted among postnatal mothers admitted in selected hospitals. Data were collected using structured assessment tools and analyzed using descriptive and inferential statistics.

### Results:

Findings related to planned nursing intervention by comparing the experimental group and control group among mothers after elective caesarean section revealed that there was significant association existing in biophysiological health parameters at  $p$  value  $<0.05$ . The findings showed that majority of the participants in both groups had moderate pain and satisfactory wound healing. In the control group, 33.3% participants were hypertensive whereas 23.3% participants in the experimental group were hypertensive. Hyperthermia was present among 20% participants in the control group and 10% in the experimental group. Tachycardia was found among 10% participants in the control group and none in the experimental group. Dysuria was present among 13.3% participants in the control group and 3.3% in the experimental group, whereas no participant in the experimental group had haematuria.

The findings further revealed that 30% participants in the control group had not passed stools within 24 hours whereas only 20% participants in the experimental group had this problem. More amount of lochia was observed among 3.3% participants in the control group and none in the experimental group. Effective breastfeeding was observed among the majority of participants in the control group (83.3%) and experimental group (90%). Difficulty in breathing was reported by 3.3% participants in the control group and none in the experimental group. Cough was present among 23.3% participants in the control group and 6.6% participants in the experimental group. Constipation was observed among 13.3% participants in the control group and 3.3% participants in the experimental group. The findings revealed that there was a significant association between planned nursing intervention and improvement in biophysiological health parameters among mothers after elective caesarean section at  $p$  value  $<0.05$ .

### Conclusion:

The following conclusions were made on the basis of the findings of the study: there was significant difference between the experimental group and control group regarding biophysiological health parameters among mothers after elective caesarean section following planned nursing intervention.

There was significant association existing among mothers after elective caesarean section at  $p$  value  $<0.05$ . Majority of the participants in both groups had moderate pain and satisfactory wound healing. Hypertension, hyperthermia, tachycardia, dysuria, constipation, cough, and breathing difficulty were found to be lower in the experimental group compared to the control group. Effective breastfeeding was higher among participants in the experimental group (90%) compared to the control group (83.3%).

The study findings concluded that planned nursing intervention was effective in improving the biophysiological health parameters and breastfeeding status among mothers after elective caesarean section. Therefore, implementation of planned nursing intervention can be considered an effective nursing strategy for enhancing post-operative recovery and maternal wellbeing among mothers undergoing elective caesarean section.

**Keywords:** NIL

## Introduction

Motherhood is one of the most significant experiences in a woman's life and childbirth is considered a major life event. The process of childbirth not only affects the physical health of the mother but also influences her emotional, psychological, and social well-being. In recent years, the incidence of cesarean section has increased worldwide due to various maternal and fetal indications. Although cesarean section is a life-saving surgical procedure, it is associated with several postoperative complications that may delay recovery and increase maternal discomfort.

Women undergoing elective cesarean section require specialized postoperative nursing care to maintain physiological stability and prevent complications such as pain, infection, delayed ambulation, constipation, abdominal discomfort, and impaired wound healing. Effective nursing care after cesarean section focuses on monitoring vital signs, pain management, early mobilization, promotion of bowel function, maintenance of hygiene, and emotional support.

Planned nursing interventions are systematic and evidence-based nursing activities designed to improve patient outcomes and accelerate recovery. Appropriate nursing interventions can help mothers regain independence in activities of daily living, improve comfort, reduce hospital stay, and enhance maternal satisfaction. Nurses play a vital role in providing comprehensive postoperative care and educating mothers regarding self-care practices after surgery.

Despite advancements in obstetric and postoperative care, many mothers continue to experience complications and discomfort following cesarean delivery. Therefore, there is a need to assess the

effectiveness of planned nursing interventions on biophysiological health parameters among mothers after elective cesarean section. The findings of the study may help nurses adopt effective nursing strategies for improving maternal recovery and quality of care.

## Need For The Study

Caesarean section is one of the most commonly performed surgical procedures in obstetric practice worldwide. According to the World Health Organization (WHO), the global rate of caesarean section has increased from nearly 7% in 1990 to 21% of all births in recent years, and it is projected to rise to 29% by 2030. In India, the prevalence of caesarean section has also increased steadily, with reports indicating that nearly one-fourth of institutional deliveries are conducted through caesarean section.

Although caesarean section is a lifesaving surgical intervention when medically indicated, it is associated with several postoperative complications and delayed recovery among mothers. Women undergoing elective caesarean section frequently experience postoperative pain, restricted mobility, delayed bowel elimination, wound complications, fatigue, urinary discomfort, constipation, cough, and difficulty in breastfeeding. These complications may negatively influence maternal wellbeing, newborn care, and overall quality of life during the postnatal period.

In the present study findings, majority of mothers in both experimental and control groups experienced moderate pain after surgery. Hypertension was observed among 33.3% participants in the control group and 23.3% in the experimental group.

Hyperthermia was present among 20% participants in the control group and 10% in the experimental group. Dysuria, cough, constipation, and delayed bowel elimination were also more common among mothers in the control group

compared to the experimental group. Effective breastfeeding was observed among 90% mothers in the experimental group compared to 83.3% in the control group.

These findings indicate the importance of planned nursing intervention in improving maternal recovery and biophysiological health parameters after elective caesarean section.

Evidence-based nursing interventions can minimize postoperative complications, enhance maternal comfort, promote early recovery, and improve breastfeeding practices

Hence, the investigator felt the need to conduct the present study to evaluate the effectiveness of planned nursing intervention on biophysiological health parameters among mothers after elective caesarean section and to provide evidence-based recommendations for nursing practice.

### **Operational Definitions:**

**Effect:** Refers to changes in biophysiological health parameters of mothers after elective caesarean section between the experimental and control group, after planned nursing intervention for five days.

**Biophysiological health parameters:** Refers to indicators of mother's well being such as vital signs, respiratory function, GI function, urinary function, lochia, condition of lower extremities and breast feeding assessed by observation checklist, incisional pain measured using 0-10 numerical pain rating scale and wound status assessed by Southampton wound assessment scale. Assessment will be done twice daily (morning and evening) from 1st to 5th post operative days.

**Planned nursing intervention:** Refers to systematically planned activities to enhance the post-operative well being of women after elective C.S. It consists of two sessions. First session is planned teaching on deep breathing and coughing exercises, abdominal exercises, leg exercises, early ambulation and breast feeding imparted through lecture, discussion and demonstration followed by observation of return

demonstration of exercises by the participants. The total duration of the session is 60 minutes.

Second session is supportive supervision of mother's practice of exercises post operatively twice daily (8 hrs apart in the morning and evening) starting from 6 hrs after surgery, from day 1 to 5. Total duration of supportive supervision is 45 minutes (including the total interval time of 5 minutes).

**Mothers:** Women posted for elective caesarean section.

**Elective caesarean section:** Refers to surgical procedure in which incisions are made through the mother's abdomen and uterus to deliver the baby as per plan due to already existing fetal or maternal risks.

### **Hypothesis:**

H<sub>1</sub>: There is a significant difference in the mean score of biophysiological health parameters between experimental and control group.

H<sub>2</sub>: There is a significant association between biophysiological health parameters and selected variables

### **Sampling Criteria**

**Inclusion Criteria:** Women posted for elective caesarean section

1. In the age group of 20-40 years and greater than 37 weeks of gestation
2. Who can speak and understand Hindi language

**Exclusion Criteria:** Mothers Having

1. Any immediate complications after elective caesarean section
2. Multiple pregnancy

### **Statement Of The Problem:**

Effect Of Planned Nursing Intervention On Biophysiological Health Parameters Among Mothers After Elective Caesarean Section.

### **Objectives Of The Study:**

Effects of planned nursing intervention on biophysiological health parameters among mothers after elective cesarean section.

1. To assess the biophysiological health parameters among mothers after elective caesarean section.

2. To evaluate the effect of planned nursing intervention on biophysiological health parameters among mothers after elective caesarean section.
3. To find out the association between on biophysiological health parameters among mothers after elective caesarean section.

## Methodology

### Source of data:-

Data was collected from mothers posted for elective caesarean section and admitted in TSMH.

### Method Of Data

Research approach:- Quantitative experimental research approach

Research Design:- The research design selected for the study was a quasi-experimental, non-equivalent control group post-test only design

Setting:- T. S. Misra Medical College & Hospital

Reference population:- mothers posted for elective caesarean section and admitted in TSMH  
Study population:- mothers posted for elective caesarean section.

Study sample:- mothers posted for elective caesarean section and admitted in TSMH.

Sample size:- 60

Sampling technique:- Purposive sampling technique.

### Data Collection Procedure

The study was conducted after getting permission from Institutional Ethics Committee of T.S. Misra College of Nursing, Lucknow and administrative sanction from ACMS, T.S. Misra Hospital, Lucknow. The data collection period started from 23/05/2023 to 20/06/2023. The data were collected from 60 mothers posted for elective CS. Investigator visited the preoperative wards of

T.S. Misra Hospital, Lucknow and selected the samples according to the inclusion criteria using non-probability purposive sampling technique. A rapport was made with the mothers. Informed consent was obtained from participants after explaining the purpose of the study. The study was conducted in Community health center, Sarojinagar to assess the feasibility and practicability of main study, to decide

the statistical analysis 06 (10%) samples were selected by using purposive sampling technique. The collected were amenable to statistical analysis. The study was found to be feasible.

### Data Analysis Procedure:

The collected data were organized, tabulated, analyzed, and interpreted by using descriptive and inferential statistics. Socio personal data will be analysed using frequency and percentage. The effect of planned nursing interventions on biophysiological health parameters among mothers after elective caesarean section will be computed using chi-square test.

### Research Variables:

Independent variable:

Planned nursing intervention among mothers after elective caesarean section.

Dependent Variable:

Biophysiological health parameters and breastfeeding status among mothers after elective caesarean section.

Demographic Variable: Age of mother, religion, Educational status, Occupational status, types of Family, Gravida, Parity, previous history of CS, Indication for present CS.

### Analysis And Interpretation

The collected data were organized, tabulated, analyzed, and interpreted by using descriptive and inferential statistics.

This chapter deals with the analysis and interpretation of data collected from 60 samples on knowledge to assess the effectiveness of planned nursing intervention on biophysiological health parameters among mothers after elective caesarean section.

### Objectives Of The Study:

1. To assess the biophysiological health parameters among mothers after elective caesarean section.
2. To evaluate the effect of planned nursing intervention on biophysiological health parameters among mothers after elective caesarean section.
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## Section-I

Distribution Of Samples According To The Socio - Demographic Variables.

**Table 4.1 Frequency and Percentage Distribution of samples according to their selected socio demographic variables.**

| Sociodemographic Data    | Control group (n=30) |        | Experimental group (n=30) |        |
|--------------------------|----------------------|--------|---------------------------|--------|
|                          | F                    | %      | F                         | %      |
| <b>1. Age of Mothers</b> |                      |        |                           |        |
| a) 20-24 years           | 6                    | 20.00% | 3                         | 10.00% |
| b) 25-29 years           | 11                   | 36.70% | 13                        | 43.30% |
| c) 30-34 years           | 10                   | 33.30% | 13                        | 43.30% |
| d) 35-40 years           | 3                    | 10.00% | 1                         | 3.30%  |
| <b>2. Religion</b>       |                      |        |                           |        |
| a) Hindu                 | 19                   | 63.30% | 18                        | 60.00% |
| b) Muslim                | 11                   | 36.70% | 12                        | 40.00% |
| c) Christian             | 0                    | 0.00%  | 0                         | 0.00%  |
| <b>3. Education</b>      |                      |        |                           |        |
| a) Primary               | 1                    | 3.30%  | 5                         | 16.70% |
| b) Secondary             | 4                    | 13.30% | 5                         | 16.70% |
| c) Higher Secondary      | 14                   | 46.70% | 11                        | 36.70% |
| d) Graduation            | 8                    | 26.70% | 6                         | 20.00% |
| e) Post Graduation       | 3                    | 10.00% | 3                         | 10.00% |
| <b>4. Occupation</b>     |                      |        |                           |        |
| a) Homemaker             | 20                   | 66.70% | 28                        | 93.30% |
| b) Private Employee      | 7                    | 23.30% | 2                         | 6.70%  |
| c) Govenment Employee    | 3                    | 10.00% | 0                         | 0.00%  |
| <b>5. Type of Family</b> |                      |        |                           |        |
| a) Joint Family          | 17                   | 56.70% | 20                        | 66.70% |
| b) Nuclear Family        | 13                   | 43.30% | 10                        | 33.30% |
| <b>6. Gravidia</b>       |                      |        |                           |        |
| a) Primigravida          | 3                    | 10.00% | 1                         | 3.30%  |
| b) Multigravida          | 27                   | 90.00% | 29                        | 96.70% |
| <b>7. Parity</b>         |                      |        |                           |        |

|                             |    |        |    |        |
|-----------------------------|----|--------|----|--------|
| a) Primipara                | 20 | 66.70% | 19 | 63.30% |
| b) Multipara                | 10 | 33.30% | 11 | 36.70% |
| 8. Previous history of CS   |    |        |    |        |
| a) Yes                      | 24 | 80.00% | 25 | 83.30% |
| b) No                       | 6  | 20.00% | 5  | 16.70% |
| 9. Indication of Present CS |    |        |    |        |
| a) Maternal Indications     | 21 | 70.00% | 23 | 76.70% |
| b) Fetal Indications        | 2  | 6.70%  | 3  | 10.00% |
| c) Combined Indications     | 7  | 23.30% | 4  | 13.30% |

**Table 4.1 Reveals:-**

1. According to Age among 60 samples of group, 1 (1.7%) were from below 20 year, 24 (40.0%) were from 21-25 year age group, 22 (36.7%) were from 26-30 year age group, 13 (21.7%) were from above age 30 year.
2. According to Educational status of Mother among 60 samples of group, 13 (21.7%) were from Illiterate, 31(51.7%) were from Primary education, 8 (13.3%) were from Higher primary or lower secondary, 7 (11.7%) were from Higher Secondary level, 1 (1.7%) were from senior secondary, 0 (0.0%) were from Degree or other level.
3. According to Occupation of Mother among 60 samples of group, 56(93.3%) were from House wife, 4(6.7%) were from Working, 0(0.0%) were from Business.
4. According to Place of residence among 60 samples of group, 0 (0.0%) were from Urban area, 60 (100.0%) were from Rural area, 0 (0.0%) were from Slums area.
5. According to Family Income (Rs per month) among 60 samples of group, 26 (43.3%) were from Below 10000, 30 (50.0%) were 10000-20000, 4 (6.7%) were 20000-30000, 0 (0.0%) were Above 30000.
6. According to types type of family of mother among 60 samples of group, 30 (50.0%) were from Nuclear family, 30 (50.0%) were from Joint family.
7. According to No of living children of mother among 60 sample of group, 16 (26.7%) were from

one children, 23 (38.3%) were from two children, 21 (35.0%) were more than two children.

### Discussion

The study aimed to evaluate the effect of planned nursing intervention on bio-physiological health parameters among mothers after elective caesarean section admitted in T. S. Misra Medical College & Hospital, Lucknow. The bio-physiological parameters included are incisional pain, wound status, vital signs, respiratory function, GI function, urinary function, lochia, condition of lower extremities and breast feeding. Planned nursing intervention refers to systematically planned activities to enhance the post-operative well-being of women after elective C.S.

The findings of the study are discussed in relation to the observations made by other studies which the investigator had reviewed.

The present study revealed that the planned nursing intervention was effective in improving the GI function, respiratory function, lochial problems and condition of lower extremities.

The respiratory problems were found to be less in experimental group (16%) compared to control group (47%). This is indicating that respiratory function is well and good in experimental group participants than control group. This is supported by a study which was conducted to assess the effect of planned exercise programme on post-operative outcome of women undergoing caesarean section.

Result of the study includes frequency of occurrence of respiratory complications.

Were less in experimental group who were practiced deep breathing exercises than control group<sup>45</sup>. A contradiction was found with a study conducted to investigate whether the inclusion of deep breathing exercises in physiotherapy-directed early mobilisation confers any additional benefit in reducing postoperative pulmonary complications (PPCs). Conclusion of the study was addition of deep breathing exercises to physiotherapy-directed early mobilisation did not further reduce PPCs compared with mobility alone. PPCs can be reduced with once-daily physiotherapy if the patients are mobilised to a moderate level of exertion<sup>46</sup>.

In the present study, the GI problems were found to be less in experimental group (66.6%) than control group (100%). The present study findings is consistent with another quasi experimental study conducted to assess the effect of planned exercise programme on post operative outcome of women undergoing caesarean section among 30 patients. Result of the study showed that the incidence of paralytic ileus, abdominal distention, stress incontinence and flatulence were less in experimental group<sup>47</sup>.

The present study findings is further supported by another randomized control study conducted in Egypt to evaluate the efficacy and safety of postoperative gum chewing on the recovery of bowel motility after CS. Study results revealed the safety of gum chewing after CS and associated with rapid resumption of intestinal motility and shorter hospital stay with potential impact on reducing the overall healthcare costs in case of routine implementation<sup>48</sup>. This is further supported by another study conducted to explore the effect of free position during the early period after caesarean section on patient's subjective comfort, the time of first bowel exhaust, the time of first walking, postoperative complications and milk secretion. The study concluded that taking free position during the early period after caesarean section can make the patients more comfortable, facilitate the recovery of bowel movement and milk secretion<sup>49</sup>.

The present study showed that there was no significant change in incisional pain after planned nursing intervention. It was found that majority of the participants in the experimental (93.3%) and control group (80%) had moderate pain. The findings revealed

that there is no significant reduction in pain experienced by mothers in experimental group than control group. The current study finding is not

inconcordance with another study conducted to investigate the effects of a physiotherapy program on incision pain and functional activities in the early post-caesarean period. Results of the study showed that incision pain and difficulty in functional activities decreased significantly within 2 days in both groups, and the values were lower in the study group ( $p < 0.05$ ).<sup>50</sup>

All the participants in the control and experimental group had satisfactory wound healing. The study showed that there is no significant change in wound status after intervention. The finding is contradicting to the finding of a study conducted to explore the effect of evidence-based care in reducing infection after cesarean section and improving the quality of life of the mothers. Result of the study showed that postoperative infection rate in the observation group was significantly lower than the control group.<sup>51</sup>

Experimental group participants (13%) had less problems compared to control group (43%). There was a significant change in condition of lower extremities after planned nursing intervention. The current study finding is supported by another quasi experimental study conducted to evaluate the effect of early ambulation on occurrence of deep vein thrombosis among post CS patients. Results obtained that reduction in the prevalence of DVT after early ambulation in the experimental group.<sup>52</sup>

Majority of the participants in control (83.3%) and experimental group (90%) demonstrated effective breastfeeding. There is no significant change in breast feeding after intervention. The findings of the present study were not supported with another quasi experimental study was conducted to evaluate the effectiveness of a prenatal breastfeeding education programme among

100 primigravida women underwent elective caesarean section. The study concluded that providing education booklets, videos and telephone interview on breastfeeding prior to a caesarean delivery may contribute to breastfeeding attitude and improved rooming-in and exclusive breastfeeding rates.

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