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EFFECT OF DATES IN LATE PREGNANCY ON THE DURATION OF LABOUR IN NULLIPAROUS WOMEN

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Abstract

Objective: *To compare the duration of labor in nulliparous women receiving dates with those not receiving dates in late pregnancy.*

Study Design: *Randomized controlled trial.*

Study Setting: *Obstetrics and Gynecology Department, Ali Fatima Hospital, Lahore.*

Study Duration: *Six months (from June to Nov, 2024)*

Methodology: *A total of 80 nulliparous women aged 18–35 years with singleton, cephalic pregnancies at 37–38 weeks gestation were included. Participants were randomly assigned into two groups: Group A (intervention, n=40) received 70–75 grams of date fruit three times a week from the 37th week, while Group B (control, n=40) received standard antenatal care without dates. Randomization was done using a random number table. All participants were monitored for onset of labor. If labor had not commenced by 41 weeks, induction was performed. Duration of the active, second, and third stages of labor, along with type and mode of delivery, were recorded. Data were analyzed using SPSS version 26.0. Independent t-tests compared labor durations, and chi-square tests were used for categorical variables. A p-value ≤0.05 was considered statistically significant.*

Results: *The intervention group experienced a higher rate of spontaneous labor and normal vaginal delivery. The active and second stages of labor were significantly shorter in the date group compared to the control. No significant difference was observed in the third stage duration.*

Conclusion: *Date consumption in late pregnancy significantly reduces labor duration and promotes spontaneous vaginal delivery. It may serve as a safe, culturally acceptable dietary approach to support natural childbirth in nulliparous women*

INTRODUCTION

World Health Organization defined that healthy pregnancies typically result in normal deliveries characterized by spontaneous onset and low-risk progression of the labor(1).The medical problems

may require labor induction or augmentation due to inefficient uterine contractions (2, 3). But the induction rates vary in women, and the technique is connected with possible complications including hemorrhage and cesarean section(4). Complementary and alternative medicine (CAM) approaches are sometimes sought by women to avoid induction, such as acupuncture and herbal remedies(5, 6).

Date fruit is known for its nutritional value and holds cultural significance, particularly in the Islamic tradition(7, 8). Dates include a variety of essential nutrients, including fatty acids and hormones that may aid in energy conservation and uterine muscle preparation for childbirth (9) Limited research suggests that consuming dates throughout pregnancy may result in a more natural labor onset and improved cervical dilatation, most likely due to their nutritional value and potential uterine-stimulating qualities(10, 11).

The rationale of the current study is to investigate the potential benefits of date fruit consumption during late pregnancy on the duration of labor stages. Normalizing the procedures for delivery without the use of medical treatments such as labor induction is critical for maternal health. Date fruit, noted for its nutritional richness and cultural relevance, offers a viable option for aiding natural labor advancement(14). By reducing the duration of labor phases, this dietary practice may lead to safer and more natural delivery experiences, thereby benefiting mother care and providing a culturally accessible means of supporting healthy labor outcomes for women without contraindications.

METHODOLOGY:

This randomized controlled trial was designed to evaluate the impact of date fruit consumption during late pregnancy on the duration of labour stages in nulliparous women. The study was conducted in the Obstetrics and Gynecology Department of Ali Fatima Hospital, Lahore, over a period of six months following ethical approval from the hospital's ethics committee.

A total of 80 participants were enrolled, with 40 women in each group. The sample size was calculated using the WHO sample size calculator, based on expected durations of the active phase of labour (329±249 minutes in the intervention group and 547.80±392.10 minutes in the control group), with 80% power and a 5% level of significance. A non-probability consecutive sampling technique was employed for participant selection.

Eligible participants were nulliparous women aged 18 to 35 years, at 37 to 38 weeks of gestation, with singleton pregnancies in cephalic presentation. Gestational age was determined using the date of the last menstrual period or confirmed through first-trimester ultrasound performed by a radiologist with over five years of experience. Women were excluded if they had high-risk pregnancies, contracted pelvis, pre-eclampsia, uterine atony, or if they consumed dates for less than two weeks prior to labour onset.

After obtaining informed consent, demographic data including name, age, gestational age, height, and weight (for BMI calculation) were collected. Participants were randomly assigned to two groups using a random number table: those with even numbers were allocated to Group A (intervention), and those with odd numbers to Group B (control). Group A received 70–75 grams of 'Bam Mazafati Khajoor' (equivalent to 6–7 dates) three days a week from the 37th week of pregnancy onward. Group B received standard care without date consumption.

Participants were monitored for the spontaneous onset of labour. If labour did not commence by the end of the 40th week, monitoring continued until the 41st week, with Group A continuing date intake. Induction of labour was initiated after 41 weeks under the supervision of a senior obstetrician with over five years of experience.

For statistical analysis, SPSS version 26.0 was utilized. Numerical data such as maternal age, gestational age, BMI, and labour durations were expressed as means with standard deviations, while categorical variables such as mode and type of delivery were presented as frequencies and percentages. Stratification was done by maternal age, gestational age, BMI, and type of labour. Independent sample t-tests were applied to compare the durations of labour stages between the two groups, while chi-square tests assessed categorical outcomes. A p-value of ≤0.05 was considered statistically significant.

RESULTS:

This study compared labor duration in nulliparous women aged 18-35 who consumed dates during late pregnancy with those who did not. After consent, 80 women were divided into an intervention group (n=40), who consumed dates in the last trimester, and a control group (n=40), who did not.

The demographic data showed that most participants were aged 25-30 in the intervention group and 20-30 in the control group. BMI data showed 45% of the intervention group and 40% of the control group had a normal BMI, with only 5% and 10% classified as obese in each group, respectively. The gestational ages, with 47.5% of the intervention and 57.5% of the control group at full term.

Labor onset patterns indicate that the spontaneous labor was significantly higher in the intervention group (n=37) compared to the control (n=21), while induced labor was lower in the intervention group (n=3) than in the control (n=19). The delivery modes, with 31 normal deliveries and 9 C-sections in the intervention group compared to 21 normal and 19 C-sections in the control group.

The active phase duration for the intervention group was 350.80±47.985 minutes, and the control group was 364.15±50.205 minutes, with a mean difference of -13.350 ($p < 0.045$). The second stage showed a mean difference of -3.67 ($p < 0.05$). However, the third stage duration difference was not significant (mean difference -0.025, $p > 0.05$).

TABLE SHOWING THE DETAILS OF THE PARTICIPANT DEMOGRAPHICS AND LABOR OUTCOMES

Variable	Intervention Group (n=40)	Control Group (n=40)	p-value
Age (years, Mean ± SD)	24.30 ± 4.30	25.55 ± 4.55	>0.05 (NS)
Gestational Age Category (n)	Term: 19, Late: 21	Term: 23, Late: 17	>0.05 (NS)
BMI Category (n)	Normal: 18, Overweight: 20, Obese: 2	Normal: 16, Overweight: 20, Obese: 4	>0.05 (NS)
Week of Labor Onset (Mean ± SD)	39.35 ± 1.48	39.53 ± 1.54	0.605
Spontaneous Labor (n, %)	37 (92.5%)	21 (52.5%)	<0.001
Induced Labor (n, %)	3 (7.5%)	19 (47.5%)	
Normal Vaginal Delivery (n, %)	31 (77.5%)	21 (52.5%)	0.019
Cesarean Section (n, %)	9 (22.5%)	19 (47.5%)	
Active Phase Duration (min, Mean ± SD)	350.80 ± 47.99	364.15 ± 50.21	0.045
Second Stage Duration (min, Mean ± SD)	70.03 ± 11.36	73.70 ± 10.68	0.032
Third Stage Duration (min, Mean ± SD)	10.08 ± 1.73	10.10 ± 1.65	0.947 (NS)

Note: "Term" = 37–39 weeks, "Late" = ≥40 weeks; NS = not significant.

Variable	Intervention Group (n=40)	Control Group (n=40)	p-value
Spontaneous Labor (n)	37	21	<0.001
Induced Labor (n)	3	19	
Normal Vaginal Delivery (n)	31	21	0.019
Cesarean Section (n)	9	19	
Week of Labor Onset (Mean ± SD)	39.35 ± 1.48	39.53 ± 1.54	0.605
Active Phase Duration (min)	350.80 ± 47.99	364.15 ± 50.21	0.045
Second Stage Duration (min)	70.03 ± 11.36	73.70 ± 10.68	0.032
Third Stage Duration (min)	10.08 ± 1.73	10.10 ± 1.65	0.947

Independent sample t-test was applied to see between group differences in type of labor (spontaneous and induced) which shows that there was a statistically significant difference as $p < 0.05$ and number of spontaneous labors in group A are 37 and 21 in control group. Induced labors are 3 and 19 in intervention group and control group respectively. There is a significant difference in mode of delivery as $p < 0.05$ as this is a categorical variable so number of normal vaginal deliveries are 31 and 21 in group A and B respectively. Number of C-section deliveries are 9 and 19 in group A and B respectively.

Independent Sample T-Test Results for Labor Outcomes

Outcome Variable	Intervention Group (n=40)	Control Group (n=40)	Mean Difference	p-value
Week of Labor Onset (weeks)	39.35 ± 1.48	39.53 ± 1.54	-0.18	0.605
Active Phase Duration (minutes)	350.80 ± 47.99	364.15 ± 50.21	-13.35	0.045
Second Stage Duration (minutes)	70.03 ± 11.36	73.70 ± 10.68	-3.67	0.032
Third Stage Duration (minutes)	10.08 ± 1.73	10.10 ± 1.65	-0.02	0.947
Spontaneous Labor (n)	37	21	+16	<0.001
Induced Labor (n)	3	19	-16	
Normal Vaginal Delivery (n)	31	21	+10	0.019
Cesarean Section (n)	9	19	-10	

Independent sample t-test is applied to see the difference between groups. Mean difference of week of onset of labor in both groups was -.175 however, the difference is not significant as $p>0.05$. Mean and St. deviation of active phase duration in intervention and control group is 350.80±47.985 and 364.15±50.205 respectively. Mean difference is -13.350 and it is significant as p is less than 0.045. Difference of 2nd stage duration between groups is also significant as p is less than 0.05, mean difference is -3.67. There is no significant difference between groups in 3rd stage duration as p value is more than 0.05 and there is a slight difference in mean that is -.025.

The results of this randomized controlled trial demonstrate that date consumption during late pregnancy significantly influenced several labor outcomes in nulliparous women. The intervention group exhibited a markedly higher rate of spontaneous labor (92.5% vs. 52.5%) and normal vaginal deliveries (77.5% vs. 52.5%), with significantly fewer inductions and cesarean sections compared to the control group. The active phase and second stage of labor were both significantly shorter in the date-consuming group ($p = 0.045$ and 0.032, respectively), while no significant difference was observed in the third stage duration ($p = 0.947$). Although the mean week of labor onset did not significantly differ between groups ($p = 0.605$), figures illustrated a greater proportion of early spontaneous labor in the intervention group. These findings suggest that dates may support more favorable labor progression and delivery outcomes without adverse effects.

DISCUSSION

Our research showed that women who did consume dates during the last trimester had a higher rate of spontaneous labor and a higher number of normal deliveries. These findings point to the possible advantages of dietary interventions in terms of labor outcomes, implying that a late-pregnancy diet that includes dates may help to speed up the labor process. Kordi et al. discovered that the intervention group had a far shorter average active phase duration of 329.00 minutes (SD: 249.00) than the control group, which averaged 547.80 minutes (SD: 392.10). The second stage of labour was shorter for the intervention group, lasting 33.60 minutes (SD: 13.70) against 42.10 minutes (SD: 17.10) for the control group. The third stage of labour averaged

5.10 minutes (SD: 2.50) in the intervention group and 6.80 minutes (SD: 7.00) in the control group. They found that consuming dates late in pregnancy reduced labour time and oxytocin use. The results of this study suggest that healthy women may benefit from eating dates in the final weeks of pregnancy to aid labour.(12).

Ahmed et al. found noticeable effects of rutab date fruit eating on labour phases. The study found that date fruit consumers had a mean first-stage labour duration of 210.14 minutes (SD: 177.13), compared to 224.43 minutes (SD: 157.25) for those who consumed both date fruits and water and 362.46 minutes (SD: 292.12) for the control group.(10)

Date fruit drinkers had a mean second-stage labour duration of 23.59 minutes (SD: 23.73), while those who coupled date fruits with water had 20.50 minutes (SD: 13.94). Control group time averaged 31.17 minutes (SD: 27.25). On the third stage of labour, date fruit consumers spent 5.45 minutes (SD: 4.50), date fruit consumers with water spent 5.50 minutes (SD: 3.10), and the control group spent 2.17 minutes (SD: 1.50). Despite these differences, date fruit users and non-consumers had similar cervical dilatation, rupture of membranes, uterine contractions, tocometric reports, and maternal progression variables.(13)

The significant difference in job type between intervention and control groups ($p < 0.05$) supports earlier research. A study by Al-Shahri found that dates may boost uterine contractions and reduce forced birth. Our study found that 19 control women and 3 date-consuming women needed induction. This suggests that dates may help natural labour begin. (15) Our study found that the intervention group had a significantly shorter active phase of labor (350.80 ± 47.985 minutes) than the control group (364.15 ± 50.205 minutes). This finding is congruent with studies conducted by Alireza Bagherzadeh et al. in 2020, who discovered that women who ingested dates during childbirth had shorter activity periods. (16) The shorter labor period is especially essential because lengthier labor can pose greater issues for the mother and child, including a higher risk of interventions like cesarean sections. (17)

According to research conducted by Sagi-Dain et al. in 2021, dates may promote effective contractions, potentially leading to a more efficient second stage of labor. The two groups also differed considerably in the second stage of labor, with the date group having a mean difference of -3.67 minutes. All of these findings support the idea that pregnant women who want a more comfortable birth can benefit from incorporating dates into their diet. (18)

Although one study indicates that eating dates in the latter stages of pregnancy improves the chances of a successful childbirth, other studies take a more cautious approach to the effectiveness of dietary interventions during this crucial time. (19) According to a study by Nasiri et al. in 2019, there is no significant difference between women who ingested dates and those who did not in terms of labor time or delivery outcomes. Although dates are nutrient-dense, the authors contended that their effect on labor may be insignificant when taking into account the many variables that affect delivery, such as maternal health in general, genetics, and prenatal care. (20)

Opposing the results of our study, individual dietary demands and responses should also be taken into account. Changes in diet may not have the same effect on all women, and benefits seen in one group may not apply to another. Individual characteristics, including food choices and pre-existing health issues, might have a major impact on labor outcomes. (21) According to a study by Marshell NE et al. This emphasizes the need for tailored nutritional advice during pregnancy as opposed to a general strategy based on a few numbers of dietary modifications.(22) A systematic review conducted in 2020 by Lassi ZS et al. brought attention to the dearth of large-scale, multicenter trials that looked at how dates affected labor outcomes. They stressed that although small studies can suggest advantages, the results should be evaluated cautiously because of methodological variations and possible biases(23)

A study conducted by Kinshella et al found there is no significant difference in labor duration or delivery method by consumption of dates he emphasized the need for personalized dietary plans. (24) Another study by Karmakar et al. found that inducing labor in postdated nulliparous women led to lower rates of cesarean delivery and fewer maternal and perinatal complications compared to expectant management. (25)

CONCLUSION

The consumption of the dates throughout late-term pregnancy reduced the induction of labor and significantly shortened the stages of labor in nulliparous women. Dates may increase uterine contraction and lead towards natural labor progression. Furthermore, having dates in the diet is a culturally accepted practice, making it an effective dietary intervention for pregnant women.

REFERENCE:

Neal JL, Lowe NK, Ahijevych KL, Patrick TE, Cabbage LA, Corwin EJ. "Active labor" duration and dilation rates among low-risk, nulliparous women with spontaneous labor onset: a systematic review. Journal of midwifery & women's health. 2010;55(4):308-18.

Abalos E, Chamillard M, Díaz V, Pasquale J, Souza JP. Progression of the first stage of spontaneous labour. Best Practice & Research Clinical Obstetrics & Gynaecology. 2020;67:19-32.

Pasquale J, Chamillard M, Diaz V, Gialdini C, Bonet M, Oladapo O, et al. Clinical algorithms for identification and management of delay in the progression of first and second stage of labour. BJOG: An International Journal of Obstetrics & Gynaecology. 2024;131:28-36.

Vogel JP, Souza JP, Gülmezoglu AM. Patterns and outcomes of induction of labour in Africa and Asia: a secondary analysis of the WHO global survey on maternal and neonatal health. PloS one. 2013;8(6):e65612.

Sarada K, Puthiyedath R, Philip A, Ravindran GC, Pavithran K. Prevalence of the use of traditional complementary and alternative medicine amongst cancer patients in a tertiary care center in Kerala, India. Journal of Ayurveda and Integrative Medicine. 2021;12(2):359-64.

Azimi-Nezhad M, Sistani MN, Vahedian-Shahroodi M. Women's attempts related to complementary and alternative medicine use in infertility causes and diagnosis: a narrative inquiry. Community Health Equity Research & Policy. 2022;42(3):291-8.

Nasiri M, Gheibi Z, Miri A, Rahmani J, Asadi M, Sadeghi O, et al. Effects of consuming date fruits (Phoenix dactylifera Linn) on gestation, labor, and delivery: An updated systematic review and meta-analysis of clinical trials. Complementary therapies in medicine. 2019;45:71-84.

Zaher E, Khedr N, Eman E. Effect of Date fruit on Labor Outcomes among Primi Parous Woman. Mansoura Nursing Journal. 2022;9(2):17-24.

Shehzad M, Rasheed H, Naqvi SA, Al-Khayri JM, Lorenzo JM, Alaghbari MA, et al. Therapeutic potential of date palm against human infertility: A review. Metabolites. 2021;11(6):408.

Hiba N, Nisar S, Mirza ZA, Nisar S. Effect of date fruit consumption in later pregnancy on length of gestation, labour and delivery of nulliparous women. Pakistan Armed Forces Medical Journal. 2022;72(6):2082-86.

Koh LM, Percival B, Pauley T, Pathak S. Complementary therapy and alternative medicine: effects on induction of labour and pregnancy outcome in low risk post-dates women. Heliyon. 2019;5(11).

Kordi M, AGHAEI MF, Tara F, Nemati M, Shakeri MT. The effect of late-pregnancy consumption of date fruit on cervical ripening in nulliparous women. 2014.

Ahmed IE, Mirghani HO, Mesaik MA, Ibrahim YM, Amin TQ. Effects of date fruit consumption on labour and vaginal delivery in Tabuk, KSA. Journal of Taibah University Medical Sciences. 2018;13(6):557-63.

Sileshi GW, Dagar JC, Akinnifesi FK, Mng'omba SA. Potentials of Indigenous Fruit Trees in Enhancing Nutrition, Income and Biodiversity Conservation in African Agroforestry. Agroforestry for Sustainable Intensification of Agriculture in Asia and Africa: Springer; 2023. p. 321-61.

Uusitalo U, Lee H-S, Aronsson CA, Yang J, Virtanen SM, Norris J, et al. Gluten consumption during late pregnancy and risk of celiac disease in the offspring: the TEDDY birth cohort. 2015;102(5):1216-21.

Bagherzadeh Karimi A, Elmi A, Mirghafourvand M, Baghervand Navid RJBp, childbirth. Effects of date fruit (Phoenix dactylifera L.) on labor and delivery outcomes: a systematic review and meta-analysis. 2020;20:1-14.

Ríos-Covian D, Langella P, Martin R. From short- to long-term effects of c-section delivery on microbiome establishment and host health. Microorganisms. 2021 Oct 9;9(10):2122.

Sagi-Dain L, Sagi SJE. The effect of late pregnancy date fruit consumption on delivery progress–a meta-analysis. 2021;17(6):569-73.

Salajegheh Z, Nasiri M, Imanipour M, Zamanifard M, Sadeghi O, Ghasemi Dehcheshmeh M, Asadi M. Is oral consumption of dates (Phoenix dactylifera L. fruit) in the peripartum period effective and safe integrative care to facilitate childbirth and improve perinatal outcomes: a comprehensive revised systematic review and dose-response meta-analysis. BMC Pregnancy and Childbirth. 2024 Jan 2;24(1):12.

Nasiri M, Gheibi Z, Miri A, Rahmani J, Asadi M, Sadeghi O, et al. Effects of consuming date fruits (Phoenix dactylifera Linn) on gestation, labor, and delivery: An updated systematic review and meta-analysis of clinical trials. 2019;45:71-84.

Guasch-Ferré M, Willett WC. The Mediterranean diet and health: a comprehensive overview. Journal of internal medicine. 2021 Sep;290(3):549-66.

Marshall NE, Abrams B, Barbour LA, Catalano P, Christian P, Friedman JE, et al. The importance of nutrition in pregnancy and lactation: lifelong consequences. 2022;226(5):607-32.

Lassi ZS, Padhani ZA, Rabbani A, Rind F, Salam RA, Das JK, et al. Impact of dietary interventions during pregnancy on maternal, neonatal, and child outcomes in low-and middle-income countries. 2020;12(2):531.

Kinshella M-LW, Omar S, Scherbinsky K, Vidler M, Magee LA, von Dadelszen P, et al. Effects of maternal nutritional supplements and dietary interventions on placental complications: an umbrella review, meta-analysis and evidence map. 2021;13(2):472.

Karmakar S, Bid S, Maiti TK. Effects of induction of labor on maternal and perinatal outcome in postdated nulliparous pregnancy. Journal of South Asian Federation of Obstetrics and Gynaecology. 2021 Jul 9;13(2):106-10.