

Effect of Ambulation during First Stage of Labor on Labor Pain and Outcome of Labor among the Primigravida Mothers in a Selected Hospital, Mangalore

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ABSTRACT

Objectives

- To assess the intensity of labor pain and outcome of labor among the control group.
- To assess the effectiveness of ambulation on intensity of labor pain and outcome of labor among the experimental group.
- To assess the usefulness of ambulation by opinionnaire among experimental group.
- To compare the effectiveness of ambulation on the intensity of labor pain and outcome of labor among experimental and control groups.
- To find an association between the intensity of labor pain with selected demographic variables.

Materials and methods: An experimental research approach was used for the study. Random sampling technique was used to allocate the subjects into experimental and control groups. Visual analog scale was used to assess the intensity of pain and observational check list was used to assess the outcome of labor. The study comprised of 40 primigravida mothers and they were grouped as experimental and control through randomization. One group received ambulation treatment, the other did not. The researcher then observed the groups to determine the effect of the treatment.

Results: The collected data was analyzed by descriptive and inferential statistics. The intensity of pain revealed that 40% in the experimental and 55% in the control groups experienced severe pain. The labor augmentation revealed that both oxytocin and cerviprime gel was used for 30% in the experimental and 35% in the control groups.

On the mode of delivery, majority of mothers (60%) had normal vaginal delivery both in experimental and control groups.

On the duration of the first stage of labor revealed that 50% in the experimental and 20% in the control groups were between 10 to 12 hours.

Second stage of labor revealed that majority were between 1 and 2 hours in both the control and experimental groups.

The opinion of experimental group mothers on ambulation revealed that half of the mothers (50%) agreed for recommending the ambulation for their neighbors and friends and less than half (35%) of them have agreed for comfort during first stage of labor and 40% of them have agreed for ambulation should be made as a routine in labor room.

In the experimental group, mean pain score (6.8) is less than the control group (7.5). The calculated Mann-Whitney Z-value (2.045) is greater than the Z α -value of 1.960 at 0.05 level of significance. In the experimental group, the mean duration of first stage of labor score (3.95) is significantly higher than the control group mean score (3.00). The mean outcome of labor in experimental group (13.95) is greater than the control group.

Conclusion: There was a significant difference in the duration of first stage of labor between the experimental and control

groups. But, there was no significant difference in the overall outcome of labor between experimental and control groups. There was no significant association between intensity of labor pain with selected demographic variables. This may be because of small sample size.

Keywords: Ambulation, Labor pain, Outcome of labor, Visual analog scale, Observational checklist, Primigravida mothers, Opinionnaire.

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INTRODUCTION

Well! The wait is over, the labor has begun and it is time for the child to be born! Undoubtedly, labor is one of the major events in every woman's life. Parturition is a unique, exciting and wondersome, yet sometimes worrisome experience for the women.¹ The child-bearing women experience many demanding sensation and discomfort during labor and child birth. Pregnant women commonly worry about the pain, duration and process of labor.² Ambulation during first stage of labor has become more popular. Ambulation has also been found to increase maternal fetal circulation which in turn increase the well being of the newborn. Through the literature review on freedom of movement in labor appears to facilitate the progress of labor and enhance child birth satisfaction. This awareness made the researcher to provide the method of ambulation during the first stage of labor.³

An experimental study conducted to find the effect of ambulation during first stage of labor to assess the length of first stage of labor, labor pain and use of analgesia on 40 randomized participants with a medically uncomplicated pregnancy revealed that 3.9 (1.5), 5.41 (1.5), Z = 1.95 (p = 0.051). There was reduction in the length of first stage of labor among experimental group as compared with the control group. Labor pain was also less among the experimental group as compared with the control group.⁴

MATERIALS AND METHODS

The data were collected from 18/08/09 to 06/10/09 after ethical clearance and informed consent. The data were using as follows:

1. Baseline data
2. Visual analog scale

3. Structured observational checklist on the outcome of labor.
4. Structured opinionnaire on the usefulness of ambulation for experimental group.

The investigator had 20 mothers in the control group and 20 in the experimental group.

RESULTS

As per age-wise distribution seven (35%) were in the age group of 21 to 25 years and 26 to 30 years in the experimental group, whereas nine (45%) were in the age group of 21 to 25 years in the control group.

As per religion, 35% were Christians and Hindus in the experimental group and 50% were Hindus in control group.

As regards knowledge on ambulation, 60% had knowledge in the experimental group and 55% in the control group.

Pain of mothers in the experimental and control group (Table 1).

The intensity of the labor pain in experimental group revealed that 12 (60%) with moderate pain and 8(40%) were found to have severe pain, whereas in the control group majority 11 (55%) had severe pain.

The Table 2 depicts that, in the experimental group the duration of 1st stage of labor majority 10 (50%) were between 10 and 12 hours, 3 (15%) were between 16 and 18 hours, 2 (10%) between 7 and 9 hours.

The Table 3 reveals that in the experimental group the mean pain score of the subjects was (6.8) which is significantly lower than the control group mean pain score (7.5).

Opinionnaire on Usefulness of Ambulation

The distribution of experimental group mothers on their opinion about ambulation reveals that 10 (50%) of mothers strongly agreed and 10 (50%) have agreed for recommending ambulation for their friends and neighbors. To make ambulation as a routine in labor theater, 12 (60%) mothers strongly agreed and eight (40%) have agreed. Majority [13 (65%)] of mothers have disagreed on experiencing less pain after ambulation and this again might be due to the small sample size.

This indicates that the ambulation was effective in reducing the labor pain among the primigravida mothers.

The Table 4 reveals that in the experimental group mean duration of 1st stage of labor (3.95) is significantly higher than the control group mean score.³

DISCUSSION

The present study findings revealed 12 in experimental group (60%) and nine in the control (45%).

The distribution of subjects on the mode of delivery in both the experimental group and the control group reveals that majority of (60%) mothers had normal vaginal delivery with episiotomy.

Regarding opinionnaire about 10 (50%) strongly agreed and 50% agreed for recommending ambulation for their friends and neighbors. For ambulation gives comfort during 1st stage of labor 7 (35%) and to make ambulation as routine in labor theatre 12 (60%) have strongly agreed and eight (40%) have agreed.

Table 1: Distribution of subjects on the intensity of labor pain

Sl. no.	Intensity of pain (VAS)	Experimental group		Control group	
		Frequency	%	Frequency	%
1.	Mild pain (0 to 3)	0	0	0	0
2.	Moderate pain (4 to 6)	12	60	9	45
3.	Severe pain (7 to 10)	8	40	11	55

Table 2: Distribution of subjects on the duration of the first stage of labor

Sl. no.	Duration of the first stage of labor	Experimental group		Control group	
		Frequency	%	Frequency	%
1.	4 to 6 hours	0	0	0	0
2.	7 to 9 hours	2	10	0	0
3.	10 to 12 hours	10	50	4	20
4.	13 to 15 hours	1	5	4	20
5.	16 to 18 hours	3	15	5	25
6.	More than 18 hours	0	0	2	10
7.	Cesarean section	4	20	5	25

Table 3: Distribution of Mann-Whitney Z-value between experimental and control groups on labor pain (n = 40)

Groups	Mean	Std. deviation	Median	Mann-Whitney Z-value	p-value
Experimental	6.8	1.106	6.5	2.045*	0.042
Control	7.5	0.910	8.0	—	—

$Z_{cal} = 2.109 > Z_{\alpha} = 1.960$; *Significant

Table 4: Distribution of Mann-Whitney Z-value between experimental and control groups on the duration of first stage of labor (n = 40)

Groups	Mean	Std. deviation	Median	Mann-Whitney Z-value	p-value
Experimental	3.95	1.734	5.0	2.027*	0.043
Control	3.00	1.482	3.0		

$Z_{cal} = 2.038 > Z_{\alpha} = 1.960$; *Significant

In experimental group, the mean pain score of the subjects was (6.8) which is significantly lower than the control group mean pain score (7.5).

The calculated Mann-Whitney Z-value (2.045) was greater than the $Z_{\alpha} = 1.960$ at 0.05 level of significance which indicates that the ambulation was effective in reducing the labor pain among the primigravida mothers.

In the experimental group, the mean duration of first stage of labor (3.95) is significantly higher than the control group mean score (3.00).

The calculated Mann-Whitney Z-value (2.027) was greater than the $Z_{\alpha} = 1.960$ at 0.05 level of significance which indicates that the ambulation was effective in reducing the duration of first stage of labor among the primigravida mothers.

There was no significant association between labor pain and selected demographic variables, such as age, religion and occupation.

There was no significant association in the duration of second and third stage of labor.

CONCLUSION

A study conducted by Dr Prathiba R Vaidya, Department of Obstetrics and Gynecology, Lokmanya Tilak Municipal Medical College and General Hospital, Sion, Mumbai, India, on a comparative study on ambulation vs supine position during first stage of labor on duration of first stage of labor found that there was a reduction in the first stage of labor in ambulatory group as compared with the supine group.⁶ Therefore, ambulation provides comfort from long period of supine position and helps in the early descent of fetus by gravity, influences in uteroplacental and fetomaternal blood circulation.⁵

Nurses play a vital role in promotion of comfort. Nursing care is no more a task oriented and fragmented care, but it demands to look after the comprehensive care of the client in a scientific way.

SUGGESTIONS AND RECOMMENDATIONS

Midwives should take action in order to identify the intranatal mothers with pain and outcome of labor and to initiate appropriate treatment to enhance comfort.

Maternal and child health unit should be motivated to utilize ambulation as a nonpharmacological method to reduce labor pain, duration of labor and to improve the outcome of labor.

A similar study can be conducted on a larger sample for generalization. A similar study can be conducted to find the effectiveness of ambulation between primigravida and multigravida mothers.

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