



The Effect of Dates Palm (*Phoenix Dactylifera*) on Uterus Involution among Mother with Postpartum

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Abstract. The absence of uterine contractions after labor caused problems during the postpartum period, especially in the process of uterine involution. Date palm fruit is a non-pharmacological therapy that contains oxytocin, which is good for postpartum mothers' consumption to maintain uterine contractions so that the involution process can run normally. The study aimed to examine the effect of date palm fruit consumption on uterine involution in postpartum mothers. A quasi-experimental study, pre and posttest with the equivalent control group. We involved 32 respondents and divided into experimental group (n=16) and control group (n=16). The results showed that the uterine revolution was faster in the intervention group after receiving the dates palm fruit (*Phoenix dactylifera*) compared to the control group. This study proves that there is an influence of consumption of dates on uterine involution in postpartum mothers. Further research needs to investigate the effect of the palm fruit on other variables related to uterus involution and expected to measure biomarkers such as prolactin

Keyword: Consumption of date palm fruit (*Phoenix Dactylifera*), uterine involution, postpartum



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INTRODUCTION

The maternal mortality rate is not only a benchmark for maternal health figures but also an indicator of the assessment of public health. This is because the Maternal Mortality Rate will show how to improve health services, both in terms of access to health services and in terms of the quality of health services. According to the WHO (World Health Organization), in 2015, there were 303,000 maternal deaths, caused by bleeding, hypertension, infections, and previous maternal health history) (1).

In Central Java in 2015 reported that 619 maternal cases had death. This number decreased compared to the previous year was 711 cases in 2014. In districts/cities with the highest death cases were: Brebes 52 cases, Semarang City 35 cases, Tegal 33 cases. Several factors were associated with maternal death in Central Java, including bleeding (21.14%), hypertension in pregnancy (26.34%), Infection (2.76%), circulatory system disorders

(9.27%), Others (40.49%). The highest maternal death occurred at the age of 20 to 34 years old (68.50%), while ≥ 35 years was 26.17% (2).

Some factors that cause bleeding during the puerperium, namely direct factors such as uterine atony, placental retention, trauma, and coagulation disorders, and indirectly, namely maternal age, parity, birth distance, and anemia. In Dr. RSUP M. Djamil Padang, the bleeding was caused by the presence of remaining placenta 35.9%, placental retention 25.0%, birth canal tears 25.0%, uterine atony 12.5 %, uterine inversion 1.6%. In 2013 at the Metro City Muhammadiyah General Hospital, there were eight people out of 65 postpartum mothers who had bleeding due to uterine atony 12,3%. Some of the factors that cause bleeding during the puerperium, namely direct factors such as uterine atony, placental retention, trauma, and coagulation disorders, and indirectly, namely maternal age, parity, birth distance, and anemia (3)

Other factors that because postpartum hemorrhage are subinvolution. The cause of subinvolution or failure of the uterus to normal was due to the presence of infection and residual placenta (4). To keep uterine contractions going well and to prevent the occurrence of uterine subinvolution among postpartum mothers, oxytocin as the pharmacological therapy is needed. However, it always makes discomfort among mothers and the impact on the feeling of cramping in the uterus. A study from Rahayu et al. showed the provision of therapy had been carried out for uterine involution cases. Uterine is 9.10 cm higher than the control group that gets 5.88 cm. The degree of healing of the perineal wound is higher in the intervention group (5). However, providing pineapple juice also cause gastric problems, pineapple juice can be predisposing factor ulceration of the stomach (6).

Dates are one of the oldest plants cultivated by humans and have been consumed for more than 6000 years. It contains a nutritional value, fructose, and glucose. In addition, it also consisted of minerals (selenium, copper, potassium, and magnesium), and B-complex vitamins and vitamin C, and oxytocin, which can stimulate uterine contractions to facilitate labor (7). Besides being able to help uterine contractions, the hormone oxytocin can also contract blood vessels around the mother's breast, which will facilitate breastmilk production (8). Date palm fruit contains complete and proper nutrition for breastfeeding mothers, the content of oxytocin which can stimulate nerve impulses in the posterior pituitary granule and stretches the myoepithelial alveoli cells to contract and encourage the release of ASI (9).

The results of the Suroso et al. 2016 study stated that mothers who consumed date palm juice during pregnancy progressed when the delivery was faster. Hence, the complete opening process was 0,83 hours faster than 49.8 minutes (10). Providing dates in the final trimester of pregnancy can minimizing the need for labor induction. This is because dates contain oxytocin, which can stimulate the uterine muscles to contract, dates can also reduce postpartum bleeding. In conditions of prolonged labor, pregnant women who are given dates have faster cervical dilatation than mothers who are not given dates. Dates are consumed to avoid the use of oxytocin and prostaglandin (11). Date palm rich in sugar content is recommended for consumption by pregnant women and postpartum mothers (12).

Based on the background that has been described, a study will be conducted on "The Effect of Giving Dates Palm Fruit (*Phoenix Dactylifera*) on Uterus Involvement in Postpartum Mothers.

OBJECTIVE

The study aimed to examine the effect of date palm fruit consumption on uterine involution in postpartum mothers.

METHOD

We conduct a quasi-experimental, pretest, and posttest with control group design. The variable that will be the object of this study is date palm fruit, which is the independent variable, and the uterus involution is the dependent variable.

Thirty-two total samples were involved in this study and allocated in the experimental group and control group. The sampling method used to include consecutive sampling.

The research instruments used in this study are as follows: Observation sheet containing about the respondent's research, date of research, respondent's code, age, gravida, education and employment, observation uterus involution. This research was registered at the Health Research Ethics Commission Faculty of Dentistry Sultan Agung Islamic University, Semarang Number. 029/B.1-KEPK/SA-FKG/III/2019.

Data analysis using the SPSS 16 software program. Data normality test as a bivariate parameter monitor using the Shapiro Wilk test. Analyzing the uterus involution pretest and posttest between the experimental groups compared with the control group using the dependent t-test. The Independent t-test was performed to determine the effect of the intervention on uterus involution in the experiment and control group

RESULTS

Mean difference of uterus involution before and after receiving the intervention among the experimental group and the control group

Table 1 showed the mean difference of uterus involution before and after receiving the intervention among the experimental group and the control group. The mean showed *uterine* involution among the intervention group before receiving the treatment. was 14.13 ± 0.39 , and after treatment 5.56 ± 0.22 with p-value <0.05 . Whereas the control group showed that before receiving treatment, the mean. 14.03 ± 0.42 and after treatment 7.56 ± 0.56 with a p-value <0.05

Table 1. mean difference of uterus involution before and after receiving the intervention among the experimental group and the control group

Group	Before Mean $\pm$ SD	After Mean $\pm$ SD	p-value
Intervention	14.13 ± 0.39	5.56 ± 0.22	0.000
Control	14.03 ± 0.42	7.56 ± 0.56	0.000

Mean difference of uterus involution after receiving the intervention between group

Table 2 explained the mean difference of uterus involution after receiving the intervention between the group. The mean of uterine involution among the intervention group was 8.56, and the control group was 6.46, with a value of $p = 0.000$ (<0.05).

Table 2. Mean difference of uterus involution after receiving the intervention between group

Variable	Groups		P-value
	Intervention Mean $\pm$ SD	Control Mean $\pm$ SD	
Uterus Involution	8.56 ± 0.531	6.46 ± 0.592	0.000

DISCUSSION

In the intervention group, the mean uterine involution before treatment was 14.13 ± 0.39 , and after treatment 5.56 ± 0.22 with p-value <0.05 . Whereas the mean control group uterine involution before treatment was 14.03 ± 0.42 and after treatment 7.56 ± 0.56 where p-value <0.05 . The results of the independent t-test statistical test show that the value of $p < 0.05$ states that there are differences in uterine involution after treatment in the intervention and the control groups. The results of the analysis show that the intervention group and the control group experienced a decrease in uterine fundal height. Still, a reduction in fundal uterine height was faster in the intervention group compared to the control group, where the mean in the intervention group was 8.56 and in the control group 6.4.

Decreasing involution of the uterus more quickly can be caused by giving dates palm fruit. Dates palm fruit can expedite the process of breastfeeding in postpartum mothers and improve maternal health during the lactation process. During the lactation process, it involves the role of two hormones, namely the hormone prolactin and the hormone oxytocin. Prolactin hormone has the role of producing breast milk, and the hormone oxytocin has the role of launching breast milk. Besides, the hormone oxytocin in the postpartum mother plays a role in stimulating uterine muscle contraction so that the process of involution can go well (13,14).

The lack of uterine contractions during the postpartum period can affect uterine involution during the postpartum period. The complexity of the uterus in the process of returning the uterus to the condition before pregnancy, which is preceded by adequate uterine contractions. The disruption of uterine involution is called the subinvolution of the uterus. Uterine subinvolution is one of the symptoms of pathology during puerperium which can cause complications during the postpartum period (15,16,17).

This study focused on the process of accelerating or facilitating the process of uterine involution in postpartum mothers. Postpartum care aims to promote the recovery process, facilitate the process of complexity to prevent the occurrence of complications during the puerperium (18,19). One of the herbs that are believed to maintain a healthy body is dates.²⁰ Dates contain oxytocin which can stimulate the uterine muscles to contraction (21).

Uterine contractions will be controlled by the sugar and vitamin B1 content found in dates palm fruit. Dates palm fruit that is rich in sugar content is strongly recommended for consumption by pregnant women and postpartum mothers (22).

Oxytocin is produced from the posterior pituitary in the paraventricular nucleus and supraoptic nucleus. This nerve travels to neurohypophysis through the pituitary stalk, where the end of the stalk is a sphere that contains many secretory granules and is on the posterior pituitary surface. It will secrete oxytocin if there is stimulation, while oxytocin will work to cause contractions when the uterus has an oxytocin receptor. The hormone oxytocin released from the pituitary gland strengthens and regulates uterine contractions, compresses blood vessels, and helps the process of hemostasis. Contraction and retraction of the uterine muscles will reduce the blood supply to the uterus. This process will help reduce the scar implantation of the placenta and reduce bleeding (23,24,25).

The above theory is in line with this study where there is a strong uterine contraction as a result of the researchers' intervention in the form of giving dates, which causes a decrease in fundal uterine height faster in the intervention group. Whereas in respondents who were given puerperal midwifery care, they did not experience a slow but normal invoicing process. Research on dates palm fruit can be used as a non-pharmacological alternative that is processed naturally without involving the use of chemicals that aim to accelerate the process of uterine involution in postpartum mothers and prevent complications in the mother during the puerperium.

CONCLUSION

There was a difference in uterine involution on the 7 days in postpartum mothers who were given consumption of dates palm fruit with postpartum mothers who were given puerperal midwifery care

LIMITATION

The limitations of the study only examined the variable uterus involution. The researcher was unable to fully control the external variables that could affect the experiment, such as anxiety.

RECOMMENDATION

For further researchers, it is recommended to examine the content of dates palm fruit, which is more specific and the right dose in giving dates palm fruit. It also needed to add variables to explore affect uterine involution and oxytocin levels for further investigation.

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