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Effectiveness of early ambulation on maternal outcome among post caesarean mothers admitted in a tertiary care hospital

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Abstract

After every surgery the body takes time to heal. A caesarean section is a major surgical procedure after the mother not only has to deal with herself but also has to take care of her baby. It is the initial day which acts as a turning point in her life. Adding to her plight is the excruciating pain that she feels initially which delays the breastfeeding, further leading to poor infant mother bonding. Study aimed to assess maternal outcome (pain score & infant behaviour) after early ambulation among post cesarean mothers.

Objectives: To assess the pain score of post caesarean mothers before and after ambulation.. To assess the infant's behaviour of post caesarean mother after ambulation.. To compare the maternal outcome among post caesarean mothers in both groups.

Methods and Material: Experimental approach with two group pre-test post-test design was adopted for the study. The study included 60 subjects selected by computerised random sampling technique; 30 in experimental and 30 in control group. Pain score assessed by VAS and infant behaviour by modified BOAT.

Findings: There was significant difference with regard to application of statistical test results of maternal outcome in experiment group. Thus proving that early ambulation is effective to improve maternal outcome among post caesarean mothers.

Conclusion: The study concludes that early ambulation; after six hours of post caesarean section plays a vital and beneficial role in improving maternal outcome of post caesarean mothers, and it can be practiced safely and independently by the nursing staff in hospital setting for the benefits of post cesarean mothers.

Keywords: Early ambulation, post caesarean mothers, maternal outcome, pain, breastfeeding

Introduction

Pregnancy is the most amazing time in the life of a woman. It is the transition phase between womanhood to motherhood. Every pregnant woman hopes for a short labour and delivering a beautiful baby with no complications. As the wellbeing of maternal and child health occupies paramount place in health care delivery system, today caesarean section has become the most common intervention in developed as well as developing countries. It is performed as a safe alternative to a difficult vaginal delivery.

The number of births by caesarean section is on the rise, climbing from about 16 million (12.1% of all births) in 2000 to 29.7 million (21.1% of all births) in 2015, according to a study published in the journal The Lancet^[1].

In India, according to data collected by Union Ministry of Health and Family Welfare system under the Health Management Information System over 14% of total birth in 2018-19 took place via Caesarean section. In 2018-19, the rate of Caesarean section in India is around 20% against 10-15% which is ideal recommendation by WHO. NFHS- 5 survey (2019-2020) revealed the rate of cesarean section rocketed to 21.5%. In Maharashtra in the year 2018-19 a total of 4, 00,894 caseaeran section was conducted^[2].

A study conducted in Sweden on 278 post cesarean women revealed that 91% had high levels of pain, 41% had worst imaginable pain, in spite of wide use of pharmacological pain relief^[3].

Mother infant bonding occurs when the mother touches, cuddles, breastfeeds, put the baby to sleep and by caring for baby. But the post-caesarean section women suffer great loss in

capacity to take care of their babies, breastfeed effectively and interact with their infant during immediate postpartum [4]. Enhanced recovery after surgery (ERAS) is a standardized, perioperative care program that is embedded firmly within multiple surgical disciplines. It has been shown to result in both clinical benefits (reductions in length of stay, complications, and readmissions) and health system benefits (reduction in cost) [9-10]. The ERAS caesarean delivery guideline/pathway has created a pathway for postoperative care which include postoperative analgesia, nutritional care, early mobilization with primarily, maternal focus [11].

Immobility after caesarean section has a different effect on the women physically and mentally. A quasi experimental research study done in Dehradun, concluded that early ambulation improved the activity of daily living also enhanced the post operative recovery after caesarean section and improved the wellbeing of mother as well [12].

Another quasi experimental study done in Mangalore revealed that the infant caring behaviour (breast feeding, rooming in and maternal feelings of wellbeing) was improved due to early ambulation as compared to the late ambulated post caesarean mothers [13].

The abundant working experience enabled us to understand the problem faced by the post caesarean mothers. We observed that delayed ambulation leads to poor pain relief which further aggravated the problem of maternal bonding with the neonate. It also further lead to poor latching and delayed feeding. Through this research we are trying to explore the possibilities of early ambulation. The post caesarean mothers if ambulated early will result in better pain relief which in turn will foster good mother child bonding.

Problem statement

“A study to assess the effectiveness of early ambulation on maternal outcome among post caesarean mothers admitted in a tertiary care hospital.”

Objectives

1. To assess the pain score of post caesarean mother before and after ambulation
2. To assess the infant care behaviour of post caesarean mother after ambulation
3. To compare the maternal outcome among post caesarean mother in both groups
4. To find the association of maternal outcome among post caesarean mothers and selected demographic variables

Operational definitions

Early ambulation is ambulating post caesarean mothers after 6 hrs of time of section about 20 mts.

Maternal Outcomes includes pain relief after caesarean section at incision site and infant behaviour, breast feeding pattern.

Methodology

Research design

Experimental two group pre-test post-test design was used to assess the effectiveness of early ambulation on maternal outcome among post caesarean mothers.

Research setting

Post-natal ward of a tertiary care hospital where post caesarean mothers are taken care.

Population

Population for the present study are post natal mothers who underwent lower segment caesarean section on 1st 2nd and 3rd postoperative days.

Sample size

The sample size in the study consisted of 60 postnatal mothers (30 in each arm) who fulfilled the inclusion criteria.

Sampling technique

60 samples were selected by Computer generated random sampling technique. 30 subjects (1-30) were recruited into experimental groups and next 30 subjects (31-60) were recruited into control group. 30 subjects (1-30) were ambulated to 20 minutes after 6 hrs. From time of section and 30 subjects (31-60) were give routine care as per institutional policy.

Inclusion criteria

Post caesarean mothers admitted in the tertiary care centre on 1st, 2nd & 3rd post operative day. Post caesarean mothers willing to participate in the study and Post caesarean mothers who could understand Hindi or English.

Exclusion criteria

Post caesarean mothers operated by classical caesarean section, mothers who are advised bed rest, who underwent LSCS under anaesthesia other than SA, whose baby required NICU care and who required analgesic support other than the standard post caesarean analgesia protocol of the institution.

Description of tool

Data was collected by

Part 1: Socio demographic data.

Part 2: Numerical pain rating scale to assess the pain score and

Part 3: Modified BOAT Checklist to assess the infant behaviour; breast feeding pattern.

Description of the procedure

The investigator maintained a well knitted communication network with the ward staff and subject. Every day the assigned ward staff assessed the pain score, maternal outcome of the subjects admitted in the ward and documented in the register kept in the ward with the staff. Investigator ambulated the subjects in experimental arm and ensured the adequacy of knowledge and proficiency of assigned staff in pain assessment using numerical pain scale and modified BOAT checklist to assess the breastfeeding pattern.

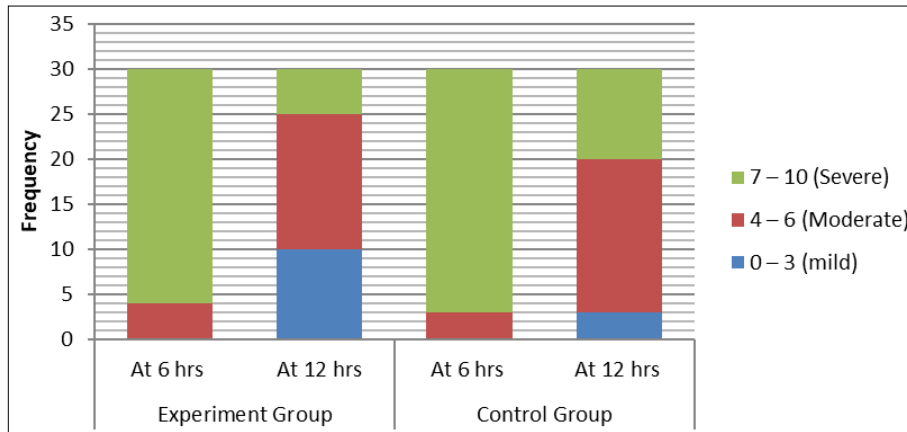
Subjects were selected by computerized random sampling technique. Selected sample were assigned to experimental & control group (30 in each arm). Those who satisfy the inclusion criteria & consented for participation in the study were included. Participants were coded as per the time of delivery Investigator personally contacted each selected post

caesarean mother admitted in postnatal ward of the selected hospital on their postoperative day established a rapport and written informed consent was obtained after explaining the purpose of the study and assured confidentiality. Post caesarean mothers in the experimental group were ambulated after 6 hrs from time of surgery by the investigator. Pre ambulatory pain score was assessed at 6 hrs of surgery for all post caesarean mothers. The pain score & breast feeding pattern for all post caesarean mothers were assessed after 12 hrs. of surgery. The data of selected subjects were taken from the record book in which staff have entered the pain score and modified BOAT score to assess the breastfeeding pattern.

Major Findings

The maximum samples were in the age group of 26-30 years and graduated. Primiparous women quantified about (46.7%) in experimental group and (53.3%) in control group. Maximum 50% in experimental group and 56.7% in the control group mothers underwent caesarean section for the first time.

The baseline pain score of all post-caesarean mothers in first 6hrs was severe (7-10) in both the groups whereas at 12hrs, severe pain was experienced by 33.3% of the control group while only (16.7%) in the experimental group experienced severe pain. 93.3% of subjects were able to breastfeed competently in experiment group as compared to control group (76.7%).



Pain score category of post Cesarean mothers n=60

Fig 1: Pre and post pain score in experiment and control group.

The mean pain score at 12hrs was 4.77 in experiment group and 5.90 in control group.

Table 1: Comparison of modified BOAT score at 12 hrs in experiment and control group. n = 60

Parameter	Experiment (n=30)		Control (n=30)		MW test Z Value	p-value
	Mean	SD	Mean	SD		
Modified BOAT score	8.43	1.135	7.57	1.431	2.61	0.009

The computed Z value for modified BOAT score was 2.61, higher than table value. P value was 0.009 (less than 0.05), indicating better modified BOAT score after ambulation. The selected demographic variables were age and parity. MW test and ANOVA was applied to find the association of pain score and breastfeeding pattern with demographic variables. P value >0.05 in regard to all statistical analysis at 0.05% level of significance.

Discussion

Maternal Outcome

Pain score

The mean pain score of experiment and control group after 6hrs of surgery was 7.83 & 7.57 respectively. Both groups experienced severe pain. Studies done by H Kaur, S Kaur and Pooja Sikka also showed that mean pain score was 7.12 [14]. Thus present study also supports that post caesarean mothers do experience (7.7) severe pain after surgery. After 12 hrs of surgery, mean pain score of experiment group was 4.77 whereas for control group mean pain score was 5.90. The pain level of experiment group is less than control group. There is statistical significant change in pain score after ambulation in experiment group. Hence present study statistically proved that there is a reduction in pain

score after early ambulation among post cesarean mothers. Study published in Nursing and Midwifery Research Journal, Vol -11, No-1, Jan 2015 by H Kaur *et al.* also highlighted the statistically significant reduction in pain score after ambulation among post caesarean mothers [14]. The present study is consistent with the findings of above studies.

Breastfeeding pattern

The mean Modified BOAT score at 12hrs in experimental and control group was 8.43+1.135 and 7.57+1.431. The computed Z value was 2.61, higher than table value. P value was 0.009 (less than 0.05), indicating better modified BOAT score after ambulation. The findings of the present study go in accordance with the study of Reema Jacqueline and Rev. Aileen, which showed that there is a marked improvement in breastfeeding pattern score after ambulation [12]. Hence sub hypothesis H3, there is no difference between modified BOAT score among experimental and control group at 12hrs is rejected & accepted research hypothesis.

Association of maternal outcome with selected demographic variables

The selected demographic variables were age and parity.

MW test and ANOVA was applied to find the association of pain score and breastfeeding pattern with demographic variables. P value >0.05 in regard to all statistical analysis at 0.05% level of significance. Hence revealed no statistical association. Between selected demographical variables and maternal outcome.

Conclusion

The study confirms the presence of improvement in maternal outcome i.e. reducing the pain intensity & better breastfeeding pattern after early ambulation at 6hrs among experiment group in comparison to control group. The study shows that practicing early ambulation as a non-pharmacological, easy, economical and independent maternal outcome management strategy, is an attempt towards reducing intake of analgesics, prevention of side-effects & complications, improving maternal-neonatal bonding and early healing of wound.

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