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The Effect of Pineapple Juice on The Healing of Postoperative Sectio Caesarea Wounds at Bogor City Mulia Pajajaran Hospital in 2023

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Abstract

Background: According to RISKESDAS in 2018, the number of childbirths using the sectio caesarea method in women aged 10-54 years in Indonesia reached 17.6% of the total number of deliveries. Recovery in the puerperium for mothers who have given birth by sectio caesarea surgery can be done by gradual early mobilization, because there is an incision wound on the abdomen of the mother. In addition to the mobilization of factors affecting wound healing is the intake of maternal nutrients. The role of nutrition in wound healing is very important in wound healing. Nutrient intake is high in protein such as in fish, eggs and fruits. Pineapple fruit can accelerate wound healing because there is a bromelain enzyme that can convert protein into amino acids that can regenerate damaged cells so that wound healing will take place faster.

Purpose: To know the Effect of Pineapple Juice on The Healing of Postoperative Sectio Caesarea Wounds at Bogor City Mulia Pajajaran Hospital in 2023

Methods: This research is a quasi-experiment with a pre-posttest only control group research design. The sampling technique uses non probability sampling with accidental sampling method. The samples in this study were calculated by large samples with a paired numerical analytical formula with the results of a large sample of 32 samples, and the group was divided into 2, namely the control group and the intervention group. Data collection is carried out by observation. Data analysis was performed using the Wilxocon Test.

Results: Based on the results of the study showed that there was an effect of giving Pineapple Juice on wound healing in postoperative sectio caesarea mothers with a p-value of 0.000 meaning < 0.05.

Conclusion: Consumption of Pineapple Juice can speed up the healing process of postoperative sectio caesarea wounds at Mulia Pajajaran Hospital, Bogor City. It is hoped that consuming pineapple juice can be recommended and applied by health workers to postpartum mothers whose delivery is by sectio caesarea surgery.

Keywords: Pineapple Juice Consumption, Post SC, Wound Healing.

Introduction

According to RISKESDAS in 2018, the number of childbirths using the sectio caesarea method in women aged 10-54 years in Indonesia reached 17.6% of the total number of deliveries. In West Java, the risk factor for mothers to give birth with SC was 13.4% in

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2018.[1] Recovery in the puerperium for mothers who have given birth by sectio caesarea surgery can be done by gradual early mobilization, because there is an incision wound on the abdomen of the mother.[2]

In addition to the mobilization of factors affecting wound healing is the intake of maternal nutrients. The role of nutrition in wound healing is very important in wound healing. Nutrient intake is high in protein such as in fish, eggs and fruits.[6] Pineapple fruit can accelerate wound healing because there is a bromelain enzyme that can convert protein into amino acids that can regenerate damaged cells so that wound healing will take place faster.[7]

Childbirth by sectio caesarea (SC) surgery method is performed surgically to give birth to the fetus through incisions in the abdominal and uterine walls, so that the fetus is born through the abdominal wall and uterine wall so that the child is born intact and healthy. Recovery in the puerperium for mothers who have given birth by sectio caesarea surgery can be done by gradual early mobilization and intake of nutrients that support wound healing[8].

This wound healing starts from the process of replacing and repairing the function of damaged tissues. In mothers who have just given birth, many normal physical components in the postnatal period require healing to varying degrees. The puerperium tends to be related to the process of returning the mother's body to its pre-pregnancy condition, and many of these processes are related to the process of uterine involution, accompanied by healing at the placenta (extensive wounds) including ischemia and autolysis.[10] The success of such resolutions is critical to maternal health, but apart from nutrition there are other factors such as the hygiene and lifestyle of each of these individuals.

Based on the care of health workers for the wound care process, there are currently many complementary treatments that can combine to help in the wound healing process. One of his complementary upbringings was with herbs, herbs that were used in this upbringing using fruit. There are various fruits that can support a person's recovery process to be better than one on pineapple. In pineapple fruit there are enzymes that can convert proteins into amino acids so that the wound healing process can help repair these damaged tissues[5].

Based on observations at the Mulia Pajajaran Hospital in Bogor City, there are postpartum mothers with sectio caesarea who feel that if after the operation it will take a long recovery process in healing their wounds so that many are afraid to move or mobilize

and lack knowledge about the intake of what protein sources can accelerate the healing of surgical wounds. Based on the survey above, researchers are interested in conducting a study entitled "The Effect of Pineapple Juice on Wound Healing After Sectio Caesarea Surgery at Mulia Pajajaran Hospital, Bogor City".

Method

1. Research design

This type of research is quantitative research, because the data from the study is in the form of numbers that can be analyzed based on statistical procedures. This research is a type of quasi-experimental research with a pretest-postttest design with a control group. This study was divided into two groups, namely the control group that was not given treatment and the intervention group that was given treatment.

2. Settings and samples

The research was conducted in January 2023 at Mulia Pajajaran Hospital, Bogor City. The population in this study was postpartum mothers who gave birth sectio caesarea at the Bogor City Mulia Pajajaran Hospital. Sampling technique with nonprobability sampling technique with accidental sampling method is a method of determining samples by taking respondents who happen to exist or are available somewhere according to the research context and obtained by the formula of the sample size of the numerical analytical formula in pairs with a total sample of 32 respondents and divided into 2 groups of 16 respondents.

3. Measurement and data collection

The research instrument used in this study was an observation sheet for SC surgical wound healing using the REEDA scale. The instruments used in this study are intended to obtain appropriate results, namely with the REEDA scale, there are 5 categories, namely redness, edema (swelling), ecchymosis (sign of bleeding), Discharge (Fluid discharge), and Approximation (density between the edges of the wound). The assessment of both groups of respondents was carried out before and after the treatment. Standard Operating Procedure (SOP) for making pineapple juice is with 150 gr of pineapple fruit and 150 ml of water blended until smooth. How to consume 150 ml in the morning and evening (2 times a day) after meals. Pineapple juice in regular consumption for 7 days.

4. Data analysis

Data analysis using SPSS (Statistical Package for the Social Sciences) software using statistical tests, namely the Wilcoxon test with a p value of 0.000 <0.05 which means that statistical tests show an influence on the intervention group given the treatment.

Result

Table 1.
Average Before Intervention

Group		N	Min.	Max.	Mean	SD
Control	Pretest	16	5	7	5.50	0.730
Intervention	Pretest	16	5	6	5.31	0.479

Based on the table above, information was obtained on the average value of the 1st day of the control group, which was 5.50 and the standard deviation value was 0.730. The minimum score for the control group is 5 and the maximum score is 7. In the inervention group, the average nilan of day 1 was 5.31 and the standard deviation value was 0.479. a minimum score of 5 and a maximum score of 6. From the two data, there is no difference in the average value which is very different because the same two groups have not been given treatment and monitoring.

Table 2.
Average After Intervention

Group		N	Min.	Max.	Mean	SD
Control	Posttest	16	0	4	1.81	1.223
Intervention	Posttest	16	0	1	0.38	0.500

Based on the table above, information on the average value after treatment and monitoring for 7 days was obtained. For the control group that was not given treatment and only standard treatment for its score of 1.81 and standard deviation value of 1,223, the minimum score value was 0 and the maximum score value was 4. Meanwhile, in the invention group that was given treatment for 7 days for an average value of 0.38 and

standard deviation value of 0.500, the minimum score was 0 and the maximum value score was 1. From these two data, we can see that there is a decrease in the average value, which means that there is an acceleration of healing after being given intervention.

Table 3.
Effect of Pineapple Juice on Postoperative Sectio Caesrea Wound Healing

Group	N	Pretest	Posttest	Difference	*P-value*
		Mean	Mean	Mean	
Intervention (Pineapple Juice)	16	5.31	0.38	4.93	0.000

Based on the table above, it is known that the average wound healing before giving pineapple juice is 5.31 while the average after giving pineapple juice is 0.38 with a difference of 4.93 with Wilcoxon results getting a P-value of 0.000 < 0.05. From this information, it can be concluded that there is an influence of pineapple juice on the healing of postoperative caesarean section wounds at MP Hospital, Bogor City in 2023.

Table 4.
Effect of Standard Care on Postoperative Sectio Caesarea Wound Healing

Group	N	Pretest	Posttest	Different	P *value*
		Mean	Mean	Mean	
Control (Standard Care)	16	5.50	1.81	3.69	0.000

Based on table above, it is known that the average wound healing in standard treatments before monitoring is 5.50 while the average value after monitoring for 7 days is 1.8.1 with a mean difference of 3.69 with Wilcoxon results getting a P-value of 0.000 <0.05. From this information, it can be concluded that there is an influence of standard monitoring without intervention on the healing of postoperative caesarean section wounds at Mulia Pajajaran Hospital, Bogor City in 2023.

Table 5.
Mean Difference Value Results between 2 groups

Value	Group Intervention	Group Control	Difference Mean	P *value*
Difference Value	4.93	3.69	1.24	0.000

Based on table 5, it is known that the value of the difference in the mean of the intervention group is 4.93 and the value of the difference in the mean of the control group is 3.69, the result of the mean difference between the two groups is 1.24 with the result of P value 0.000 <0.05. From this information, it can be concluded that there is a difference in wound healing between those given pineapple juice interventions and those that are not given interventions.

Table 6.
Differences in the Effect of Pineapple Juice on Post SC Wound Healing

Group	N	Mean Rank	Sum of Rank	P *Value*
Intervention (Pineapple Juice)	16	10.81	173.000	
Control (Standard Care)	16	22.19	355.000	0.000
Total	32			

In the table above, obtained from the results of the Mann Whitney Test for mean rank values in the intervention group 22.19 and in the control group 10.81. As well as the value of Asymp.Sig (2-tailed) of 0.000 < 0.05. So it can be said that the results of the hypothesis are accepted, thus it can be said that there are differences in the administration of pineapple juice to the control group and the intervention group. Because there is a significant difference, it can be said that there is an influence of pineapple juice on the healing of postoperative sectio caesarea wounds.

Discussion

The results of bivariate analysis in the 3rd table show the influence of the intervention. The decrease in the score value can be seen from the difference value of the

Wilcoxon test. So that the pineapple juice consumed has a signification effect on the healing of postoperative sectio caesarea wounds that are given the consumption of pineapple juice.

This result is supported by previous research conducted by Bunga et.al (2022) which suggests that there is an effect of pineapple juice on perineal wound healing in postpartum mothers. Another research that is in line has also been carried out by Farida et.al (2021) to get the result that there is perineal wound healing with a p-value of 0.002. This proves that pineapple juice can accelerate wound healing compared to without giving pineapple juice. Pineapple juice has the ability to heal wounds because it contains the enzyme bromelain. This enzin plays a role in the inflammatory phase of the wound healing process. The potential of bromelain as a pain reliever, antiedema, debridement due to burns, accelerates wound healing, and improves the absorption of antibiotics, in this case it is very beneficial for postoperative healing15.

Based on the results of the data analysis that has been carried out, researchers assume that there is an effect of pineapple juice on the healing of postoperative sectio caesarea wounds. This is because pineapple juice contains the enzyme bromelain which is useful as an anti-inflammatory and accelerates the healing of yamh wounds felt by respondents who consume pineapple juice.

By consuming pineapple juice can help the healing process of postoperative sectio caesarea wounds. However, although there are differences in average values between groups, lifestyle, hygiene, mobilization and nutritional intake consumed by respondents are also factors that can affect wound healing.

Limitations

In the implementation of this study, there were several limitations and obstacles experienced by researchers, including the lack of samples used in this study. the timing of the study was adjusted to the sample, the researcher only focused on one intervention, namely the consumption of pineapple juice.

Conclusion

There is an effect of giving pineapple juice consumption on the acceleration of wound healing after sectio caesarea surgery at Mulia Pajajaran Hospital, Bogor City, West Java in 2023, with the Wilcoxon test results obtained a p value of 0.000 (<0.05). It can be

recommended for health workers to carry out complementary care to support the healing process of wounds both for normal delivery that has a perineal wound and sectio caesarea delivery that has an incision wound on the abdomen. It is suggested that the results of this study can be input in efforts to improve services and management of health problems as well as additional information in health services as an alternative effort to heal surgical wounds, especially caesarean section section by consuming pineapple juice.

Ethical Approval

The research has gone through a review from the ethics commission.

Acknowledgments

Thank you to all parties involved.

Conflict of Interest

No conflict of interest.

Author's contribution

In compiling and designing research, conduct a REEDA scale observation sheet to obtain results that are appropriate to the state of the wound. And it is hoped that the results of this study can be used as a reference for the development of further research on the effect of consuming pineapple juice on wound healing after sectio caesarea surgery.

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