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"Effectiveness of ambulation during first stage of labor on Intensity of pain among Primigravida women in labor room"

Mr.Veeresh Kademani[1], Mr. Omkar Desai[2], Ms. Sheryl G. Fernandes[3],
[1]PG Student, [2]Community Health Officer (Dist: Vijayapura), [3]PG Student,
SDM Institute of Nursing Sciences,
Shri Dharmasthala Manjunatheshwara University, Sattur, Dharwad, Karnataka, India.

Corresponding author: omveeru007@gmail.com

ABSTRACT

Background: During labour, restricting women's movement can result in poorer birth outcomes and may decrease women's satisfaction with their birth experiences. Walking or freedom of movement is important during childbirth. It is the best way to use gravity to help the baby settle down and to increase the size and shape of the pelvis. The fact indicates that walking makes it possible to respond to pain in an active way, and it can speed up the labor process. **Objectives:** 1) To assess the intensity of labor pain among Primigravida women in both the experimental & control group. 2) To evaluate the effectiveness of ambulation on intensity of labor pain among Primigravida women only in experimental group. 3) To compare the intensity of labor pain among Primigravida in experimental and control group. **Setting:** This proposed study was conducted in labor room at tertiary care Hospital, Dharwad. **Samples:** 40 primigravida women who were in the first stage of labor admitted in labor room at tertiary care Hospital, Dharwad. **Results:** The findings of the study revealed that the pre-test mean scores of both experimental and control group was 1.2 and 1 respectively. And the mean post test score of both experimental and control group was 4.237 and 0.68 respectively. This suggest that there is no significant difference in the pre-test scores of both the group, but in the experimental group post-test mean score was higher than that of control group. **Conclusion:** After giving ambulation to the participants of experimental group, the overall mean post test scores manifested a remarkable increase in the intensity of labor pain.

KEYWORDS: Ambulation, Labor, Primigravida women, First stage of labor, Intensity of labor pain.

INTRODUCTION

Expecting a baby is definitely one of the most joyous experiences in a woman's life. The birth of a child is an important contribution to parenting and is a very personal and individual experience for a mother. The

labor process begins with the onset of regular uterine activity associated with obliteration, dilation of the cervix and descent of the presenting part through the cervix. During labor and delivery, the women experience a lot of demanding sensations and discomfort. Restricting women's movements can lead to poorer birth outcomes and decrease women's satisfaction with their birth experiences. Ambulation or freedom of movement is important to facilitate the birth of the baby. Walking during labor has a number of physiological benefits, including the effect of gravity and increased pelvic size, which may reduce the need for instrumental deliveries.

NEED FOR STUDY

The birth process for all women is a complex period that involves many changes in the mother's body as well as the preparation of the baby to enter the outside world. Walking and moving during labor can help move the fetus from a position that is not ideal for birth to a more favorable position and it also helps to promote gravity, move the fetus to a lower station and can also reduce pain perception associated with contractions and discomfort during the labor process. In the first stage of labour, the cervix will dilate to a diameter of 10 cm. For mothers who have their first child, this phase usually lasts 12 to 16 hours. Discomfort can often be alleviated by body positions where gravity accelerates expansion, such as; walking, squatting and kneeling forward on a chair or sitting on the birth ball. This allows the baby to sink into the pelvis faster and less painfully.

Free movement during labor appears to facilitate the progress of labor and promote labor by restricting women's freedom of movement. This can have adverse consequences. No evidence was found of damage to freedom to walk, move or change position during labor and birth when restriction is not required to resolve a complication. The literature review on freedom of movement during labor has been shown to facilitate the progress of labor and increase satisfaction with the labour. This awareness prompted the researcher to provide the method of ambulation during the first stage of labor on the intensity of labor pain along with the outcome of labor to the intra-natal mothers.

STATEMENT OF THE PROBLEM

"A study to evaluate the effectiveness of ambulation during the first stage of labor on intensity of pain among the Primigravida women in labor room at tertiary care Hospital, Dharwad.

OBJECTIVES OF THE STUDY

1. To assess the intensity of labor pain among Primigravida women in the experimental and control group.
2. To evaluate the effectiveness of ambulation on intensity of labor pain among Primigravida women in experimental group.
3. To compare the intensity of labor pain among Primigravida in experimental and control Group.

HYPOTHESES

H_1: There will be significant difference in the intensity of labor pain between pre-test and Post-test of the experimental group at 0.05 level of significance.

H_2: There will be significant difference in the intensity of labor pain between experimental and control group at 0.05 level of significance.

OPERATIONAL DEFINITIONS

EVALUATE: In this study, evaluate refers to the process of measuring the efficacy of ambulation during first stage of labor to increase the intensity of pain in Primigravida women in experimental group with the help of statistical measurements.

EFFECTIVENESS: In this study, effectiveness refers to extent to which the ambulation has its influence on the intensity of the pain, shortening the duration of labor and also on the outcome of labor among Primigravida women in the first stage of labor.

AMBULATION: In this study, ambulation refers to the intervention of walking around or the act of travelling by foot. Primigravida women will be ambulated when there will be no powerful uterine contractions during the first stage of labor and till the rupture of membrane.

FIRST STAGE OF LABOR: In this study, first stage of labor refers to active phase where the cervix is dilated for 3cms to 10 cm or till the rupture of membranes.

PRIMIGRAVIDA WOMEN: In this study, Primigravida women refers to the mothers who are pregnant for the first time and who are in 37weeks to 40weeks of gestation with no complications of labor such as high risk pregnancy, high risk intra-natal mothers, mothers with elective caesarean section.

ASSUMPTIONS

- The Intensity of labor Pain experience varies from women to women.
- Ambulation helps the expectant Primigravida women to cope up with labor Pain and Shortening the duration of labor.
- Mother develops a positive attitude towards ambulation.

DELIMITATIONS

The study is limited to the Primigravida women who are,

- in first stage of labor with 37 weeks to 40 weeks of gestation.
- willing to participate in ambulation study.
- not with the risk of any complications in pregnancy.
- not receiving oxytocin.

RESEARCH METHODOLOGY

Research approach: In this proposed study, a quantitative evaluative research approach was used.

Research design: Quasi-experimental time series research was used for the present study.

Table 1: Symbolic representation of time series design.

Group	Test
Primigravida women during first stage of labor at tertiary care teaching Hospital, Dharwad.	**O1 X O2 O3 O4 O5**

O1- Pre-test (assessment of intensity of labor pain using modified Wong baker's facial pain scale)

X - Intervention (Ambulation)

O2 – Post- test (1st hour assessment of intensity of labor pain by using same scale)

O3 – Post-test (2nd hour assessment of intensity of labor pain by using same scale)

O4 – Post-test (3rd hour assessment of intensity of labor pain by using same scale)

O5 – Post-test (4th hour assessment of intensity of labor pain by using same scale)

Research study setting: The investigation was conducted in the delivery room of the tertiary hospital in Dharwad.

Population: The population comprised of Primigravida women between 37 – 40 weeks of gestational age in the active First stage of labor.

Sample: The selected subjects for the study included 40 Primigravida women (20 in experimental group & 20 in control group) who were in the first stage of labor admitted in labor room at tertiary care hospital, Dharwad.

Sampling procedure: In this proposed study, Non-Probability purposive sampling technique was used.

Sample size: 40 samples with 20 in the experimental group and 20 in the control group.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria:

Primigravida women who are,

- admitted in labor ward of Tertiary care Hospital, Dharwad.
- in first stage of labor.
- co-operative for ambulation.
- in gestational age between 37 to 40 weeks.

Exclusion criteria:

Primigravida women with,

- high risk of pregnancy and intranatal period.
- elective caesarean section & with PROM.

DESCRIPTION OF THE TOOL

Tool 1: Demographic Performa of Primigravida women

Primigravida women who are in labor pain and undergoing vaginal delivery. It contains 5 items like age, education, type of family, daily activities and gestational age.

Tool 2: Modified Wong baker's facial pain scale

This scale was used for Primigravida women included in this study.

PROCEDURE FOR DATA COLLECTION

The data collection was started after obtaining the necessary approval from the ethics committee. Formal administrative approval was obtained from the authorities of the proposed hospital. A written consent form was obtained from the participants regarding their willingness to participate in the study. The investigator had done pre assessment by using modified Wong Baker's facial pain scale to both experimental and control group. The ambulation was given only to the experimental group subjects. The investigator continuously observed the process of ambulation and scored the intensity of pain hourly by using the pain scale, after that the investigator had done post assessment on both groups.

PLAN FOR DATA ANALYSIS

The data obtained were analysed using descriptive statistics (frequency and percentage distribution, mean and standard deviation) and inferential statistics (paired and unpaired 't' test).

RESULTS AND DISCUSSION

Section- A

Table 2: Frequency and percentage distribution of subjects in experimental and control group according to socio-demographic characteristics. N=40

Sl. No.		Experimental Group		Control Group	
	Demographic Variables	Frequency	Percentage	Frequency	Percentage
1.	**Age in years**				
	20-25	14	70%	15	75%
	26-30	06	30%	5	25%
2.	**Education**				
	Primary	1	5%	3	15%
	Secondary	10	50%	13	65%
	Graduate	9	45%	4	20%
3.	**Type of Family**				
	Nuclear family	10	50%	12	60%
	Joint family	10	50%	8	40%
4.	**Daily activities**				
	Mild	7	35%	9	45%
	Moderate	12	60%	6	30%
	Severe	1	5%	5	25%
5.	**Gestational age**				
	37-38 weeks	5	25%	10	50%
	38-39 weeks	6	30%	4	20%

	39-40 weeks	9	45%	6	30%

The above table shows that 75% of the subjects were in age group of 20-25 years, 65% were completed secondary education. Majority 60% of the mothers are from nuclear family & 60% of the subjects had moderate daily activities. Majority of 50% subjects were at the gestational age of 37-38 weeks.

Section- B

Table 3: Frequency and percentage distribution of subjects in experimental and control group according to the modified Wong baker's pain scale. N=40

Sl. No.	Level of intensity of pain (score)	Pretest				Post test			
		Experimental Group		Control Group		Experimental Group		Control Group	
		F	%	f	%	f	%	F	%
1	0-2	18	90%	20	100%	1	5%	20	100%
2	2-4	02	10%	-	-	11	55%	-	-
3	4-6	-	-	-	-	08	40%	-	-
4	6-8	-	-	-	-	-	-	-	-
5	8-10	-	-	-	-	-	-	-	-

The above table revealed that during pre-test 90% (18) of the Primigravida women in experimental group had 0-2 level of intensity of pain and 100% (20) of Primigravida women in control group respectively. Whereas in post-test the intensity of pain in control group women were same, but in experimental group the level of pain was increased as 55% between 2-4 level and 40 % between 4-6 level in the pain scale respectively.

Section- C

Effectiveness of ambulation on intensity of labor pain among Primigravida women in experimental group

Table 4: Comparison of pre-test and post-test intensity of pain on experimental group by paired 't' test. n=20

Experimental Group	Mean	Mean difference	SD	SD difference	df	Paired 't' value	Table value
Pre test	1.2	3.037	0.97	0.13	39	4.43	2.09
Post test	4.237		1.1				

***p<0.05 (significant)**

The above table shows that the calculated 't' value was ±4.43 which was higher than the table value i.e. 2.09, was significant at 0.05 level. Hence the research hypothesis was accepted and the null hypothesis was rejected. In pre-test the mean intensity of pain was ±1.2 with SD of ±0.97 whereas the mean post-test intensity of pain was ±4.237 with SD of 1.1. The calculated 't' value was ±4.43 which was higher than the table value ±2.09 which is highly significant at p≤0.05 level. This shows that the ambulation was effective to increase the intensity of labor pain in experimental group.

Section- 3

Comparison between the intensity of labor pain among Primigravida women in experimental and control group.

Table 5: Comparison between intensity of pain in experimental group with control group by unpaired 't' test N=40

Group	Intensity of pain	Mean	SD	Calculated 't' value	Table value
Experimental group	Post test	4.237	1.1	6.7	2.02
Control group	Post test	0.68	0.31		

***p<0.05 (significant)**

The above table shows that the post mean score of experimental group was ±4.237, SD ±1.1 whereas the post mean score of control group was ±0.68, SD ±0.01. The calculated 't' value was ±6.7 which was higher than the table value i.e. 2.02 which was significant at 0.05 level. Hence H_2 was accepted. This shows that ambulation for experimental group was effective to increase the intensity of labor pain as compared to control group.

DISCUSSION

Demographical characteristics of the participants were as follows:

In the under taken study 40 participants were enrolled. Majority of the study participants, 15 (75%) were in age group of 20-25 years. As far as education is concerned 13 (65%) subjects had completed secondary education. Majority 12 (60%) of the participants were from nuclear family. Further most of the study participants 12 (60%) had moderate daily activities. And majority 50% of the participants were at the gestational age of 37-38 weeks.

Findings related to Objectives of the study:

Objective 1: To assess the intensity of labor pain among Primigravida women in experimental and control group.

- **Experimental group:** During pre-test, 18 (90 %) of primigravida women had pain level between 0-2 and 2 (10%) of them had 2-4 level of pain on pain scale.
- **Control group:** The study findings revealed that the level of pain in all i.e. 20 (100 %) the primigravida women was 0-2.

Objective 2: To evaluate the effectiveness of ambulation on intensity of labor pain among Primigravida women in experimental group.

- After giving ambulation to the participants of experimental group, the overall mean post test scores showed a remarkable increase in intensity of labor pain i.e. the
  - Mean pre-test score was - 1.2
  - Mean post-test score was - 4.237

The calculated 't' value of experimental group by paired 't' test was 4.437 which was higher than the table value ±2.09 which was highly significant at p≤0.05 level. This shows that the ambulation was effective to increase the intensity of labor pain among primigravida women in experimental group.

Objective 3: To compare the intensity of labor pain among Primigravida in experimental and control group.

- The study findings of pre-test mean scores of both experimental and control group were 1.2 and 1 respectively. And the mean post test score of both experimental and control group was 4.237 and 0.68 respectively. Which suggest that there is no significant difference in the pre-test scores of both group, but experimental post –test mean score was higher than that of control group.

- The calculated 't' value of overall knowledge score of experimental and control group by unpaired 't' test was ±6.7 which was higher than the table value i.e. 2.02, so which was significant at 0.05 level. Hence research hypothesis was accepted. This shows that ambulation for experimental group was effective to increase the intensity of labor pain among primigravida women as compared to control group.

LIMITATIONS OF THE STUDY

- Findings of the study could not be generalized due to small sample size, time constraints and purposive sampling technique.
- Study was limited to 40 Primigravida women.

RECOMMENDATIONS

Taking into account the findings and limitations of the current study, the following recommendations are made,

- The study can be replicated with a large sample of Primigravida women.
- Similar research can be performed with randomisation, control and manipulation.
- A comparative study can be conducted between Primigravida and Multigravida women.

CONCLUSION

After administrating ambulation to the participants of experimental group, the overall mean post test scores showed a remarkable increase in intensity of labor pain. The study results of the pre-test mean scores of both the experimental and control groups were 1.2 and 1, respectively, and the post-test mean scores of both the experimental and control groups were 4.237 and 0.68, respectively, suggesting no significant difference in the pre-test scores of both groups, but the post-test mean scores of the experimental group were higher than that of the control group. The calculated't' value of overall knowledge score of experimental and control group by unpaired 't' test was ±6.7 which was higher than the table value i.e. 2.02 which was significant at 0.05 level. Hence research hypothesis was accepted. This shows that ambulation for experimental group was effective to increase the intensity of labor pain as compared to control group.

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