# Cutaneous stimulation of slow stroke back massage to reduce the pain of sectio caesarea

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## ARTICLE INFORMATION

## A B S T R A C T

**Background:** Labor with sectio caesarea may result to an impact after surgery, namely pain. The pain reduction technique that can be done is cutaneous stimulation of Slow Stroke Back Massage.

**Objective:** This study aims to determine cutaneous stimulation of Slow Stroke Back Massage towards pain in post sectio caesarean patients

**Methods:** This study used Pre Experimental Design with the One-Group Pre-test-Posttest Design approach. The samples studied were 20 patients of post SC surgery by consecutive sampling technique. The instrument used a VAS scale observation sheet. The research data were analyzed through Wilcoxon test.

**Results:** The results showed that the average pain intensity before the intervention was 6.10, the average intensity of pain after the intervention implemented reached 3.90, there was a difference of pain intensity in post sectio caesarean patients before and after cutaneous stimulation technique of Slow Stroke Back Massage (p-value = 0.001)

**Conclusion:** there is an effect of cutaneous stimulation of Slow Stroke Back Massage on pain in post sectio caesarean patients.

## INTRODUCTION

Based on the data from the World Health Organization (WHO) Global Survey on Maternal and Perinatal Health 2011, it showed that 46.1% of all births in the world were carried out with SC [1]. According to the Indonesian Health Demographic Survey in 2012, the incidence of SC in Indonesia was 921,000 from 4,039,000 labor or 22.8% of all deliveries, while the incidence of SC surgery in Central Java reached 32.2%[2].

Labor with sectio caesarea can have an impact after surgery, namely pain. Post-surgical pain will cause physical and psychological reactions in postpartum mothers such as impaired mobilization, lazy to do activities, insomnia, no appetite, unwilling to care for babies, thus it is necessary to control the pain in order to adapt to postoperative caesarean pain and accelerate the puerperium[3]. If the pain persists it can cause an increase in respiratory frequency and heart rate, peripheral vasoconstriction, an increase of muscle tension, a decrease of gastrointestinal motility. Moreover, psychologically, pain can cause anxiety, so it is very necessary to know the right intervention to reduce pain [4].

One of non-pharmacological approaches to relieve the pain is cutaneous stimulation technique of Slow Stroke Back Massage (SSBM). According to the gate control theory, cutaneous stimulation activates the transmission of pain through small C-and delta A fibers, so that the synapse closes the transmission of pain impulses. The proper use of cutaneous stimulation is able to reduce the perception of pain and muscle tension[5].

The advantage of SSBM cutaneous stimulation is its simplicity and easiness to be taught to patients and families. In addition, it also soften the ligaments between the pelvic bones and back , to loose the joints and to increase the secretion of endorphins in order to reduce pain and increase body immunity optimally[6]. Massage techniques are more effective to reduce pain than breathing ones. In the massage technique there is a

decrease in pain intensity of 2.0 while the breathing technique is 1.65 7. It can be concluded that the massage technique is more effective to reduce pain intensity compared to other techniques.

During the last 2 years, the incidence of sectio caesarea at RSUD dr. R. Goeteng Tarunadibrata Purbalingga increased. The incidence of SC in 2015 was 278 of 851 total deliveries (32.6%) and in 2016 as many as 369 people of 934 total deliveries (39.5%). The effort to reduce pain that has been conducted by RSUD Dr. R. Goeteng Taroenadibrata Purbalingga is the administration of analgesic drug. However, even though this treatment has been implemented, there are still patients who complain of pain. Based on the information from the midwife in the Bougenville ward, the respondents experience pain about 2-3 hours after the administration of the analgesic drug, with a duration of pain of around 15-20 minutes. One of the possible reasons is because in pain management the emphasis is on giving analgesics. As a result, when the analgesic effect disappears or decreases, the pain sensation will be felt by the patient.

## METHOD

### Study design

This study uses the Pre Experimental Design of the One-Group Pretest-Posttest Design approach.[7]

### Setting and respondents

The population of post sectio caesarea patients in 2016 was 369 patients. The sample of 20 postoperative SC patients was taken by sampling consecutive technique[8] based on inclusion criteria, ie patients first time SC, interventions carried out 2-3 hours after SC surgery in the first day, patients accompanied by families, getting analgesics with the same technique and dose.

### Instrument and measurement

The instrument of pain measurement used the Visual Analogue Scale (VAS) scale observation sheet. This instrument had been standardized.[8] This scale gave patients complete freedom to identify the severity of pain. The SSBM intervention was carried out by the researchers and enumerators who had carried out the same perception before the research was conducted.

### Experimental procedure

The measurement of pain scale measurement was carried out by post SC patients 2-3 hours filling the pain scale sheet before being carried out SSBM cutaneous stimulation technique then performed SSBM cutaneous stimulation technique according to the procedure for 10 minutes, then post SC patients re-filled the pain scale sheet.

### Data analysis

The univariate data were analyzed through frequency distribution and bivariate analysis through the Wilcoxon test.[7]

### Ethical consideration

Ethical feasibility tests had been carried out before research data collection was carried out.

## RESULTS

Most of the post sectio caesarean patients had background study of elementary education (50%), junior high school education (30%), high school education (15%) and undergraduate education (5%). The age of patients in this study was the youngest age of 21 years and the oldest age of 42 years. Most of patients were in (32.85 ± 7.35) years old.

The mean of pre-intervention SSBM cutaneous stimulation pain was on a scale of 6.10. The lowest pain range was on a scale of 3.4 and the highest one was on a scale of 10. The mean of pain in post-intervention cutaneous stimulation of SSBM was on a scale of 3.90. The lowest pain range in post intervention indicated on a 1.5 scale and the highest pain scale was 10.

The negative rank value showed that the post-test value was lower than the pretest value, so it can be concluded that the post-intervention pain scale was lower than the pre-intervention scale. The z value obtained was 3.312 with p value of 0.001 indicating there was a difference in the pre and post intervention pain scale SSBM cutaneous stimulation (Table 1).

## DISCUSSION

In this study, the average score of pain intensity before SSBM cutaneous stimulation intervention was 6.10. The lowest pain intensity on a scale of 3 and the highest on a scale of 10. According to Patasik 9, the difference of the pain level perceived by the patients can be caused by the ability of the individual's attitude to respond and perceive the pain. The ability to perceive pain is influenced by several different factors among individuals. Each individual will have different reaction in exposing to the same stimulus experiencing the same pain intensity. A very painful sensation for someone may hardly be felt by others.

Everyone is different in reacting to pain because it has a pain threshold and a different level of pain tolerance. Factors affecting pain such as the environment, general conditions, levels of endorphins, situational factors, gender, emotional status, past experience, reactions to-

**Table 1.** Differences of pain intensity in post sectio caesarean patients before and after SSBM cutaneous stimulation techniques were implemented (n = 20)

| Variable | Mean Rank | Negative | Ties | Z | p-value |
|---|---|---|---|---|---|
| Pain Intensity | 7.50 | 14 | 6 | 3.312 | 0.001 |

pain, anxiety and personality, culture and social, age and cognitive function. The factors that significantly affect the pain intensity of postoperative abdominal patients are gender (p value = 0.005), anxiety level (p value = 0.0005), by knowing the factors that influence pain intensity it can be beneficial for nursing practitioners as a reference for nursing care in managing postoperative abdominal pain.

Furthermore, the average of pain intensity in post intervention of SSBM cutaneous stimulation is 3.90. This shows that respondents experience a decrease in pain intensity after the intervention. The results of this study are in accordance with the study of Anisa Pratiwi Lestari (2015) on the effect of SSBM Cutaneus stimulation on menstrual pain intensity in XI Grade students indicated that there was an effect of SSBM Cutaneus stimulation on menstrual pain intensity in XI grade students with p-value 0.0001 (p- value <0.05), and this study is in accordance with the theory of Smeltzer & Bare (2005) which states that a person's pain experience is influenced by several factors that can increase or decrease the perception, tolerance, or individual response to pain. One of the actions that can be applied to reduce pain intensity is the administration of SSBM stimulation.

In this study there is a decrease in the pain intensity in post sectio caesarean patients in pre and post intervention of SSBM cutaneous stimulation techniques. The mean value before the SSBM cutaneous stimulation technique is 6.10, and it decreases at 3.90 (p value = 0.001) after SSBM cutaneous stimulation technique was carried out (table 1).

This is in line with previous research there are differences in rheumatic pain scale in the elderly after being given SSBM cutaneous stimulation intervention (p value = 0.0004). The effects of slow-stroke back massage on anxiety and shoulder pain in elderly stroke patients shows that SSBM intervention significantly reduces the pain scale and anxiety of elderly patients with stroke. [10]

SSBM is a back massage with a gentle swab for 3-10 minutes [4]. The mechanism of massage that can reduce pain is the gate control theory which is the activation of the neural gate mechanism in the spinal cord. The gate control theory states that there is a kind of gate mechanism in the spinal cord that allows nerve fibers to receive pain stimuli. This theory provides a more holistic impetus to the pain management approach. The gate control theory says that cutaneous stimulation can activate larger sensory A-beta nerve fibers. This process then decreases the transmission of pain impulses through small diameter delta-A and C fibers, so that the synapse gate closes the transmission of pain impulses [11].

## CONCLUSIONS AND RECOMMENDATION

The mean of pain intensity in pre SSBM cutaneous stimulation intervention is 6.10. Moreover, the mean of pain intensity in post SSBM cutaneous stimulation intervention decreasases 3.90. There is a difference in pain intensity in post sectio caesarean patients in pre and post SSBM cutaneous stimulation technique was given with a p-value of 0.001. Further research needs to be conducted by measuring physiological responses to the incidence of pain.

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