



## The Effect Of Provision Of Extraction Of Berenuk Fruit (*Crescentia Cujete* Linn) On Postpartum Mothers With Constipation At Mandala Public Health Care 2022

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### ABSTRACT

There are about 38% of postpartum mothers who are afraid and have difficulty during defecation. Management of postpartum mothers be able to be pharmacologically, administering drugs via rectal or taken orally, having pharmacological or non-pharmacological effects on nutritional intake, early mobilization. Provision of complementary therapy based on local wisdom, namely Berenuk fruit (*Crescentia Cujete* L.) as a drug to treat constipation or constipation can be a safe solution. in the working area of Mandala Public Health Care Rangkasbitung in 2022. Quasi experimental research design with Control Group Posttest-Only design. The samples in this study were 34 people, 17 intervention groups were given berenuk fruit extract at a dose of 23.53 mg once given healthy food and control group 17 people with healthy food, August – September 2022. Postpartum inclusion criteria with constipation on 3-4 days. Univariate data analysis of the age of the intervention and control groups had the same average age of 18 young and 38 years old, the average parity of the different control groups was parity 3 and intervention parity 5. Bivariate analysis of berenuk fruit extract containing anthraquinone as a laxative dose of 23.53 mg had a speed of 13.4 times faster for defecation to occur with a span of less than 2 hours when compared to the post partum mother group who were constipated and only given healthy food for more than 15 hours with the bivariate test the p value = 0.000 ( $p < .$ ), which means that there was a very significant difference in the mean occurrence of defecation between the two groups (the group of post partum mothers who were given berenuk fruit extract and the group of post partum mothers who were only given healthy food). Using the Mann Whitney statistical test, It is hoped that local wisdom can be applied in midwifery services to postpartum mothers in fulfilling the physiological needs of elimination with constipation during the puerperium.

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### 1. Introduction

The postpartum period is an important period because of the increased risk of morbidity and mortality for both mother and baby. Most postpartum mothers experience post partum pain problems so they are afraid to do elimination activities and so on. Post partum is a transition period for a mother, after

going through a very tiring phase, experiencing uterine contractions after childbirth, digestive problems that must be faced are difficulty defecating. mother should get extra care. (Henderson, 2006) is one of the common gastrointestinal symptoms that often occur in postpartum mothers. A prospective study showed that the prevalence of constipation was 24% with 95% CI, 13% to 36% at 3 months postpartum in the United States. In China the survey found that 25% and 11.6% of women suffered from constipation at 3 and 12 months postpartum. (Zai et al, 2019)

A study shows that almost 38% of postpartum mothers are afraid and have difficulty defecating. Often, postpartum mothers experience difficulty in defecating, several factors can affect it both physically and psychologically, which can delay the return of bowel function to return to normal (Putri Sari, 2013).

Currently, the solution that can be done is to reduce the worries that the mother feels due to stitches or birth canal injuries, nutrition for the mother's food intake, mobilization as early as possible if it is still very difficult, usually the mother is assisted by rectal laxative therapy. Management of postpartum mothers can be pharmacological or non-pharmacological (Maritalia, 2017) The provision of complementary therapy based on local wisdom, namely decoction or extraction of berenuk fruit (*Crescentia Cujete* Linn.) can be a better choice, considering the dangers of side effects of pharmacological drug therapy having a detrimental impact on postpartum mothers. Compounds that act as laxatives are anthraquinones. The mechanism of action of anthraquinones is that they are absorbed in the epithelial cells of the small intestine through the microvilli, then enter the mucosal cells where they activate the hormones PG5 (prostaglandins) and 5-hydroxytryptamine, resulting in increased absorption of electrolytes in the lumen and smooth stool movement. Natural ingredients, namely berenuk fruit (*Crescentia Cujete* Linn) based on the Ejelonu theory contain anthraquinones (Saraswati 2020, Fitrianda 2019). Meanwhile, there are other studies that say that, the papaya fruit is able to overcome constipation but has a lack of specific compounds that can launch bowel movements. (Setyaningsih, 2019).

Berenuk fruit is a tropical herbaceous plant that is efficacious as a medicine for various diseases. Berenuk leaves in traditional medicine are used to treat new wounds and reduce hypertension. The young leaves are ground and used as a compress for headaches and wounds. While the flesh is used to treat diarrhea, flu, bronchitis, cough, asthma, and urethritis. Scientific research on beenuk is still very rare, but this plant has quite promising potential as a herbal medicine. (Nurikasiwi, 2017) In addition, the phytochemical tests that have been carried out provide information that the flesh of the berenuk fruit contains alkaloids, flavonoids, saponins, tannins, and polyphenols. The content of alkaloids, saponins, tannins, and polyphenols has the potential as antibacterial substances (Saraswati 2020; Fitrianda 2019; Setyaningsih 2019; Hasanah, 2017; Atmodjo, 2019; Ridwanulloh, Sari, 2006).

Based on the above background, the authors are interested in conducting a study entitled The Effect of Berenuk Fruit Extraction (*Crescentia Cujete* Linn) on the recovery of constipation in postpartum mothers at the Mandala Public Health Center in 2022.

## 2. Method

The design of this study was a quasi-experimental with a Control Group Posttest-Only design approach. The experimental group and the control group were formed by a random procedure so that the two groups were equal. The treatment was given to the experimental group, then measurements were made on the dependent variable in the two groups to compare the differences.

The population in this study were all postpartum mothers who experienced constipation in the Mandala Public Health Care. The sample size in this study was based on the number of postpartum mothers with constipation at the Mandala Public Health Center in August – September 2022. The inclusion criteria in this study were postpartum mothers with constipation on the 3rd to 4th day. The exclusion criteria postpartum mothers with conditions: postpartum mother day I and Diarrhea, intestinal obstruction, gastritis. The research was conducted with due observance of ethical principles with permission no. 0289/EA/KEPK/2022.

### 3. Result And Discussion

The results of the research carried out the presentation of data based on data analysis. The analysis carried out are age and in the table 1. Normality test in the table 2 and the different test result in the table 3.

Table 1.  
Characteristics of Postpartum Mothers with Constipation by Group, Age, and Parity  
at the Mandala Public Health Center 2022

Group	Age (tahun)			Parity		
	Mean	Median	Min-Max	Mean	Median	Min-Max
Control	24.88	25.0	15 – 33	1.35	1.0	1 – 2
Intervention	24.88	22.0	18 – 38	1.59	1.0	1 – 5

The mean age of the control group and the intervention group was the same, namely 24.88 years. The youngest age in the control group was 15 years, the intervention group was 18 years. While the oldest age in the control group was 33 years, and the intervention group was 38 years. Based on parity the intervention group was higher (1.59) when compared to the control group (1.35); Likewise, the maximum parity was higher in the intervention group, which was 5, while the control group was only 3.

Table 2.  
Characteristics of Postpartum Mothers with Constipation by Group, Age, and Parity  
at the Mandala Public Health Center 2022

Mean	Median	Min – Max	P Value	Information	Test Decision
491.76 minutes or 8 hours 12 minutes	277.50 minutes or 4 hours 38 minutes	35 minutes – 1500 minutes	0.000	Data is not normally distributed	Mann-Whitney Non-Parametric Test

The average length of time for defecation is not normally distributed ( $p < \alpha = 0.000$ ), so the test performed must use the Mann-Whitney Non-Parametric Test.

Table 3.  
Results of Different Tests on the Average Length of Time (Minutes) Occurrence of Defecation  
After Intervention on Postpartum Mothers Who Experienced Constipation  
at the Mandala Public Health Center 2022

Group	Mean	Median	Min – Max	P Value
Control	915 minutes or 15 hours 15 minutes	1010 minutes or 16 hours 50 minutes	390 – 1500 minutes	0.000*
Intervention	68.53 minutes or 1 hour 9 minutes	60 minutes or 1 hour	35 – 165 minutes	

These results show that the intervention group (post partum mothers who were constipated and given berenuk fruit extract) had a 13.4 times faster rate of defecation when compared to the post partum mother group who were constipated and only given healthy food; and from the results of the bivariate test, the value of  $p = 0.000$  ( $p < \alpha$ ), which means that there is a very significant difference in the average occurrence of defecation between the two groups (the group of post partum mothers who were given beenuk fruit extract and the group of post partum mothers who were only given healthy food).

#### 3.1 Discussion

In this study there were confounding variables, namely early ambulation and balanced nutrition; but during treatment all respondents were treated the same according to the existing SOP in the public

health care, so that the two variables became homogeneous. Thus, the variables of early ambulation and balanced nutrition are no longer confounding variables. Early ambulation is carried out in stages, in the first 6 hours the postpartum mother must rest first. Early ambulation that can be done is moving the arms, hands, moving the tips of the toes and rotating the ankles, lifting the heels, tensing the calf muscles and bending and sliding the legs. After 6-10 hours, the mother is required to be able to tilt to the left and right to prevent thrombosis and thromboembolism, after 24 hours the mother is recommended to sit and walk (Rizki, 2017). This is in line with the previous study, namely Turawa 2020 which stated that the postpartum mother group with multifactor defecation problems can not only be taken as an obstacle to the pattern of nutrition and ambulation and movement, the effect of previous childbirth, the effect of giving emetics given during pregnancy, hormonal changes that occur from pregnancy until the mother becomes postpartum or postpartum can also be a contributing factor in the adjustment of maternal defecation after postpartum, especially in the first week after postpartum (Turawa, 2020).

The results of this study showed that the characteristics of the intervention group and the control group had similarities in terms of age, namely the average age of the youngest was 15-18 years and the oldest age was 33-38 years. In these two groups, there was no difference in complaints of defecation. However, the picture of parity for the intervention group is higher where this group has a 5th parity compared to the control group, namely the 3rd parity who has defecation problems. This condition illustrates that the parity group experiences more gastrointestinal complaints after postpartum and is in line with the characteristics of pregnant women who often experience gastrointestinal complaints due to intestinal motility due to hormonal changes during pregnancy and these complaints will still be felt in the early adaptation period after postpartum (Rudiyanti, 2019).

After conducting research on the group that was given the intervention of 17 postpartum mothers with problems in defecation, namely constipation in the mother on days 3 and 4, administration of berenuk fruit extract at a dose of 23.53 mg or 1 capsule had a speed of 13.4 times faster for defecation to occur when compared with the post partum mother group who experienced constipation and was only given healthy food, and the measurement of time was under 24 hours in the intervention group and the average control group was more than 24 hours. With a significance level of  $p = 0.000$  ( $p <$ ), which means that there is a very significant difference in the mean of defecation between the two groups. This result is in line with the previous complementary study by Zhai in 2018 which treated the postpartum mother group with constipation by giving Chinese herbal ingredients compared to the control group which was only given a placebo. With a significance value of  $p = 0.05$  (Zhai et al, 2019).

Another study which stated that this berenuk plant (*Crescentia Cujete* Linn) had rapid effectiveness against the intervention group was Ardianti 2014 although this intervention benefited from saponins and flavonoids as anti-inflammatory but it can be seen that the effect was significant ( $\alpha=0.05$ ) on the bacterial group. *Staphylococcus aureus* (Ardianti, 2014). In the Saraswati study in 2020, (*Crescentia Cujete* Linn) has an effectiveness of 6.72 mg/20 g BW on anthraquinone levels as a laxative with a group of mice that were constipated during the first 48 hours by giving more than 3 doses, the difference with previous studies is that In this study, giving to postpartum mothers at a dose of 23.53 mg or 1 capsule given only once in less than 24 hours had a speed of 13.4 times faster than the control group. This proves that the laxative effect of anthraquinone is very effective. The intervention group of postpartum mothers after being observed did not experience any side effects, even stated that they wanted to defecate more easily without feeling like they had to strain and were not accompanied by heartburn which is usually excruciating like other laxative drugs. Because this is natural. And it does not make it difficult for mothers who have stitches in the perineal wound or birth canal (Saraswati, 2020).

Parvin's 2015 study showed that the leaves and bark of *C. cujete* had anti-inflammatory and antibacterial activity indicating that the plant extract had therapeutic potential against bacterial infections and also had an effect on the disease process by causing destabilization of biological membranes (Parvin, 2015). Balogun's 2021 research which states the benefits of the berenuk fruit (*Crescentia Cujete* Linn) in southern Africa an economical and medicinal plant of wide native uses including hypertension, diarrhea, respiratory diseases, stomach problems, infertility problems, cancer,

and snake bites, *C. Cujete* mostly underutilized, but from some of today's technological advances. This study found that there are many benefits available from this type of plant, including ethnobotany, phytochemical, toxicological, and pharmacological benefits, as well as other economic benefits (Balogun FO, 2021).

#### 4. Conclusion

The age in each intervention and control group has the same average age. The average parity in the control group is different from the average parity in the intervention group of Berenuk Fruit Extract containing anthraquinone as a laxative in a dose of 23.53 mg has a speed of 13.4 times faster for defecation to occur with a span of less than 2 hours when compared to the post partum mother group who were constipated and only given healthy food for more than 15 hours.

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