

## THE EFFECT OF EARLY MOBILIZATION ON THE PROCESS OF WOUND HEALING IN THE INFLAMMATORY PHASE OF POST SECTIO CAESAREA

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### Abstract

Sectio caesarea is an artificial birth where the fetus is born through an incision in the abdominal wall and uterine wall provided that the uterus is intact and the fetus weights more than 500 grams. The incidence of sectio caesarea in Indonesia is 15.3%. Sectio caesarea surgery performed in an attempt to expel the baby will leave an incision wound condition. One of the factors that support the process of wound healing is early mobilization. Early mobilization carried out in stages will help to improve blood circulation so it can accelerate the healing process, especially during the inflammatory phase, so mothers can return to normal daily activities. This research aims to determine the effect of early mobilization on the wound healing process in the inflammatory phase of post sectio caesarea, The purpose of this research is to find out how early mobilization influences the wound healing process in the inflammatory phase of post sectio caesarea at Sufina Aziz General Hospital, Medan in 2023. This research used a quantitative research method with the Quasi Experiment Design Method with the One Group Pre-test Post-test Design. The population of all post sectio caesarea patients at Sufina Aziz General Hospital in Medan City with a sample of 15 respondents used the Accidental Sampling Technique. Data analysis in this research used the Paired Sample T-Test. The results showed that almost all respondents, namely 14 respondents, experienced wound healing in the inflammatory phase category either on the third day post sectio caesarea or after (post-test) early mobilization. The results of the Paired Sample T-Test obtained a p value  $(0.000) < \alpha (0.05)$  which means that there is an effect of early mobilization on the wound healing process in the inflammatory phase of post sectio caesarea at Sufina Aziz Hospital, Medan City in 2023. Health workers are expected to increase professionalism in providing services to patients, especially in providing early post-sectio caesarea mobilization.

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**Keywords: Sectio caesarea , Early Mobilization, Wound Healing**

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### INTRODUCTION

Childbirth is the process in which the product of fertilization (fetus, placenta, and amniotic fluid) is pushed out of the uterus through the birth canal or by others. Sectio caesarea is an artificial birth in which the fetus is born through an incision in

the abdominal wall and uterine wall provided that the uterus is complete and the fetus weight more than 500 grams (Jitowiyono & Kristiyanasari, 2022).

According to the World Health Organization (WHO), in 2020 the number of sectio caesarea has increased in the world and exceeded the recommended range of 10-15%. America Latin and the Caribbean had the highest percentage of cesarean section births at 40.5%, followed by Europe 25%, Asia 19.2% and Africa 7.3%. According to statistics, there were 3,509 cases of section caesarea with indications of 21% fetal pelvic disproportion, 14% fetal distress, 11% placenta previa, 11% having had a cesarean section, 10% abnormal fetal position, 7% pre-eclampsia and hypertension (WHO, 2020).

According to Basic Health Research in (2018) there was 15.3% of childbirth carried out by sectio caesarea . The maternal childbirth rate in Indonesia in 2018 reached 79.3%. The highest provinces with childbirth by sectio caesarea were DKI Jakarta 27.2%, Riau Island 24.7%, and West Sumatra 23.1%. According to the Ministry of Health of the Republic of Indonesia (Kementrian Kesehatan Republik Indonesia), the number of mothers giving birth in Indonesia in 2018 was 5.043.078 and there was 4.351.389 mothers in Indonesia assisted by health workers. The indications of childbirth by sectio caesarea in Indonesia are caused by several complications with a percentage of 23.2% including transverse fetal position 3.1%, bleeding 2.4%, seizures 0.2%, premature rupture of membranes 5.6%, prolonged labor 4.3%, umbilical cord entanglement 2.9%, placenta previa 0.7%, placenta left behind 0.8%, hypertension 2.7%, and others 4.6% (Kemenkes RI, 2018).

Based on the Riskesdas of North Sumatra (2018) the incidence rate of sectio caesarea in North Sumatra was 23.89% and rate of the normal birth was 75.95%. The number of mothers giving birth in the province of North Sumatra in 2018 was 321.232, and mothers who were assisted by health workers at health facilities was 265.212 (Kemenkes RI, 2018).

Sectio caesarea surgery that carry out to deliver the baby will leave an incision wound condition. Post caesarean incision wound is a type of acute wound caused by sectio caesarea surgery when a woman cannot give birth normally.

Wound healing in sectio caesarea is estimated to take approximately 1 week. The condition of the incision wound requires optimal care to ensure the recovery process runs optimally as well. One of the things that supports the wound healing process is early mobilization (Zuiatna D, 2018).

Early mobilization can begin within the first 6 hours after post sectio caesarea . The goals of mobilization is to accelerate the wound healing process, improve circulation, prevent venous stasis, and support optimal respiratory function. So that the mother can gain strength, accelerate recovery, improve bowel and bladder function, stimulate intestinal peristalsis to return to normal and mobilization also helps speed up the body's organs to work as before (Nadiya & Mutia, 2018).

Step by step of early mobilization carried out will help to improve blood circulation so it can accelerate the healing process, especially during the inflammatory phase, so mothers can return to normal daily activities. Delaying early mobilization can worsen the mother's condition and hinder the healing process of sectio caesarea wounds (Hartati & Ferinawati, 2019).

Based on a preliminary survey which conducted by researchers at Sufina Aziz General Hospital Medan on November 14 2022, data was obtained from nurses regarding early mobilization of post-sectio caesarea mothers that nurses tell to the

patients about early mobilization. However, there are many mothers who do not want to do early mobilization after post section caesarea because of the mother's fear of moving and fell worry about surgical wound will open and feel pain in the surgical wound. In terms of wound care post sectio caesarea , it was found that all post sectio caesarea wound care still used sterile gauze for post sectio caesarea wound dressings.

Based on a preliminary survey conducted by researchers, it was found that medical record data from Sufina Aziz General Hospital Medan recorded 818 cases of sectio caesarea in 2019, there were 876 cases of sectio caesarea in 2020, 930 cases of sectio caesarea in 2021 and 821 cases of sectio caesarea in 2022. From the background above, the researcher is interested in conducting research on "The Effect of Early Mobilization on the Wound Healing Process of the Post Sectio caesarea Inflammatory Phase at Sufina Aziz General Hospital General Medan City 2023".

## **RESEARCH METHODS**

This research used quantitative research with using the Quasi Experiment Design method with the One Group Pre-test Post-test Design. The population in this research were all post sectio caesarea patients at Sufina Aziz General Hospital Medan from January to May 2023. Sampling in this research used the Accidental Sampling technique from January to May 2023 with a total of 15 respondents.

The instrument used in this variable is the post sectio caesarea wound healing observation sheet to collect data before and after being given an early mobilization intervention using the REEDA scale (Redness, Edema, Ecchymosis, Discharge, Approximation) which is a wound healing assessment instrument that contains five factors. There are redness , edema, ecchymosis, discharge, and approximation of the two edges of the wound. Each factor is given a score between 0 to 3 which represents the absence of signs to the presence of the highest level of signs. Thus, the total score scale ranges from 0 to 15, with a higher score indicating poor wound healing. Observations were made 2 times, namely on day 1 and day 3 after sectio caesarea .

Data analysis was done by using univariate analysis and bivariate analysis. Univariate analysis only produces frequency distributions. Using the Shapiro-Wilk test for the normality test and the Parametric test with the Paired Sample T-Test for bivariate analysis.

## **RESULTS AND DISCUSSION**

Table 1 Frequency Distribution Based on Respondent Characteristics at Sufina Aziz General Hospital, Medan City in 2023

**Table 1 Frequency Distribution Based on Respondent Characteristics**

| <b>Characteristics</b> | <b>F</b>  | <b>%</b>   |
|------------------------|-----------|------------|
| Age                    |           |            |
| 21-25 year             | 4         | 26,7       |
| 26-30 year             | 6         | 40,0       |
| 31-35 year             | 4         | 26,7       |
| 36-40 year             | 1         | 6,7        |
| <b>TOTAL</b>           | <b>15</b> | <b>100</b> |

|              |    |      |
|--------------|----|------|
| Work         |    |      |
| House Wife   | 10 | 66,7 |
| Entrepreneur | 3  | 20,0 |
| Nurse        | 2  | 13,3 |
| TOTAL        | 15 | 100  |
| Dressing     |    |      |
| Kasa Steril  | 15 | 100  |
| TOTAL        | 15 | 100  |

Based on table 1 above, it is known that from 15 respondents (100%) the characteristics of respondents based on age obtained the majority of respondents aged 26-30 years as many as 6 respondents (40 %), the characteristics of respondents based on work obtained the majority of respondents with IRT jobs (housewives) as many as 10 respondents (66.7%) and the characteristics of respondents based on the dressing used showed that all 15 respondents (100%) used sterile gauze.

**Table 2 Frequency Distribution of the Inflammatory Phase Wound Healing Process on the First Day of Post *Sectio caesarea***

| Wound Healing Process<br>Inflammatory Phase | Pre-Test |     |
|---|----------|-----|
|   | F        | %   |
| Good  | 15       | 100 |
| Bad   | 0        | 0   |
| TOTAL                                       | 15       | 100 |

Based on table 2 above, it is known from 15 respondents (100%) showed that all respondents experienced the process of healing the wound in the inflammatory phase on the first day post *sectio caesarea* before (pre-test) early mobilization was carried out with a good category of 15 respondents (100%).

**Table 3 Frequency Distribution of the Wound Healing Process of the Inflammatory Phase Third Day of Post *Sectio caesarea***

| Wound Healing<br>Process<br>Inflammatory Phase | Post-Test |      |
|--|-----------|------|
|  | F         | %    |
| Good   | 14        | 93,3 |
| Bad  | 1         | 6,7  |
| TOTAL  | 15        | 100  |

Based on table 3 above, it is known from 15 respondents (100%) showed that the majority of respondents experienced the wound healing process in the inflammatory phase on the third day post *sectio caesarea* after (post-test) early mobilization was carried out in a good category, 14 respondents (93.3%).

**Table 4 Statistical Test Results Based on the Influence of the Post *Sectio caesarea* Inflammatory Phase Wound Healing Process**

| Wound Healing Process<br>Inflammatory Phase | Pre-Test |     | Post-Test |      | P Value |
|---|----------|-----|-----------|------|---------|
|   | F        | %   | F         | %    |         |
| Good  | 15       | 100 | 14        | 93,3 | 0,000   |
| Bad   | 0        | 0   | 1         | 6,7  |         |
| TOTAL                                       | 15       | 100 | 15        | 100  |         |

Based on table 4 above, it can be seen that the results of the statistical test using the Paired Sample T-Test show a sig (2-tailed) value or a p value of 0.000, which means a p value  $<0.05$  ( $0.000 < 0.05$ ). If the p value  $<0.05$ , there is a significant difference so that it can be concluded that there is an effect of early mobilization on the wound healing process in the post-*sectio caesarea* inflammatory phase.

**Wound Healing Process Inflammatory Phase First Day of Post *Sectio caesarea* Before (Pre-test) Early Mobilization**

The results of the research conducted by the researcher found that all respondents experienced the wound healing process in the inflammatory phase on the first day post *sectio caesarea* before (pre-test) early mobilization was carried out with a good category of 15 respondents (100%). This is because the wound healing process in the first day of the inflammatory phase in the respondents after performing a *sectio caesarea* operation was the same because it was still covered with stitches.

The wound healing phase begins with the inflammatory phase. This phase starts with the body's reaction to the wound starting a few minutes after the injury and lasts for several days. In this phase, a hemostatic process (controlling bleeding) occurs, that is, according to the brain's orders, the body will send blood supply to the injured area, then form epithelial cells (epithelialization) (Arisanty, 2022).

During this process the blood vessels that supply blood to the wound area will constrict and platelets will gather in the wound area to stop the bleeding process by forming a network of fibrin threads (fibrin matrix) from this fibrin matrix which will later become the framework for cell repair. Then the damaged tissue secretes histamine which stimulates capillary vasodilation in the wound area and secretes serum and white blood cells (Arisanty, 2022).

These two components will cause inflammation to kill germs that may be present when the wound occurs. This inflammatory process will certainly cause signs of inflammation in the form of redness, swelling, warmth and pain (Arisanty, 2022).

The results of this research are in line with Mustikarani (2019) regarding the effect of early mobilization on wound healing post *sectio caesarea*, namely a pre-experimental research with a one group pretest posttest design approach. 100%).

**Wound Healing Process Inflammatory Phase Third Day Post *Sectio caesarea* After (Post-test) Early Mobilization**

Early mobilization post *sectio caesarea* is a movement, position or activities carried out by the mother immediately after giving birth. Step by step for mobilization is very useful to help the patient's healing process.

Mobilization is carried out in the first 6 hours after surgery by moving the arms and legs, tilting the right side to the left, sitting up until they can stand up and do

normal activities and breathing exercises can be done by the patient while sleeping on his back after he is conscious (Rukiyah & Yulianti, 2018).

Based on the results of research conducted by researchers that early mobilization can affect the healing of post *sectio caesaria* wounds because early mobilization can improve blood circulation so that the nutrients needed by the wound are met and speed up wound healing. The results showed that the majority of respondents experienced the wound healing process in the inflammatory phase on the third day of post *sectio caesarea* after (post-test) early mobilization was carried out with a good category of 14 respondents (93.3%). It's just that there was one respondent who did early mobilization well and experienced wound healing in the bad category. This was known from observations made by researchers on the third day when changing the wound dressing, the wound experienced redness and swelling around the wound.

This condition is suspected to be due to the age factor of the respondents. Age can interfere with all stages of wound healing such as vascular changes that interfere with circulation to the wound area, decreased liver function interferes with the synthesis of clotting factors, slow inflammatory response, decreased formation of antibodies and lymphocytes, less soft collagen tissue, less elastic scar tissue. Healthy reproductive age is a safe age for a woman to get pregnant and give birth, namely the age of 20-35 years (Arisanty, 2022).

Respondents who experienced wound healing in the poor category were aged 37 years, so skin moisture was reduced which could affect a decrease in skin elasticity. In addition, as we age, the collagen content in the skin also decreases so that the process of regeneration of new cells becomes hampered. This of course can affect the wound healing process post *sectio caesaria* (Arisanty, 2022).

### **The Effect of Early Mobilization on the Wound Healing Process of Post Sectio Cesarea Inflammatory Phase**

From the research conducted by researchers on 15 respondents (100%) with pre-test and post-test, it was shown from the results of the research that there was an effect of early mobilization on the process of wound healing in the post-*sectio caesarea* n phase of inflammation at Sufina Aziz General Hospital, Medan in 2023.

This is proven based on the results of statistical tests using the Paired Sample T-Test showing a sig value (2-tailed) or a p value of 0.000, which means that the value of  $p < 0.05$  ( $0.000 < 0.05$ ). If the p value  $< 0.05$ , there is a significant difference so that it can be concluded that there is an effect of early mobilization on the wound healing process in the post-*sectio caesarea* inflammatory phase.

The results of this research are in line with Mustikarani's research (2019) concerning the effect of early mobilization on wound healing post *sectio caesarea* , namely pre-experimental research with a one group pretest posttest design approach, it was found that early mobilization had an effect on post *sectio caesarea* wound healing with almost all respondents experiencing wound healing post *sectio caesarea* with the category of wounds healed within 3 days after carrying out early mobilization, namely 19 (95%) respondents. Based on the results of statistical tests using the Wilcoxon test it is known that the p-value of 0.000 is smaller than the value of  $\alpha = 0.05$  ( $0.000 < 0.05$ ) so that  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is an effect of early mobilization on wound healing post *sectio caesarea*.

Based on the research results of Mutianingsih R (2017) regarding the process of wound healing in the inflammatory phase with early mobilization of post sectio caesarea patients, the results obtained from a research of 30 respondents, most of them carried out early mobilization in the first 6 hours as many as 23 respondents experienced wound healing in the inflammatory phase of surgery on the day the third is in the healed category and 7 respondents who did not perform early mobilization experienced healing of non-healing inflammatory phase wounds with a sig or p value of 0.000, which means that the value of  $p < 0.05$  so it can be concluded that early mobilization of post section caesarea patients is effective in the wound healing process inflammatory phase of surgery on the third day.

Based on the research of Rottie & Erlita (2019), the results of the research showed that all respondents who carried out early mobilization were 21 patients, and it was seen that more respondents mobilized early with good post-*sectio caesarea* wound healing. Based on the results of statistical tests using the binomial test, the p value = 0.027 is less than the value  $\alpha = 0.05$ . So that  $H_0$  is rejected, there is an effect of early mobilization on wound healing post *sectio caesarea*.

From the results of the research conducted by the researchers, it was found that the wound care carried out at Sufina Aziz Hospital, all post-caesarean wound care still used sterile gauze for post-cesarean wound dressings. According to the researchers, the results of this research indicated that wound healing would be maximized if patients who experienced post *sectio caesarea* were given intervention in the form of early mobilization.

## CONCLUSION

From the results of the research that has been done, it can be concluded that there is an effect of early mobilization on the wound healing process in the inflammatory phase of post sectio caesarea at Sufina Aziz General Hospital, Medan in 2023. This is proven based on the results of statistical tests using the Paired Sample T-Test showing a sig value (2-tailed) or a p value of 0.000, which means that the value of  $p < 0.05$  ( $0.000 < 0.05$ ). If the p value  $< 0.05$ , there is a significant difference so that it can be concluded that there is an effect of early mobilization on the wound healing process in the inflammatory phase of post sectio caesarea at Sufina Aziz General Hospital, Medan in 2023.

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