



Original Research Article

Effect of Planned Early Ambulation on Selected Postnatal Activities of Postcaeserean Patients

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ABSTRACT

Background: Caesarean section has been used effectively throughout the 20th century and among the major abdominal surgeries, it is the most common, oldest worldwide surgery performed in Obstetrics. The rate of caesarean section has increased dramatically over the past 3 decades. The increase in the rates of CS is a global phenomenon that has got the profession, the public and those who care for women's health worried, because the rise has not contributed to an improved pregnancy outcome. Thought the indicated and timely cesarean section has tremendous advantages for mother and baby and although CS is a comparatively risk free procedure, it is not without problems for anesthetists, obstetricians, midwives and physiotherapists and most important of all- for the woman herself. The role of nurse midwife is to act in the best interest of patient and newborn and make the patient independent in carrying out the activities of daily living as soon as possible. This can indirectly help in reducing the complications and morbidity associated with post operative prolonged bed rest and can improve the maternal newborn bonding.

Aim: By taking into consideration the above fact, the present study was done to evaluate the effect of planned early ambulation on selected postnatal activities of post caesareans patients.

Methods: Quasi experimental approach with multiple time series design was adopted for the study. The study included total 500 study subjects, 250 in experimental and 250 in control group. The experimental group was given planned early ambulation starting from the day of surgery for first five post operative days. With routine post caesarean hospital care, the ambulation was done as per guidelines for three times in a day with a time interval of 3 to 4 hours. The control group was refrained from it where it received only the routine post caesarean medical and nursing care, as per hospital routine. The post caesarean activity rating scale was used to assess the selected activities of both the groups. The assessment was done at the end of each post caesarean day for first five post operative days.

Findings: The result showed that there was significant difference in the activities carried out by the study subjects of experimental and control group, as evidenced by better activities of experimental group. This indicated the beneficial effect of planned early ambulation on resumption of activities of post caesarean patients.

Key words: LSCS, post caesarean activities, planned early ambulation.

INTRODUCTION

Globally there are wide geographical variations in caesarean section rates but almost all show a rise, quadrupled in less than two decades.^[1] In the 19th century, obstetrics, gynecology and general surgery all began to proliferate and prosper. Over the years, other technical advances were made as cesarean delivery became a safer and therefore a more frequently performed surgical procedure. India is not excluded from the trend of increased rate of caesarean section. Though the estimates of CS rates in India was 7.1 per cent in the year 1998 and there is 16.7 per cent change in the rates annually in India (Stanton, 2006), which is one of the highest among the countries.^[2]

Today the wellbeing of maternal and child health occupies paramount place in health care delivery system, today cesarean section has become the most common intervention in developed as well as developing countries. It is not performed as a last resort, but as a safe alternative to risky vaginal delivery. And the due consideration is given not only to immediate safety of mother and newborn, but also to remote obstetric future.^[3]

The World Health Statistics (WHS) 2012, released from New Delhi on May 18, 2012 said 9% of all births in India were by Caesarian section. The latest figure has gone up by 5% since nearly one in 10 women in India, who gave birth between 2005 and 2010, had gone under the surgical knife. Deliveries through Caesarian are steadily increasing in India raising doubts on whether doctors are needlessly exposing women and infants to surgical risks.^[4]

In India various studies reveal doubling or tripling of rates in short span. In Aug 2008 the article published by IBN Live on caesarean section states that India is one of the few countries where more than 50% of woman opt for CS, as opposed to vaginal delivery. Many woman request doctor to

perform CS for non medical reasons like fear of pain, seeking auspicious date and timing of delivery and other personal reasons.^[5]

The factors associated with caesarean section are age, parity, multiple pregnancy, maternal weight gain, and birth weight. Including these factors the caesarean section is justified under certain circumstances such as cephalo pelvic disproportion and contracted pelvis, dystocia due to soft parts, inadequate uterine forces, ante partum hemorrhage, preeclampsia toxemia, eclampsia, fetal distress and prolapse of the cord, malpresentation, maternal distresses such as heart problems, bad obstetric history, habitual intrauterine death of the fetus and elderly primigravida. Except these demographic and medical reasons the patient request and the physician factor are playing a major role in increasing caesarean section rates. As caesarean section is less painful and less time consuming the patients request the obstetricians to perform the caesarean and in case of the physicians it is also much more convenient and quick than attending a normal vaginal delivery. In India giving birth in an auspicious day are driving the women to go for a caesarean section.^[6]

Although the caesarean section is recommended safe when vaginal delivery put the baby's and mothers life or health at risk, the surgery carries many risks, including immediate and late complications. Despite the life saving advantages, there are several adverse consequences of caesarean delivery for women and to their households. The use of caesarean delivery in unwanted circumstances creates risks to the mother's health and leads to inefficient use of resources (Millennium Development Goal 2003). The risks may be intraoperative as well as postoperative complications. Most common postoperative complications are pneumonia, atelectasis, thromboembolism,

infection, urinary tract infection and paralytic ileus and serious socio-psychological damage in cases caesarean section was done without any medical and obstetric indication. The rate and risk of these complications increases due to the increasing incidence of caesarean section mainly in countries like India.^[7]

The woman undergone cesarean section has more problems, minor or major, than that of a woman with vaginal delivery. Some of these are longer duration of hospital stay, postoperative pain, delayed ambulation, increased period required to return to normal meals, breast engorgement, urination problems, problems in relation to bowel movements, lactation failure, and less maternal newborn bonding. The patients recovering after abdominal surgery may limit their activities due to pain or fatigue interfering with their ability to regain their previous level of functioning.^[8]

Mothers with a caesarean section delivery are less likely to room in with their babies, less likely to continue breastfeeding and more likely to experience health concerns post delivery, including abdominal pain, bladder and bowel difficulties, headache and backache. It was evident that there is increased risk of possible postoperative complications following caesarean section; therefore prophylaxis is essential.^[9]

By preventive and promotive postoperative care the women can be helped to avoid the postoperative problems and complications, which can help in early recovery. One of the important aspects of comprehensive postoperative care can be planned early ambulation. Planned early ambulation means that patients can be out of bed as early as possible based on type of surgery. For caesarean section this period can be as less as 6-8 hrs after caesarean section, or can be 1 or 2 days after operation. The early ambulation leads to less

fatigue, better healing of muscles, fewer “sick man complexes”, no bowel and bladder complaints, eat better, sleep better and feel better. There are even earlier reports on the physiological advantages of early ambulation and disadvantages of prolonged bed rest. Early ambulation after surgery as a newer concept raises medical interest and enthusiasm. The goal of this concept is to optimize the postoperative management of the patient in order to reduce morbidity, to enhance recovery of the patient after a surgical procedure, to reduce hospital stay and to reduce the costs.^[10]

MATERIALS AND METHODS

Based on the aim and objectives of the study, quantitative-quasi experimental approach was used. Before and after intervention with multiple time series design was adopted. The investigator carried out the study in selected tertiary care hospitals of Jalgaon. A partially controlled setting was used to conduct the study. The study was conducted during the years 2010 to 2013. The study subjects consisted of 500 lower segment caesarean patients. The sampling technique used was non-probability purposive sampling. The samples those who fulfilled inclusion criteria like those who underwent primary or repeat caesarean section, emergency or planned lower segment caesarean section under spinal anesthesia, with minimum discomfort in post operative period, which were available within first 4 to 5 hours after surgery and were willing to participate in the study were included in the study. Post caesarean patients with classical CS or LSCS under general anesthesia, who were not willing to participate in the study, who had developed major complications in post caesarean period, suffering with severe anemia, DM, heart diseases, PPH. severe PIH and eclampsia post partum psychosis, and

whose newborns were still born or admitted in NICU were excluded from the study.

After obtaining the ethical clearance from the committee and after securing the permission from concerned authority of hospitals, the study subjects were solicited from population of maternity patients who had undergone LSCS. The sample selection was done according to the sample selection criteria. The patients who met the study criteria were requested to participate in the study. The purpose of the study, potential benefits and risks, right to confidentiality and right to withdrawal were explained to each patient in their mother tongue and additional doubts asked by them were cleared with appropriate explanation. Those patients who were willing to be a part of study were requested to sign an informed consent about their willingness to participate in the study.

After that, each sample was randomly assigned to either of group i.e. experimental or control group. Each study subject was given an identification number to maintain confidentiality. Each group consisted of total 250 study subjects. Based on the predetermined plan of action, the researcher carried out planned intervention of early ambulation and observations for study subjects. The ambulation guideline^[11] consisting of deep breathing exercise, coughing exercise, leg exercises and moving was followed for first five days. The planned ambulation technique was taught by explanation cum demonstration to the study subjects of experimental group and they were supervised while execution of guidelines. The ambulation was initiated on very first post operative day when the subjects were found to be hemodynamically stable. Later on the study subjects were instructed and motivated to follow the guideline for three times in a day with an interval of 3 to 4 hours, for first five days. The privacy was maintained for study

subjects of experimental group while ambulating. Preference was given to each study subjects willingness, convenience and comfort. The control group was refrained from planned early ambulation where it received the routine post caesarean medical and nursing care, as per hospital routine. New study subjects were added as per convenience. The data collection was continued till the researcher obtained the required sample size.

The tool for data collection was activity rating scale consisting of total eight selected postcaesarean activities in relation to self and newborn care. The technique followed for data collection was non-participatory observation. This tool was prepared based on extensive review of literature, researchers' knowledge, past experiences and opinion of subject experts of medical and nursing field. The reliability of the tool was done by inter rater method. The reliability coefficient of tool was 0.81 indicating high reliability. This tool consisted of different post natal activities carried out in relation to care of self and newborn care by post caesarean patients. These activities were breast feeding, sitting on the bed, walking, bladder elimination, bowel elimination, diet, self care and attention to the newborn. Non-participatory observation was carried out to record all selected post caesarean activities at the end of each post cesarean day till fifth post operative day. The observation was done when the study subjects were engaged in activities and without the knowledge of study subjects. For the data analysis purpose, the scores were assigned to the activities on the basis of expected progress in each activity.

RESULT

The selected demographic and obstetrical data and selected postcaesarean

activities of study subjects were analyzed, and compared.

Section-A: In the present study the distribution of study subjects based on selected demographic and obstetrical characteristics showed that out of total 500 study subjects, majority of the subjects 244 (48.8%) were from the age group of 21 to 25 years. Majority of them 267 (53.4%) were

multi gravida. For majority of subjects i.e. 395 (79 %) the emergency caesarean section was done and only 105 (21 %) had undergone planned caesarean section. Out of total 500 study subjects, majority 313 (62.6 %) subjects had primary caesarean section at the time of study and also for majority of subjects 309 (61.8 %) surgery was due to maternal indications. (Table 1)

Table 1 -Distribution of study subjects based on selected demographic and obstetrical characteristics (N=500).

| Sn | Selected demographic and obstetrical characteristics | Specification | Experimental group | | Control group | |
|----|--|---------------------|--------------------|---------|---------------|---------|
| | | | Freq | Percent | Freq | Percent |
| 1 | Age | Less than 20 yrs | 32 | 12.8 | 34 | 13.6 |
| | | 21 to 25 years | 123 | 49.2 | 121 | 48.4 |
| | | 26 to 30 years | 71 | 28.4 | 75 | 30.0 |
| | | 31 to 35 years | 21 | 8.4 | 17 | 6.8 |
| | | More than 36 years | 03 | 1.2 | 03 | 1.2 |
| 2 | Gravida | Primi | 111 | 44.4 | 122 | 48.8 |
| | | Multi | 139 | 55.6 | 128 | 51.2 |
| 3 | Parity | Primi | 122 | 48.8 | 138 | 55.2 |
| | | Multi | 128 | 51.2 | 112 | 44.8 |
| 4 | Type of caesarean section | Planned | 56 | 22.4 | 49 | 19.6 |
| | | Emergency | 194 | 77.6 | 201 | 80.4 |
| 5 | Indication for caesarean section | Maternal indication | 157 | 62.8 | 152 | 60.8 |
| | | Fetal indication | 63 | 25.2 | 52 | 20.8 |
| | | Combined indication | 30 | 12.0 | 46 | 18.4 |
| 6 | Number of caesarean section | Primary | 154 | 61.6 | 159 | 63.6 |
| | | Repeat | 96 | 38.4 | 91 | 36.4 |

Section B: This section represents the analysis, distribution, comparison and interpretations of day wise total scores of assessment of selected post caesarean activities of experimental and control group.

1. Distribution of study subjects based on total scores of selected post caesarean activities

The analyzed data of table no. 2 showed the equal number of subjects with poor post caesarean activities in both the groups on post caesarean day 1, which was

suggestive of homogeneity of both the study groups. The percentages of study subjects with poor postcaesarean activities were more in control group (mean 74.58%) as compared to experimental group (mean 28.16%) on all post operative days from day 2 to day 5. Also it was evident that the subjects with good and excellent scores were more in experimental group (mean 24.8% and 47.76 % respectively) than that of control group (mean 21.92 % and 11.2% respectively), on all assessment days.

Table 2-Distribution of study subjects based on total scores of selected post caesarean activities. (N=500)

| Sn | Day of assessment | Poor postcaesarean activities | | | | Good postcaesarean activities | | | | Excellent post caesarean activities | | | |
|----|-------------------|-------------------------------|------|---------------|------|-------------------------------|------|---------------|------|-------------------------------------|------|---------------|-----|
| | | Exp group | | Control Group | | Exp group | | Control group | | Exp group | | Control group | |
| | | Freq | % | Freq | % | Freq | % | Freq | % | Freq | % | Freq | % |
| 1 | POD 1 | 248 | 99.2 | 248 | 99.2 | 02 | 0.8 | 02 | 0.8 | 00 | 00 | 00 | 00 |
| 2 | POD 2 | 97 | 38.8 | 249 | 99.6 | 146 | 58.4 | 01 | 0.4 | 07 | 2.8 | 00 | 00 |
| 3 | POD 3 | 07 | 2.8 | 236 | 94.4 | 124 | 49.6 | 13 | 5.2 | 119 | 47.6 | 01 | 0.4 |
| 4 | POD 4 | 00 | 00 | 162 | 64.8 | 21 | 8.4 | 82 | 32.8 | 229 | 91.6 | 06 | 2.4 |
| 5 | POD 5 | 00 | 00 | 53 | 21.2 | 08 | 3.2 | 176 | 70.4 | 242 | 96.8 | 21 | 8.4 |

(POD- Post operative day)

2. Comparison of day wise total scores of selected post caesarean activities between experimental and control group

It was evident from the obtained data that at the end of first post caesarean day, there was no significant difference in the selected post caesarean activities of study subjects of both the groups. This has helped to establish the homogeneity of study subjects (Table 3). The significant difference was observed in the scores of all selected categories, that are poor, good and excellent post caesarean activities of the study subjects, at the end of the post caesarean day two, three, four and five. As the obtained Z value was greater than the table value (1.64) for all the observations at 0.05 level of significance, the research hypothesis (H) was accepted and null hypothesis (H₀) was rejected. The results are presented in the table no 3, 4, 5 and 6.

Table 3- Comparison of scores of selected post caesarean activities at end of post caesarean day one. (N=500)

| Sr. no. | post caesarean activities | Experimental group | | Control group | | SE | Obtained Z value | Level of significance |
|---------|-------------------------------------|--------------------|---------|---------------|---------|--------|------------------|-----------------------|
| | | Freq | Percent | Freq | Percent | | | |
| 1 | Poor post caesarean activities | 248 | 99.2 | 248 | 99.2 | 0.0079 | 00 | NS |
| 2 | Good post caesarean activities | 02 | 0.80 | 02 | 0.80 | 00 | 00 | NS |
| 3 | Excellent post caesarean activities | 00 | 00 | 00 | 00 | 00 | 00 | NS |

NS- Not significant.

Table 4-Comparison of scores of selected post caesarean activities at end of post caesarean day two. (N = 500)

| Sr. no. | Post caesarean activities | Experimental group | | Control group | | SE | Obtained Z value | Level of significance |
|---------|-------------------------------------|--------------------|---------|---------------|---------|----------|------------------|-----------------------|
| | | Freq | Percent | Freq | Percent | | | |
| 1 | Poor post caesarean activities | 97 | 8.80 | 249 | 99.6 | 0.031077 | 19.5645 | * |
| 2 | Good post caesarean activities | 146 | 58.40 | 01 | 0.40 | 0.031428 | 18.4549 | * |
| 3 | Excellent post caesarean activities | 07 | 2.80 | 00 | 00 | 0.010434 | 2.6835 | * |

* - 0.05 level of significance.

Table 5-Comparison of scores of selected post caesarean activities at end of post caesarean day three. (N = 500)

| Sr. no. | post caesarean activities | Experimental group | | Control group | | SE | Obtained Z value | Level of significance |
|---------|------------------------------------|--------------------|---------|---------------|---------|--------|------------------|-----------------------|
| | | Freq | Percent | Freq | Percent | | | |
| 1 | Poor post cesarean activities | 07 | 2.80 | 236 | 94.4 | 0.0178 | 51.1803 | * |
| 2 | Good post cesarean activities | 124 | 49.60 | 13 | 5.2 | 0.0345 | 12.8325 | * |
| 3 | Excellent post cesarean activities | 119 | 47.60 | 01 | 0.40 | 0.0318 | 14.8252 | * |

*- 0.05 level of significance.

Table 6-Comparison of scores of selected post caesarean activities at end of post caesarean day four. (N = 500)

| Sr. no. | Post caesarean activities | Experimental group | | Control group | | SE | Obtained Z value | Level of significance |
|---------|------------------------------------|--------------------|---------|---------------|---------|--------|------------------|-----------------------|
| | | Freq | Percent | Freq | Percent | | | |
| 1 | Poor post cesarean activities | 00 | 00 | 162 | 64.8 | 0.0302 | 21.452 | * |
| 2 | Good post cesarean activities | 21 | 8.4 | 82 | 32.8 | 0.0344 | 7.0748 | * |
| 3 | Excellent post cesarean activities | 229 | 91.6 | 06 | 2.40 | 0.0200 | 44.5181 | * |

* - 0.05 level of significance,

Table 7-Comparison of scores of selected post caesarean activities at end of post caesarean day five. (N = 500)

| Sr. no. | post caesarean activities | Experimental group | | Control group | | SE | Obtained Z value | Level of significance |
|---------|-------------------------------------|--------------------|---------|---------------|---------|--------|------------------|-----------------------|
| | | Freq | Percent | Freq | Percent | | | |
| 1 | Poor post caesarean activities | 00 | 00 | 53 | 21.20 | 0.0258 | 8.2011 | * |
| 2 | Good post caesarean activities | 08 | 3.20 | 176 | 70.40 | 0.0309 | 21.717 | * |
| 3 | Excellent post caesarean activities | 242 | 96.80 | 21 | 8.40 | 0.0207 | 42.547 | * |

*-0.05 level of significance.

Based on the above findings of all five post caesarean days, it was evident that there was significant difference in the selected post caesarean activities of experimental and control group in post caesarean period. And so null hypothesis (H₀) was rejected and alternative hypothesis (H₁) which stated that ‘There will be significant difference in post caesarean activities of the study subjects of experimental and control group, as evidenced by better activities of experimental group, as measured by post caesarean activity rating scale’ was accepted at 0.05 level of significance.

DISCUSSION

The ambulation of patients soon after surgery, now a fundamental part of nursing care, wasn't common practice until the middle of the past century. Years ago early ambulation was considered a ‘crack-pot’ idea. Today, it is recognized and is rapidly approaching a ‘must’ procedure following a surgical operation.” Indeed, the practice of having patients walk as soon as possible after surgery constituted a major change in patient care, based on then new evidence of the benefits of exercise and its positive impact on patient recovery. Since then, facilitating ambulation has been considered an important part of excellent nursing care, particularly in postoperative patients.^[12]

In the present study it was found that there was significant difference in the selected post caesarean activities of experimental and control group. The selected post caesarean activities like breast feeding, sitting, walking, bowel and bladder elimination, diet, self care and care of newborn of experimental group were significantly better than that of control group. This study concluded that the planned early ambulation was effective in improving the activities of post caesarean patients in relation to self care and care of

newborn. Right from the second post caesarean day, the significant difference was noted in the selected postcaesarean activities of patients with caesarean section; and it was evident throughout the days of assessment.

This result is in accordance with the study done in year 2005 by Lin P., Wang R. on ‘Effectiveness of early ambulation on postoperative recovery and activities of daily living (ADL)’. A randomized controlled study conducted between January and August 2001, on patients’ undergone abdominal surgery. Patients were randomly assigned in experimental group 30 and control group 30. Result showed that, experimental group experienced a significant decrease in morbidity as well as significant improvement in ADL as compared to control group. Thus it could be concluded; early ambulation is effective strategy to improve ADL in patients with abdominal surgery.^[13]

The study done in 2006, Houborg KB, Jensen MB conducted study on “Postoperative physical training following abdominal surgery” also shown the similar result like present study. In which 60 colorectal surgery patients were undertaken. Physical training and progressive ambulation was given to the experimental group and routine care was given to control group. The outcome was measured in terms of fatigue, muscular strength, walking speed and physical performance test. The result shown that, physical training and progressive ambulation was effective to improve the postoperative physical functions.^[14]

The present study findings are also in accordance with the RCT done by Dimeo FC, Thomas F, Raabe-Menssen C, Pröpper F, Mathias M on ‘Effect of aerobic exercise and relaxation training on fatigue and physical performance of cancer patients after surgery’ concluded that a structured

aerobic training programme improves the physical performance of patients recovering from surgery. In this Seventy-two patients who underwent surgery for lung (n=27) or gastrointestinal tumors (n=42) were assigned to an aerobic exercise group or a progressive relaxation training group (45 min three times per week). Both interventions were carried out for 3 weeks. At the beginning and the end of the study, the physical, cognitive and emotional status and somatic complaints and maximal physical performance with an ergometric stress test were assessed. Physical performance of the training group improved significantly during the programme (9.4+/-20 watts, p=0.01) but remained unchanged in the relaxation group (1.5+/-14.8 watts, p=0.37).^[15]

CONCLUSION

From this study it could be concluded that the planned early ambulation is after lower segment cesarean section plays an important and beneficial role in improving the postnatal activities of postcaesarean patients in relation to self care and care of newborn. Thus it is effective strategy which can help in early post cesarean recovery of the postnatal patients by improving the postnatal activities of mothers, making them independent in self care and care of newborn and this can indirectly helps in reducing morbidity. And it can be practiced safely in hospital setting for the benefit of patients and health care.

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