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Effectiveness of ambulation versus semi fowlers position in primi para mothers

Shradha Malviya

Malwanchal University, Indore, Madhya Pradesh, India

Corresponding Author: Shradha Malviya

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Abstract

Background: Ambulation during labor pertains to the act of moving about during the early and active stages of labor, which diminishes the duration a woman remains in a supine position throughout these phases. The semi-Fowler's position during the first stage of labor offers several practical benefits for the healthcare provider. The choice of position by the mother for labor and delivery holds significant importance.

Aim: This study aims to evaluate the effectiveness of ambulation in comparison to the semi-Fowler's position on maternal outcomes among mothers.

Methods and Materials: A quantitative research methodology employing a quasi-experimental post-test-only design was adopted for this investigation. The research was conducted at Index Hospital in Indore. Utilizing a purposive sampling technique, 60 primiparous mothers were selected for participation. A self-structured questionnaire was administered to gather demographic information, while a modified WHO partograph was employed to evaluate maternal outcomes. Both groups received the intervention. Data collection was performed using descriptive and inferential statistical methods.

Results: In the ambulation group, the average labor duration was recorded at 9 hours and 9 minutes, with uterine contractions averaging 89.4 seconds in intensity. Conversely, in the semi-Fowler's position, the average duration of uterine contractions was noted to be 51.5 seconds. The findings indicate that ambulation was more effective than the semi-Fowler's position in enhancing maternal outcomes.

Conclusion: The results of the study reveal a significant difference in maternal outcomes following the intervention.

Keywords: Ambulation, labor, semi fowler, pregnancy, intervention

Introduction

The process of childbirth for numerous women is a multifaceted period that encompasses various transformations in the mother's body, alongside the baby's preparation to enter the world. Advances in medical technology have enhanced care for women at risk; however, the rising incidence of unnecessary interventions during labor may, in fact, impede a healthy mother from achieving the most favorable birth experience and outcomes for both herself and her child. Mothers have access to a plethora of non-medical, non-pharmacological strategies to manage the stress associated with labor. Such strategies may encompass ambulation or alterations in position during the initial stage of labor, massage or reflexology, various forms of hydrotherapy, as well as hot and cold therapy, and the mediation of the birth environment. Ineffective birthing positions, such as lithotomy and supine, can compress significant blood vessels, thereby disrupting circulation and diminishing maternal blood pressure. Women who maintained a non-supine position during the first stage of labor experienced fewer perineal injuries, reduced vulvar EDEMA, and less blood loss. Provided that the membranes remain intact, patients are permitted to walk. This approach mitigates venacaval compression and promotes the descent of the head. Ambulation has the potential to shorten the duration of labor, decrease the necessity for analgesia, and enhance maternal comfort.

Need of the study

Labor represents the process of childbirth, during which the product of conception is expelled through the vagina. This labor process can be perceived as a rite of womanhood, a measure of personal capability, a culmination of experience, and the initial act of motherhood. The onset of labor is marked by the beginning of regular uterine contractions, which are associated with the effacement and dilation of the cervix, as well as the descent of the fetus through the cervix. According to statistical data from the Government of India, in the year 2011, there were a total of 5546 births, with 1587 primi mothers successfully undergoing normal vaginal delivery. On average, 132 primi mothers deliver in hospitals each month. Interestingly, out of these 132 mothers, 45 experience prolonged labor. The general recommendation for managing a prolonged latent phase is to adopt a conservative approach unless clinical circumstances suggest that early intervention could be advantageous. At this juncture, women may feel anxious about the potential outcomes of labor. Therefore, one-on-one support,

reassurance, proper nutrition, hydration, rest, and pain relief are crucial elements. Ambulation facilitates the natural progression of labor until it is well established and the woman enters the active phase.

The positions that mothers select for labor and delivery are significant, as they can enhance comfort during the labor process. Certain positions may also expedite the labor process. Many of these positions can be practiced with or without the assistance of a partner or nurse. Familiarizing oneself with these positions prior to labor can make them feel more comfortable and natural.

A study was conducted to evaluate the effectiveness of ambulation, in which 200 mothers were randomly divided into two groups. The first group was permitted to ambulate, while the second group was confined to bed in either a dorsal or lateral recumbent position. The findings of the study indicated that ambulation significantly reduces the duration of the first stage of labor.

The investigator, who is a nurse, has a keen interest in non-pharmacological interventions. As a nurse, the researcher recognized the significance of walking in shortening the duration of labor. Taking into account the advice provided by various experts in the realm of labor duration research, the student researcher believed it would be pertinent to offer guidelines on walking and the semi-Fowler's position to help reduce labor duration for primi para mothers in the hospital.

Problem Statement

A comparative study to assess the effectiveness of ambulation versus semi fowler's position on maternal outcome among primi para mothers at selected hospital Indore.

Objectives

- To assess the effectiveness of ambulation on maternal outcome among primi para mothers.
- To assess the effectiveness of semi fowler position on maternal outcome of primi para mothers.
- To compare the effectiveness of ambulation and semi fowler position on maternal outcome among primi para mothers.
- To find out the association between maternal outcome among primipara mothers with their selected demographic variables.

Hypopthesis

- **H_1:** There will be a significant difference between mean scores of maternal outcomes among primi para mothers of group I and group II.
- **H_2:** There will be a significant association between maternal outcome on primi para mothers with their selected demographic variables in group I and group II.

Methods and Materials

The current investigation sought to evaluate the efficacy of ambulation in comparison to the semi-Fowler's position concerning maternal outcomes. A quantitative research methodology was employed. The study utilized a quasi-experimental design with a post-test only framework. The research was conducted at the Index Medical College Hospital & Research Center located in Indore, Madhya Pradesh. The sample consisted of primi para mothers who met the specified inclusion criteria. In total, the sample included 60 primi para mothers aged between 20 and 35 years, with 30 participants assigned to group I and 30 to group II. A purposive sampling technique was implemented to select the participants. The instruments utilized for the study included demographic variables, gestational variables, and a modified WHO Partograph. Following the selection of participants, the primi para mothers in group I were encouraged to ambulate for 20 minutes, interspersed with a 10-minute rest in the left lateral position, and to repeat this cycle six times until full cervical dilation was achieved. Conversely, the primi para mothers in group II were advised to maintain a semi-sitting position for 20 minutes, also with a 10-minute rest in the left lateral position, continuing this for six cycles until full cervical dilation was reached. Maternal outcomes were evaluated using the modified WHO Partograph. The data collected were analyzed through descriptive and inferential statistical methods.

Results and Discussion

Section I: Distribution of participants according to socio demographic variables

The majority of mothers in the age group of 14, specifically 46.67%, were aged between 20 and 25 years, while 43.33% or 13 individuals were aged between 26 and 30 years in Group I. In Group II, the majority, comprising 60% or 18 individuals, were also aged between 20 and 25 years, with 33.33% or 10 individuals falling within the 26 to 30 years age bracket. Concerning the duration of marital life, in Group I, the majority, 46.67% or 14 individuals, had been married for a period of 1 to 3 years, and 33.33% or 10 individuals had been married for less than 1 year. Conversely, in Group II, the majority, 53.33% or 16 individuals, had been married for less than 1 year, while 23.33% or 7 individuals had been married for a duration of 1 to 3 years. Regarding the type of marriage, in Group I, a significant majority of 93.33% or 28 individuals were in arranged marriages, whereas 6.67% or 2 individuals were in love marriages. In Group II, the majority, 70% or 21 individuals, were also in arranged marriages, with 30% or 9 individuals in love marriages. Pertaining to the gestational age of primi para mothers, in Group I, 46.67% or 14 individuals were within the 38 to 40 weeks gestational age range, and 33.33% or 10 individuals were within the 36 to 38 weeks range. In Group II, the majority, 53.33% or 16 individuals, were within the 38 to 40 weeks range, while 26.67% or 8 individuals were within the 36 to 38 weeks range. With respect to the rupture of membranes in Group I, the majority, 80% or 24 individuals, experienced spontaneous rupture of membranes, while 30% or 9 individuals had artificial rupture of membranes. In Group II, the majority, 53.33% or 16 individuals, had spontaneous rupture of membranes, and 46.67% or 14 individuals had artificial rupture of membranes.

Section II: Assessment of maternal outcome among primi para mothers in group I and II

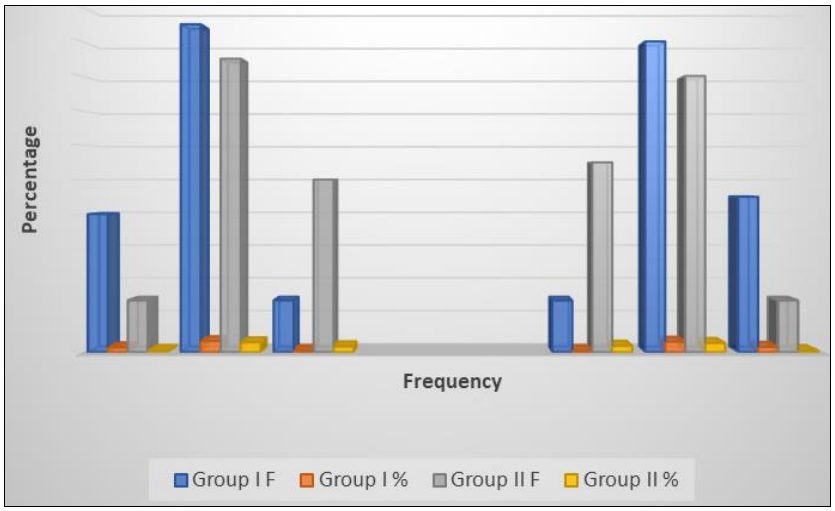

Fig 1: Maternal Outcome

The bar diagram illustrates the overall duration of labor experienced by primi para mothers, with a predominant 19 (63.33%) in group I laboring for 9-12 hours, while 8 (26.67%) labored for 6-8 hours. In group II, the total duration of labor among primi para mothers revealed that the majority, 17 (56.67%), were in the 9-12 hour range, and 10 (33.33%) exceeded 12 hours.

Furthermore, the bar diagram depicts the uterine contractions among primi para mothers in group I, where a significant majority of 18 (60%) exhibited moderate uterine contractions. In group II, the findings indicate that 16 (53.33%) had moderate contractions, while 11 (36.67%) experienced mild contractions.

Section III: Effectiveness of ambulation versus semi fowlers position on primi para mothers in group I and group II

Sr. No	Maternal Outcome	Group I		Group II		Mean Difference	Unpaired "T" Test
		Mean	SD	Mean	SD		
1	Duration of labor in hours	9.09	1.79	12.53	2.48	3.44	11.09
2	Intensity of uterine contraction in seconds	89.4	19.38	51.5	16.2	37.9	3.85

The table illustrates that the average total duration of labor was 9 hours and 9 minutes for group I, while for group II, it was 12 hours and 53 minutes. The computed t value was 11.09, exceeding the table value, thereby indicating a highly statistically significant difference in the total duration of labor at the $p>0.05$ level. This suggests that ambulation contributes to a reduction in the total duration of labor.

In terms of the intensity of uterine contractions, the mean value for group I was 89.4 seconds, whereas for group II, it was 51.5 seconds. The calculated t value was 3.85, which surpassed the table value, indicating a highly statistically significant difference in the intensity of uterine contractions at the $p<0.05$ level. This implies that ambulation promotes uterine contractions.

Section IV: Association of selected demographic variables with maternal outcome among primi para mothers in group I and group II

A statistically significant correlation was identified between the length of labor and the gestational age of the mother.

A statistically significant correlation was identified between the strength of uterine contractions and dietary patterns.

Discussion

The ambulation of maternal outcomes indicates that among primi para mothers, the majority, 19 (63.33%), experienced a labor duration of 9 to 12 hours, while 8 (26.67%) had a duration of 6 to 8 hours. In terms of uterine contractions, the majority of primi para mothers, 18 (60%), exhibited moderate contractions, and 9 (30%) experienced severe contractions in group I. Conversely, in group II, the total duration of labor for primi para mothers showed that 17 (56.67%) were in the 9 to 12 hours range, and 10 (33.33%) exceeded 12 hours. Additionally, 11 (36.67%) had mild uterine contractions.

This study, supported by Sabitha Nayak and Shynee Paul (2021), aimed to evaluate the effectiveness of ambulation during the first stage of labor on the intensity of labor pain and the overall outcome of labor. The findings indicated that 50% of mothers in the experimental group believed that ambulation was effective in alleviating pain during labor, and 40% recommended that ambulation be incorporated as a standard practice in the labor room. Thus, ambulation during labor proved to be significantly beneficial for both maternal and fetal outcomes.

The analysis of the results revealed that the mean total duration of labor was 9 hours and 9 minutes in group I, compared to 12 hours and 53 minutes in group II. The calculated t value was 11.09, exceeding the table value, which signifies a highly statistically significant difference in the total duration of labor at the $p<0.05$ level. This suggests that ambulation effectively reduces the total duration of labor. Furthermore, the mean intensity of uterine contractions in group I was recorded at 89.4 seconds, while in group II, it was 51.5 seconds. The calculated t value of 3.85 also surpassed the table value, indicating a highly

statistically significant difference in the intensity of uterine contractions at the $p<0.05$ level, thereby demonstrating that ambulation promotes uterine contractions.

The research conducted by Manomias (2019) illustrated the efficacy of ambulation in comparison to the Fowler's position among parturient mothers, focusing on the duration of labor, the intensity of uterine contractions, and the estimated blood loss. In terms of labor duration measured in hours, group A experienced a total of 13 hours, while group B had 17 hours. The calculated t value was 3.59, exceeding the table value, which signifies a highly statistically significant difference in the total duration of labor at the $p<0.001$ level. This indicates that ambulation effectively shortens the total duration of labor. Concerning estimated blood loss, group A recorded an average of 469 ml, whereas group B had an average of 475 ml. Regarding the intensity of uterine contractions, mild contractions persisted for 2.2 hours in group A and 2.6 hours in group B; moderate contractions lasted for 3 hours in group A and 3.2 hours in group B; severe contractions were recorded at 1.8 hours in group A and 1.4 hours in group B. However, no statistically significant difference was observed concerning the intensity of uterine contractions and estimated blood loss.

Conclusion

The results of the study indicate a notable disparity in maternal outcomes following the intervention. It was concluded that, in comparison to the semi-Fowler's position, ambulation proved to be effective in enhancing maternal outcomes. Therefore, the ambulation protocol may be employed by nursing professionals during the first stage of labor in their clinical practice to foster maternal outcomes and elevate the quality of life, a finding that is corroborated by numerous other research studies.

Conflict of interest: The authors declare no conflict of interests.

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