

# Determinants of perineal wound healing in 2023

Sri Sukamti <sup>a,1,\*</sup>, Vicky Agista Noviani <sup>b,2</sup>

<sup>a</sup> Poltekkes Kemenkes Jakarta III, Jl. Arteri JORR Jatiwarna Pondok Melati, Bekasi 17415, Indonesia

<sup>b</sup> Student-Poltekkes Kemenkes Jakarta III

<sup>1</sup> [sukamtisri@yahoo.co.id](mailto:sukamtisri@yahoo.co.id)\*



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## ABSTRACT

Normal labour can result in a perineal laceration due to pressure from the baby's bottom during delivery or from an episiotomy operation to open the birth canal. Perineal injuries will have an impact on the muscles in the pelvic floor. In the East Jakarta region, there will be numerous cases of perineal rupture in 2022, both spontaneous and due to episiotomy. Many postpartum women suffer from perineal lacerations that take longer than seven days to heal. This study aims to identify the factors that influence perineal wound healing in the Kramat Jati District Health Center's operational setting. This study used a cross-sectional design. Based on the sample formula, the research sample of 110 postpartum women with perineal wounds was chosen to test the hypothesis with a different percentage. Purposive sampling was used as the sample method. Chi-Square test study of a correlation test. A questionnaire and a checklist were employed as the data collection tools to track the healing of the perineum wound, which was assessed during the respondent's postpartum visit. *The results showed that there was a significant association between age (P-value 0.003; OR 3.354), parity (P-value 0.001; OR 4.028), mobilization (P-value 0.007), personal hygiene (P-value 0.001; OR 3.611), body mass index (BMI) (P-value 0.012; OR 2.682), type of perineal injury (P-value 0.001; OR 0.251), treatment (P-value 0.0001; OR 5.262) on perineal wound healing. Postpartum mothers are advised to practice good hygiene, non-pharmacological therapies, engage in active mobilization, and maintain a normal BMI. Perineal wounds might heal more quickly depending on BMI. Health services require education for health workers and perineal wound care recommendations for postpartum women.*

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## 1. Introduction

Normal delivery may end in perineal tears caused by pressure exerted on the baby's head during delivery or from an episiotomy to open the birth canal. The muscles in the pelvic floor will be affected by perineal injuries ([Astriana, 2017](#)). The female pelvic floor muscles are the most important structures for maintaining the health of the reproductive, urinary and digestive systems connected to them. To allow for the natural healing process, the two edges of the perineal wound will be brought together and sutured. Perineal sutures can reopen if the mother pushes a lot during the initial suturing process, there is a lot of movement, the threads are of poor quality, or the stitches are too tight or loose. When the wound dries, the open stitches usually cannot be repaired because the edges of the tissue cannot join together or the usual process of wound healing cannot occur ([Andini & Margarita, 2022](#); [Yuliana & Rahman, 2019](#)). The perineal wound can be sutured as long as the edge is still moist and the stitches are removed within three days. Left untreated, open suture incisions will lead to unsightly scars, poor function, and infection ([Sari, 2016](#)).

The postpartum period is one of the contributors to maternal mortality and can increase the maternal mortality rate in Indonesia, so that it is not enough to only provide health services during pregnancy and childbirth. Postpartum services must be available after delivery or during the postpartum period. Postpartum care is provided by medical professionals according to established guidelines between six hours and forty-two days after delivery (Mansyur, 2019).

After the delivery of the placenta, the puerperium begins and lasts until the structure of the uterus is returned to its pre-pregnancy state. There are six weeks, or 42 days, in the postpartum phase. The postpartum period is an important time for women. It is important to provide qualified postpartum care. Physical changes, uterine involution, milk flow, psychological changes, and adjustments to the mother's physiological systems occur during the puerperium (Angraini & Dewi, 2022). Additionally, infections can develop during the puerperium, one of which is a perineal infection. There will undoubtedly be a birth canal injury after every delivery, which will serve as a pathway for commensal bacteria to enter and spread infection. The risk factors for wound infection in the birth canal will rise in the presence of perineal wound injuries brought on by episiotomy, spontaneous rupture, or trauma by the fetus (Andarwulan, 2022; Hanum, 2018). Infection in the perineum will result from the moist, lochia-affected condition of the perineal wound. Mothers are 20% more likely to contract an infection, and perineal infections account for 11% of cases (Yuliaswati & Kamidah., 2018). If the perineal wound is not treated appropriately, it will become infected during the puerperium and require longer to heal. Treatment of postpartum moms' perineal wounds can lessen pain from birth canal injuries, stop infection, and hasten perineal wound healing (Yuliana & Rahman, 2019).

World Health Organization (WHO) data from 2015 shows that 2.7 million women giving delivery worldwide experienced perineal rupture. It was predicted that the number of delivery mothers who undergo perineal rupture will rise by up to 6.3 million by the year 2050. Up to 26 million new mothers in America experience perineal rupture. Asia accounts for 50% of perineal rupture incidences, making it a region with a relatively high incidence in society (Sigalingging & Sikumbang, 2018). According to the Indonesian Demographic Health Survey Data (IDHS), up to 75% of women in Indonesia experience perineal rupture during normal childbirth (Scientific et al., 2022). In 2017, 57% of mothers who gave delivery through vaginal method (28 % due to an episiotomy and 29% due to spontaneous rupture) had perineal rupture sutures (Subekti & Sulistyorini, 2021). The number of maternal fatalities in Indonesia in 2021 is 7389, which is an increase from the 4627 maternal deaths in 2020. The leading causes of maternal deaths in 2021 were Covid-19 (2982 fatalities), hemorrhage (1320 fatalities), pregnancy-related hypertension (1077 fatalities), and infections (207 fatalities). Maternal deaths in DKI Jakarta were 129 in 2021, with the leading causes being hemorrhage (17 deaths), hypertension in pregnancy (22 deaths), infection (3 deaths), circulatory system problems (5 deaths), heart disease (5 deaths), Covid-19 (52 deaths), and others (25 deaths).

326 postpartum mothers, out of 378 postpartum mothers, had perineal ruptures, according to the Health Center. According to the aforementioned information, the Kramat Jati District Health Center saw the majority of postpartum women who sustained perineal rupture. 325 postpartum mothers underwent perineal wound sutures of the 326 postpartum women who experienced perineal rupture, either via episiotomy or spontaneous rupture, whereas 1 postpartum mother was referred to the hospital due to a Grade IV perineal rupture. In postpartum mothers, the process of healing perineal wounds varies; normal wound healing takes between 6-7 days (7 days), while some postpartum mothers experience delays in wound healing (8 days) (Wiknjosastro, 2016).

Out of 239 postpartum moms who experienced perineal rupture at the Ciracas District Health Center, 221 postpartum mothers; out of 224 postpartum mothers who experienced perineal rupture at the Cipayung District Health Center; and in the Kramat Jati District, 201 postpartum mothers. Numerous variables, such as the mother's age, the proportion of parity mothers, the baby's birth weight, movement, personal cleanliness, BMI, and the type of perineal injury, have an impact on wound healing (Cunningham, 2016; Isabella et al., 2023; Theddeus & Prasetyono, 2016). Infection, increased tissue damage, delayed wound healing, bleeding, and death in postpartum women are all consequences of improper perineal wound care (Zubaidah, 2021). Because the mother does not adequately clean the perineal wound and does not take proper care of it, the perineal wound swells and even begins to smell (Scientific et al., 2022). The length of the healing process, the mother's fear of the pain she feels after washing the wound area, and the mother's concern that frequent cleaning of the suture wound will result in the suture not being finished can all contribute to infection due to

perineal rupture. Perineal infections can also result from perineal wounds (Yuliaswati & Kamidah., 2018).

There is a significant correlation between knowledge and parity in the healing time of perineal sutures during the puerperium in Independent Practice Midwife Rusmawati Gasing, Banyuasin Regency in 2021, according to the findings of several studies, including one by Heni Sudarmini, et al. with the title "Relationship of Knowledge and Parity to the Time of Healing of Perineal Sutures in the Postpartum Period." (Scientific et al., 2022). The findings of a study by Yuli Triyani, et al. with the title "Factors Influencing the Perineal Wound Healing Process in Postpartum Mothers at Serui Hospital, Papua" revealed a connection between pain, age, diet, and personal cleanliness and perineal wound healing. There is a correlation between the type of wound and the perineal wound healing time, according to Anur Rohmin's "Factors Influencing Perineal Wound Healing Time in Postpartum Mothers." (Rohmin et al., 2017). Yayat Suryati, et al.'s study "The Correlation between Knowledge Level of Postpartum Mothers About Perineal Wound Care and Nutritional Status with Wound Healing" found a connection between postpartum mothers' nutritional status and their ability to heal wounds in the KIA polyclinic at Panti Wilasa Citarum Hospital Semarang in 2012 and 2013. With the findings that there is a correlation between early mobilization and the length of the perineal wound healing process in postpartum mothers, Rika Asmirah's "Factors Influencing the Length of Perineal Wound Healing Process in Postpartum Mothers at the Mejene Regional General Hospital in 2021" was published (Asmirah, 2021).

According to a preliminary study by the researchers, three postpartum mothers had normal perineal wound healing (7 days), including one postpartum mother who practiced good personal hygiene; her perineal wounds healed in 6 days; another postpartum woman who did well to mobilize; and a third postpartum woman who had a normal BMI and type of perineal injury that spontaneously healed. A 38-year-old postpartum mother healed her perineal wounds in 8 days, a postpartum mother with an obese BMI healed her perineal wound in 10 days, a postpartum mother who did not mobilize her perineal wound in 8 days, two postpartum mothers who paid less attention to their personal hygiene healed their perineal wounds in 10 days, and two primiparous postpartum mothers with an episiotomy healed their perineal wound for 9 days. The healing process of perineal lacerations begins with the hemostasis phase, which aims to stop bleeding immediately after the injury occurs. This phase is critical for preparing the wound for healing. Following hemostasis, the inflammatory phase starts, characterized by the presence of white blood cells that clean the wound by removing debris and bacteria. This phase is essential for preventing infection but can also lead to symptoms such as swelling and pain. Next, the proliferation phase occurs, during which new tissue and blood vessels form. This phase is driven by the production of collagen by fibroblasts and the process of epithelialization, which helps to close the wound (Purwanti et al., 2019). The final phase, remodeling, involves strengthening the newly formed tissue, although it may lead to scar formation (Ningrum et al., 2022). In 2023, the researcher hopes to investigate factors associated with perineal wound healing in the working environment of the Kramat Jati District Health Center.

## 2. Methods

This study employed a cross-sectional methodology to explore the dynamics of perineal wound healing among postpartum women attending postpartum visits at the Kramat Jati Public Health Center in East Jakarta during March and April 2023. A sample of 110 postpartum women with perineal wounds was carefully selected for inclusion in the study. The determination of this sample size was guided by a sample formula designed for testing hypotheses with various proportions, although the precise parameters for this determination were not explicitly delineated. Inclusion criteria encompassed postpartum women with perineal wounds attending postpartum visits at the specified health center, those who gave birth within the specified timeframe, and women aged 18 years or older. Conversely, exclusion criteria involved women with pre-existing medical conditions known to impact perineal wound healing (e.g., diabetes mellitus, immunodeficiency disorders), those with a history of perineal surgeries preceding the current childbirth, and individuals unable to provide informed consent or partake in the study due to language barriers or cognitive impairments.

Purposive sampling methodologies were adopted to select participants based on predefined inclusion criteria. However, the precise criteria used for participant selection were not expressly elucidated, raising potential concerns regarding the introduction of selection bias.

Perineal wound healing assessment during postpartum visits was conducted utilizing a meticulously developed questionnaire and checklist. Prior to integration into the study, the questionnaire underwent rigorous validation and reliability testing procedures. Content validity assessments ensured comprehensive coverage of pertinent aspects related to perineal wound healing, while reliability evaluations involved scrutinizing the internal consistency of questionnaire items, gauged through the application of Cronbach's alpha coefficient.

Ethical approval for the research endeavor was obtained from the URINDO Health Research Ethics Commission, denoted by authorization number 160/SK.KEPK/URN/III/2023, thus affirming adherence to ethical standards in research practice.

The investigation delved into various determinant factors including age, parity, mobilization, personal hygiene, BMI, type of perineal injury, and treatment modalities. These factors were scrutinized concerning their association with perineal wound healing outcomes, categorized as either fast (healing within  $\leq 7$  days) or protracted (healing extending beyond 7 days).

Statistical analyses primarily involved the utilization of the Chi-Square test to explore potential correlations between the studied variables. However, a comprehensive explication of the statistical analysis methodology could further bolster the transparency and reproducibility of the study's findings.

### 3. Results/Findings

According to the findings, more participants in the study had perineal wound healing processes occur quickly (57%) than they had experienced perineal wound healing processes slowly (43%). According to study findings, more respondents (66%) than respondents (34%) are not at danger. However, results for the category parity indicate that respondents with multiparous parity (57%) outnumbered those with primiparous parity (43%).

According to research findings, those with good active mobilization (53%) outnumber those with very active mobilization (24%) and passive mobilization (23%). Whereas the results for the personal hygiene category indicate that more respondents (52%) than respondents (48%) had good personal hygiene. According to study findings, respondents with normal BMI had a 50% distribution, just like respondents with abnormal BMI. According to Table 4.2, more responders (59%) reported perineal injuries caused by spontaneous rupture than through episiotomy (41%). However, the category of therapy for perineal wounds revealed that 66 percent of respondents treated perineal wounds without the use of medication, compared to 34 percent who did so. According to the study's findings, aged respondents had no risk of healing old perineal wounds in 24 persons (32.9%) and were at risk of doing so in 23 people (62.2%). While older respondents had a risk of 14 people (37.8%) healing perineal wounds rapidly, older respondents had a risk of 49 people (67.1%) healing perineal wounds quickly.

Results of the Chi-Square test indicate a relationship between the respondent's age and the healing of the perineal wound, with a p-value of 0.003 (p-value 0.05). According to the odds ratio (OR) calculation results, respondents with a high risk of experiencing a healing old perineal wound are 3.354 times more likely than respondents with a low risk to do so (95% CI: 1.471 - 7.650).

According to the study's findings, parity primiparous respondents had an old perineal wound healing rate of 29.7%, whereas parity multiparous respondents had an old perineal wound healing rate of 18.6%. Contrary to parity primiparous respondents, who had up to 18 cases of perineal wounds that healed fast (38.3%), parity multiparous respondents had up to 45 cases of perineal wounds that healed quickly (71.4%). According to the results of the Chi-Square test, there is an association between respondents with parity and healing perineal wounds (p-value 0.001; p-value 0.05). According to the results of the odds ratio (OR) calculation, respondents with primipara parity have a 4.028 times higher chance than respondents with multipara parity to heal an old perineal wound (95% CI 1.805 – 8.990).

According to the study's findings, mobilization of inactive respondents with the healing of old perineal wounds affected up to 16 people (64%), mobilization of active respondents with the healing of old perineal wounds affected up to 17 people (29.3%), and mobilization of very active respondents affected up to 14 people (51.9%). While mobilization inactive respondents had nine perineal wounds that healed quickly (36%), mobilization active respondents had 41 perineal wounds that healed quickly (70.7%), and mobilization very active respondents had thirteen perineal wounds that healed

quickly (48.1%). With a p-value of 0.007 (p-value 0.05), the Chi-Square test results revealed a correlation between respondent mobilization and perineal wound healing.

According to research findings, there were 31 respondents (58.5%) with poor personal hygiene and old perineal wound healing, compared to 16 respondents (28.1%) with good personal cleanliness. In contrast, 41 patients (71.9%) had good personal cleanliness and quick perineal wound healing, while 22 people (41.5%) had poor personal hygiene. The Chi-Square test results revealed a correlation between respondents' personal hygiene and the healing of perineal wounds, with a p-value of 0.001. The odds ratio (OR) calculation revealed that respondents with poor personal hygiene had a 3.611 times higher likelihood of having a delayed healing time for a perineal wound than respondents with good personal hygiene (95% CI 1.630 - 7.997).

The study's findings indicate that 30 people (54.5%) with ancient perineal wounds had their BMIs outside of the normal range, whereas 17 people (30.9%) with old perineal wounds had their BMIs within the normal range. As many as 25 respondents (45.5%) had perineal wounds that did not heal rapidly, while 38 respondents (69.1%) with normal BMI had perineal wounds that did heal quickly. The Chi-Square test results reveal a correlation between respondents' BMI and perineal wound healing, with a p-value of 0.012. According to the odds ratio (OR) calculation results, respondents with abnormal BMI are 2,682 times more likely than those with normal BMI to have perineal wounds take longer to heal. The odds ratio was calculated as OR 2.682 (95% CI 1.229 - 5.853).

According to research findings, spontaneous rupture with old perineal wound healing affects 19 persons (29.2%), while episiotomy with old perineal wound healing affects as many as 28 people (62.2%). In contrast to the spontaneous rupture injury type, which heals perineal wounds quickly in up to 46 people (70.8%), the responder episiotomy injury type heals perineal wounds quickly in up to 17 individuals (37.8%). With a p-value of 0.001, the Chi-Square test findings revealed a correlation between the type of respondent's perineal injury and perineal wound healing. The odds ratio (OR) calculation's findings indicate that type injury is a factor in the protection against healing perineal wound. It means that a perineal wound with spontaneous rupture of the type damage OR 0.251 (95% CI 0.112-0.561) can heal 75% more quickly.

According to the findings, there were 26 respondents (68.4%) who used pharmaceutical treatment to repair old perineal lesions, compared to 21 respondents (29.2%) who utilized non-pharmacological treatment. While there were as many as 12 respondents (31.6%) who used pharmacological treatment, there were as many as 51 respondents (70.8%) who used non-pharmacological medication to treat perineal wounds immediately. The Chi-Square test results revealed a link between respondent treatments and perineal wound healing, with a p-value of 0.0001. The odds ratio (OR) calculation results suggest that respondents who used pharmaceutical treatment had a probability of 5,262 times longer perineal wound healing than respondents who used non-pharmacological treatment, with an OR of 5.262 (95% CI 2.244-12.337).

**Table 1.** Distribution of Respondents Based on Perineal Wound Healing, Age, Parity, Mobilization, Personal Hygiene, BMI, Type of Injury and Treatment in 2023

Variabel	Category	f	%
Perineal Wound Healing	Long	47	42.7
	Fast	63	57.3
Age (year)	< 20 & > 35	37	33.6
	20 - 35	73	66.4
Parity	Primipara	47	42.7
	Multipara	63	57.3
Mobilization	Passive	25	22.7
	Active	58	52.7
	Very Active	27	24.5
Personal Hygiene	Poor	53	48.2
	Good	57	51.8
BMI	Other	55	50.0
	18.5 – 24.9	55	50.0
Type of Perineum Wound	Rupture Spontaneous	65	59.1
	Episiotomy	45	40.9
Treatment	Pharmacology	38	34.5
	Non-Pharmacology	72	65.5

**Table 2.** Determinants of Perineal Wound Healing in 2023

Variabel	Category	Perineal Wound Healing				P-value	OR (95% CI)
		Protracted (long)		Fast			
		f	%	f	%		
Age (year)	< 20 & > 35	23	62.2	14	37.8	0.003	3.354 (1.471-7.650)
	20 - 35	24	32.9	49	67.1		
Parity	Primipara	29	61.7	18	38.3	0.001	4.028 (1.805-8.990)
	Multipara	18	28.6	45	71.4		
Mobilization	Passive	16	64.0	9	36.0	0.007	
	Active	17	29.3	41	70.7		
	Very Active	14	51.9	13	48.1		
Personal Hygiene	Poor	31	58.5	22	41.5	0.001	3.611 (1.630 – 7.997)
	Good	16	28.1	41	71.9		
	Other	30	54.5	25	45.5		
BMI	18.5 – 24.9	17	30.9	38	69.1	0.012	2.682 (1.229 – 5.853)
Type of Perineum Wound	Rupture Spontaneous	19	29.2	46	70.8	0.001	0.251 (0.112 – 0.561)
	Episiotomy	28	62.2	17	37.8		
Treatment	Pharmacology	26	68.4	12	31.6	0.0001	5.262 (2.244-12.337)
	Non-Pharmacology	21	29.2	51	70.8		

#### 4. Discussion

Perineal wound healing is starting to improve the perineal wound with the formation of new tissue that covers the perineal wound within 6-7 days after delivery. The process of healing the perineal wound if it is not accompanied by a perineal wound infection will heal 6 to 7 days after delivery. The wound is said to heal within 7 days if the wound is dry and closed (Mochtar, 2018). The results of a study conducted on 110 mothers in the Working Area of the Kramat Jati District Health Center showed that 57% of respondents experienced a fast healing process of perineal wounds, while 43% of respondents experienced a slower healing process of perineal wounds (Walyani, 2016; Yuniza, 2021). Based on these results, most mothers can treat perineal wounds properly so that perineal wounds can heal quickly. However, there are still 43% of mothers who experience a long process of healing perineal wounds. This is caused by several factors such as age, parity, mobilization, personal hygiene, BMI, type of perineal wound, and treatment.

Based on the results of bivariate analysis showed that there is an association between age and perineal wound healing. Respondents who are not at risk of experiencing a faster healing process of perineal wounds. Mother's age is associated with slower perineal wound healing time (Putri, 2022; Samutri & Erni, 2022). Mothers who are over 35 years old will experience a healing process with a longer scar compared to mothers who are 20-35 years old. This can happen because an elderly mother is at risk of experiencing a decrease in body metabolism, causing a delay in the process of cell repair, such as a decrease in the function of tissue union in the skin, postpartum women aged <20 and > 35 years so that it can slow down the wound healing process. Ages <20 and > 35 years are more at risk and require a long cell repair experience until adulthood, the speed of cell repair takes place in line with a person's growth or age of maturity. This research is in line with Yuli Triyani's research (2021) which shows that mothers aged 20-35 years are considered to experience a faster healing process than those aged < 20 and > 35, with a p-value = 0.000 (Triyani et al., 2021).

From the results of the study, it was found that respondents who were young or older >35 years had a risk of 3.5 times more risk of experiencing a long recovery from perineal lacerations than respondents with age. This research is in line with research conducted by (Rohim, 2017) it is known that mothers who are not at risk have a tendency of 6 times the duration of good perineal wound healing. It is proven that the variable age of the mother is related to perineal wound healing, mothers with a younger or older age will be at risk for experiencing slow perineal wound healing (Ulfah & Rachman., 2022).

Based on the results of bivariate analysis, there is an association between parity and perineal wound healing. Respondents with primipara parity had a 4.028 times higher chance of experiencing wound healing on the old perineum than respondents with multiparity parity (Misrina & Silvia., 2022; Nurani & Dian, 2015). Based on the results of the study, mothers who had given birth more than twice had a

higher level of experience and had a better understanding of perineal care methods. This is in line with research conducted by [Anur Rohmin, et al \(2017\)](#) which stated that there was a significant relationship between parity and perineal wound healing (p-value 0.044) ([Rohim, 2017](#)).

Besides, mother primiparous has a big risk of rupture because the perineum is still intact so that easy happen rips, whereas mother multiparous has a risk of low happen perineal rupture. According to [Maria Ulfa \(2022\)](#) the mother puerperium with partial primipara parity big healing perineal wound is not normal, whereas mother partially multiparous big healing perineal wound is normal. So, we can conclude that proven exists connection between parity with healing perineal wounds with p-value = 0.001 ([Ulfah & Rachman., 2022](#)).

Analysis results in a bivariate show that there is a connection between mobilization with healing perineal wounds. Proportion respondents who have mobilization active more fast experiencing the healing process of perineal wounds than very active and passive mobilization, this is in line with research conducted by [Anur Rohmin, et al \(2017\)](#) stated that mothers did mobilization early tend of 12.6 times the healing time for good perineal wound. Research conducted by [Afandi \(2014\)](#), shows that there is a connection between mobilization early with acceleration recovery perineal wound ([Rohim, 2017; Saputra et al., 2016](#)).

In the opinion of the researchers, postpartum mothers who actively mobilize the wound healing process will be faster because the mobilization carried out by the mother can benefit from increased blood circulation around the genitals thereby accelerating wound healing. Even though mobilization is very beneficial for the wound healing process, mothers still have to watch out for. Don't do very active mobilization, such as driving your own motorized vehicle, sitting for too long or doing great stretching in the vaginal wound area because it will make the perineal wound take a long time to heal and even stitches can occur. reopen.

The results showed that there was a relationship between personal hygiene and perineal wound healing. Respondents with poor personal hygiene had a 3.611 times higher chance of experiencing old perineal wound healing than respondents with good personal hygiene. This is in line with research conducted by [Nina \(2020\)](#) that there is an effect of personal hygiene on perineal wound healing ([Nina et al., 2019](#)).

According to the researchers, the more diligent the mother performs personal hygiene, the faster the perineal wound will heal. Most mothers have good personal hygiene because of the counseling program provided by midwives. This counseling has changed the mindset of mothers in a better direction, so mothers know that the importance of maintaining personal hygiene must be done properly because it can speed up the healing of perineal wounds ([Nina et al., 2019](#)).

The results of bivariate analysis showed that there was a relationship between BMI and perineal wound healing. Respondents with abnormal BMI had a 2.682 times higher chance of experiencing prolonged perineal wound healing than respondents with normal BMI. This is in line with research conducted which showed that respondents who had a normal Body Mass Index would experience faster perineal wound healing (p-value 0.021) ([Haryanto et al., 2019](#)). Other research also states that mothers who have normal BMI experience a faster wound healing process when compared to mothers who have abnormal BMI with a P-value = 0.000.

From the results of the study, postpartum BMI has a close relationship in accelerating the healing of perineal wounds, because maternal BMI greatly affects the physiology of the mother's body. As in mothers who have an abnormal BMI, the blood supply in the wound area becomes insufficient so that it can slow or stop wound healing. In overweight or obese mothers, the impact of obesity will cause excess fat deposits which will hinder the supply of oxygen needed and inhibit the work of cells for the wound healing process. Wounds will easily become infected or cause new wounds. Meanwhile, mothers who have a low BMI will experience malnutrition, including vitamin and mineral deficiencies and decreased body resistance, so that the body's strength will decrease and the body is susceptible to infection, which can slow down the healing process of perineal wounds.

Based on the results of the study, there is a relationship between the type of perineal wound and perineal wound healing. Mothers with perineal wounds that occur spontaneously during labor will experience faster perineal wound healing than respondents who have episiotomy wounds. From the results of bivariate analysis it was also concluded that the variable type of wound is a protective factor

against perineal wound healing, meaning that the type of spontaneous rupture wound can accelerate 75% of the perineal wound healing process.

The results of the study showed that there was a relationship between the treatment of drug administration and perineal wound healing. Respondents who used pharmacological treatment had a 5.262 times higher chance of experiencing old perineal wound healing compared to respondents who received non-pharmacological treatment. This is in line with the results of several studies, including Dewi Yuliana (2019) showing that binahong leaves (non-pharmacological) are more effective for healing perineal suture wounds in postpartum women compared to the use of 10% povidone-iodine (pharmacology) with a p-value = 0.000 (Yuliana & Rahman, 2019).

In this study, respondents who used pharmacological drugs such as antibiotics and antiseptics (Povidone Iodine) would make the perineal wound healing process slower. In addition, it can inhibit the formation of collagen which functions for wound healing (Wulandari et al., 2018). From the results of this study it can be concluded that the use of non-pharmacological drugs can accelerate perineal wound healing more than pharmacological drugs.

## 5. Conclusion

In the working environment of the Kramat Jati District Health Center in 2023, it was determined that there was a correlation between age, parity, mobilization, personal hygiene, body mass index (BMI), kind of perineal injury, and therapy with perineal wound healing. Postnatal mothers should maintain normal BMI, exercise excellent personal hygiene, employ non-pharmacological treatments, engage in physical mobilization, and practice good personal hygiene to hasten the healing of perineal wounds. Guidelines for postpartum moms' perineal wound care and health workers' education are required by the health services.

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