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The Effect of Egg White Consumption on the Healing of Perineal Wounds in Post Partum Mothers at Harjono Ponorogo Hospital

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ABSTRACT

Postpartum period is a period of reproductive organs recovery that undergoing major changes during pregnancy and childbirth, for example perineal tear recovery. Acceleration of perineal wound healing during the postpartum period is expected to prevent postpartum mother from infection. The research aimed to determine the effect of egg white consumption on the healing of perineal wounds in post partum mothers at Harjono Ponorogo Hospital. The research method was experiment with a population of postpartum mothers who suffered perineal wounds at Dr. Harjono Ponorogo Hospital. The sample in this research were 51 respondents which were divided into 3 groups, namely the control group, the first case group was giving 5 egg whites per day for 6 days and the second case group was giving 3 egg whites per day for 6 days. Each group consisted of 17 respondents. Data were collected by observation then analyzed using Chi square test. The results showed p-value of 0.022. The result showed that there was a positive influence of egg white consumtion on postpartum maternal perineal wound healing. It is recommended for postpartum mothers to consume at least 3 egg whites a day to speed up the healing process of perineal wounds.

Keywords: egg white; perineal wound healing; postpartum mothers

INTRODUCTION

Background

The postpartum period is an important period for health workers to optimally monitor their patients inorder to increase maternal morbidity and mortality [(1)]. The period begins immediately after childbirth, following the expulsion of the placenta until the uterine organs recover and return to the nonpregnant state. This period lasts for 6 weeks. The postpartum period is a period of reproductive organs recovery that undergoing major changes during pregnancy and childbirth, such as perineal tears that occur in almost all first deliveries andnot infrequently in subsequent deliveries [(2)]. Perineal rupture is a tear that occurs in the perineum during childbirth. A birth canal tear is an irregular wound or tissue tear [(3)].

Acceleration of perineal wound healing during the postpartum period is expected to prevent postpartum mother from infection or physiological changes, namely by giving high protein intake. This high protein food can be obtained from eggs [(4).] Nutritional factors, especially animal protein, will greatly affect the perineal wounds healing because protein is needed to repair damaged tissue [(5)]. Post partum care should be prioritized because it is estimated that 60% of maternal deaths due to pregnancy occur after delivery, and 50% of postpartum deaths occur within the first 24 hours [(6)]. In the first week postpartum morbidity is usually caused by endometriosis, mastitis, infection at the episiotomy or laceration, urinary tract infection, and other diseases [(7).]

According to WHO report [(8)], the world's maternal mortality rate (MMR) were 289,000. The United States accounted for 9300 of global deaths, North Africa at 179,000, and Southeast Asia at 16,000 [(8)]. In 2015 The maternal mortality rate in Indonesia amounted to 305 per 100,000 live births, far lower than MMR in 2012 which amounted 359 per 100,000 live births [(9)].

Based on data in East Java, the incidence of perineal rupture in 2008 was 52 cases, in 2009 as many as 18 cases, in 2010 as many as 17 cases, in 2011 as many as 100 cases, in 2012 as many as 93 cases (10). In RSUD dr HarjonoPonorogo recorded 40 cases of childbirth with perineal laceration injuries due to episiotomy.

Physiologically, perineal wounds recovery improve for 6 to 7 days [(11)]. Improper perineal care can cause the condition of the perineum affected by lochia to become moist and strongly support the proliferation of bacteria that can cause infection in the perineum.Infection not only inhibits the wound healing process but can also cause damage to the supporting cell tissue, so that it will increase the size of the wound itself, both in length and depth [(12).]

One of the factors that accelerate the healing of perineal wounds is post partum maternal nutrition [(13)]. Postpartum mothers who experience delays in healing perineal wounds are often due to the habit of abstaining from food. One of the foods that are often avoided is eggs. Egg whites contain protein which is very useful for accelerating the healing process of perineal wounds. Protein as an element of building blocks that will build damaged cells, especially damage due to the tearing process in the perineum.

Purpose

The research aimed to determine the effect of egg white consumption on the healing of perineal wounds in post partum mothers at Dr. Harjono Ponorogo Hospital.

METHODS

The research method was experiment with a population of postpartum mothers who suffered perineal wounds at Dr. HarjonoPonorogo Hospital. The sample in this research were 51 respondents which were divided into 3 groups, namely the control group, the first case group was giving 5 egg whites per day for 6 days and the second case group was giving 3 egg whites per day for 6 days. Each group consisted of 17 respondents. Case group 1 consumed egg whites every morning at 06.00-07.00, then 10.00-11.00, then lunch at 13.00-14.00, then 16.00-17.00 and finally 19.00-20.00. The inclusion criteria for the study were postpartum mothers who had uncomplicated episiotomy wounds. Exclusion criteria for postpartum women who had perineal injuries due to spontaneous rupture.

The wound evaluated after the 7th post partum day. The results of the observations were divided into two categories. Wound healing ≤7 days if the wound was dry, there were no signs of infection. Wound healing >7 days if the wound was not dry. Then the data were analyzed using Chi-square test.

RESULTS

Table 1 describe about characteristics of respondents by age. It shows that the respondents in this research were at most 20-35 years old (74.51%) and most were multiparous (54.90%).

Table 1. Results of descriptive analysis of general data

Variable	Frequency	Percentage
Age		
< 20 years	3	5.88
20-35years	38	74.51
Over 35 years	10	19.61
Parity		
Primipara	23	45.10
Multipara	28	58.90

Table 2 describe about characteristics of respondents based on wound healing length. It shows the control group wound healing length were ≤7 days (52.94%), the first case group were (94.11%) ≤7 days and the second group were (74.47 %) ≤7 days.

Table 2. Results of descriptive analysis of special data

Variable	Frequency	Percentage
Wound healing length in the control group		
≤ 7 days	9	52.94
More than 7 days	8	47.06
Wound healing length in first case group 1		
≤ 7 days	16	94.11
More than 7 days	1	5.85
Wound healing length in second case group 2		
≤ 7 days	13	74.47
More than 7 days	4	23.53

The result of the study stated that there were differences in the lenght of perineal wound healing between the groups, 16 respondents (31.37%) recovered less than equal to 7 days after consuming 5 eggs a day for 6 days

and only 1 respondent (1.96%) recovered more than 7 days.

The results of the statistical test calculation obtained p-value of 0.022 (<0.05), it could be concluded that there was an effect of giving egg whites on perineal wound healing.

Table 3. The results of Chi-square test

Wound healing process	Control		Case 1		Case 2		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
≤ 7 days	9	17.64	16	31.37	13	25.49	38	74.50
>7 days	8	15.69	1	1.96	4	7.84	13	25.49
	17	33.33	17	33.33	17	33.33	51	99.99

The p-value of Chi-square test = 0.022 (<0.05)

DISCUSSION

The result shows that most of the perineal wound healing length in postpartum mothers were not intervention (control group) at dr. Harjono Ponorogo Harjono, the result was 52.94% wound healing less than 7 days. Respondents who have a wound healing process of more than 7 days are due to their belief on illogical restrictions. These restrictions include restrictions on the nutrients consumption (the presence of tarak), restrictions on activity or mobilization and the fear of cleaning wounds in the perineum.

In accordance with the results of research that has been carried out by Mustikarani [(14)] that there is an effect of early mobilization on post sectiocaesaria wound healing in maternal post sectiocaesaria at Aura Syifa Hospital, Kediri Regency.

Another factor that affects wound healing is the consumption of nutrients. The results of research from Puspitasari, that nutritional status or nutritional consumption affect the wound healing process. Meanwhile, another factor that was also studied [(13)] is that personal hygiene factors also affect wound healing.

Theoretically, wound healing is a process of replacing destroyed or damaged tissue by newly produced tissue. Wound healing is the process of damaged tissue slowly pulls the wound edges closer together and tissue strength is returned to normal. Wound healing includes 2 categories, namely: tissue recovery is tissue regeneration structurally and functionally, and repair is restoration or replacement by connective tissue [(5)].

The result explained that most of the perineal wound healing process in postpartum mothers was carried out by intervention (case group 1) at dr. Harjono hospital, Ponorogo, the result is that 94.11% wound healing less than 7 days. The most of the perineal wound healing process in postpartum mothers was carried out by intervention (case group 2) at dr. Harjono hospital Ponorogo, the result was 13 respondents (74.47%) whose wound healing was less than 7 days and only 4 respondents (23.53%) whose wound healing was more than 7 days. Factors that affect the respondent's wound healing process less than 7 days is egg white consumption.

The results of this study are in line with research conducted [(15)] that consuming egg whites will accelerate the healing process of perineal wounds. Wound healing is the stage of replacement and repair of damaged tissue function and begins with perineal wound repair. The wound healing process goes through an inflammatory phase that begins when the tissue is damaged and lasts for 1-4 days, where there is a phase of constriction of blood vessels to control bleeding by forming platelet plugs and fibrin fibers.Next is the proliferative phase where new blood vessels are formed around the wound, ground substance and collagen fibers are formed to startinfiltrating the wound. Epithelial cells develop into capillaries which become a source of nutrition for a completely regenerated tissue and collagen is well supported within 6-7 days.The criteria for assessing the wound are if the wound is dry, the perineum is closed and there are no signs of infection such as red, swollen, hot, painful and functional, whereas if the wound looks wet, the perineum opens or closes, and shows signs of infection. The next phase is maturation which is contributed by granulation tissue, namely collagen deposits for wound healing that lasts up to a month or even years [(16)].

The perineal wound healing process requires adequate nutritional intake, especially those that contain lots of protein. Protein helps regenerate and build cells damaged by childbirth.Egg whites contain very high protein, protein quality, digestibility value, and the best digestibility of eggs among other food ingredients. Egg white contains 95% albumin which functions for wound healing. Egg protein is very easy to digest, absorb and use for growth and development of body tissues [(17)].

Based on the results, there was an effect of giving egg whites on perineal wound healing. The results of this study are in line with the research [(18)] that there is an effect of consuming boiled eggs on perineal wound healing in postpartum women for 1-7 days. The length of time needed for perineal wound healing in mothers who consume boiled eggs is a maximum of 7 days, while for mothers who do not consume boiled eggs, the perineal wound healing process takes more than 7 days. The difference in time required for perineal wound healing was 1.35 faster in mothers who were given egg intervention.

A similar study [19] found that there was a significant relationship between giving egg whites to the healing of second-degree perineal wounds. Protein or egg white is the main ingredient in the formation of damaged tissue cells and is referred to as an element or building block [20].

CONCLUSION

Based on the results, there was an effect of giving egg whites on perineal wound healing. It is recommended for postpartum mothers to consume at least 3 egg whites a day to speed up the healing process of perineal wounds.

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