

**ICASH-A57**

**THE DURATION OF PERINEAL WOUND HEALING BETWEEN  
BASTE AND INTERRUPTED SUTURE AMONG POSTPARTUM  
MOTHERS IN BANTUL, YOGYAKARTA, INDONESIA**

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**ABSTRACT**

**Background:** Suture is a most used technique to heal perineal wound after delivery baby. Midwives often offer baste and disconnected suture for the healing process.

**Aims:** This study aimed to determine the duration of perineum wounds healing between the two suture techniques, baste and disconnected suture.

**Methods:** The study employed a quasi-experimental methods with a longitudinal approach. A total of 24 postpartum mothers who suffered perineum wounds degree II, no smoking, 20-35 years old, no obese, no DM, and no infections, was taken using random sampling. Seven validated parameters in assessing the perineum wound healing process were asked by the researchers during the observation including the status of the stiche, openness, festering, swollen, redness in the skin around the stiches, pain, and smell. The data was then analyzed by independent T-test.

**Results:** The results showed that the average length of the perineum wound healing in a private midwife clinic BPM Umu Hani by baste suturing technique was 7.42 days, and it was significantly shorter ( $p$  value = 0.003) than the healing by interrupted suturing technique (9.33 days).

**Conclusion:** Disconnected suturing technique can be a preference for perineal wound healing after delivery baby. However, the midwifery should pay attention to the needs of the postpartum mothers before propose the technique.

**Keywords:** Postpartum mother, wound healing, baste suturing techniques, disconnected suturing techniques.

**INTRODUCTION**

Most maternal deaths can be prevented if these women obtain help from a qualified healthcare professional and get adequate health facilities. Ministry of health launched Normal Delivery Care (NDC) which aimed to maintain the viability and provide a high level of health for mother and baby [1,2]. NDC training has been conducted since 2002 until now, the last revision was in 2008, in which there were material about prevention and immediate treatment of childbirth complications, such as prevention of rupture, episiotomy indications and treatment of bleeding due to perineal wound lacerations. The perineal wound treatment was performed by suturing the wound, and the training has taught baste sewing techniques [3].

Perineal wound occurs when the perineum tissues torn during the childbirth. According to Cioffi Jane (2009), 65% of the perineum wounds happened on primigravida [4]. These wounds can occur spontaneously or these happened due to the episiotomy. According to the Royal College of

Obstetricians and Gynaecologists (RCOG) (2004), 85% of women who give birth will experience perineum injuries and 60-70% of the wounds were resolved by perineum repairs / suturing [5]. Wound care aimed to improve the tissue healing process and also to prevent infection [6].

The perineum wound healing process is influenced by nutrition, smoking, coexisting diseases, and suturing techniques [7,8]. There are still many myths in the society that affect the health of the postpartum mothers, for instance that the postpartum mothers should not eat food such as eggs, meat, shrimp, sea trout and catfish, snail. the myths said that it will aggravate the stitches. Some people today still think that suturing the perineum wound is not necessary. They still regard that the present situation is the same as the previous one when mothers gave birth; their wounds were not sutured [9].

The government through the ministry of health also has policy of the service for the postpartum mother in accordance with the health basic of the postpartum mother, i.e. at least four visits during the childbirth. The policy goals are to assess the health of mothers and infants, to prevent possible health disorders in the mothers and the infants, to detect the presence of the events during postpartum. The surveillance was conducted to assess perineum wound laceration [10].

In this case, the midwife can provide midwifery care to patients, families and the community that there are no food restrictions during postpartum and to recommend them to eat lawful and good food and to avoid overeating. The above statement is in accordance with the role of the midwife. According to IBI (2006), midwives act as executor and educator. As the executor, midwives can provide midwifery care to patients as preventing any injury/perineum rips, repairing perineum wound, ensuring the wounds healing, and provide iron tablet. As the educators, midwives inform and teach patients how to take care the wounds so the treatment can be maximized and the wound healing is not disturbed then the mothers would feel comfortable [3,11].

In a private midwife clinic (BPS) Umu Hani, the number of labors from January to February 17 was 20 mothers. Of these labors, 14 mothers get perineum wound suturing. This case should warn midwives in doing perineum wound suturing to help the wound healing is the best. This study aimed to determine the differences the duration of perineum wounds healing between baste and disconnected suture, after that midwives know about the best wound suturing to help the wound healing.

## **METHODS**

This study is a comparison research using experimental method, the research procedures were conducted to reveal a causal relationship between the two factors deliberately caused by the researchers by eliminating other interfere factors, then they were compared [12,13]. The design of experiments used quasi-experimental, there were the treatment group and control group for the comparison. The samples taken using random sampling. The treatment group is group of mothers who get the perineum wound suturing with baste technique to 12 respondents, while the control group is group of mothers who get disconnected suturing techniques dengan jumlah 12 respondents. The study used longitudinal approach, data were collected by forward, the recording time of each respondent was the same, it will remain between the independent and dependent variables [12]. The respondents were observed at the same time, starting at 7 days until the wound healing declared in accordance with the checklist that contains seven parameters for wound healing.

There are seven parameters in assessing the perineum wound healing process compiled by the researchers and they have been validated by a specialist. The 7 parameters were contained in

the monitoring checklist including: the stitches were closed or not open, no festering, no swollen, no redness in the skin around the stitches, painless, and no smell [14].

The population of this study was all post partum mothers who gave birth in BPS Umu Hani and get perineum scarred/rips due to episiotomy or spontaneous rupture. Control of confounding variables with the samples taken met the inclusion criteria for the postpartum mothers, namely: no smoking, aged 20-35 years old, no obese (with a BMI calculation), no DM (diabetes mellitus), having normal hemoglobin level and no infection. They were 24 mothers. Several factors that were not controlled were nutrients for everyone eats diverse food, the use of corticosteroids, wound stress for it cannot be measured, and the type of wound for the selection was based on the degree of wound. The data processing used t-test independent sample. This study used a significance level of 0.05.  $H_0$  is rejected and  $H_a$  is accepted if p-value < 0.05 (15,16,17).

## RESULTS

The Data Collecting in this study was conducted according to the inclusion criteria predetermined by the researcher. In the study, the researcher and the assistant collect data and observe the check list in accordance with the manual charging. From the data processing, it was obtained the following results:

Table 1 Respondents' characteristic among postpartum mothers in BPS Umu Hani in 2012

<b>Characteristic</b>	<b>Frequency</b>	<b>% (Percentage)</b>
<b><u>Age</u></b>		
20-25 years old	8	34
26-30 years old	8	33
31-35 years old	8	33
<b>Total</b>	<b>24</b>	<b>100</b>
<b><u>Education level</u></b>		
SD	1	4
SMA	19	79
D3	2	9
S1	2	8
<b>Total</b>	<b>24</b>	<b>100</b>
<b><u>Type of jobs</u></b>		
House wife	13	54
Laborer	2	9
entrepreneur	2	8
employer	6	25
Lecturer	1	4
<b>Total</b>	<b>24</b>	<b>100</b>
<b><u>Parity</u></b>		
1	13	54
2	6	25
3	5	21
<b>Total</b>	<b>24</b>	<b>24</b>
<b><u>Hb content</u></b>		
< 11 gr%	0	0
>11 gr%	24	100
<b>Total</b>	<b>24</b>	<b>100</b>
<b><u>Nutrition status (BMI)</u></b>		
<18,5 kg/m <sup>2</sup>	0	0
18.5 – 24,9 kg/m <sup>2</sup>	13	45,83
>24,9 kg/m <sup>2</sup>	11	54,17
<b>Total</b>	<b>24</b>	<b>100</b>

<b>Type of wound</b>		
Episiotomy	11	45,83
Spontaneous	13	54,17
<b>Total</b>	<b>24</b>	<b>100</b>

Table 2 Frequency distribution of the perineum wound healing duration with baste suturing techniques among postpartum mothers in BPS Umu Hani in 2012

Healing duration	Frequency	%
7 days	8	66,7
8 days	3	25
9 days	1	8,3
10 days	0	0
11 days	0	0
12 days	0	0
total	<b>12</b>	100

Based on the Table 2, the study results showed that duration of perineum wound healing with baste suturing technique was at the most at 7 days, there were 8 respondents (66.7%).

Table 3 Frequency distribution of the perineum wound healing duration with disconnected suturing techniques among postpartum mothers in Bps Umu Hani in 2012

Healing duration	Frequency	%
7 days	3	25
8 days	1	8,3
9 days	2	16,7
10 days	3	25
11 days	1	8,3
12 days	2	16,7
Total	<b>12</b>	100

Based on table 3, the results showed that the duration of the perineum wound healing with the disconnected suturing technique was at the most at 7 days and 10 days, there were three respondents (25%), but there were respondents who recovered on the twelfth day, is 2 respondents (16.7%).

**Table 4** The differences of the perineum wound healing duration between the baste suturing and the disconnected suturing among the postpartum mothers in BPS Umu Hani in 2012

Type of suture Healing duration	baste		disconnected		Total	
	F	%	F	%	f	%
7 days	8	33,3	3	12,5	11	45,8
8 days	3	12,5	1	4,2	14	16,7
9 days	1	4,2	2	8,3	3	12,5
10 days	0	0	3	12,5	3	12,5
11 days	0	0	1	4,2	1	4,2
12 days	0	0	2	8,3	2	8,3
Total	12	50	12	50	24	100

Based on Table 4, it can be seen that the duration of the perineum wounds healing was at the most at the seventh day in the baste suturing technique, there were 8 respondents (33.3%), while the respondent who experienced healing at least on the eleventh day was respondent who get disconnected suturing technique, there was one respondent (4.2%).

**Table 5.** The comparison of the perineum wound healing duration between the baste suturing group and the disconnected suturing group.

	baste N = 12 Mean (SD)	Disconnected N = 12 Mean (SD)	T	df	P	Sig (2-tailed)
Wound healing duration	0,668	1,825	-3,415	22	0,003	0,002

The results showed the statistical test using t-test that counted twas -3.415 with the probability of 0.003, which means that there are differences in the duration of the perineum wound healing between the baste suturing and the disconnected one.

## DISCUSSIONS

Based on the Table2, the study results showed that duration of perineum wound healing with baste suturing technique was at the most at 7 days(66.7%).Baste suture is suturing using one thread to the entire wound and the node is at the end of the suture and it is cut after creating node [8]. The perineum wound suturing using the baste technique can accelerate healing because fewer nodes are created.According to Rurh& Taylor Wendy Johnson, any foreign objects in the body tissues always provoke a reaction. Fewer knot and suturing material, the faster the healing process. The perineum wound healing duration could be unequal although the suturing is done by the same technique. It is influenced by the individuals, for instance, due to the nutrition intake.The varied characteristics of the respondent's age, uneven, no one dominating others can affect the wound healing duration, although the age of the selected respondent is at the reproductive age, 20-35 years [8,18]. According to Maureen Boyle (2008), increasing age effects on all phases of wound healing in connection with the circulation and coagulation disorders, slower inflammatory response and decreased activity of fibroblasts [19]. The wound healing process at the old age is

much longer than one at young age. This happen because of the degeneration process, inadequate food intake, decreased immunity, and decreased circulation [20].

Based on table 3, the results showed that the duration of the perineum wound healing with the disconnected suturing technique was at the most at 7 days and 10 days, there were three respondents (25%). The equal duration on the disconnected and the baste suturing technique at the 7th day is caused by not only the type of stitch affecting the duration of the perineum wound healing [21]. Nutrition is a factor that can affect the duration of wound healing. According to Maureen Boyle, nutrient which affects the wound healing are protein, vitamin A and C, copper, zinkum, and adequate iron. Protein supplies the amino acids required for the tissue repairing and regeneration. Vitamin A and zinkumis needed to epitelialisasi, and vitamin C as well as zinkumis required to synthesise collagen and capillary integration. Iron is needed for hemoglobin synthesis and oxygen is needed to deliver oxygen throughout the body [22].

Based on Table 5 means that there are differences in the duration of the perineum wound healing between the baste suturing and the disconnected one. The wound healing is a complex process involving many cells [8]. The average length of the perineum wound healing at the group of the baste suturing was 7.42 days, while the average length of the disconnected suturing group was 9.33 days. In the previous study by the Kristiani (2004), the duration of the wound healing was 7 to 11 days [21]. This indicated that the duration of wound healing could occur 7 days if there was no infection, as described by Suriadi [20].

The perineum wound suturing using the baste technique can accelerate healing because fewer nodes are created. According to Rurh & Taylor Wendy Johnson, any foreign objects in the body tissues always provoke a reaction. Fewer knot and suturing material, the faster the healing process. For example, the baste suturing technique uses only one same thread in all layers of the perineum wounds, while the disconnected suturing technique uses not only one thread but also more puncture [8]. The number of punctures will make medical devices (needles) often impale the skin, the number of nodes even more and more, so that muscle tension is higher. While in the baste stitches technique, the muscle tension is weaker [22]. It is supported by Maureen Boyle, he found that severe tension in the wound tissue could inhibit the formation of collagen and connective tissue so that the wound healing would be longer [7].

Based on the differences in the negative independent sample t-test, it is -3.415, then the increasing of baste suturing techniques will lead to the declining of disconnected suturing technique, and the duration of the perineum wound healing will be faster. The significance value is 0.002, It indicates that  $H_0$  is rejected, which means there is a significant average difference in the duration of the perineum wound healing between the baste and the disconnected suturing technique. The little significance value indicates that the difference level or strength is low or weak [9].

The characteristics of the respondent is varying from age, education level, occupation, parity, obesity (as seen from IMT), and oxygenation disorders (as seen from Hb). The respondents obtain the same information about nutrition and the perineum wound care that may affect the duration of the perineum wound healing. Fatty tissue in obesity causes unadequate blood supply, resulting in the long process of healing and decreased resistance to infection. It can also be caused by different kinds of wounds between the spontaneous rupture and episiotomy. Some studies show that rip will heal better than episiotomy [7].

According to Midwifery Manual of Maternal Care and Varney's Midwifery, 3rd edition (JPNK-KR, 2008), the wound caused by an episiotomy recovers longer because the amount of blood lost increases and there is risk of hematoma, the incidence of third or four degree laceration

occurs more, the postpartum pain increase in the perineum area and the risk of infection also increase (especially if the PI procedure is ignored) [3]. According to Ruth & John Taylor Wendy, if the hematoma or blood clot is sewn, it can be used as a place for germs to breed so that it can cause infection and the failure of the wound healing process [8]. It is not supported by the journal written by Sri fortune & Ernawati, entitled factors that affect the perineum wound healing among the postpartum mothers. In this study, it was stated that there was no relationship between age, education level, occupation, and parity with the duration of perineum wound healing [23].

The perineum wound care taught by the midwives was not different namely by using betadine for all respondents, since there was no antiseptic better to accelerate the perineum wound healing process [25]. According to the previous research by Endang Susilowati, there was no difference in the length of the episiotomy wound healing by using alcohol and betadine among the normal postpartum mothers in Muntilan local hospital, Magelang regency [24].

All respondents have obtained the same information from the midwife about good nutrition for healing the stitches [25]. Information is not only delivered to the respondents but also to the respondent's family, it is conducted since many people still consider the nutrition that contain many nutrients, such as eggs, meat, shrimp, sea trout and catfish, snail, should not be consumed because it will aggravate the wound stitches. The midwife explained to respondents and families that the prohibited food is haram food and overeating [26]. The family must not restrict the respondents to consume nutritious food [11]. The commands for humans to eat halal food can be obtained in Al-Quran surah An-Nahl verse 114 [27].

## **CONCLUSIONS AND SUGGESTIONS**

The average length of perineum wound healing in baste suturing technique was 7.41 days. The average length of one in disconnected suturing technique was 9.33 days. There were differences of the perineum healing duration between the baste suture and disconnected suture among the postpartum mothers in BPS Umu Hani in 2012, with the result of p-value <0.05 was 0,003. The significant value of 0.002 indicated that the level of the differences was low or weak. The suggestion for Umu Hani clinic was to create SOP (Standard Operating Procedure) for perineum wound suturing using baste technique. The midwives were suggested to suture perineum wound using baste techniques always to improve their skills in conducting perineum stitches. For further researchers, it was suggested to develop other experiments related to the perineum wound healing process by giving attention to the variables control influencing the perineum wound healing.

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