



## THE EFFECTIVENESS OF DATE FRUIT ADMINISTRATION ON THE DURATION OF ACTIVE PHASE I AND PHASE II LABOR

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### ABSTRACT

Prolonged labor remains a primary risk factor contributing to the rising rates of cesarean sections. This condition is commonly triggered by inadequate uterine contractions or pelvic disproportion, which, if left unmanaged, can jeopardize the safety of both mother and fetus. Given the importance of maintaining a physiological (normal) birth process, this study aims to examine the effectiveness of date consumption as a natural alternative for strengthening contractions. The active compounds in dates play a vital role in optimizing uterine function mimicking the effects of the hormone oxytocin making this research strategically significant in efforts to reduce invasive medical interventions during childbirth of this study was to determine the effectiveness of dates on the duration of active phase I and phase II labor at the Pondok Gede Bekasi TPMB. Was a quasi-experimental study with a post-test with control group design. The research sample involved 64 respondents divided into two groups. One group was given date fruit intervention, and one control group was only given sweet tea. The sampling technique used purposive sampling. Data analysis used the Independent Sample T-test because the data were normally distributed. The results showed that dates were effective in reducing the duration of active phase I labor with a p-value = 0.000 (<0.05), but were not effective in reducing the duration of stage II labor in mothers in labor because they had a p-value of 0.327 (>0.05).

Keywords: active phase of first stage of labor; dates; second stage of labor

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## INTRODUCTION

The maternal mortality rate (MMR) in Indonesia remains a cause for concern. MMR is the number of maternal deaths caused by pregnancy, childbirth, and the postpartum period. Based on Indonesia's 2023 health profile data, the MMR in West Java is still quite high at around 96.89 per 100,000 live births, while the MMR in Bekasi City is 37 per 100,000 live births, according to data from the Health Office.

Prolonged labor carries the risk of various complications such as uterine atony, birth canal lacerations, and bleeding in 7% of cases, infection in 5% of cases, as well as fatigue, shock, and several other effects that require medical intervention and cesarean section. The effects of prolonged labor on the mother also affect the newborn baby. One of the complications experienced by newborns is asphyxia, which reaches 3.9% due to brain trauma caused by excessive pressure when the baby's head is forced into the birth canal. Therefore, it is important to detect prolonged labor early and provide prompt and appropriate treatment during the first stage of labor.

The rate of cesarean deliveries in Indonesia is alarmingly high at 10-15%. This rate far exceeds the recommendation of the World Health Organization (WHO), which states that cesarean deliveries should only be performed in cases where such intervention is indicated. Research findings indicate that the rate of cesarean section deliveries in Indonesia is around 17.7%. This contributes to the high rate of cesarean section deliveries caused by prolonged labor, which is 4.3%. Therefore, doctors and

midwives need to take quick and appropriate action during the delivery process to ensure that the duration of labor is normal.

The results of the study showed that consuming dates shortened labor by 249.00 minutes compared to the control group that did not consume dates, whose labor lasted 392.10 minutes. This shows that dates contribute to the duration of labor. Another study supports these findings, showing that the duration of the first stage of labor was shorter, and the average cervical dilation was significantly higher in the treatment group compared to the control group. This indicates that dates not only shorten the duration of labor but also increase the effectiveness of cervical dilation. Dates act on oxytocin receptors, enabling the uterine muscles to respond effectively to oxytocin by producing more efficient contractions (Ahmed, I. G., et al. 2018; Ahmed, I. G., et al. 2018; Istikomah, Mufidah, Kunang, & Diana. 2023; Kordi, M., et al. 2017). This study aims to determine the effectiveness of date fruit consumption on the duration of active phase I and phase II labor at the Pondok Gede Bekasi TPMB.

## **METHOD**

### **Research Design**

This study used a quasi-experimental method with a post-test with control group design. The intervention group was given dates to eat, while the control group was only given sweet tea to drink. This study compared two groups of mothers in labor: the intervention group at TPMB S, who were given dates to eat, and the control group at TPMB P, who were only given sweet tea to drink. During the labor process in the delivery room, the respondents were observed and their progress monitored by midwives (the research team).

### **Research Location and Samples**

This study was conducted at TPMB Pondok Gede, Bekasi, West Java. The sample size was calculated using a formula for comparing two groups in quasi-experimental studies, resulting in 32 mothers for the intervention group who were given dates and 32 mothers for the control group who only drank 1 glass of sweet tea.

The sampling technique used purposive sampling, with the criteria for respondents being pregnant women aged 37-42 weeks, parity > 1, active phase of labor, cervical dilation of 4 cm, the lowest part of the fetus being the head, intact amniotic sac, no pregnancy and delivery complications, and the mother and fetus in good condition. All mothers were of childbearing age.

### **Data Analysis**

After the data is collected, the next step is data analysis. The data analysis performed is as follows: Testing the normality and homogeneity of data for each research parameter using Shapiro-Wilk or Kolmogorov-Smirnov for data normality and Lavenne's test for data homogeneity. To determine the effectiveness of date consumption on the duration of phase I and phase II, an Independent Sample T-test was conducted because the data was normally distributed.

## **RESULT**

This study aims to determine the effectiveness of date fruit consumption on the duration of active phase I labor and phase II labor in mothers giving birth at the TPMB S in the Pondok Gede Bekasi District in 2025. The number of respondents in the sample was 64 for the intervention group and 32 for the control group. The research results are described as follows.

### **Univariate Analysis**

#### **Respondent Characteristics**

The respondent characteristics variables from the research results consist of maternal age, parity, occupation, and estimated fetal weight (EFW), which can be seen in Table 4.1 below

Table 1.  
Frequency Distribution Based on Respondent Characteristics (Age, Education, Occupation, Parity, and Estimated Fetal Weight) in the Intervention Group and Control Group

Respondent Characteristics	Intervention Group		Control Group		Total	
	f	%	f	%	Σ	%
<b>Mother's age</b>						
1. 20 - 35 years old	27	84,4	29	90,6	56	88
2. < 20 - >35 years old	5	15,6	3	9,4	8	12
<b>Education</b>						
1. Elementary School	1	3,1	1	3,1	2	3
2. Junior High School	2	6,3	3	9,4	5	8
3. Senior High School	20	62,5	22	68,7	42	66
4. Academy/University	9	28,1	6	18,8	15	23
<b>Work</b>						
1. Housewife	20	62,6	18	56,3	38	60
2. Private sector	7	21,9	11	34,4	18	28
3. Teacher	5	15,5	0	0	5	8
4. Civil servant	0	0	3	9,3	3	4
<b>Parity</b>						
1. Multipara	22	68,8	22	68,7	44	69
2. Primipara	10	31,2	10	31,3	20	31
<b>Estimated Fetal Weight (EFW)</b>						
1. 2.500-3.500 gr	27	84,4	31	96,9	58	90
2. > 3.500	3	9,4	1	3,1	4	6
3. < 2.500	2	6,2	0	0	2	4

The analysis results show that the characteristics of both the intervention and control groups are predominantly of reproductive age, namely 20 to 35 years old (88%), with a high school education (66%) and employment as housewives for both the intervention and control groups (60%), while parity is predominantly multiparous (69%) for both groups. and the majority of birth weights were normal, ranging from 2,500 to 3,500 grams, at 90%.

### Differences in the Duration of Active Phase I and Phase II of Labor

The duration of active phase I and phase II labor in mothers giving birth is expected to show a difference, with the intervention group having a shorter duration than the control group. Thus, there is a difference in the success rate between the intervention group that consumed dates and the control group. The results can be seen in Table 2.

Table 2.  
Overview of Differences in the Duration of Active Phase I and Phase II in Mothers Giving Birth Between the Intervention Group and the Control Group

Time of Delivery	Group	n	Mean	Elementary School	95% CI	
					Lower	Upper
Time I	Intervention	32	154,06	86,829	-153.216	-57.847
	Control	32	259,59	103,296		
Time II	Intervention	32	25,91	15,906	-11.147	3.775
	Control	32	29,59	13,879		

Table 2, the duration of active phase I labor in the intervention group was 154.06 minutes, which was 105.53 minutes faster than the control group, which had a mean value of 259.59 minutes. The duration of the second stage of labor in the intervention group also had a lower mean value of 25.91 minutes, while the control group had a mean value of 29.59 minutes, meaning that the intervention group had a shorter second stage of labor by 3.68 minutes compared to the control group.

Descriptively, these results show that the group that received the intervention experienced a shorter average duration of labor compared to the control group.

## Bivariate Analysis

### Homogeneity test

This test is a prerequisite before conducting a bivariate test. The test used for numerical data is the independent t-test. This test is used because it compares the means of two data groups, namely the intervention group and the control group. The homogeneity test results show that all variable data are homogeneous and normal because they have a Sig value (based on mean) > 0.05. m

**Effectiveness of Dates on the Duration of the Active Phase and the Duration of the Second Stage of Labor in Women in Labor** This study aims to prove that consuming dates during labor can shorten the duration of both the active phase of stage I and stage II. The dates consumed by the intervention group were monitored until stage II began. This allowed for a comparison of the results between the intervention group and the control group. The results of this study can be seen in Table 3.

Table 3.

Effectiveness of Date Palm Administration on the Duration of Active Phase I Labor and Phase II Labor in Mothers Giving Birth

Time of Delivery	Group	n	Mean	Elementary School	95% CI		F	P value
					Lower	Upper		
Time I	Intervention	32	154,06	86,829	-153.216	-57.847	0,342	0.000
	Control	32	259,59	103,296				
Time II	Intervention	32	25,91	2,812	-11.147	3.775	1,186	0.327
	Control	32	29,59	2,454				

Table 3 analysis show that with a p-value = 0.000, there is a difference in duration between the intervention group and the control group after the date palm fruit intervention. The intervention group had a faster duration of stage I labor by 105.53 minutes compared to the control group respondents. In stage II, there was no difference between the intervention group and the control group with a p-value of 0.327. With this p-value, the administration of dates in stage II was not significant, even though there was a difference in the mean value. Based on the results of this study, it was proven that the administration of dates was effective in reducing the duration of the active phase of labor in pregnant women. Although there were no significant results for the second stage of labor, there was a difference in the mean duration. In the intervention group, the duration of the second stage of labor was 3.68 minutes shorter than in the control group.

### Relationship between characteristics and duration of phase I active period and phase II in the intervention group consuming dates.

The characteristic variables in this study were age, education, occupation, parity, and estimated fetal weight. Statistical tests were conducted on these variables to analyze their relationship or effect on the duration of the active phase of labor in the date palm intervention group. The results of the analysis of these variables are shown in Tables 4 and 5.

Table 4.

Relationship between Characteristics and Duration of Active Phase I in the Intervention and Control Groups

Characteristics	Group				p-value
	Intervention		Control		
	f	%	f	%	
Mother's age					
20 - 35 years old	27	84,4	29	90,6	0,613
<20 dan >35 years old	5	15,6	3	9,4	
Education					
Elementary School	1	3,1	1	3,1	0,755
Junior High School	2	6,3	3	9,4	
Senior High School	20	62,5	22	68,7	
Academy/University	9	28,1	6	18,8	

Characteristics	Group				p-value
	Intervention		Control		
	f	%	f	%	
Work					
Housewife	20	62,6	18	56,3	0,259
Private Sector	7	21,9	11	34,4	
Teacher	5	15,5	0	0	
Civil Servant	0	0	3	9,3	
	0	0		0	
Parity					
Multipara	22	68,8	22	68,7	0,132
Primipara	10	31,2	10	31,3	
TBJ					
2.500-3.500 gr					1,000
> 3.500	27	84,4	31	96,9	
< 2.500	3	9,4	1	3,1	
	2	6,2	0	0	

Table 4 data shows that there is no relationship between characteristic variables and the duration of active phase I. This is evidenced by a p-value > 0.05 from the data analysis results.

Table 5.

Relationship between Characteristics and Second Stage Duration in the Intervention and Control Groups at TPMB

Respondent Characteristics	Group				p-value
	Intervention		Control		
	f	%	f	%	
Mother's age					
20 - 35 years old	27	84,4	29	90,6	0,755
< 20 - >35 years old	5	15,6	3	9,4	
Education					
Elementary School	1	3,1	1	3,1	0,744
Junior High School	2	6,3	3	9,4	
Senior High School	20	62,5	22	68,7	
Academy/University	9	28,1	6	18,8	
Work					
Housewife	20	62,6	18	56,3	0,259
Private sector	7	21,9	11	34,4	
Teacher	5	15,5	0	0	
Civil servant	0	0	3	9,3	
Parity					
Multipara	22	68,8	22	68,8	0,116
Primipara	10	31,2	10	31,2	
TBJ					
2.500-3.500 gr	27	84,4	31	96,9	0,990
> 3.500	3	9,4	1	3,1	
< 2.500	2	6,2	0	0	

Table 5, the same results as Table 4 were obtained, showing that there was no relationship between all characteristic variables and the duration of stage II. This was proven by a p-value > 0.05 from the results of the data analysis.

**DISCUSSION**

**Respondent Characteristics**

**Respondents' Age in Relation to the Duration of the Time I and Time II Stages of Labor**

The majority of respondents were within the healthy reproductive age range, namely 20 to 35 years old. This may be due to the respondents' understanding of the ideal and safe age for pregnancy and childbirth. Previous studies have shown that age has an effect on the duration of active phase I and phase II of labor. The older the mother, the higher the risk of prolonged labor. Physiologically, the age range of 20 to 35 years is a good time to conceive and give birth because during this period, the mother is in good physical condition and emotionally stable, and her fertility is at its peak.

Conversely, women under the age of 20 are at risk because their reproductive organs are not yet fully developed and they are not yet mentally ready to become mothers. Meanwhile, women over the age of 35 tend to experience a decline in reproductive system function due to aging, which causes the birth canal to be less elastic and uterine muscle contractions to be less than optimal. This has the potential to increase the risk of prolonged labor. Therefore, the age of 20-35 is the optimal age for childbirth, both physically and psychologically (Melida, Y. 2022; Soenarnatalina. 2018).

Some studies suggest that the main cause of prolonged labor is not age but other factors such as abnormal contractions, where uncoordinated uterine contractions can cause unstable cervical dilation and slow down the process. Other studies conclude that age can be a factor causing uterine contractions that affect the duration of labor. The ideal age for pregnancy and childbirth is 20-35 years old because women are in peak physical condition and fertility at this age. The older a person is, the higher the risk of prolonged active phase of labor, so age is a consideration in planning a pregnancy (Ardhiyanti, Y., & Susanti, S. 2016; Soenarnatalina. 2018; Yusmahanani. 2017). Based on the results of this study, it is necessary to follow up that the ideal age for a woman to become pregnant is between 20 and 35 years old to prevent complications during the duration of labor, both stage I and stage II. The results of this study prove that there is no relationship between the age of the respondents and the duration of stage I and stage II, so there is no need to conduct a multivariate test.

#### **Respondents' Education Regarding the Duration of Time I Stage and Time II Stage Labor**

The results of the study showed that the educational level of respondents in both the intervention and control groups was high school (66%), while the lowest was elementary school (3%). Education should help shorten the duration of labor, especially in the second stage of labor. With a high level of education, respondents are expected to have the knowledge and skills to deal with labor, which will increase their confidence in the labor process. Adequate education can also reduce anxiety and pain during labor and improve joint decision-making with health workers (Desmawati, & Agustina. 2019).

The educational level of respondents in this study varied. Education is a process that changes the attitudes and behavior of individuals or groups to mature humans through teaching and training. In the context of childbirth, mothers with low educational levels tend to face the childbirth process without adequate preparation. Meanwhile, mothers with higher levels of knowledge tend to actively seek information about childbirth, how to deal with it, and make the necessary preparations. In general, educational level affects a person's ability to receive and understand information and their surrounding conditions. Based on research on the education level and knowledge of pregnant women with anemia, it was found that education is closely related to changes in attitudes, behavior, views, and social status. The higher a person's education level, the easier it is for them to accept information, thereby increasing the mother's ability to think rationally (Bohari, N. H., *et all* 2024; Chandra, F., Junita, D. D., & Fatmawati, T. Y. 2019).

#### **Respondents' Occupations in Relation to the Duration of Labor Time I and Time II Stage of Labor**

Respondent characteristics based on employment showed that in the intervention group there were 20 respondents (62.6%) who were unemployed, while in the control group there were 18 respondents (56.3%) who were unemployed. Thus, most of the respondents in this study were unemployed. Based on several related studies, physical activity during pregnancy can affect the delivery process. Pregnant women who spend a lot of time lying down or are less active tend to experience difficulties during delivery. It is not only the mother's employment status that has an impact, but women who are physically active on a daily basis can have a significant impact before, during, and after delivery. Light to moderate physical activity during pregnancy can help

strengthen the pelvic muscles, increase elasticity, and prepare the body for the delivery process (Ningsih, D. A., Oklaini, S. T., Oktarina, M., Subani, P., & Sari, R. D. 2023).

The results of this study indicate that there is no relationship between occupation and the duration of active phase I and phase II labor. These findings are consistent with other studies that show no significant relationship between occupation and labor duration with a p-value  $> 0.05$ . The study mentioned that the main causes of prolonged labor are not related to occupation but rather to inadequate nutritional intake, abnormal contractions, and malpresentation. Conversely, other findings show that occupation is related to the duration of the first stage of labor with a p-value  $< 0.05$  (p-value = 0.024). The study explained that physical activity related to certain occupations can increase dopamine and norepinephrine levels. This increase contributes to an improved mood, which leads to a more positive outlook, high self-confidence, and motivation, which indirectly have a positive impact on the delivery process. Physiologically, physical activity can increase the flexibility of the abdominal wall muscles, thereby reducing the duration of labor. However, further comprehensive research is needed on this variable to identify and understand the various factors that can influence the duration of labor (Anggraini, W., Ashari, A., & Iriyani, E. 2023; Pamudita, R. R., Indahwati, L., & Prameswari, A. 2024).

### **Parity in Relation to the Duration of the Time I and Time II Stages of Labor**

In this study, the characteristics of the parity variable of respondents showed that in the intervention group and the control group, each had a multiparous parity of  $>68\%$ . The majority of respondents had a parity that was still considered safe for reproductive health. This may be because respondents understood and were aware of the importance of the ideal number of births to reduce complications during childbirth. If a mother giving birth has a parity classified as grande multipara, then there is a possibility of complications during childbirth, such as a lack of elasticity in the uterine wall. Abnormalities in the uterus can cause fetal malposition, uterine rupture, prolonged labor, and bleeding (Melida, Y. 2022)

The results of this study indicate that there is no relationship between parity and the duration of active phase of labor and the second stage of labor. This study is in line with previous studies which concluded that there is no relationship between parity and the duration of labor, with a p value  $> \alpha$  ( $> 0.05$ ). The study explains that the main causes of prolonged labor are not parity but rather inefficient uterine contractions, malposition and malpresentation, pelvic disproportion, and a rigid cervix. Conversely, these findings differ from several studies that show a significant relationship between parity and duration of labor. The study explains that parity can affect the duration of labor, which is thought to be caused by differences in the strength of the uterine muscles in mothers with different parities; primiparas tend to experience longer labor durations than multiparas (Ardhiyanti, Y., & Susanti, S. 2016; Yohana, W. S. 2016; Yusmaharani. (2017). Based on the results of this study, there is no relationship between parity and duration of labor. Although in theory parity is one of the factors often studied in relation to the length of labor, further research is needed to find other factors that can affect the duration of labor, such as nutritional status, maternal psychology, and health worker support.

### **TBJ on the Duration of Labor in Stage I and Stage II**

The results of the analysis of the study found that in the intervention group and control group respondents, each had a normal fetal weight. A fetal weight within the normal range indicates that the fetus is in an ideal condition, so that no additional precautions or interventions are required during delivery. Conversely, an estimated large fetal weight, if predicted to be more than 3500 grams, can increase the risk of shoulder dystocia, birth canal tears, and the need for operative procedures, which can ultimately affect the duration of labor (Widatiningsih, S., Hastuti, T. P., & Wibowo, M. T. 2015).

This study also found that there is a relationship between birth weight and duration of labor. This finding is consistent with other studies that found no relationship between birth weight and duration of active phase I labor with a p value  $> 0.05$ . There is no relationship between birth weight and duration of labor, presumably because the majority of respondents had normal birth weight, so the viability of the data did not reflect any meaningful differences. Conversely, several studies found a relationship between large fetuses and the duration of labor with a p-value  $\leq 0.05$ . These studies showed that large birth weight can increase the risk of labor complications, such as shoulder dystocia or fetal size incompatibility with the mother's pelvis, which can ultimately prolong the duration of labor. Similar findings also conclude that fetal weight affects the duration of labor with a p-value  $< 0.05$ . The study explains that large FLW can affect the effectiveness of uterine contractions. The uterine muscles tend to fatigue more quickly, so the process of cervical dilation is slower and the duration of labor is longer (Kusbandiyah, J. 2023; Widatiningsih, S., Hastuti, T. P., & Wibowo, M. T. 2015; Yohana, W. S. 2016).

### **The Effectiveness of Date Fruit Administration on the Duration of Active Phase I Labor and Phase II Labor in Women in Labor**

#### **Effectiveness of Date Fruit Administration on the Duration of Active Phase I Labor**

This study analyzed the effectiveness of date fruit administration on the duration of active phase I labor in two groups, namely the intervention group and the control group. The results of the analysis showed that the average duration of active phase I labor in the intervention group was 154.06 minutes, while in the control group it was 259.59 minutes, meaning that the intervention group was 105.53 minutes faster than the control group. These results show that the group given the date palm intervention experienced a shorter duration of labor than the control group. There was a difference in the duration of active phase I labor between the intervention group and the control group with a difference of 105.53 minutes, which indicates a potential positive effect in the intervention group on the duration of labor. The duration of active phase I labor refers to the time required for the cervix to dilate from 4 cm to 10 cm, which physiologically takes about 6 hours or 360 minutes. Therefore, the shorter average duration of active phase I labor in the intervention group indicates better efficiency in the cervical dilation process (Nurlianti, L., & Halimatussakidah. 2021; Tilden, E. L., et al. 2022).

Based on the results of the independent t-test analysis, as shown in Table 4.3, the p-value is 0.000. Therefore, it can be concluded that there is a difference in the average duration of active phase I labor in mothers in the intervention group and the control group, with a p-value  $< 0.05$ . The results of this study indicate that there is a statistically significant difference between the intervention group and the control group, so it can be concluded that the intervention of giving dates is effective on the duration of active phase I labor in pregnant women. The results of this study are in line with the research by Putu et al., which found a significant difference between the intervention group that received dates and the control group in the duration of active phase I labor. based on the statistical test results, a p-value of 0.000 was obtained, meaning that there is an effect of date palm juice administration on the duration of the active phase of the first stage of labor, with an average difference in labor duration of 50.5 minutes (Putu Dewi Agustina, G. A., Lathifah, N. S., Putri, R. D., & Nurlyani, N. 2023).

Other studies on the administration of dates to the intervention group also showed a shorter duration compared to the control group, which was only given sweet tea, as evidenced by the statistical test results, which yielded a p-value of 0.0001. Thus, the duration of spontaneous labor in the intervention group was significantly shorter than that in the control group. The similarity between this study and previous studies may be due to the fact that the procedure for administering dates to the control group was the same, and the inclusion criteria for respondents also did not differ significantly. The results of the study indicate that consuming dates at the end of pregnancy is effective in shortening the duration of labor and reducing the need for invasive measures to

accelerate labor. The study's conclusion recommends consuming dates if a mother experiences inadequate contractions without other complications (Indriati, N., Sriani, P., & Indah, S. Y. V. 2024)

Similar findings also concluded that there was an effect of sukari date consumption on the duration of labor. The results of the analysis using an independent t-test showed that the average duration of labor in mothers who consumed sukari dates was 275.77 minutes compared to the average duration of labor in respondents who did not consume sukari dates, which was longer at 347.23 minutes with a p-value of 0.001. Based on these test results, it was proven that the administration of sukari dates as a non-pharmacological intervention was effective in shortening the duration of active phase I labor. This occurred because the dates consumed had an impact on increasing energy and uterine contractions. The high glucose content in sukari dates serves as a source of energy that is quickly absorbed during active phase I. Sukari dates also contain serotonin and tannin compounds that can stimulate smooth muscle contractions in the uterus, thereby preventing postpartum bleeding. Sukari dates contain essential fatty acids such as oleic and linoleic acids, which play a role in prostaglandin synthesis, helping to strengthen and stretch the uterine muscles. Previous studies have also shown that dates contain natural oxytocin, which can increase the effectiveness of uterine contractions during labor. The advantage of sukari dates is that they are easily available in the market, making them a practical and affordable alternative source of nutrition to support labor for mothers and families in need (Wibowo, H. S. 2020).

Several other studies also explain that non-pharmacological therapy to increase contractions and maternal strength during labor is to consume sukari dates. These dates have a high sugar content of 78.32%. The total sugar content consists of 51.80% glucose and 47.50% fructose. The high glucose content is beneficial for meeting energy needs during labor, while serotonin and tannins contribute to helping smooth muscle contractions in the uterus and shortening the duration of bleeding. Sukari dates also contain oleic and linoleic acids, which function in the production of prostaglandins, substances that strengthen and stretch the uterine muscles. Another advantage of sukari dates is their availability in the market (Soebahar, E., Daenuri, E., & Firmansyah, A. 2015).

Further research shows that dates contain tannins, which can help facilitate painless contractions. Some researchers recommend that mothers consume dates during labor because of their beneficial effects in facilitating the delivery process. Dates are rich in natural sugars and calories, providing the extra energy needed during labor (El-Ardat, M. A., et al. 2025). Mothers who consume dates during labor will help trigger contractions, because dates contain substances that are very similar to the hormone oxytocin, allowing labor to proceed smoothly and normally. Dates also help the cervix dilate more quickly, thereby preventing complications from prolonged labor. Based on these findings, it can be concluded that the intervention of consuming dates is significantly effective in accelerating the duration of the active phase of labor in pregnant women.

### **Effectiveness of Date Fruit Administration on the Duration of the Second Stage of Labor**

The results of the analysis of the effectiveness of date fruit administration on the duration of the second stage of labor in two groups, namely the intervention group and the control group. The results of the study show that the average duration of the second stage of labor in the intervention group was 25.91 minutes, while in the control group it was 29.59 minutes, meaning that the intervention group was 3.68 minutes faster than the control group. These results show that the group given the date palm intervention experienced a faster duration of the second stage of labor than the control group. The difference in the duration of the second stage of labor between the intervention group and the control group shows the potential for a positive effect in the intervention group on the duration of labor. Based on the results, the faster average duration of the second stage of labor in the intervention group shows a positive effect of consuming dates starting from the first stage of labor.

The effectiveness of dates on the duration of the second stage of labor is not only seen from the average duration of labor, but also requires analysis from an independent t-test. The results of the independent t-test analysis showed a p-value of 0.327. Therefore, it can be concluded that consuming dates is not effective in reducing the duration of the second stage of labor in women in labor. The results of this study are inconsistent with previous studies, which found that of the 60 respondents in the first group, 60% gave birth spontaneously, and only 40% gave birth with invasive intervention using oxytocin injections. This study shows the promising effects of consuming dates on the duration of the stages of labor. The saturated and unsaturated fatty acids contained in dates stimulate the production of prostaglandins, which are necessary for labor. Dates are also rich in folic acid, vitamin K, iron, potassium, and magnesium (Guntari, & Tridiyawati. 2023).

The results of this study are also inconsistent with other studies that prove that consuming dates at the end of pregnancy is effective in reducing the duration of labor and decreasing the need for oxytocin to accelerate the second stage of labor. The results recommend consuming dates for women experiencing a decrease in contractions during the second stage of labor. The test results have a p-value of 0.03, indicating that dates are effective in reducing the duration of the second stage of labor. Other research results also show differences with the current study, which proves that there is an effect of date consumption on the duration of the second stage of labor in women in labor with a p-value of 0.001. The difference in research results with previous studies may be due to differences in the characteristics of the respondents compared to previous studies. In addition, the location of the study may also influence the research results (Siwi, Murti, & Tamtono. 2023; Sunaryo, & Simanjuntak. 2024). However, the results of this study are consistent with research conducted by Siwi using meta-analysis, which proved that consuming dates has a weak effect on the duration of the second stage of labor, with a p-value of 0.910. The similarity is likely due to the research process, respondent characteristics, and location, which are not significantly different. The results of both studies prove that dates are only effective on the duration of active phase I labor.

## **CONCLUSION**

The characteristics of the respondents were that the majority of mothers giving birth were aged 20-35 years old, most had a high school education, on average were not working, had multiparous parity, and the majority had a normal birth weight. The duration of active phase I labor in the intervention group respondents was on average 105.53 minutes shorter than that of the control group. Thus, there is a benefit to consuming dates in the intervention group respondents during active phase I labor. The duration of the second stage of labor in the intervention group was on average 3.68 minutes shorter than in the control group. This also demonstrates the benefits of consuming dates in the intervention group. The results showed that consuming dates was effective in reducing the duration of active phase I labor, but not effective in reducing the duration of active phase II labor in women in labor.

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