

The Effect of Pineapple Juice and Honey on the Acceleration of Perineal Wound Healing in Post-Partum Mothers

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Abstract. *The purpose of this research is to determine the effect of pineapple juice and honey on the acceleration of perineal wound healing in puerperal mothers, with a quasi-experimental design. The research design chosen was Post Test Only Control Group Design using purposive sampling technique with a sample of 36 respondents. The experimental group 18 which was given pineapple juice and honey for 7 days was 150 ml 2x1 then measured by post-test after the treatment while the control group 18 respondents who were not given treatment. The results showed that administration of pineapple juice and honey had a significant effect on the acceleration of perineal wound healing in postpartum mothers using the Whitney mann test to obtain a mean of 24.50-12.50 mean value of 12 p value 0,000 α 0.05.*

Keywords: *Pineapple, Honey Juice, Perineal Wound*

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INTRODUCTION

The puerperium is a critical period for both the mother and baby, it is estimated that 60% of maternal deaths including pregnancy occur after the labor and 50% of the postpartum deaths occur within 24 hours of labor. One of the most frequent complications is the perineum occurring in nearly all primigravida births and is not uncommon in subsequent births that can cause hemorrhage and infection which leads to morbidity and mortality (Dewi, 2011).

According to WHO (2015), there are 27 million cases of rupture perineum in mothers worldwide. There are 26 million women who have rupture perineum in America, among whom 40% experience perineum rupture due to the negligence of midwives and this will cost about 10 million dollars per year. In Australia there are 20,000 maternity mothers who have suffered perineum ruptures. In Asia, perineum ruptures is quite a problem in society, 50% of the world occurs in Asia.

The fruit which has the Latin name *Ananas Cosmosus*, thrives in tropical climates such as Indonesia. Pineapple fruit originates from Europe and spreads to all corners of the world, including Indonesia. The nutritional content in a pineapple can be found is phytocin of bromelain which functions as an anti-inflammatory. In addition, other contents found in pineapples are (Vitamin A, Vitamin C, Vitamin B1, Vitamin B6, Minerals, Antioxidant, Fiber, Fat, Potassium, protein, sucrose, calcium, sodium,

phosphorus, pectin, carotene, magnesium, carbohydrates, thiamine, water) (Swastika, 2014).

The pineapple juice for postpartum mothers who suffered perineum rupture is a natural and simple alternative to accelerate wound healing other than by using drugs. Pineapple contains the bromelain enzyme which acts as an anti-inflammatory. Bromelain in pineapples can reduce the average number of days for pain relief and post-surgery wounds that cause inflammation. Research on women who have had an episiotomy has shown that the bromelain contained in pineapples. The antibacterial properties of honey help fight infection in wounds and its anti-inflammatory properties can reduce pain and affect the healing process and stimulate the growth of new tissue so that it can accelerate wound healing and reduce scarring on the skin or tissue. (Jamila & Anwar, 2017).

Honey contains many antioxidant and antibiotic compounds (anti-bacterial). This content plays a role in strengthening endurance. The content of antibiotics can also reduce the incidence of infection in women who have just given birth, especially for women who gave birth by caesarean section. Honey can be consumed every day by drinking it directly or added to beverages such as water, milk, juice, food or other drinks (Jamila & Anwar, 2017).

Based on previous research conducted by Jamila & Anwar, (2017) entitled "The Effect of Pineapple Juice and Honey on Perineum Wounds Healing in PostPartum Mothers at BPM NY. ARIFIN S, SST Surabaya" shown that giving pineapple juice and honey can effectively accelerate the healing process of perineum wounds. Evidenced by giving 150ml of pineapple juice and honey twice a day. Perineum wounds in most clients who consumed pineapple juice and honey showed a faster healing process than those who did not drink pineapple juice and honey.

From the results of observations and interviews with researchers, there were 5 cases of post-partum mothers who complained that the healing process of perineum wounds took longer than 7 days, while from the results of interviews of midwives in the maternity ward of dr. M.M Dunda Limboto hospital said that there were many incidents of maternal perineum's involuntary wounds during the process of childbirth.

METHODS

This research has been conducted in the work area of dr. M.M Dunda Limboto hospital, conducted from August to September 2019. The method used in this research quasi-experiment in this experimental method has a control group, so that it cannot fully function to control external variables that affect the implementation of the experiments. This method was developed to overcome difficulties in research.

The form of research design chosen by the researcher was Post Test Only Control Group Design. The treatment group and the control group were not chosen randomly. In this research the treatment group and control group were compared. The experimental class get treats while the control class doesn't get treats. The experimental group was a group of mothers with perineum wounds who were given pineapple juice and honey while the control group was a group of mothers who had perineum wounds but were not given pineapple juice and honey (Sugiyono, 2011).

RESULTS AND DISCUSSION

This type of research used experimentally with a total sample of 36 postpartum mothers, the sampling was carried out by purposive sampling technique using inclusion criteria, the sample was 18 people in the treatment group given pineapple juice and honey and 18 control groups were not given pineapple juice and honey.

Distribution of Respondents by Age Group of Post-Partum Mothers in the Working Area of dr. M.M Dunda Limboto Hospital

Based on Table 1, it can be seen that in the treatment group the most people aged 20-30 years old were 16 people (88.9%) while those aged >35 years old were only 2 people (11.1%). In the control group, the most were 8 people aged 20-35 years old (44.4%) while those aged >35 years were only 4 people (22.2%).

Table 1. Distribution of respondents by age group of mothers

Age of mothers (year)	Treatment Group		Control Group	
	Frequency	(%)	Frequency	(%)
<20	0	0	6	33,3
20-35	16	88,9	8	44,4
>35	2	11,1	4	22,2
Total	18	100,0	18	100,0

Source: Primary Data, (2019)

Frequency Distribution of Respondents Based on Education Level of Post-Partum Mother in the Work Area of Dr. M.M Dunda Limboto Hospital

Based on Table 2, it can be seen that in the treatment group the majority of respondents had high school education with 12 people (66.7%) while the least educated is 2 people (11.1%). In the control group, most of the respondents had junior high school education (77.8%).

Table 2. Distribution of respondents by level of education

Level of Education	Treatment Group		Control Group	
	Frequency	(%)	Frequency	(%)
Elementary School	4	22,2	2	11,1
Junior High School	2	11,1	14	77,8
Senior High School	12	66,7	2	11,1
Bachelor Degree	0	0	0	0
Total	18	100	18	100

Source: Primary Data, (2019)

Frequency Distribution of Respondents Based on the Occupation of Post-Partum Mother in the Work Area of Dr. M.M Dunda Limboto Hospital

Based on Table 3, it can be seen that the treatment group and the control group are equally distributed. Most of them are mothers who do not work or only as

housewives, in the treatment group as many as 17 people (94.4%) and in the control group as many as 18 people (100%).

Table 3. Distribution of respondents based on maternal occupation.

Occupation of Mothers	Treatment Group		Control Group	
	Frequency	(%)	Frequency	(%)
Housewife	17	4,4	18	100
Enterpriser	1	5,6	0	0
Total	18	100	18	100

Source: Primary Data, (2019)

Frequency Distribution of Respondents Based on the Number of Children with Postpartum Mother in the Work Area of Dr. M.M Dunda Limboto Hospital

Based on Table 4, it can be seen that in the treatment group the most were 12 multiparous mothers (66.7%) while in the control group the most were primiparous mothers were 10 people (55.6%).

Table 4. Distribution of respondents based on maternal parity.

Parity	Treatment Group		Control Group	
	Frequency	(%)	Frequency	(%)
Primi	6	33,3	10	55,6
Multi	12	66,7	8	44,4
Total	18	100	18	100

Source: Primary Data, (2019)

Univariate Analysis

Distribution of Perineal Wound Healing Respondents in the Treatment Group after being given pineapple juice and honey to post-partum mothers in the working area of Dr. M.M Dunda Limboto Hospital

Based on Table 5, it can be seen that in the post-partum mothers who received pineapple juice and honey, 15 people (83.3%) experienced accelerated wound healing while 3 people (16.7) had not yet recovered.

Table 5. Distribution of Perineal Wound Healing Respondents in the Treatment Group after Being Given Pineapple Juice and Honey

Healing of Perineal Wounds	Frequency	(%)
Recovered	15	83,3
Not yet recovered	3	16,7
Total	18	100

Source: Primary Data, (2019)

Distribution of Perineal Wound Healing Respondents in the Control Group without being Giving Pineapple Juice and Honey to Post-Partum Mothers in the Working Area of Dr. M.M Dunda Limboto Hospital

Based on Table 6, it can be seen that in post-partum mothers who did not receive the treatment of pineapple juice and honey, there are 15 people (83.3%) had not recovered, while 3 people (16.7%) had been recovered.

Table 6. Distribution of perineal wound healing respondents in the treatment group after being given pineapple juice and honey

Healing of Perineal Wounds	Frequency	(%)
Recovered	3	16,7
Not yet recovered	15	83,3
Total	18	100

Source: Primary Data, (2019)

Bivariate Analysis

Testing Requirements

Based on Table 7, the results of the frequency of perineal wound healing and signs of infection in the treatment group and the control group were not normally distributed. This can be seen in the sig. Shapiro Wilk <0.05, Shapiro Wilk is very effective for testing small samples of no more than 50 data. Because the data were not normally distributed, the analysis of 2 free samples was using the Mann Whitney test.

Table 7. data normality test for the treatment group and the control group, Tests of Normality

Indicator	Group	Shapiro-Wilk		
		Statistic	Df	Sig.
Healing of Perineal Wounds	Treatment	0.789	18	0.001
Sign of Infection	Treatment	0.762	18	0,000
Healing of Perineal Wounds	Control	0.457	18	0,000
Sign of Infection	Control	0.457	18	0,000

Source: Primary Data, (2019)

Perineal wound healing in the treatment group given pineapple juice and honey and the control group to postpartum mothers in the working area of Dr. M.M Dunda Limboto Hospital.

Based on Table 8 it can be explained that the average post-test perineal wound healing of pineapple juice and honey in the treatment group is 12 mean values, which are obtained from the average number in the treatment group is 24.50 and in the control group is 12.50 from the results Mann Whitney U test obtained a value of p value $0.000 < (\alpha) 0.05$, it can be concluded that there is an effect of pineapple juice and honey on the acceleration of perineal wound healing in postpartum mothers in the Dr. M.M Dunda Limboto Hospital.

Table 8. Perineal wound healing of the treatment group and the control group.

Group	n	Mean	SD	Min-Max	P Value
Treatment Post-test	18	24,50	507	1-2	0.000
Control Post-test	18	12,50	507	1-2	

Source: Primary Data, (2019)

Acceleration of Perineal Wound Healing in Postpartum Women in the Treatment Group and Control Group in the Dr. M.M Dunda Limboto Hospital

The results of the study showed that postpartum mothers who experienced perineal wounds who received pineapple juice and honey in the treatment group had faster healing of perineal wounds as many as 15 (83.3%) people while those who had not healed were 3 people (16.7%). It can be seen from the results after giving 150 ml of pineapple juice and honey for 7 days 2 times a day.

Respondents in the treatment group were 16 people aged 20-35 years who are reproductive healthy and safe for a woman to give birth. Intact skin in healthy young adults is a good barrier against mechanical trauma as well as infection, as well as on the immune system, cardiovascular system and respiratory system which allows for faster wound healing. Meanwhile, over 35 years of age, the functions of the reproductive organs begin to decline, so they are at high risk. The speed of cell repair takes place in line with the growth or maturity of a person's age, and then the aging process can reduce the cell repair system so that it can slow down the wound healing process.

The highest level of education in the treatment group with secondary education, namely 12 people (66.7%), can affect perineal care performed by mothers, postpartum mothers who have good knowledge will have greater knowledge about perineal care than mothers with low education. The mother's lack of knowledge about hygiene will lead to prolonged wound healing. Because with a lack of education, of course the information and knowledge received is lacking, including knowledge of perineal care in postpartum mothers, this can be due to a lack of understanding of information (Smeltzer & Bare, 2012).

Parity can also affect the acceleration of wound healing of primiparous mothers in contrast to multiparous mothers who already have experience, because experience is a source of knowledge or a way to obtain the truth if a mother has given birth to a second child and so generally can perform perineal wound care properly because they have gained experience and information on previous child births. Meanwhile, primiparous mothers or those who have given birth for the first time have no experience regarding perineal wound care.

In the treatment group there were 3 mothers (16.7%) who had not healed the perineal wound was still moist and a little painful which was influenced by several factors, knowledge of wound care, age and dietary nutrition for wound healing because postpartum women needed a lot of additional nutrition from the usual conditions for restore energy and for healing perineal wounds in the puerperium.

Whereas in the control group who were not given pineapple juice and honey, after examining the acceleration of perineal wound healing, it was found that only 3 respondents (16.7%) experienced 100% perineal wound healing and 15 people (83.3%) had not healed. This can be seen from the results of examinations on postpartum mothers who experience perineal injuries after 7 days.

The results showed that the control group consisted of 18 people and 3 respondents who had recovered while those who had not yet recovered were 15 respondents, this could be influenced by various factors that influence perineal wound

healing, including factors of education, age, parity, socioeconomic, tissue handling, personal hygiene. Smeltzer & Bere, 2012).

The effect of pineapple juice and honey administration on the acceleration of perineal wound healing in postpartum mothers in Dr. M.M Dunda Limboto Hospital

The results showed that the mean value of 12 obtained from the average number in the treatment group was 24.50 and in the control group, namely 12.50 from the results of the Mann Whitney U test, the value of ρ value was $0.000 < (\alpha) 0.05$ so it could be It was concluded that there was an effect of pineapple juice and honey on the acceleration of perineal wound healing in postpartum mothers. This means that H_0 is rejected and H_a is accepted. It can be interpreted that postpartum mothers who are given pineapple juice and honey experience an accelerated healing of perineal wounds. It is contrast to post-partum mothers who are not given pineapple juice and honey experience slow healing of wounds after the examination.

Pineapple juice contains pectin, the enzyme Bromelin, which is effective for reducing pain and improving blood circulation and is nutritious for the wound healing process. This means that consuming pineapple juice can accelerate the healing of perineal wounds. Meanwhile, honey is antibacterial, antiseptic, keeps wounds faster and accelerates wound healing, can reduce pain and circulation which affects the healing process by stimulating the growth of new tissue, thereby accelerating wound healing. (Jamila & Anwar, 2017).

The Bromelain enzyme in pineapple acts as anti-inflammatory and anti-edema, while honey is antibacterial, antiseptic and to protect wounds and accelerate the wound healing process. The antibacterial properties contained in solid honey fight infection in the perineal wound and are anti-inflammatory and can reduce pain and stimulate the growth of new tissues. Consuming pineapple juice and honey for 7 days is a simple and easy alternative that can accelerate the perineal healing of postpartum mothers (Fatma, 2017).

Bromelain enzyme which is mostly contained in pineapple which has high enough levels in pineapple has many benefits for the health of the human body. Bromelain contains the enzymes amylase, cellulase, acid phosphotase, and acid peroxidase in small amounts. This enzyme has the ability to break down the protein complex structure so that it is easier for the body to absorb. In the health sector, the bromelain enzyme can reduce pain and swelling due to wounds, reduce inflammation, heal wounds (Putri & Anita, 2017).

Perineal wound assessment, it was declared healed if the wound was dry, there was no redness, no swelling, the tissue was fused, and there was no pain when sitting and walking. Long perineal wound healing will result in the risk of infection during the puerperium (Rukiah, 2011).

Research results In line with the research (Rahayu & Sugita, 2015) it can be seen from the results of the study that there was a difference in the degree of perineal wound healing between the control group ($\rho < 0.05$). The average value of the degree of perineal wound healing in the experimental group reached 3.74, higher than the degree of perineal wound healing in the control group which only reached 1.96. Perineal wound healing obtained a value of 6.608 with probability (p) = 0.000. This shows that

the administration of pineapple juice and honey can accelerate the healing of perineal wounds in post partum mothers.

CONCLUSION

Based on the results of the study, there is a very significant effect of giving pineapple juice and honey to the acceleration of healing of perineal wounds in postpartum mothers in the working area of Dr. M.M Dunda Hospital.

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