How to Cite:
Dawoud, S. E. S. M., Mageed, H. M. A., & El-sharkawy, N. S. A. (2021). The effect of sitting position versus walking positions during first stage of labor on pain intensity and labor outcomes among primiparous women. *International Journal of Health Sciences*, *5*(S2), 982–997. https://doi.org/10.53730/ijhs.v5nS2.14006

The effect of sitting position versus walking positions during first stage of labor on pain intensity and labor outcomes among primiparous women

Salwa El Saied Mahmoud Dawoud
Nursing Fellow (Woman's Health and Midwifery Nursing), Students Hospital Mansoura University

Hemmat Moustafa Abdel Mageed
Maternal and Newborn Health Nursing, School of Nursing Badr University in Cairo

Naglaa Shaban Attia El-sharkawy
Maternal and Newborn Health Nursing, School of Nursing Badr University in Cairo

***Abstract*---**Background: Labor is a physiologic process and consideration of labor pain and relief that is among the major components of maternal care. Application of some labor positions can lay the fetus better in the pelvic canal direction. Aim of the study: to evaluate the pain intensity in the sitting position versus the walking position during the first stage of labor and investigate their effects on labor outcomes among primiparous women. Research design Quasi-experimental research design was utilized to fulfill the aim of this study. Setting: The study was carried out in the labor unit in the obstetric department at Mansoura University Hospital. Sample: Included 100 primiparous women in 1 st stage of labor were recruited in the study, they were divided into two equal groups; a sitting group (50) and a walking group (50) randomly selected through convenient sampling from those who were hospitalized in the previously selected setting with a gestational age of 37–42 weeks, singleton pregnancy, and with cephalic presentation. Tools: Structured Interviewing questionnaire sheet, Structured Observational Checklist including (Partograph and Apgar score), and Visual analogue pain intensity scale (VAS) were used. Position changes were implemented during the first stage of labor and the intensity of pain was assessed by the Visual analogue pain intensity scale tool. Results: Mean score of pain severity in the Latent phase was (3.56) in the sitting position and

(4.24) in the walking group. In the Active phase, the mean was (5.69) in the Sitting position and (5.33±2.4) in the walking group. In the Active phase, there were significant differences between labor position groups (P=0.009). The walking group reported significantly less incidence of CS than the sitting position group. There was a statistically significant difference in the Apgar score of the neonates during both the first and fifth minute (p < .001). Conclusion: Walking positions was more effective in reducing pain intensity than sitting position during the first stage of labor and also, had a better effect on labor outcomes for primiparous women and their neonates. Recommendation: These findings recommended changing positions during the active phase of the first stage of labor such as Sitting position and walking position during the first stage of labor to reduce labor pain intensity and decrease labor duration and increase normal vaginal delivery. providing continuous training programs for nurses in labor units about the importance and benefits of changing positions during the active phase of the first stage of labor.

***Keywords*---**labor pain, labor outcomes, primiparous women, sitting position, walking position.

Introduction

The fundamental element of labor for women is feeling pain, and different levels of discomfort might have an impact on how well labor occurs. Each women's experience of labor pain is unique and subjective, and it can vary even within the same woman over the same arduous procedure. Uterine contractions, cervical dilatation, and straining of the pelvic floor and vaginal wall all contribute to labor pain. Moreover, conflicting feelings like dread and worry, which are frequently paired with eagerness and joy, are present during labor. The experience of labor and delivery for women is impacted by this struggle, which impacts how they perceive pain. The methods for controlling labor pain are divided into numerous categories, including pharmaceutical and non-pharmacological therapies, which can reassert women and improve their sense of control (Aziato, et al., 2017).

Cultural aspects, obstetric procedures, the location of delivery, technology, and the mother's and medical professionals' preferences all have an impact on how the mother positions herself during labor. The anatomy and physiology modifications required to influence all parts of labor, including powers, passage, passenger, and psychology, are greatly influenced by the position of the mother during labor. Moreover, has an impact on the nature and strength of uterine contractions, fetal well-being, maternal comfort, the duration of labor, and increasing satisfaction with the birthing process (Priddis et al., 2012).

Walking and shifting positions during the early stage of labor are two non-pharmacological techniques that have been scientifically shown to be useful in lowering labor discomfort. Upright positions, such as sitting, kneeling, squatting, and standing, were chosen by women up until 250 years ago during giving birth. Although women should be encouraged to assume any position of their choice,

including an upright position (WHO, 2020), many labor and delivery facilities assert that all women are permitted to adopt any position of comfort during their labor and delivery. These positions maintain flexion at the hip joint and somewhat straighten the pelvis (Salameh et al., 2020). Nonetheless, many women continue to give birth and go through labor lying on their backs (Gizzo et al., 2014).

In contrast to supine or lithotomy positions, using an upright or lateral position may shorten the first stage of labor, prolong the second stage, decrease the need for forceps and vacuum assistance during delivery, prevent perineal tears, and result in fewer aberrant fetal heart rate patterns. Moreover, a mother's improved sense of control, less need for painkillers, and altered pelvic shape and size can help the fetus descend and help gravity drive it downward (Kibuka, & Thornton, 2017).

In addition to supporting and advocating for the mother, nurses and midwives who assist women during various phases of labor and delivery must give both mothers and fetuses high-quality, evidence-based care (World Health Organization, 2020). Nurses and midwives should be aware of the advantages and disadvantages of various labor and delivery positions that can speed up the delivery process and improve maternal-infant outcomes (World Health Organization, 2015)

Significance of the study

According to global measured reports, 210 million women worldwide become pregnant each year. In the world, there are more than 130 million births per year, of which more than 4 million occur in the United States and around 120 million in less developed countries. (General Authority for Statistics, 2016). The study covers 21 trials with a total of 3706 women, according to the Cochrane Database of Systematic Reviews (Lawrence et al., 2013). Overall, women randomly assigned to upright positions experienced a shift in position during the first stage of labor that lasted about an hour less than those assigned to recumbent positions (MD -0.99, 95% CI -1.60 to -0.39). In addition, women who were randomly assigned to sit up straight had a lower risk of receiving epidural analgesia (RR 0.83 95% CI 0.72 to 0.96).

Changes in position serve to decrease aortocaval compression, raise pelvic outlet diameters, favor a better fetus alignment in the delivery canal, and make uterine contractions more effective, all of which help to lessen intrapartum mother and newborn problems (Maputle, 2018) Research demonstrates the advantages of using different labor positions at various stages of labor as well as for safeguarding the mother and the newborn both during and after delivery. The lithotomy position is still the most common, even though evidence favors their use (Gaffka, 2016) Nurses who are knowledgeable about alternative occupations can individualize care to improve maternal and neonatal outcomes.

Aim of the study

to evaluate the pain intensity in sitting positions versus walking positions during the first stage of labor and investigate their effects on labor outcomes among primiparous women**.**

Hypothesis

- Women who shift their positions during the first stage of labor will experience less pain at a significantly different intensity.
- primiparous women who use different positions are expected to have a better effect on labor outcomes and their neonates**.**

Subjects and Methods

Research design

The quasi-experimental research design was utilized to fulfill the aim of this study.

Setting

The study was carried out in the labor unit in the obstetric department at Mansoura University Hospital.

Sample

A total of 100 pregnant women in the first stage of labor were enrolled in the study. They were divided into two equal groups by random selection from among those admitted to the hospital in the predetermined location with a gestational age between 37 and 42 weeks, a singleton pregnancy, and cephalic presentation: the sitting group (50) and the walking group (50).

Tools for data collection

Data collection employed three instruments.

Tool (I): structured interview questionnaire: The researcher created and used it after studying the pertinent literature. There were two sections: First section: Sociodemographic data of the study's sample, including (age, educational level, residence, occupation, and gestational age). Second section: Admission's initial evaluation, including (frequency, duration, interval, and intensity of uterine contraction, cervical dilatation, fetal head descent, and pain intensity).

Tool (II): Structured Observational Checklist includes (Partograph and Apgar score): It was created by the researcher after examining pertinent literature that covered the course of labor and the results of labor and neonatal care. It featured: a) A partograph, as designated by the World Health Organization (WHO)[13], is a graphic record used to track the progression of labor in terms of cervical dilatation, fetal head descent, the progress of uterine contraction (duration,

frequency, interval, and intensity), and duration of the first, second, and third stages of labor. b) The Virginia-adopted Apgar score, which is used to assess the neonatal prognosis. Heart rate, respiratory effort, muscle tone, responsiveness to stimulation, and skin coloring are added up for the calculation, and a score of ten denotes good health. If the result is still low, it may be repeated later. It is done in the first and fifth minutes after birth. Scores of 4 or lower indicate severe asphyxia, 5-7 indicate mild asphyxia, and 8 or higher indicate fair health.

Tool (III): Scale of visual analogue pain (VAS): The researcher adopted and applied this Freyd et al., [15] standardized linear scale to evaluate the intensity of pain. It is a self-reported, horizontal, 10-cm line that shows how much pain is considered to be severe. It ranges from 0 to 10, with the two opposing ends signifying mild to severe pain as follows: Pain levels range from 0 to 4, from 4 to 6, and from severe to no discomfort (7-10).

Tools validity and reliability

Five members of an expert jury panel in the fields of maternity nursing and obstetric medical specialized evaluated the tools' content validity for the suitability of the items. The questionnaires were changed in accordance with the panel's assessment of the content's appropriateness and the clarity of the sentences. Testing for reliability used a Cronbach's Alpha coefficient of 0.85.

Ethical considerations

After describing the study's objectives to the recruited women, their informed consent was obtained. The privacy of women was completely respected while maintaining the confidentiality of the data collection. Each participant was made aware that their participation in the study was voluntary and that they could discontinue at any time, without having to provide a reason.

Pilot study

The application and clarity of the study tools were tested, as well as the time required to fill out the study tools and any issues that might have interfered with the data collection procedure. The pilot study was conducted on 10% of the sample (10) primiparas women. And as a result, the appropriate adjustments were made by adding or removing some questions. The main study sample did not include any of the women who participated in the pilot trial.

Procedure

To achieve the goal of the current study, the assessment, implementation, and evaluation phases were adopted. These phases took place over six months, from the beginning of June 2019 to the end of December 2019. After describing the goal of the research and requesting their approval, the director of the Mansoura University Hospital received formal authorization from the dean of the nursing faculty at Mansoura University. The researchers conducted three daily visits to the aforementioned locations beginning at 9.00 am and lasting until three hours after the mother gave birth.

Assessment phase

To gather demographic information, the researchers interviewed primipara women. Before each interview, the researchers met the women, explained the purpose, scope, and activities of the study, and obtained their informed consent. Each participant was then assigned to an upright or a reclined group based on their preference. The researcher used tool (2) to measure the baseline characteristics of labor, including uterine contraction (length, interval, frequency, and strength), cervical dilatation, and fetal head descent/fifths, upon admission in both groups (3).

The implementation phase

The first stage of labor was managed the same for parturient primipara in both groups during this phase in accordance with the applied standards in the study setting, except for the adopted posture during the first stage of labor. During the latent period, each woman in the upright group was personally greeted. In the meantime, she was given information on the advantages of shifting their position from walking to standing to sitting to kneeling to squatting during the early stages of labor. Women were urged to assume one of the upright positions when the active phase of labor began (i.e., walking and upright non-walking as sitting, standing, kneeling, or squatting). When medical or nursing assistance is required, getting up and telling her to get back into bed, She assumed a sitting position on a chair or in bed with the back support, and she also managed to stand with assistance from a wall. Every woman was urged to adopt these postures alternately for 15-20 minutes every hour, as desired. In between, she was allowed to rest down on her bed for 10-15 minutes, with the recommendation that she continues these positions until her cervical disc has dilated by 10 cm. In case the membrane bursts, tell her to go back to bed. Women in the recumbent group, however, entered one of three recumbent positions—supine, semi-recumbent, and left lateral—for 15-20 minutes per hour, lasting more than 50% of the time it took for the first stage of labor to begin.

To achieve a simple backrest-supported sitting position, the woman raised her back to a 60-degree angle while sitting on the bed. The backrest elevation measurement on the bed frame, which ranges from 0 to 60 degrees, was used by the researchers. (Hummel and others, 2000) Three times at cervical dilatation, each woman in each of the two groups underwent an individual interview (3-4 cm, 5-7 cm, and 8-10 cm). an array of numbers Each time, the pain level was assessed using the VAS. The place on the ruler where the respondent's line was drawn on the VAS on the data collection sheet corresponds to their score. cervical cancer's early stages. At the initial stage of cervical dilation, pain severity, and labor progress were measured three times. About 6 to 8 hours after the second stage ended, the researcher remained with each woman.

The evaluation phase

The researcher assessed the progress of labor every hour in terms of duration, interval, frequency of uterine contractions, cervical dilatation, the descent of fetal head/fifth, and pain intensity to determine the impact of the sitting and walking

positions on labor progress and labor outcomes. In addition to the length of the first, second, and third stages of labor, the method of delivery, and the newborn's condition (tools 2, 3).

Statistical analysis

Statistical Package for Social Sciences was used to organize, categorize, tabulate, and analyze the acquired data (SPSS version 20.0). The use of descriptive statistics was used (e.g., mean, standard deviation, frequency, and percentages). The study hypothesis was put to the test using the chi-square and paired t-tests as tests of significance. At p .05, a difference was deemed statistically significant, and at p .001, it was deemed extremely statistically significant. To identify significant relationships between variables, using ANOVA and post hoc analysis.

Results

Table 1 demonstrates that the age in the sitting position group (70%) and the walking position group (74%) was less than 25 years. In the groups of people who were sitting and walking, respectively, 60% and 56% of them had bachelor's degrees. The majority of the women that were studied were also housewives. Women in the study currently reside primarily in urban cities (82.8%). Except for occupation (P=0.037), there were no differences between the two study groups in terms of the demographic characteristics of the women.

As shown in Table 2, the majority of the women who participated in the study (88% and 86%) had regular periods. As for the age at menarche, (54% and 52%) of both groups experienced menarche between the ages of 11 and 13 years. In addition, the majority of the women in the study (94 % in the sitting group versus 96 % in the walking group) accepted their pregnancies.

According to data from table 3, the mean score of pain intensity during the latent period was 3.56± 2.07 for people sitting and 4.24 ±2.08 for people walking. The mean in the active phase was 5.69± 2.16 for sitting and 5.33± 2.34 for walking. Although the mean score for pain intensity during the transition phase was 9.17 ± (1.15), sitting, and 9.18 ± (1.47), walking. However, only the Active phase (P=0.009) revealed differences in labor position groups that were statistically significant.

According to Table 4, there was no statistically significant difference in cervical dilatation at baseline between the walking and sitting groups. However, a highly statistically significant difference between the two groups was discovered in the second, third, and fourth hours following the implementation of different positions, with the walking group having a higher mean score of cervical dilatation (5.68 ±0.47, 9.02± 0.32, and 9.94± 0.24) compared to the sitting group's 4.08 0.80, 5.54 0.50, and 6.48 0.50, respectively (p .001*). Moreover, there is no discernible difference between the two groups' baseline values for the fetal head descent/fifth. After one hour, the walking group noticed a little improvement in head descent, with a considerable difference and highly statistically significant improvement during the second and third hours.

Table 5 shows that the walking group (94%) completed the first stage in 10 to 12 hours, compared to the sitting group's 68%. However, the walking group's second stage of labor lasted 10 to 30 minutes, 16% longer than the sitting group's (10%). However, the majority (88%) of the walking group completed the second stage over 30 minutes to an hour, compared to 58% of the sitting group (p .001*). In addition, 94% of the walking group experienced the third stage of labor for 10 to 20 minutes, compared to 46% of the sitting group. Regarding the lengths of the first, second, and third stages of labor, there were statistically significant variations between the groups that were walking and those that were sitting.

According to Table 6, 18.0% and 82.0% of the walking group spontaneously delivered their babies via vaginal birth, respectively, while only 6.0% and 94.0% of the sitting group did so at (p .04*).

Concerning the neonate's Apgar score in the first and fifth minutes, Table 7 demonstrates a statistically significant difference between the two groups (p .05. Regarding the neonate's admission to the neonatal critical care unit, there was no statistically significant difference between the two groups.

Table 1: Comparison of the study sample's various position groups concerning demographic characteristics (N = 100)

Demographic data	Labor positions				Chi-Square (Sig.)
	Sitting N=50		Walking N=50		
	N	%	N	%	
Age					
less than 25 years	35	70.0	37	74.0	6.965 (.135)
from 25 to 30 years	9	18.0	10	20.0	
more than 30 years	6	12.0	3	6.0	
Educational level					
Primary	2	4.0	2	4.0	5.133 (.091)
Intermediate	2	4.0	2	4.0	
Secondary	13	26.0	15	30	
Post-secondary diploma	3	6.0	3	6.0	
Bachelor	30	60.0	28	56.0	
Occupation					
Employee	9	18.0	8	16.0	6.456 (.037)
Housewife	41	82.0	42	84.0	
Current of residence					
Urban	40	80.6	44	88.0	2.065 (.743)
Rural	10	20.0	6	12.0	
Gestational age at birth (weeks) Mean ± SD	39.33 ± 0.46		39.57 ± 0.42		0.347

Table (2): Comparison of the obstetric characteristics of study sample groups in different positions (100)

Obstetric characteristic	Labor positions				Chi-Square (Sig.)
	Sitting N=50		Walking N=50		
	N	%	N	%	
Age at menarche					
less than 11 years	10	20.0	9	18.0	6.245 (1.667)
from 11 to 13 years	27	54.0	26	52.0	
more than 13 years	13	26.0	15	30.0	
Regularity of period					
Regular	44	88.0	43	86.0	156 (0.916)
Irregular	6	12.0	7	14.0	
Planning for pregnancy					
Unplanned	5	10.0	3	6.0	436 (0.157)
Planned	45	90.0	47	94.0	
Acceptance of pregnancy					
Wanted	47	94.0	48	96.0	.098 (0.969)
Unwanted	3	6.0	2	4.0	

Table (3): Comparing the mean pain score for the study sample across sitting position v/s walking position for women during the first stage of labor (N=100)

Different labor positions	The mean score of pain severity (0-10)					
	Latent phase Cervical dilatation at 3-4cm		Active phase Cervical dilatation at 5-7 cm		Transition phase Cervical dilatation at 8-10 cm	
	Mean	±SD	Mean	±SD	Mean	±SD
Sitting position	3. 56	2.07	5. 69	2.16	9.17	1.15
Walking	4.24	2.08	5.33	2.34	9.18	1.47
F (p)	2.012 (0.122)		4.089* (0.009)		0.921 (0.434)	

F, the p-value for ANOVA with repeated measures test for comparing between the four positions

*: Statistically significant at p ≤ 0.05

Table 4. Distribution of the studied sample according to mean cervical dilatation (cm), and fetal head descent/fifths (n = 50 for each group)

Items	Walking Group	Sitting Group (50)	Paired *T*-test (*p*)
1-Cervical dilatation (cm)			
Before assuming a different position	3.33 ± 0.37	3.22 ± 0.53	0.53 (.59)
After one hour	4.44 ± 0.45	3.55 ± 0.43	4.99 (.037)*
After two hours	5.68 ± 0.47	4.08 ± 0.80	13.38 (< .001)**
After three hours	9.02 ± 0.32	5.54 ± 0.50	27.59 (< .001)**

After four hours	9.94 ± 0.24	6.48 ± 0.50	29.76 (< .001)**
2-Fetal head descent/fifth			
Before assuming a different position	4.80 ± 0.40	4.38 ± 056	2.28 (.745)
After one hour	3.88 ± 0.33	4.14 ± 0.35	3.96 (.009)**
After two hours	2.18 ± 0.44	4.02 ± 0.14	13.29 (< .001)**
After three hours	0.85 ± 0.11	3.39 ± 0.62	25.11 (< .001)**
After four hours	0.31 ± 0.14	3.11 ± 0.53	14.39 (< .001)**

**A highly statistically significant difference ($p \leq .001$).

Table 5. Distribution of the studied women according to the duration of the first, second, and third stage of labor (n = 50 for each group)

Variable	Walking group		Sitting Group (50)		χ^2	*p*
	No	%	No	%		
Duration of 1st stage of labor (hours)						
8- < 10	3	6.0	0	0.0	24.34	.000**
10- < 12	47	94.0	34	68.0		
12-14	0	0.0	16	32.0		
Duration of 2nd stage of labor (minute)						
< 30 minutes	6	12.0	3	6.0	18.67	.001**
30 minutes-one hour	44	88.0	29	58.0		
> one hour	0	0.0	18	36.0		
Duration 3rd stage of labor (minute)						
10-20 minutes	47	94.0	23	46.0	29.45	.001**
30 minutes > 20-	3	6.0	27	54.0		

Note. x^2 Chi-Square test. **Highly statistically significant differences ($p \leq .001$).

Table 6. The studied women were distributed according to the mode of delivery (n = 50 for each group)

Variable	Upright group (50)		Recumbent Group (50)		χ^2	*p-value*
	No	%	No	%		
Spontaneous vaginal delivery	9	18.0	3	6.0		
Vaginal delivery with an episiotomy	41	82.0	47	94.0	72.33	.004*

Note. x^2: Chi-Square test, *Statistically significant difference ($p < .05$)

Table 7. Distribution of the studied women according to their neonatal outcome (n = 50 for each group)

walking group (50)			sitting Group (50)			
Variable					x2	*p*
No		%	No	%		
Apgar scored in the first minute Good (8-10)	33	66.0	18	36.0		

				6.96		0.003**
Moderate asphyxia (5-7)	15	30.0	24	48.0		
Sever asphyxia (≤ 4)	2	4.0	8	16.0		
Apgar score at fifth minute Good (8-10)	47	94.0	38	76.0	5.79	(0.05)*
Moderate asphyxia (5-7)	2	4.0	10	20.0		
Severe asphyxia (≤ 4)	1	2.0	2	4.0		
Admission to the neonatal intensive care unit Yes	3	6.0	5	10.0	11.26	.06
No	47	94.0	45	90.0		

Note. x^2: Chi-Square test, No statistically significant difference ($p > .05$), *Statistically significant difference ($p < .05$), **A highly statistically significant difference ($p \leq .001$).

Discussion

The current study found that the demographic characteristics of the individuals in the upright and recumbent groups were identical, with no statistically significant differences. Because of its homogeneity, the targeted intervention's effects on labor progress and result are protected from the influence of unintended variables. These results were consistent with those of Gizzo et al. (2014), who found no differences in age, educational attainment, or gestational age between groups of women who chose to labor in an upright or recumbent position.

Most women still give birth flat on their backs, despite mounting data to the contrary that does show the physical advantages for laboring women and their infants (Zhang et al., 2017) There is no evidence, according to WHO (2017), to back up the recumbent position during the early stage of labor. There is proof that laboring in a walking position during the first stage of labor shortens the process and requires less intervention to ensure the health of the mother and fetus.

The present study found differences in labor position groups that were statistically significant, with the mean score of pain intensity during the phases of labor being lower in the walking position than the sitting position. This outcome is consistent with studies that demonstrate a beneficial relationship between walking during the initial stage of labor and pain severity (Kibuka & Thornton, 2017). According to Zaky's (2016) research, women in the walking position during the initial stage of labor experienced better cervical dilation than those in the supine position. According to researchers, this theory is supported by the gravitational force acting downward.

Uterine contractions become stronger, more frequent, and more regular. Pregnant women typically find that walking positions during the early stages of labor are more comfortable due to changes in the size and shape of the pelvic cavity, increased blood flow, and uterine activity (Gizzo et al., 2014). The fetus can rotate and descend into the pelvic cavity more easily in these postures. These results are consistent with those of Maddirevula et al. (2018), who discovered that after

adopting a walking position rather than a recumbent position, the fall of the fetal head showed a significant difference throughout the second, third, and fourth hours.

In addition, groups in sitting positions had mean pain scores at baseline assessments that were much lower than those lying on their backs or those who were walking. The walking group's mean pain score decreases during the active phase. Similar to the sitting group, the walking group experienced less severe discomfort throughout the changeover phase. Recent research has shown that women who spent the first part of labor standing up instead of lying down experienced less discomfort (Catling, 2016; Emam and Al-Zahrani, 2018).

The results of the current investigation demonstrated substantial statistically high variations in the mean pain scores during the second, third, and fourth hours after assuming a walking position between the upright and recumbent groups. They could be caused by pain during the early stage of labor, which is brought on by both cervical dilatation and uterine contractions (Gabbe et al., 2014). Visceral afferent or sympathetic nerves that exit the uterus and enter the spinal cord through the posterior segments of thoracic spinal nerves are the sources of painful sensations. To avoid added stress during delivery, women need to be physically and mentally comfortable. To further achieve this throughout labor, the mother should be permitted to walk around freely and listen to her body's cues. These results are consistent with those of Angel Rajakumari et al. (2015), who investigated the impact of several nursing interventions on primigravid women's labor outcomes and found that moms who maintained walking positions experienced much less discomfort than those in other positions. Moreover, Chaillet et al. (2014) discovered that women who spent the first part of labor standing up experienced less discomfort than those who labored while lying down.

The World Health Organization (WHO), in its 2015 report, found no evidence in favor of the recumbent position during the first stage of labor. Yet, there is proof that staying in a walking position during the first stage of labor reduces intervention and shortens labor time without having any negative consequences on the health of the mother or the fetus. Hence, during the first stage of labor, maternity nurses should urge women to choose the position that feels the most comfortable to them. This study has provided some insight into the effects of primipara women being in a walking or recumbent position during the initial stage of labor. Under the context of the aforementioned research premise, the findings of this investigation will be presented.

The current study's findings showed that, in the second, third, and fourth hours after the application of various positions, there was a highly statistically significant difference between the two groups, with the walking group having a higher mean score of cervical dilatation. For cervical dilation and fetal descent, effective contractions are essential. The strength of uterine contractions was shown to be greater in the walking position as compared to the supine position, which is consistent with Lawrence et al., (2013) study of maternal postures and mobility during the initial stage of labor. Also, I concur with Kumud et al. (2013) who investigated how walking positions affected the length of the first stage of

labor for nulliparous mothers and found that parturient women who adopted walking positions delivered babies more quickly.
.
These results could be explained by the fact that the fetal head is helped to descend towards the pelvis by gravity when it is in a walking or mobile position. Uterine contractions intensify in number, force, and regularity as the head is placed directly and evenly on the cervix. Its uterine efficacy aids in the dilation and effacement of the cervical cavity. The results of the current study are consistent with those of Hassan (2016), who examined how pelvic rocking exercises performed while sitting on a birth ball during the first stage of labor affected the progression of labor and discovered a significant increase in cervical dilation in the study group following intervention compared to the control group. In addition, Lawrence et al. (2013) discovered that women who sat up and often changed positions during the early stage of labor had better cervical dilatation than those who sat down.

The current study's findings regarding the fetal head's descent revealed that after one hour, the walking group experienced a slight improvement, with a noticeable difference and highly statistically significant improvement during the second and third hours. The results did not reveal a statistically significant relationship between various positions during the initial stage of labor and the fetal head's descent. The present study's findings, which are consistent with those of other studies, underlined this outcome Pitts et al., 2021). These results could be explained by the fact that movements performed in various positions and when standing up strengthen the pelvic floor muscles, increase pelvic diameters, and therefore aid in the fetus' descent through the vaginal outlet. The current results are in line with those of Gizzo et al. (2014), who discovered that vertical positions appeared to be beneficial in the fetal head's descent during labor and reduced the frequency of operative vaginal births and cesarean sections. Also, these results are consistent with those of Storton (2013), who claimed that, in contrast to regularly changing maternal positions, which caused the pelvic bones to move, walking positions let the baby descend into the pelvis by using gravity.

There were statistically significant differences in the lengths of the first, second, and third stages of labor between the groups that were walking and those that were sitting, with the walking group having a considerably shorter duration of the stages of labor than the recumbent group. These results might be explained by the fact that during the first stage of labor, walking positions allow the abdominal wall to relax, which in turn influences gravity and leads the uterine fundus to fall forward. With the fetal head positioned anteriorly into the pelvic inlet, direct pressure is applied to the cervix, which aids in stimulating and stretching it. In the second stage of labor, standing up has been linked to a lower cesarean birth rate, instrumental delivery, and reduction in labor duration.

These results support the conclusion made by Angel Rajakumari et al. (2015) that specific nursing interventions can shorten labor and improve the chances of a normal vaginal delivery. Additionally, these findings are consistent with those of Hassan (2016), who found that the study group experienced labor's first, second, and third stages of delivery for much less time than the control group. This result is also consistent with Lawrence et al., (2013) and Gizzo et al., (2014) findings,

which found that women who adopted an alternative walking position for labor experienced shorter mean labor durations than those who did so in a supine or recumbent position.

According to the second trial, women who were randomly assigned to walking postures during the initial stage of labor experienced labor that was roughly one hour and 22 minutes shorter than those who were assigned to recumbent positions. Also, this result is consistent with research by Kumud et al., (2013) who discovered that the experimental group saw an average reduction in first-stage labor of 2 hours.

According to the results of the current study, more women in the walking group spontaneously gave birth than those in the sitting group. Additionally, with no statistically significant difference, 100% of participants in the upright group spontaneously delivered their placenta as opposed to 98% of participants in the reclining group. These results are consistent with those of Kumud et al., ((2013) who discovered that vaginal delivery occurred in women who assumed walking positions during the first stage of labor. Contrary to Lawrence et al., (2011) findings, which indicated no differences between women randomly assigned to upright or recumbent positions in terms of obtaining spontaneous vaginal births and assisted deliveries.

The results of the current study showed that neonates in the walking group had better and higher Apgar scores than those in the sitting group in terms of neonatal outcomes. Regarding the neonate's admission to the intense newborn care unit, there was no statistically significant difference between the two groups. These results differ from those of Lawrence et al. (2011), who reported no differences in fetal distress or neonatal Apgar ratings between the study groups. Only one study reported admission to newborn special care units, and it was more probable for babies born to moms placed in a walking position.

Conclusion

Based on the findings of the present study, it can be concluded that the results of the present study support its hypothesis and revealed that walking positions was more effective in reducing the pain intensity than sitting position during the first stage of labor and also, had a better effect on labor outcomes for primiparous women and their neonates**.**

Recommendations

Based on the findings of the present study, the following recommendations were suggested:

- These findings recommended changing positions during the active phase of the first stage of labor such as sitting position and walking position during the first stage of labor to reduce labor pain intensity and decrease labor duration and increase normal vaginal delivery.
- providing continuous training programs for nurses in labor units about the importance and benefits of changing positions during the active phase of

the first stage of labor.

- Antenatal clinics and labor units must stock posters, leaflets, and videos that highlight the advantages of upright positions.
- The study was replicated with a larger sample size to generalize the results.

References

Angel Rajakumari, G, Sheela, R, Soli TK. (2015): The effectiveness of selected nursing measures on labor outcome among primigravid mothers. Journal of Science; 5(8): 716-719.

Aziato, L., Acheampong, A., & Umoar, K. (2017): Labour pain experiences and perceptions: a qualitative study among post-partum women in Ghana. BMC Pregnancy and Childbirth, 17(1), 1-9.

CATLING. (2016): Care during the decision-making phase for women who want a vaginal breech birth: Experiences from the field. Midwifery, 34: 111-116.

Chaillet, N, Belaid, L, Crochetière, C. (2014): Non-pharmacologic approaches for pain management during labor compared with usual care: A meta-analysis. Birth; 41: 122-37. PMid:24761801 https: //doi.org/10.1111/birt.12103

Emam, A., & Al-Zahrani, A. (2018): Upright versus recumbent position during the first stage of labor among primipara women on labor outcomes. Journal of Nursing Education and Practice,8. PRABHAKAR, Deepthy; GEORGE, Linu Sara; KARKADA, Sushmitha. (2015): Effectiveness of ambulation during the first stage of labor, on the outcome of labor among primigravid women in selected hospitals of Palakkad District, Kerala. International Journal of Nursing Education,7.1:1-6.

Freyd, M. (1923): The graphic rating scale. Journal of Educational Psychology; 14: 83-102. https://doi.org/10.1037/h0074329.

Gabbe, SG, Niebyl, JR, Simpson, JL. (2014): Normal and Problem Pregnancies (5th ed.). New York, NY: Churchill Livingstone.

Gaffka, K. (2016): The Effect of Alternative Labor Positions Versus the Lithotomy Position on Birthing Outcomes: An Integrative Literature Review.

General Authority for Statistics. (2016): Demography Survey 2016. Retrieved from http://www.stats.gov.sa/sites/default/files/ar-demographic-research-2016_0.pdf

GIZZO, A & Salvatore, F. (2014): Women's choice of positions during labor: return to the past or a modern way to give birth? A cohort study in Italy. BioMed Research International, 2014

Gizzo, S, Gangi SD, Noventa M. (2014): Women's Choice of Positions during Labor: Return to the Past or a Modern Way to Give Birth? A Cohort Study in Italy.

Hassan, NZ. (2016): Effect of pelvic rocking exercise using sitting position on the birth ball during the first stage of labor on its progress. IOSR Journal of Nursing and Health Science (IOSR-JNHS); 5(4): 19-27.

Kibuka, M., & Thornton, J. (2017): Position in the second stage of labor for women with epidural anaesthesia. Cochrane Database of Systematic Reviews, (2).

Kumud, AK, Chopra, S. (2013): Effect of upright positions on the duration of the first stage of labor among nulliparous mothers. Nursing and Midwifery Research Journal.

LAWRENCE &Annemarie. (2013): Maternal positions and mobility during first

stage labor. Cochrane database of systematic reviews, 2013, 8.
Lawrence, A, Lewis, L, Hofmeyr, GJ. (2011): Maternal positions and mobility during first stage labor. Cochrane Database of Systematic Reviews; 15(2).
Lawrence, A, Lewis, L, Hofmeyr, GJ. (2013): Maternal positions and mobility during first stage labor. Cochrane Database Syst Rev; 10: 1-10.
Maddirevula, S., Alsahli, S., Alhabeeb, L., Patel, N., Alzahrani, F., Shamseldin, H. Alkuraya, F. (2018): Expanding the phenome and various of skeletal dysplasia. Genetics in Medicine. https://doi.org/10.1038/gim.2018.50
Maputle, M. (2018): Support provided by midwives to women during labor in a public hospital, Limpopo Province, South Africa: a participant observation study. BMC pregnancy and childbirth, 18(1), 1-11.
Pitts, D., Treadwell, M., & O'Brien, L. (2021): Fetal heart rate decelerations in women with sleep-disordered breathing. Reproductive Sciences, 28(9), 2602-2609.
Priddis, H, Dahlen, H, Schmied, V. (2011): What are the facilitators, inhibitors, and implications of birth positioning? A review of the literature. Women and Birth. 2012. PMid:21664208 https://doi.org/10.1 016/j.wombi.05.001
Salameh, K., Paraparambil, V., Sarfrazul, A., Hussain, H., Thyvilayil, S., & Mahmoud, A. (2020): Effects of labor epidural analgesia on short-term neonatal morbidity. International Journal of Women's Health, 12, 59.
Storton, S. (2013): The coalition for improving maternity services: Evidence basis of mother-friendly care. Step 4: Provide the birthing woman with freedom of movement to walk, move, and assume positions of her choice. The Journal of Prenatal Education; 16(Supp. 1): 25S-27S. PMid:18523670 https://doi.org/10.1624/1058 12407X173164
Virginia. Apgar score. (1953): A proposal for a new method of evaluation of the newborn infant". Current Research in Anesthesia & Analgesia.
World Health Organization. (1994): partograph in management of labor. Lancet; 343: 1399-1404. PMid:7910888
World Health Organization. (2015): Reproductive Health Library (RHL) Maternal positions and mobility during the first stage of labor. Geneva.
World Health Organization. (2017): Nurses and midwives: a vital resource for health. Copenhagen: World Health Organization.
World Health Organization. (2020): Global strategic directions for nursing and midwifery 2021-2025.
ZAKY, H. (2016): Effect of pelvic rocking exercise using sitting position on the birth ball during the first stage of labor on its progress. IOSR Journal of Nursing, 2016.DiFranco & Curl, 2014; Gizzo et al., 2014
Zhang, H.-Y., Shu, R., Zhao, N.-N., Lu, Y.-J., Chen, M., Li, Y.-X., Cai, W.-Z. (2016): Comparing maternal and neonatal outcomes between hands-and-knees delivery position and supine position. International Journal of Nursing Sciences, 3, 178–184. https://doi.org/10.1016/j.ijnss.2016.05.001