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THE EFFECT OF EARLY MOBILIZATION ON THE INFLAMMATORY PHASE WOUND HEALING PROCESS *POST SECTIO CAESAREA* AT SUFINA AZIZ HOSPITAL

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ABSTRACT:
Caesarean section 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 weighs more than 500 grams. The incidence of *caesarean section* in Indonesia is 15.3%. *Caesarean section* 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 improve blood flow thereby speeding up the wound healing process, especially during the inflammatory phase so that the mother can return to normal daily activities. This study 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 study 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 City in 2023. This study 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 *caesarean section* patients at Sufina Aziz Hospital in Medan City with a sample of 15 respondents used the *Accidental Sampling* technique. Data analysis in this study 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 *caesarean section* or after (post-test) early mobilization. The results of the Paired Sample T-Test obtained a p value

(0.000) <α (0.05) which means that there is an effect of early mobilization on the wound healing process in the inflammatory phase of *after caesarean section*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.

Keywords: *Caesarean Section, E*arly Mobilization, Wound Healing

INTRODUCTION

Childbirth is a process in which the products of fertilization (fetus, placenta, and amniotic fluid) are pushed out of the uterus through the birth canal or by other means (Swanson & Liu, 2022). *Caesarean section* 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 weighs more than 500 grams (Jitowiyono & Kristiyanasari, 2010).

According to *World Health Organization* (WHO), in the year (2020) the number of birth s*caesarean section* is increasing worldwide and exceeds the recommended range of 10-15% (Bhatia et al., 2020). Latin America and the Caribbean have the highest percentage of birth s*caesarean section* the highest at 40.5%, followed by Europe 25%, Asia 19.2% and Africa 7.3% (Takegata et al., 2020). According to statistics, 3,509 case s*caesarean section* with indications, namely fetal pelvic disproportion 21%, fetal distress 14%, placenta previa 11%, ever *caesarean section* 11%, abnormal fetal position 10%, pre-eclampsia and hypertension 7% (Betrán et al., 2007) (Bull et al., 2020)

According to Basic Health Research (2018) There were 15.3% of deliveries carried out via surgery *caesarean section*. The maternal birth rate in Indonesia in 2018 reached 79.3% (Sulku & Tokatlioglu, 2023). The highest province with delivery through *caesarean section* namely DKI Jakarta 27.2%, Riau Islands 24.7%, and West Sumatra 23.1%. According to the Ministry of Health of the Republic of Indonesia, the number of mothers giving birth in Indonesia in 2018 was 5,043,078 people and 4,351,389 women giving birth who were assisted by health workers in health facilities. Indications for vaginal delivery *caesarean section* in Indonesia it is caused by several complications with a percentage of 23.2% including transverse/sunsang 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%, retained placenta 0.8%, hypertension 2.7%, and others 4.6 (Murliana & Tahun, 2022) (Ernawati, 2018).

Based on North Sumatra Riskesdas (2018) the number of surgical incident s*caesarean section* in North Sumatra Province it was 23.89% and the normal birth rate was 75.95% (Siregar et al., 2021). The number of mothers giving birth in the province of North Sumatra in 2018 was 321,232 people and 265,212 women giving birth were assisted by health workers in health facilities (Ministry of Health of the Republic of Indonesia, 2018).

Surgical action *caesarean section* What is done in an effort to remove the baby will leave an incised wound. Incision wound *after caesarean section* is a type of acute wound caused by surgery *caesarean section* when a woman cannot give birth normally.

Wound healing in surgery *sectio caesarea* estimated approx for 1 week. The condition of the incision wound must receive optimal care so that the healing process runs optimally. One of the things that supports the wound healing process is early mobilization (Zuiatna, 2019).

Early mobilization can be done starting after the first 6 hours for the mother *after caesarean section*. Mobilization aims to speed up the wound healing process, improve circulation, prevent venous stasis, and support optimal respiratory function. So that mothers can gain strength, speed up healing, 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).

Early mobilization carried out in stages will help improve blood flow thereby speeding up the wound healing process, especially in the inflammatory phase so that the mother can return to normal daily activities. Delay in early mobilization can worsen the mother's condition and hinder the wound healing process *caesarean section* (Ferinawati & Hartati, 2019).

Based on a preliminary survey conducted by researchers at RSU Sufina Aziz, Medan City on November 14 2022, data was obtained from nurses regarding early mobilization of mothers *after caesarean section* that nurses teach patients about early mobilization. However, there are still post caesarean section mothers who do not want to carry out early mobilization due to the mother's fear of moving and worry that the surgical wound stitches will open and cause pain in the surgical wound. Judging from wound care *after caesarean section* It was found that all wound care *after caesarean section* still use sterile gauze for wound dressing *after caesarean section*.

Based on a preliminary survey conducted by researchers, medical record data from Sufina Aziz General Hospital, Medan City, recorded 818 cases. *caesarean section* in 2019, 876 cases *caesarean section* in 2020, 930 cases *caesarean section* in 2021 and 821 caesarean section cases in 2022. From the above background, researchers are interested in conducting research on "The Effect of Early Mobilization on the Phase Wound Healing Process *Inflammation After Caesarean Section* at Sufina Aziz RSU, Medan City in 2023."

RESEARCH METHODS

This research is a type of quantitative research with methods *Like an experiment Design* with a plan *One Group Pre-test Post-test Design.* The population in this study was all patients *after caesarean section* at RSU Sufina Aziz, Medan City from January to May 2023. Sampling in this study used the technique *Accidental Sampling* in January to May of 2023 as many as 15 respondents.

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

healing. Observations were carried out 2 times, namely on the 1st day and the 3rd day after *caesarean section*

Data analysis was carried out using univariate analysis and bivariate analysis. Univariate analysis only produces a frequency distribution. Using the Shapiro-Wilk test for normality test and Parametric test with test *Paired Sample T-Test* for bivariate analysis.

RESULTS AND DISCUSSION

Table 1
Frequency Distribution Based on Respondent Characteristics at Sufina Aziz RSU Medan City in 2023

Characteristics		F	%
1.	**Age**		
	21-25 years old	4	26,7
	26-30 years old	6	40,0
	31-35 years old	4	26,7
	36-40 years old	1	6,7
TOTAL		**15**	**100**
2.	**Work**		
	IRT	10	66,7
	Businessman	3	20,0
	Nurse	2	13,3
TOTAL		**15**	**100**
3.	**Dressing**		
	Kasa Steril	15	100
TOTAL		**15**	**100**

Based on table 1 above, it is known that of the 15 respondents (100%), the characteristics of respondents based on age were obtained, the majority of respondents were aged 26-30 years, 6 respondents (40.0%), the characteristics of respondents based on work were obtained, the majority of respondents were 10 respondents with household jobs. respondents (66.7%) as well as the characteristics of respondents based on the dressing used showed that all 15 respondents (100%) used sterile gauze.

Table 2
Frequency Distribution of Wound Healing Process in the Inflammatory Phase on the First Day *After Caesarean Section* Before *(Pre-test)* Early Mobilization will be carried out at Sufina Aziz RSU, Medan City in 2023

Inflammatory Phase Wound Healing Process	Pre-Test	
	F	%
Good	15	100
Bad	0	0
TOTAL	**15**	**100**

Based on table 2 above, it is known that from 15 respondents (100%) it shows that all respondents experienced the inflammatory phase wound healing process on the first day *after the section* I had a caesarean section*(pre-test)* Early mobilization was carried out in the good category as many as 15 respondents (100%).

Table 3
Frequency Distribution of Wound Healing Process in the Inflammatory Phase on the Third Day *After Caesarean Section* After*(Post-test)* Early Mobilization will be carried out at Sufina Aziz RSU, Medan City in 2023

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

Based on table 3 above, it is known that from 15 respondents (100%) it shows that the majority of respondents experienced the inflammatory phase wound healing process on the third day *after the section* caesarean after*(post-test)* Early mobilization was carried out in the good category as many as 14 respondents (93.3%).

Table 4

Statistical Test Results Based on the Influence of the Inflammatory Phase Wound Healing Process *After Caesarean Section* at Sufina Aziz RSU, Medan City in 2023

Inflammatory Phase Wound Healing Process	*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, the results of statistical tests using the test can be seen *Paired Sample T-Test* show value *say (2-tailed)* or *p value* of 0.000 which means p value <0.05 (0.000 < 0.05). If the p value is <0.05 then there is a significant difference so it can be concluded that there is an influence of early mobilization on the wound healing process in the inflammatory phase *after caesarean section*.

First Day Inflammatory Phase Wound Healing Process *After Caesarean Section* Before*(Pre-test)* Carry out Early Mobilization

The results of research conducted by researchers found that all respondents experienced the inflammatory phase wound healing process on the first day *after the section* I had a caesarean section *(pre-test)* Early mobilization was carried out in the good category as many as 15 respondents (100%). This is because the process of wound healing in the inflammatory phase on the first day of the respondent after undergoing caesarean section operation was the same because it was still closed by stitches.

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

During this process the blood vessels that supply blood to the wound area will be damaged *constriction* and platelets will gather in the wound area to stop the bleeding process by forming a network of fibrin threads (*fibrin matrix*) from *fibrin matrix.* This is what will later become the framework for cell repair. Then the damaged tissue secretes stimulating histamine *vasodilation* capillaries in the wound area and secrete serum and white blood cells (Setiawan et al., 2022).

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

The results of this study are in line with Mustikarani et al (2019) regarding the effect of early mobilization on wound healing *after caesarean section* namely research *pre experimental* with approach *one group pretest posttest design* It was found that all respondents had wounds that had not healed on the first day before early mobilization, 20 respondents (100%).

Third Day of Inflammatory Phase Wound Healing Process *After Caesarean Section* After*(Post-test)* Carry out Early Mobilization

Early mobilization *after caesarean section* is a movement, position or activity carried out by the mother immediately after giving birth. Gradual mobilization is very useful to help the patient's healing progress.

Mobilization is carried out in the first 6 hours after surgery by moving the hands and feet, tilting right to left, sitting until you can stand and carrying out normal activities and breathing exercises can be done by the patient while sleeping on their back after being conscious (Rukiyah & Yulianti, 2018).

Based on the results of research conducted by researchers, early mobilization can have an effect on post caesarean section wound healing because early mobilization can improve blood circulation so that the nutrients needed by the wound are met and speed up wound healing. The research results showed that the majority of respondents experienced the third day of the inflammatory phase wound healing process *after the section* caesarean after*(post-test)* Early mobilization was carried out in the good category as many as 14 respondents (93.3%). It's just that there was one respondent who carried out early mobilization well and experienced wound healing in the poor category. This was known from observations made by researchers on the third day when the wound dressing was changed and it was found that the wound had redness and swelling around the wound.

This condition is thought to be due to the respondent's age. Age can disrupt all stages of wound healing, such as vascular changes disrupting circulation to the wound area, decreased liver function disrupting 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 20-35 years (Setiawan et al., 2022)

Respondents who experienced wound healing in the poor category were already 37 years old so skin moisture was reduced which could affect skin elasticity. Apart from that, as we age, the collagen content in the skin also decreases so that the process of regenerating new cells becomes hampered. This of course can affect the post-cesarean section wound healing process (Arisanti et al., 2020).

The Effect of Early Mobilization on the Inflammatory Phase Wound Healing Process *After Caesarean Section*

From research conducted by researchers on 15 respondents (100%) with *pre-test* and *post-test* The research results show that there is an influence of early mobilization on the inflammatory phase wound healing process *After Caesarean Section* at Sufina Aziz RSU, Medan City in 2023.

This is proven based on the results of statistical tests using tests *Paired Sample T-Test* show value *say (2-tailed)* or *p value* of 0.000 which means p value <0.05 (0.000 < 0.05). If the p value is <0.05 then there is a significant difference so it can be concluded that there is an influence of early mobilization on the wound healing process in the inflammatory phase *after caesarean section*.

The results of this study are in line with research by (Mustikarani et al., 2019)

regarding the effect of early mobilization on wound healing *after caesarean section* namely research *pre experimental* with approach *one group pretest posttest design* It was found that early mobilization had an effect on wound healing *after caesarean section* with almost all respondents experiencing wound healing *after caesarean section* with the wound category healing within 3 days after early mobilization, namely 19 (95%) respondents. Based on the results of statistical tests using the test *wilcoxson* It is known that the p-value of 0.000 is smaller than the value of α = 0.05 (0.000 < 0.05) so that H_0 rejected and H_1 accepted, meaning that there is an influence of early mobilization on wound healing *after caesarean section.*

Based on the research results of (Mutianingsih & Kamila, 2022) regarding the healing process of inflammatory phase surgical wounds with early patient mobilization actions *after cesarean section.* The research results obtained from 30 respondents, most of whom carried out early mobilization in the first 6 hours, 23 respondents experienced healing of inflammatory phase surgical wounds on the third day in the healed category and 7 respondents who did not carry out early mobilization experienced healing of inflammatory phase wounds that did not heal with a value of sig or *p value* is 0.000, which means the p value is <0.05, so it can be concluded that early mobilization of patients post caesarean section is effective in the healing process of surgical wounds in the inflammatory phase on the third day.

Based on research by (Rottie & Saragih, 2019), from the results of the study it can be seen that all respondents who carried out early mobilization were 21 patients and it can be seen that more respondents had early mobilization with wound healing. *after caesarean section* good wound. Based on the results of statistical tests using the test *binomial* earned value *p value* = 0.027 is smaller than the value α = 0.05. So that H0 is rejected, there is an influence of early mobilization on wound healing *after caesarean section*.

From the results of research conducted by researchers, it was found that all wound care carried out at Sufina Aziz RSU was wound care *after caesarean section* still use sterile gauze for wound dressing *after caesarean section*. According to the researchers, the results of this study show that wound healing will be more optimal if the patient experiences it *after caesarean section* given intervention in the form of early mobilization.

CONCLUSION

From the results of the research that has been carried out, it can be concluded that there is an influence of early mobilization on the inflammatory phase wound healing process *after caesarean section* at Sufina Aziz RSU, Medan City in 2023.

This is proven based on the results of statistical tests using tests *Paired Sample T-Test* show value *say (2-tailed)* or *p value* of 0.000 which means p value <0.05 (0.000 < 0.05). If the p value is <0.05 then there is a

significant difference so it can be concluded that there is an influence of early mobilization on the wound healing process in the inflammatory phase *after caesarean section*at Sufina Aziz RSU, Medan City in 2023.

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