

Effect of Eating Dates and Drinking Water versus IV Fluids during Labor on Labor and Neonatal Outcomes

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Abstract

Background: Eating or drinking during labour is an area of ongoing debate. While some have argued that eating in labour has no harmful effects on outcomes others advocated that restriction of fluids and food in labor for women at low risk of complications is not justified as the evidence shows no benefits or harms. This study aimed to identify the effect of eating dates and drinking water versus IV fluids during labor on labor and neonatal outcomes and assess the level of satisfaction toward eating dates and drinking water.

Design: Quazi experimental research design was used.

Subjects&Method: A total number of 54 low risk nulliparous women admitted to labor and delivery room at Maternal and Child Hospital in Dammam Governorate- Eastern Province-Saudi Arabia during the study period 1st of February to 1st of May 2017 in labor with cervical dilatation of less than 6 cm were selected and divided equally into study and control groups. Study group consumed 7 dates and drink 300 ml of water during first stage of labor before reached 6 cm cervical dilatation, the control group received the routine hospital intravenous lactate ringer started from admission to labor room till the end of fourth stage of labor.

Tools: Two assessment tools were used in this study, the first tool involved 3 parts concerned general characteristics, current obstetrical data, labor, maternal & neonatal outcomes, Tool 2 entailed the opinion questionnaire of the women in the experimental group regarding eating dates and drinking water during labor.

Results: A significant shorter median duration of the second & third stages of labor among the study group compared to control group (19 min Vs 27.5 min & 8 min. Vs 10 min. respectively) and no significant differences between both groups in respect to nausea & vomiting, APGAR score in 1st and 5th minutes and mode of delivery. The great majority (90%) of the study subjects are strongly agreed to re-experiment eating dates and drinking water during labor in the future.

Conclusion: Eating dates and drinking water during first stage of labor in low-risk women shorten significantly the duration of second and third stage of labor with no harm on fetus, mother and neonate or even mode of delivery and the majority of them agreed to re-experiment eating dates and drinking water during labor.

Keywords; Dates, IV fluids, primiparous, labor and neonatal outcomes

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I. Introduction

Nutrition in labor is a debated issue with practice varying largely by health care practitioners within hospitals and worldwide. ^[1]Historically, women have been encouraged to eat and drink during labor to supplement parturient with certain food that consider refreshing, and also can give a quick burst of energy to get through labor and delivery. ^[2,3] Fresh fruit and carbohydrates are good to eat during labor as they're easily digested and give a slow release of energy. ^[4]

Islamic scholars in interpreting the Holy Quran perceived that one of the best foods offered for women during and after delivery are dates. ^[5]Moreover, in the early 1900s, Dr. DeLee, an American obstetrician, commended women take liquids to preserve their strength during labor. ^[6]However, by the 1940s views had changed and practitioners supposed that eating and drinking in labor might be dangerous. Work by Mendelson ^[7] in the 1946s showed high morbidity and mortality in women under general anesthesia for caesarean section who inhaled liquids and particles of food from the stomach, this led to common policies of food and fluid restrictions during labor. ^[8]

Nowadays, obstetric practice has changed from the routine use of general anesthesia to the use of regional nerve blocks if anesthesia is necessary. ^[9]Moreover, practice for a general anesthetic has also altered

and use of a rapid sequence induction technique with pre oxygenation followed by endotracheal intubation is usual practice, as a consequence of this early research, it is always assumed that the laboring mother has a full stomach, and they are managed accordingly during the induction of a general anesthesia.^[9]

Investigators have repeatedly observed that regardless of the time of the last meal, the stomach is never completely empty and gastric flow does occur^[10, 11] Fasting stimulates acid secretion and may increase gastric volume, thereby augmenting rather than solving the risk of aspiration.^[12] Despite the lack of evidence, many institutions have adopted the policy of restricting women from food and drink in labor and replacing oral intake with intravenous fluids instead.^[13] However, different excessive amounts of fluids may lead to fluid overload in the mother.^[14] There are also concerns over newborn weight loss during the first three days following birth that occurs when mothers have received large volumes of intravenous fluids.^[15,16]

Although, in a recent non-randomized studies that compared the effects of date fruit and oxytocin after placental delivery, the ingestion of date fruit significantly reduced the amount of bleeding compared to oxytocin in the first hour following placental delivery, due to the presence of compounds in date fruit that mimicked the action of oxytocin.^[17] Studies have revealed that date affects the progress of labor and reduces postpartum hemorrhage.^[18]

In addition, date is a natural, non-invasive, and safer method for cervical ripening that prepares the cervix for delivery with minimum side effects for the mother and the fetus,^[5, 19] it is rich in carbohydrates, vitamin B, iron, minerals, calcium, magnesium and potassium, contains saturated and unsaturated fatty acids such as oleic, linoleic, and linolenic acids providing and reserving energy, contribute to prostaglandin provision.^[18, 20] Therefore, date fruit can be helpful in saving energy and strengthening uterine muscles. It also contains hormones which help the uterus to stretch and be prepared for child delivery.^[21]

Also, it was found that eating dates increases the pain tolerability and cause a significant rise in plasma antioxidant capacity for 4 hours after consumption, absorbed and used by the cells shortly after consumption.^[19,18,22] The authors also found no significant differences in labor duration, rate of augmentation, mode of birth, Apgar scores, or umbilical artery and vein pH, although sufficient statistical power was not obtained to draw reliable conclusions about the effect of drinking on labor outcome.^[23] In addition to providing hydration, nutrition and comfort, self-regulated intake decreases a woman's stress level and provides a feeling of control that was an essential need during labor.^[24]

As such studies related eating dates during labor are scarce especially in Gulf region. This study was conducted to make a sound and may help in clarifying the effect of eating a natural fruit for its great value during labor versus allowing IV fluids on labor and neonatal outcomes.

Aims of the study: This study aimed to:

1. identify the effect of eating dates and drinking water during labor versus IV fluids on labor and neonatal outcomes.
2. assess the level of satisfaction toward eating dates and drinking water during labor.

II. Subjects And Method:

2.1 Study Design:

Quazi experimental research design was carried out from 1st of February to 1st of May 2017.

2.2 Setting:

This study was conducted in Dammam Maternity and Children Hospital, Dammam, Eastern Province of Saudi Arabia. The hospital was chosen, as it is a governmental, tertiary level care hospital with high turnover of parturient. The total number of deliveries per year is 13,000-14,000.

2.3 Subjects:

Fifty-four primiparous women were selected randomly according to random number generator on every day and divided equally into study and control groups. The study group received water and ate dates (7 dates) during the 1st stage of labor at < 6 cm cervical dilatation and the control group received IV fluids as routine hospital care during labor.

Women who fulfilled the following criteria were included in the study: Nulliparity, singleton pregnancy, cephalic presentation, gestational age of ≥ 37 weeks at the time of delivery, age between 18 years and not more than 35 years, cervical dilatation of less than 6 cm and booked pregnant women with at least 4 antenatal visits.

The exclusion criteria: Mothers who have known obstetric or medical complications that may increase the likelihood of CS delivery, using parenteral opioids during labor, history of diabetes and planned cesarean section.

2.4 Tools: Two tools were developed and used by the researcher

Tool I. The first tool includes three parts as the following:

Part (1): Assessment items related to socio-demographic characteristics and obstetrical history. It comprised women's age, level of education and occupation as a socio-demographic data, date of last menstrual period (LMP), weeks of gestation, and place and numbers of antenatal visit as obstetrical data.

Part (2): Observation sheet related to labor progress. It comprised the following data: Time onset of true labor, cervical dilatation in cm, duration of first, second, third and whole stages of labor, Fetal Heart Rate pattern, time of membrane rupture and its state.

Part (3): Observation sheet related to labor & neonatal outcomes:

Fluid regimen and Labor outcomes: Type and amount of intravenous fluids and oral hydration, type and route of medication, occurrence of nausea/vomiting & frequency, need for augmentation, need for instrumental delivery/CS and occurrence of labor complications.

Neonatal outcomes: Apgar score of the newborn at 1st and 5th minutes, need for neonatal resuscitation, weight of the newborn and admission to NICU.

Tool II. Assessment items related to study subject's opinion and their source of information regarding eating dates and drinking water during labor.

2.5 Methods:

Ethical permission for the study was obtained from research ethical committee at Imam Abdulrahman Bin Faisal University. Official permission and approvals for conducting this study were obtained from the authorized personnel in Planning and Development Department in Ministry of Education in the Eastern Province of Saudi Arabia and Maternal and Children Hospital Administration. An informed written consent was obtained from all participant women after explaining the purpose of the study to every woman and they had the right to abstain from the study at any time regardless of the cause and women confidentiality was considered. Tools of the study were developed by the researcher after reviewing the literatures. The tool content validity was tested by five juries who are experts in the related field and content validity index (CVI) was considered. Cronbach's Alpha was applied to assess the reliability of the tools. 0.85 & 0.83 for tools I & II respectively. A pilot study was carried out on 10% (5 women) of the sample. It was conducted 2 weeks before starting data collection to test the clarity, feasibility, applicability and the time needed to complete the tools, find out any problems that might interfere with the process of data collection and it was excluded from the study, the pilot study revealed that; sentences were clear, but few words have been modified, the following items were added as the frequency of booked antenatal visit to be more than 4 times, the time of admission to the hospital and exact time of taking dates and water to assess the oral intake related effect and/or complications, not limiting the inclusion criteria to primigravida only but extend it to nulliparous, determine weeks of gestation at termination of pregnancy in each abortion if any. Following this pilot study, the assessment tool was modified and ready for use. The assessment tool was filled by the midwives and maternity nurses and used for the whole sample (54 parturient) (study and control) to find out the socio-demographic characteristics and obstetric data. The sample was assigned as the whole control group (27 parturient) taken first and followed by the whole intervention (study) group (27 parturient) divided equally into study and control groups. However, 14 women (7 from each group) didn't complete the study related to emergency Caesarean Section for fetal distress, cephalopelvic disproportion or refused to continue. The study group received 7 dates and 300 ml of water and the control group received intravenous fluid as hospital routine (intravenous lactate ringer started from admission to labor room till the end of fourth stage of labor). Neither participants nor care givers or staff could be blinded to group allocation. The protocol was only run once but the women ate and drank gradually before reaching 6 cm of cervical dilatation. The oral and parenteral intake of the study and control groups, respectively, was observed and recorded until the end of the delivery phase. The compliance behaviors supervised by the researcher. The assessment tool (I) part 1 was collected during early first stage of labor and part 2 (labor progress) was assessed as the fetal heart rates in first and second stage of labor by external electronic fetal heart monitoring, cervical dilatation, head descent, uterine contractions, state of membrane was assessed at regular intervals. We defined the duration of active phase from cervical dilation 3-4 cm until the end of delivery, and the second stage of labor from complete cervical dilatation (10 cm), until the baby is delivered. tool (I) part 3 (labor and neonatal outcomes) was recorded also by the researcher and attended midwives to assess labor outcomes, the attending obstetricians made all the decisions regarding caesarean section, oxytocin infusion, intravenous fluid, and use of analgesia. Duration of first, second, third and the whole stages of labor were recorded. The type and amount of intravenous fluids and oral hydration, type and route of medications, occurrence of nausea/vomiting and frequency were monitored. Seventh questions related mother's opinion about eating dates and drinking water during labor (the assessment tool II) answered by women in the study group; each question scored 1-5 likert scale. The information collected from women was categorized according to the calculated percent scored into: Not satisfied = (< 60 %), satisfied = (60%<80 %) and highly satisfied = (>80%). The threats of internal validity was limited as the criteria of selection among both groups were matched, the use of control group and short duration of intervention help eliminate most of the effects of history and maturation and

allocation of sample assignment further minimize the selection as threat. A comparison between the study and control groups was done to identify the effectiveness of eating date and drinking water during labor on maternal and neonatal outcomes.

2.6 Statistical analysis:

The variables were coded and data entry carried out and processing using SPSS version 19. The level of significance was chosen to be 5%. The qualitative variables were presented in tables as number and percentage and analyzed by Chi-square test or Fisher Exact test if X^2 is not valid. The quantitative variables firstly tested for its distribution by the test of normality; the test is statistically significant ($p \leq 0.05$) and this means that the distribution is abnormal accordingly the quantitative variables presented mathematically as median (measure for central tendency beside the mean) and interquartile range (measure of dispersion beside the standard deviation). Nonparametric test was utilized for statistical analysis, namely: Mann Whitney test (compare 2 medians). The mean and standard deviation were used for mathematical presentation.

III. Results

The general characteristics of the study sample showed matched results with no significant difference in term of sociodemographic data and obstetric parameters. The median age of the study and control groups was 22 and 24 years, respectively. All the study groups were housewives versus the majority of control group (85%). The median Body Mass Index (BMI) was within normal range. All the studied groups started their initial antenatal care visit during the first month of their current pregnancy with adequate number of return visits to antenatal clinics (at least for 10 times). **Table 1.** Regarding the duration of labor among both groups, **table 2** portrays that a significant shorter median duration of the second and third stage of labor among the study group compared to control group (19 min. vs 27.5 min. & 8 min. vs 10 min., respectively). In term of unfavorable maternal discomfort (nausea and vomiting) among both groups (**Figure 1**) reveals no significant differences were found between the studied groups. However, only 10% of women in the study group vomited compared to about one third (30%) of the control group. **Table (3)** illustrates the relationship between the normal duration of 2nd & 3rd stages of labor with the shorter duration among both study and control groups as evidently (50% vs 10% & 50% vs 15% respectively). The shortened second stage duration among study group is 5 times than that among control group (RR = 5). Two fifth (ARR = 40%) of shorter second stage duration could be attributed to eating dates and drink water during labor. With regards to the shortened third stage duration among study group, it is nearly 3 times than that among control group (RR = 3.3). More than one-third (ARR = 35%) of shorter third stage duration could be attributed to eating dates and drink water during labor. **Table (4)** reveals no significant correlation between studied subjects in respect to age, number of gravidity, frequency of antenatal visits and duration of the 1st stage of labor as quantitative general and obstetric characteristics and for educational level, occupation, previous abortions, place of antenatal care, mode of delivery as qualitative data with respect to the duration of 2nd & 3rd stages of labor among both groups. However, it is evident that the only significant difference was apparent related to oxytocin requirements as median duration of 2nd stage of labor among those in the study group who didn't receive oxytocin had statistically significant longer duration than those who not take oxytocin (20 min. compared to 10 min. respectively) with ($P = 0.04$). In **figure (2)** all parturient women of the study group heard about eating dates and drinking water during labor. The majority (84.2%) reported that the family is the main source of information, followed by friends, Quran, social media and books, however; the vast minority (5.3%) reported having information from health care providers (HCP). **Table (5)** displays that the majority (90%) of the study subjects is strongly agreed to re-experiment eating dates and drinking water during labor in the future and willingness to recommend it to other women.

Table (1): Distribution and mathematical presentation of parturient women according to general characteristics of the study & control groups

General characteristics	Study (n=20)	Control (n=20)	Test of signifiante
Age			
• Min-Max	18-34	18-34	Z= 1.280
• Mean (SD)	22.90 (4,03)	24.80 (5,12)	P= 0.2
• Media (IQR)	22 (7)	24 (9)	
Educational level N (%)			
• Illiterate	1 (5.0)	0 (0.0)	0.415
• Primary school	0 (0.0)	2 (10.0)	
• Intermediate school	5 (25.0)	5 (25.0)	
• Secondary school	9 (45.0)	6 (30.0)	
• University	5 (25.0)	7 (35.0)	

Occupation N (%)			
• Working	0 (0)	3 (15)	
• Non-working	20 (100)	17 (85)	0.072
Number of gravidity			
• Min-Max	1-5	1-3	
• Mean (SD)	1.8 (1)	1.4 (0.7)	Z= 1.239
• Median (IQR)	1.5 (1)	1(1)	P= 0.2
Previous abortions: No. (%)			
• No	15 (75.0)	17 (85.0)	
• Yes	5 (25.0)	3 (15.0)	FETP = 0.7
Place of antenatal care: No. (%)			
• GH	6 (30.0)	5 (25.0)	
• PHC	3 (15.0)	9 (45.0)	
• Private	11 (55.0)	6 (30.0)	0.102
Number of antenatalvisits:			
• Min-Max	5-12	7-12	
• Mean (SD)	10.1 (1.45)	10.8 (1.33)	Z=1.756
• Median (IQR)	10 (1)	11 (2)	P=0.08

- GH= Governmental hospital. PHC= Primary Health Care. FETP = Fisher's Exact Test.
- Qualitative characteristics expressed in the table as No. (%)
- Quantitative characteristics expressed in the table as median (IQR), (IQR) = inter quartile range.
- P=Probability of chance
- Z=mann-whitney test

Table (2): Distribution and mathematical presentation of parturient women according to the duration of 1st, 2nd, 3rd stages and total duration of labor in the study & control groups

	Duration of 1 st stage of labor (hours) Mean ±SD	Duration of 2 nd stage of labor(min) Mean ±SD	Duration of 3 rd stage of labor (min) Mean ±SD	Total duration of labor (hours) Mean ±SD
Study				
• Min-Max	2.5-11	5-60	2-15	2.9-11.4
• Mean (SD)	6.2 (2.5)	20.3 (12.1)	7.6 (3.9)	6.7 (2.6)
• Median (IQR)	6 (3.8)	19 (14.5)	8 (5.8)	6.5 (3.7)
Control				
• Min-Max	3-16	2-60	5-20	3.9-17.2
• Mean (SD)	7.1 (3.9)	30.1 (16.7)	10.1 (3.2)	7.7 (4)
• Median (IQR)	6 (5.8)	27.5 (21.3)	10 (0)	6.5 (5.7)
Z	0.367	2.297*	2.184*	0.541
P	0.7	0.02	0.049	0.6

Z means Mann-Whitney test, P Means probability of chance, *significant

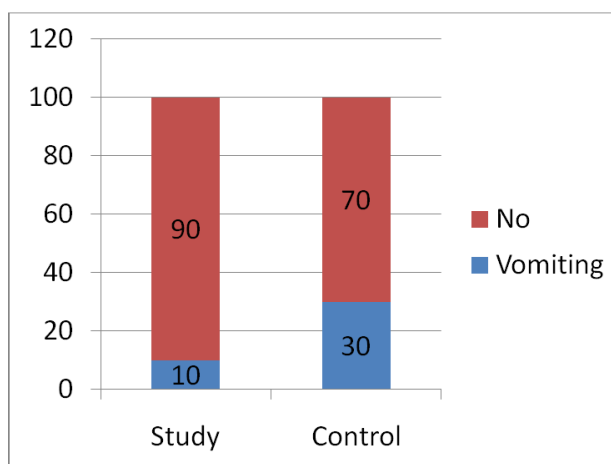


Figure (1): Distribution and mathematical presentation of parturient women according to unfavorable maternal discomfort (vomiting)

Table (3): Relationship between the normal duration of 2nd & 3rd stages of labor with the shorter duration among both study and control groups

Group	Second stage		Test	Third stage		Test
	Shorter N (%)	Within normal N (%)		Shorter N (%)	Within normal N (%)	
Study	10 (50.0)	10 (50.0)	X² = 7.619 * P = 0.006 RR = 5 ARR = 40% NNT = 2.5 ≈ 3	10 (50.0)	10 (50.0)	X² = 5.584 * P = 0.02 RR = 3.3 ARR = 35% NNT = 2.9 ≈ 3
Control	2 (10.0)	18 (90.0)		3 (15.0)	17 (85.0)	

RR = Relative Risk, ARR = Absolute Risk Reduction. NNT = Number Needed to Treat.

Table (4): Relationships between duration of 2nd & 3rd stages of labor and quantitative & qualitative general characteristics and obstetric data among studied subjects

Quantitative Data	Second stage		Third Stage	
	Study	Control	Study	Control
Age R	-0.39	-0.04	-0.01	-0.08
P	0.09	0.9	1	0.7
GravidityR	-0.23	-0.27	-0.43	-0.21
P	0.3	0.3	0.057	0.4
Number of antenatalR Visits	0.27	0.08	-0.23	0.17
P	0.2	0.8	0.3	0.5
Duration of 1st stage of labor R	0.10	0.14	-0.18	0.05
P	0.7	0.5	0.4	0.9
Qualitative Data				
Educational level N (%)				
• Illiterate	19	-	5	-
• Primary school	-	25	-	10
• Intermediate school	20	30	10	10
• Secondary school	15	25	10	8
• University	20	20	4	10
X ²	1.428	2.585	4.264	7.797*
P	0.2	0.5	0.2	0.05
Occupation				
• Working	-	30	-	10
• Non-working	19	25	8	10
Z		0.164		0.209
P		0.9		0.8
Previous abortions				
• No	18	20	5	10
• Yes	22	30	10	10
Z	0.970	1.911	0.771	1.114
P	0.3	0.056	0.4	0.3
Place of antenatal care				
• GH	18	25	7.5	10
• PHC	20	30	10	10
• Private	20	20	6	10
X ²	0.445	1.197	0.482	1.476
P	0.8	0.6	0.8	0.5
Need for augmentation (AROM, or oxytocin)				
• Yes	18	20	4	10
• No	20	30	10	10
Z	0.120	0.196	1.769	0.400
P	0.9	0.9	0.08	0.7
Need for oxytocin				
• Yes	10	30	10	10
• No	20	25	6	10
Z	2.085*	0.045	0.770	0.287
P	0.04	1	0.4	0.8
Mode of delivery				
• Vaginal	19	27.5	8	10
• Instrumental	-	16	-	10
Z	-	0.910	-	0.166
P	-	0.4	-	0.9

Table (5): Distribution and mathematical presentation of parturient women in the study group according to their satisfaction about intervention

Satisfaction Categories	Study group N (%)
Not satisfied < 60%	0 (0.0)
Satisfied = 60	2 (10.0)
Strongly satisfied ≥ 80%	18 (90.0)
Min.-max.	60.0-100.0
x± SD	88±13.6
median (IQR)	90 (20)

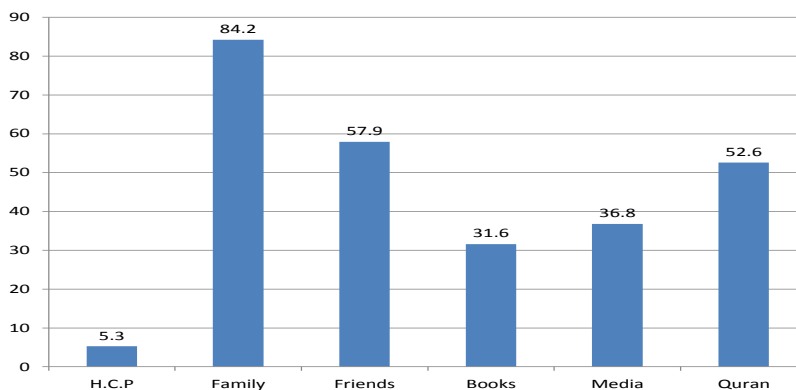


Figure (2): Distribution of the study group according to their source of information about taking dates & drinking water during labor

IV. Discussion

Historically, women’s intake of food and drink during labor was supported in the Holy Quran and in many cultures [5,6,8] and according to National Institute for Health and Care Excellence (NICE) guidelines, women should be allowed to eat a light food during childbirth except if they have received opioids or have risk factors that make a general anesthesia more likely [25]. Since the evidence shows no benefits or harms, there is no justification for the restriction of fluids and food in labor for women at low risk of complications. [12] On the other hand, restrictions of oral nutritional intake during labor with an epidural anesthesia affect a significant number of women each year, nearly four billion births occurred in 2014 alone, resulting in the restriction affecting between 2.4 and 3.2 million women per year. [26] Our study aimed to identify the effect of eating dates and drinking water during labor versus IV fluids on labor and neonatal outcomes and assess the level of satisfaction toward it. The results of the present study showed significantly shorter median duration of the 2nd & 3rd stages of labor among the study group compared to control group (19 min. vs 27.5 min. & 8 min. vs 10 min. respectively) (Table 2). This finding was supported by Rahmani et al [1] who investigated the effect of oral carbohydrate intake on labor progress and revealed a significant difference in the median duration of the second stage of labor in the date group compared with control group (12.6 min. Vs 19.7 min. respectively) however, they mentioned no significant difference in the duration of active phase and the third stage of labor among both groups. Our finding was in divergence with O’Sullivan et al [27] who reported longer duration of labor in women who consumed food during labor compared by those who consumed clear fluids only. On the other hand, the lack of significant shortness of the whole duration of first stage among the study group may be explained that the primipara cases mostly came in active phase after they reach 3 cm. for that dates effect was apparent in second & third stage only. As a consequence of this finding, no significant differences in the median of the total duration of labor among both groups which may be explained as the second & third stage of labor are the shortest stages and even shortness in both stages among the study group may not affect the whole duration of labor. (Table 2) This finding was supported by Rahmani et al [1] who found that taking dates before onset of second stage of labor had a positive effect on the second stage of labor but not in the whole process of active labor as recruitment of women into the study with different cervical dilatation might affect on the whole duration of labor and give different results. Furthermore this was explained by Heritage [28] who studied the composition and facts about foods and their relationship to the human body and mentioned that the date is digested during 2 and half hours. As dates contain a lot of minerals, vitamins, and health-benefiting phytonutrients. [28] Adding to that easily digested compartment, allowing the body to make full use of their goodness; as 100 grams of date contains 277 calories including only one calorie from fat. [7,9,12] The finding of the present study emphasized that the shortened 2nd & 3rd stage duration among the study group is 5 & 3 times than that among control group (RR = 5 & 3.3) which in turn clarifies that (ARR = 40% & 35%) of shorter 2nd & 3rd stage

duration respectively for that it could be concluded that about 3 deliveries needed to be advised to eat date and drink water to bring about a short second and third stage of labor as $NNT \approx 3$ (**Table 3**)

Concerning labor outcome, the findings of the present study revealed that two cases among the control group had instrumental delivery compared with no instrumental deliveries recorded among the study group. (**Table 4**) In this context, O'Sullivan & Scrutton^[13] and four studies aimed to evaluate caloric intake on labor outcomes reported no significant differences in the mode of delivery.^[4,5,27] Concerning the unfavorable maternal discomforts as vomiting which thought to be a common event in labor as delayed gastric emptying in labor and subsequent stasis of stomach content increases the risk of vomiting, in addition that all the study subjects of the present study received pethidine as a hospital policy to alleviate the pain which can often cause nausea and vomiting as side effects^[22] In spite of that, the number of cases who had vomiting was less among the study group compared to the control group (10% & 30% respectively), with no significant difference. This finding was in line with Kubli & Rahmani et al^[23,1] and on the contrary to Scrutton et al^[29] (**Figure 1**).

Our findings were similar to Scrutton et al and Kubli^[29,23] who found no significant difference in the fetal and neonatal outcomes in the study and control groups. Concerning women's satisfaction in the study group about the intervention, it was evident that the great majority (90%) of the study subjects are strongly willing to re-experiment eating dates and drinking water during labor in the future, and willingness to recommend it to other women. (**Table 5**) In this context, O'Sullivan, Owles and Vallejo,^[27, 30,31] supported our findings, the majority (84.2%) of women in the study group reported their family as the main source of information, followed by friends, social media, and books however, unfortunately the vast minority (5.3%) of women received this information from health care providers (**Figure 2**). As there are no studies in this context was done in Saudi Arabia, for that a light should be focused on this area of research which in turn would lead to the development of Evidence-Based Caring for permitting the low risk parturient women to drink and eat soft food during labor and this will also form a base for future researches in this area.

Limitation of the study:

The present study is subjected to several limitations such as lack of references and evidence based researches or studies in the same topic. Time limitation not allowed investigating large sample for more evidences and generalization of the findings regarding the effectiveness of eating dates and drinking water during labor and hospital policy that recommend opioids for all parturient women which may play a role in increasing incidence of nausea and vomiting as a side effect and limiting hospital facilities to check the glucose level for parturient and their neonates.

V. Conclusion

Based on the findings of the present study, it can be concluded that eating dates and drinking water during labor in low risk parturient have potential significant benefits on shortening the duration of second and third stage of labor with no significant harm regarding mode of delivery and neonatal outcomes and the majority of women in the study group were agreed to re-experiment eating dates and drinking water during labor in the future, and willingness to recommend it to other women.

VI Recommendation

In the light of the study findings, the following recommendations can be suggested:

1. More studies needed to be done in a multicenter with a large number of parturient to produce generalization of the study findings.
2. Through an informed decision-making process, midwives and physicians should discuss the potential benefits of oral intake during labor with low risk women.
3. Further studies are required to investigate the effects of eating dates alone compared to other types of simple carbohydrates and drinking water on different stages of labor.

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