

ARTICLE INFORMATION

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Early mobilization and post-cesarean delivery pain management

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Abstract

Background: Sectio Caesarea causes a break in the continuity of the tissue that secretes pain receptors, especially after the anesthetic effect is gone. If pain, is not treated on time, the recovery period is delayed, the hospitalization time is longer, and the incidence of complications and the costs incurred are higher. The incidence of cesarean section in the world globally is 11%, and at Sartika Asih Hospital, Bandung in 2022 is 20% of all delivery, with a mother won't move because of fear and pain after delivery. Early mobilization is one of the interventions to overcome the pain.

Purpose: To determine the effect of early mobilization carried out six hours after cesarean section surgery on pain at Bhayangkara TK II Sartika Asih Hospital, Bandung.

Method: This study used a quasi-intervention type with a pretest-posttest two-group design. The sample was total sampling which was divided into 15 people each in the intervention and the control group to measure the pain of post cesarean mothers with the Verbal Rating Scale (VRC)

Results: There were significant differences in pain levels before and after the intervention in the intervention group, with a median (5 ± 1.5) to (3 ± 0.4), and in the control group (8 ± 1.3), to (8 ± 1.2). In the Wilcoxon test, p-value of 0.001 in the intervention group and p-value of 0.250 in the control group.

Conclusion: Early mobilization had an impact on reducing the pain scale. Implementation for early mobilization since 6 hours can be used as non-drug pain management for Post Sectio Caesarea mothers to reduce pain levels.

Keywords: Cesarean Section; Early Mobilization; Pain Scale.

INTRODUCTION

Cesarean Section may be needed to protect the health of the mother and baby for certain medical indications, to prevent increased morbidity and mortality rates. However, what is currently happening is the opposite, Cesarean Section is carried out without any medical indication, even though this process can be dangerous and even waste energy and finances. In fact, it is projected that by 2030, 28.5% of women worldwide will give birth by Cesarean Section (Betran, Ye, Moller, Souza, & Zhang, 2021).

Childbirth by caesarean section is found to be five times more common in wealthier groups in low and middle income countries. The frequency is one to six times more common in private facilities than in public

facilities (Boerma, Ronsmans, Melesse, Barros, Barros, Juan, & Temmerman, M2018). Indonesia's prevalence of Caesarean Section was 9,8% (Ministry of Health of the Republic of Indonesia, 2013). and in 2018 it was 17.6%, which means that in 5 years it has increased significantly, namely almost 2 times (Ministry of Health of the Republic of Indonesia, 2018). West Java has 15.5% cesarean deliveries this figure is almost close to the national figure of all deliveries in Indonesia.

The incision made in Sectio Caesarea procedure might cut off the tissue's connection which release pain receptors that leads to the patients feeling discomfort and pain, especially after the anesthetic

effect wears off (Lammarisi, 2015; Metasari & Sianipar, 2018). Besides pain and discomfort, the procedures can also trigger stress and develop physiological responses, which then cause physical and psychological responses (Varney, Kriebs, & Geger, 2007). Pain is the most common side effect of post caesarean, and it does not subside easily (Berkanis, 2020).

Pain is a physiological response that can cause breakage in tissues and severe bleeding; it weakens the uterine muscles which leads to hemorrhage (Rini & Susanti, 2018). It is a psychophysiological experience that includes sensory and emotional components. Postoperative complication may cause thromboembolic complications, adhesions, and persistent pain (Mylonas & Friese, 2015).

These can affect the respiratory system, cardiac system, stomach, and often become some kind of reason to reject the offer for early mobilization. Outset activities aim to speed up the wound healing process, accelerate uterine involution, facilitate the function of urinary organs, and improve blood circulation (Rosenberg & Trevathan, 2018). Therefore, it is necessary to properly handle Post Sectio Caesarea pain. If the patient's postoperative pain is not treated in time, then their recovery period will be delayed, they will be treated in hospital emergency department for a longer time, chances of getting complications is higher, and bigger costs will be charged. All that happened because they focus more on the pain instead of the recovery process (Smeltzer, & Bare, 2018).

Sectio caesarean wound needs longer recovery time compared to vaginal delivery, because incisions during surgery cause tissue discontinuity that stimulates the release of pain receptors which then transmitted to the brain. Patients whose pain is not properly treated are feared to show. Vaginal delivery is associated with earlier mobilization and functional recovery compared to cesarean delivery (Ma, Martin, Chan, Gofeld, Geary, Laffey, & Abdallah, 2018).

Several studies have found that there is an effect

of early mobilization on post-cesarean section pain (Sembiring, 2022). Other studies state postoperative pain incidence was 78,4%, the preoperative anxiety increases the risk of moderate-severe postoperative pain. It can harm their capacity to take care their babies, the first bonding of mother and child, and the ability to effectively breastfeed (Borges, Pereira, Moura, Silva, & Pedroso, 2016).

RESEARCH METHOD

Research method in this study used the form of comparative analysis which aims to see a comparison between two or three problems with different samples. The hypothesis upheld in this study was, there is an effect of early mobilization on post caesarean section pain. This study used a quasi-intervention design with a pretest-posttest two-group design.

A total of 30 people were used as samples in this study, 15 people in intervention group (which undergo the six-hour mobilization treatment) and 15 people in the control group. The research were divided into three stages : first step were: obtained permission to go to the Bhayangkara TK II Sartika Asih Hospital Bandung City along with selecting and training five enumerators who were chosen from the head shift (training was carried out on December 25, 2022) regarding procedures for early mobilization and measurement of pain, research explanation, and picked up informed consent, preparation of post caesarean mothers to carry out early mobilization, pre-test pain level using VRS before six hours (performed in the range of three to five hours postpartum), which divided the scale point into 0 = no pain, 1-3 = mild, 4-6 = moderate, and 7-10 = severe. This instrument is valid ($r = 0.90$) and reliable ($r = 0.95$),

The second stage: applying early mobilization intervention (the first six hours of Post Sectio Caesarea) for the intervention group with the following steps: Inhale slowly through the nose and exhale through the mouth while tightening the abdominal wall three times for about one minute.

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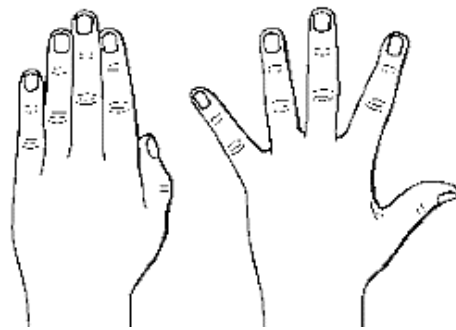


Figure 1. Abduction and adduction movements of the fingers



Figure 2. Remain in a lying position, arms extended above the head with palms facing up (Arms Movement)



Figure 3. Remain in a lying position, moving your elbows for 30 seconds

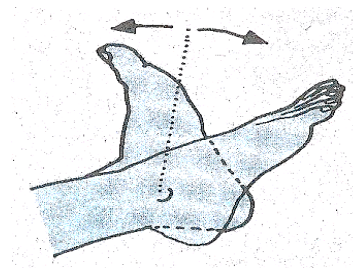


Figure 4. Lie down and move your feet up alternately for 5-10 times (Move your feet up)

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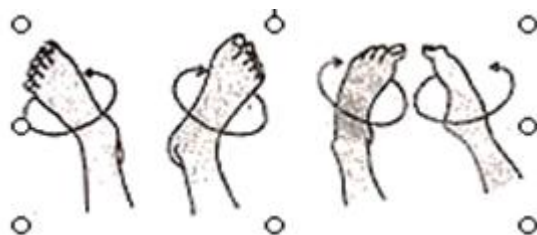


Figure 5. Move your feet in a rotating motion (for 30 seconds each) Circular leg movements

All these stages are tested valid with r table score range from 0.738 to 0.905 and r count 0.632. The result of reliability test showed a number of 0.957 for r table score and 0.632 for r count, which means that the instrument is reliable to be used as research measurement tool.

The third stage, researchers distributed a second pain level questionnaire to obtain the post test result. The data were then subjected to univariate analysis, namely the pain level before and after the intervention, by obtaining the Median value of the pain level, as well as bivariat analysis using the Wilcoxon to examine the relationship between the two paired groups with two measurements and data that has an abnormal distribution. The research was conducted at Bhakangkara Tk II Sartika Asih Hospital. Bandung City from December 2022 until January 2023. This research has also received an Ethical Approval from the Aisyiyah University Bandung Research Ethics Committee with Number: 329/KEP.01/UNISA-BANDUNG/XII/2022.

RESEARCH RESULTS

Table 1. Alteration in Pain Levels

Variable	Range min-max Total Experiments	Intervention (n=30) median±SD	Range min-max total control	Control (n=30) median±SD
Painful				
Pre-Test	6 (2-8)	5±1.5	5 (5-10)	8±1.3
Post-Test	1 (2-3)	3±0.4	4 (5-9)	8±1.2

Table 1. explains the pain score in the pre-test (before intervention) intervention group has the min-max range of 2-8 and the post-test (after intervention) has the min-max of 2-3. Whereas in the control group the pre-test score is around 5-10 and after being given early mobilization the results were not much different, namely 5-9. Next, the median values (with abnormal data) in the treatment group before and after the intervention were 5 ± 1.5 and 3 ± 0.4, while those in the control group were 8 ± 1.3 and 8 ± 1.2. Thus, there are differences in pain scores in the treatment group and the control group before and after being given early mobilization.

Table 2. The Effect of Early Mobilization on Pain

	Group	Median±SD	Min-Max	p-value
Intervention (n=15)	Early Pre-Mobilization	55.18±10.99	33-72	0.001
	Post-Early Mobilization 6 hours	35.73±9.76	21-64	
Control (n=15)	Pre dan Post No	51.11±12.46	28-74	0.250
	Treatment in 6 hours	47.10-16.10	21-74	

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Table 2. shows that the pain score in the intervention group (early mobilization) has been decreased significantly with a score of $p=0.001$, whereas in the control group the decrease in pain score was not significant with a $p=0.250$. So, it can be seen that there is an effect of giving six hours of early mobilization to reduce pain levels.

DISCUSSION

Pain is an unpleasant sensory response which is expressed differently and uniquely by each individual which also have an impact on a person's physical and psychological condition (Rini et al., 2018). The sensation of pain that felt between individuals is diverse because it is very subjective. This sensation will become a perception of pain. Each individual's perception of pain is influenced by several factors such as age, gender, culture, coping style, meaning of pain, attention, anxiety, fatigue, previous experience, also family and social support (Liawati & Novani, 2018). This study shows that pain is perceived by each respondent differently and indicated by abnormal data.

Physiologically, pain stimuli received by nociceptors in the skin can have high or low intensity, such as stretching, temperature, and also lesion tissue. Necrotic cells will release K^+ and intracellular proteins. An increase in extracellular K^+ levels will cause nociceptor to depolarized, while the protein in some circumstances will infiltrate microorganisms causing inflammation. In addition, the lesions also activate blood clotting factors so that bradykinin and serotonin are stimulated and nociceptors are stimulated (Świeboda, Filip, Prystupa, & Drozd, 2013).

The feeling of pain after having a caesarean section creates a feeling of stressor in which the patient will respond biologically and psychologically. The biological impact on patients can include movement limitation, changes in vital signs, and change in facial expression. The psychological impact can be such as fear of losing consciousness, stress which can suppress the immune system, inflammation, and delay recovery process (Dewi, Maesaroh, Sulasih, Rahmadhani, & Novyriana, 2022).

In advanced conditions, pain that is not handled properly can also cause a stress response. It is feared that excessive stress in postpartum patients will lead to baby blues syndrome or other abnormal behavioral

responses, including verbal responses, verbal responses, facial expressions, body movements and social interactions. Troubled or distressed mother will have harder time carrying out her duties towards the baby, starting from breastfeeding to fulfilling all her needs. Early mobilization is expected to reduce all the problem above. In order to stop the bleeding, clotting and thrombocytes will collect in the wound area and produce fibrin threads (fibrin matrix), which will subsequently build cell-repairing structures (Suastini & Pawestri, 2021). Subsequently, the injured tissues release histamine, which causes the area around the lesion to dilate capillaries and generate serum and white blood cells. Improved circulation, deep breathing, and the stimulation of regular gastrointestinal function are all results of mobilization. Lower legs should be moved as soon as feasible within six hours (Dewi et al., 2022).

Early mobilization is an effort to build the ability to move freely that must be carried out by mothers recovering from cesarean section so they will be able to care for their babies. But lots of mothers are afraid to make any movements in fear of feeling pain, even though in reality movement helps reduce pain and discomfort. It also teaches mothers to optimally tilt left and right. Mobilization is critical in shortening hospitalization days and lower the risks of complications due to longer bed rest state, for instance decubitus, stiffness or tension of muscles, blood circulation disorders, respiratory problems, and peristaltic or urinary dysfunction (Carpenito, 2018).

Early mobilization and gradual exercise have also proven effective in recovering mothers after cesarean section, that there is a relationship between the early mobilization treatment and a decrease in pain that can be felt immediately by post-section Caesarea mothers (Jadhav & Gosavi, 2023). Mobilization allows the mother to concentrate on the movements being performed (Rini et al., 2018), thereby triggering the release of norepinephrine and serotonin. The release of these compounds stimulates or modulates the descending control system. In the descending control system there are two things, the first is the release of substance P by delta-A and delta-C neurons. Both are mechanoreceptors and beta-A neurons release endogenous opiate inhibitory neurotransmitters such as endorphins and dynorphins to become more dominant to shut down defense mechanisms and inhibit substance P. Inhibition of substance P reduces

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nerve transmission to the central nervous system, thereby reducing the perception of pain (Smeltzer et al., 2018)

CONCLUSION

The results of the study at Bhayangkara TK II Sartika Asih Hospital found that the pain scale of post section cesarean mothers are decrease significantly after early mobilization. Result showed there is significant relationship between the provision of early mobilization carried out six hours post section caesarean to a decrease in perceived pain. The results of this study should be implemented as standard operating procedures and socialized to all midwives and other paramedics who work with postpartum mothers.

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