A Study to Assess the Effectiveness of Ambulation on the Progress of Labour During First Stage among Low-Risk Parturient Mothers in Selected Hospitals, Uttar Pradesh

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ABSTRACT

Introduction: The instant of birth is exquisite pain and joy are one at this moment- Madline

Childbirth is the culmination of a human pregnancy or gestation period with the birth of one or more newborn infants from a women's uterus. Every woman giving birth is embarking on a wondrous journey. The labour process is an exciting and anxious time for the women and her significant others. They experience one of the most profound changes in their lives. The process normal human childbirth is categorized in three stages of labour, the first stage of labour starts classically when the effaced cervix is 3cm dilated.1Every year 150 million women become pregnant, but some of them do not have easy labors and have pain or even may die. Prolonged labour is one of the reasons for undergoing cesarean sections. Morbidity of cesarean section is more than normal vaginal delivery. Prolonged labour will be preventable through special care in the maternity hospital so as to encourage mothers to walk during the first stage of labour, because this action shortens the course of labour.[2] **OBJECTIVES:**1To assess the level of labor pain before and after ambulatory nursing care in low-risk parturient mothers during first stage of labour. 2 To compare the level of labor pain before and after the therapy in low-risk parturient mothers during first stage of labour. 3To find out the association between selected demographic variables after th e ambulatory nursing care in low-risk parturient mother during first stage of labour.4 To find out the association between selected obstetric variables and after the ambulatory nursing care in the low-risk parturient mothers during first stage of labour.

KEYWORDS: *effectiveness of ambulation on the progress of labour during first stage among low-risk parturient*

INTRODUCTION

Childbirth is the culmination of a human pregnancy or gestation period with the birth of one or more newborn infants from a women's uterus. Every woman giving birth is embarking on a wondrous journey. The labour process is an exciting and anxious time for the women and her significant others. They experience one of the most profound changes in their lives. The process normal human childbirth is categorized in three stages of labour, the first stage of labour starts classically when the effaced cervix is 3cm dilated.[1] Ambulation, movement, and changes of position during the first stage of labor may shorten labor. Women who ambulated during the first stage of labor were less likely to have a surgical delivery, defined as caesarean section. When allowed the freedom to ambulate, move, and change position during labor, most women choose to do so and find this to be an effective form of pain relief. Women who choose to ambulate during first stage of labour had shorter first and second stages of labor, required less pain relief medication, and had fewer abnormal fetal heart rate patterns.[4]

Being upright will make contractions stronger and more efficient. It will allow gravity to keep the baby's head pressed down, which will help the cervix to dilate faster so that labour is speeded up. Changing positions during labour can change the shape and size of the pelvis, which can help the baby's head move to the optimal position during first stage labour, and helps the baby with rotation and descent during the second stage. Swaying motions such as walking, climbing stairs, and swaying back and forth are especially helpful with this.[5]In the first stage of labour, the cervix will dilate to 10 cm in diameter. In mothers having their first child, this stage usually lasts 12 to 16 hours. Discomfort can often be helped by body positions that allow gravity to speed dilation, such as walking, squatting, kneeling forward on a chair, or sitting. This will help the baby move down in the pelvis faster and less painfully.[6]According to the Cochrane Pregnancy and Childbirth Group, a respected international organization that defines best practices based on research, giving a laboring woman the freedom to move and choose her own position is most likely beneficial .[7]However, when laboring women are encouraged to move and do not have restrictions, they walk and change position frequently .[8] Ambulation during first stage of labor has become popular. Ambulation has also been found to increase maternal fetal circulation which in turn increase the wellbeing of newborn. Through the literature review on freedom of movement in labour appears to facilitate the progress of labour and enhance the child birth satisfaction. This awareness made the researcher to provide the method of ambulation during the first stage of labour .[9]

PROBLEM STATEMENT
'A study to assess the effectiveness of ambulation on the progress of labour during first stage among low-risk parturient mothers in selected hospital UP''

OBJECTIVES:
1. To assess the level of labor pain before and after ambulatory nursing care in low-risk parturient mothers during first stageof labour.

2. To compare the level of labor pain before and after the therapy in low-riskparturient mothers during first stage of labour.

3. To find out the association between selected demographic variables after th e ambulatory nursing care in low-risk parturient mother during first stage of labour.

4. To find out the association between selected obstetric variables and after the ambulatory nursing care in the low-risk parturient mothers during first stage of labour.

OPERATIONAL DEFINITIONS:
Assess:
Determine the levels of feto maternal parameters and levels of pain among thelow-risk parturient mothers after ambulation.

Effectiveness:
In this study it refers to the outcome of the ambulatory nursing care among low-risk parturient mothers as measured in terms of enhancement of uterine contraction, intensity of labor pain, progress in cervical dilatation, advancement in descent of fetal head and duration of length of labor which are assessed before and after therapy by modified pain intensity scale, modified WHO partograph and ambulation chart.

Ambulation:
The series of physical position given to women in labour including standing with legs apart, walking around for 20-30 minutes without any supportive aids.

First stage of labour:
It begins with the onset of true labour contractions and ends with complete dilatation (10cm) and effacement (100%) of the cervix.

Low risk parturient mother:
Being pregnant about to give birth with only one baby, not twins or triplets. The baby is growing normally and is in an anterior, or head down position and have been healthy throughout the pregnancy and have shown no signs of medical or obstetric conditions.

Feto maternal parameters:
The fetal heart rate, the maternal pulse rate, blood pressure, cervical dilatation, descents of head, frequency interval and duration of uterine contractions and duration oflabour were the feto maternal parameters assessed before and after the ambulatory nursing care through WHO Modified partograph.

HYPOTHESES:
H01: There will be no significant difference in level of feotomaternal parameters before and after the ambulation in low-risk parturient mothers during first stage of labour.

H02: There will be no significant difference level of labor pain before and after the ambulation in low-risk parturient mothers during first stage of labour.

H03: There will be no association between feotomaternal parameters and selected demographic variables and selected obstetric variables after ambulation in low-risk parturient mothers during first stage of labour.

Research approach-quantitative evaluative approach

Research design-quasi experimental,non randomized control group design

VARIABLES: Independent variables: Ambulation

Dependent variables: Progress of Labour during first stage

Demographic Variable Proforma:
Demographic variable performa consists of age, educational status, type of family, type of work, area of residence, and previous information received regarding ambulatory nursing care.

SETTING OF THE STUDY: The study was conducted in Hind Institute of medical sciences, private hospital, safedabad barabanki

POPULATION: It is the entire set of individuals or objects having some common characteristics. (Polit and Beck 2008**).**

SAMPLE AND SAMPLE SIZE: Polit and Beck (2008) said that sample is a subset of population, selected to participate in a study. A sample of 60 low-risk parturient mothers in first stage of labor were selected for the study. In these 30 mothers were randomly assigned to control group and 30 mothers were assumed to experimental group.

SAMPLING TECHNIQUE:
It was stated by Polit & Beck (2008) that sampling refers to the process of selecting a portion of the population to represent the entire population. The subject of the present study was selected by non randomized purposive sampling.

SAMPLING CRITERIA- INCLUSION CRITERIA:
The study includes mothers who:
➢ Were between 38-42 weeks of gestation
➢ Were having labour pain in latent phase of 1st stage of labor
➢ could speak and understand Hindi & English
➢ were willing to participate in this study.

SAMPLING CRITERIA-EXCLUSION CRITERIA:
The study excluded mothers who
➢ Mothers with any underlying disease such as pregnancy induced hypertension and diabetes mellitus.

➢ Mothers with complicated pregnancy like obstructed labour, multiple pregnancies and preterm labour

➢ Mothers who were not willing to participate in the study

➢ Mothers who cannot understand and speak Hindi or English.

Interpretation of the tool- The instruments used in this study were demographic variable proforma, obstetric variable proforma, modified pain intensity scale, with modified partograph, Ambulation chart and Rating scale on satisfactory of ambulatory nursing care.

Demographic Variable Proforma:
Demographic variable performa consists of age, educational status, type of family, type of work, area of residence, and previous information received regarding ambulatory nursing care.

Obstetric Variable Proforma:
The Obstetric variable proforma includes gestational age in weeks, height, and weight gain during pregnancy, number of antenatal visits till date, and complications during antenatal period, pain management during first stage of labour, type of labour ,duration of first stage of labour, maternal and fetal complications during labour

Pain Rating Scale:
0-10 pain intensity scale was used to assess the level of pain perceived by parturient mothers before and after ambulatory nursing care by interviewing the mother.

Rating scale on level of satisfaction of Ambulatory Nursing Care

The rating scale was designed to assess the level of satisfaction of the low-risk parturient mothers regarding Ambulatory nursing care and this is assessed after the mother's delivery.

The satisfaction score were classified into 3 levels.

Score	Percentage (%)	Level of satisfaction
01-30	<50%	Low Satisfaction
31-45	51-75%	Moderate Satisfaction
46-60	>76%	High Satisfaction

WHO modified Partograph:
This graph was used to asses the feto maternal parameters such as fetal heart rate, blood pressure, maternal pulse rate, uterine contraction frequency and duration, cervical dilatation, and station of the fetal head.

Validity of Study Instruments:
Content validity of the tool was obtained by getting opinion from seven experts in the field of Obstetrics and Gynecology. Three of the experts were doctors and three were nursing personnel and one biostatistician. The valuators had suggested some specific modification in the. objectives and rating scale. The modification and suggestions of experts of experts were incorporated in the final preparation of the rating scale to assess the level of satisfaction of

Ambulatory nursing care among low risk pregnant women.

PILOT STUDY:

Polit and Hungler (2004) states that a pilot study is a miniative of some parts of actual study in which the instruments are administered to the subjects drawn from the same population.

Pilot study was conducted on 06 low-risk parturient mothers in control and experimental group. The subjects were chosen by non randomized purposive sampling at hind hospital of medical sciences safedabad barabanki. Using the demographic variable proforma, simplified partograph, obstetric variable proforma pain intensity scale rating scale on satisfaction, data were collected and analysis was done. The study was found to be feasible, accepted and easy to understand by the low-risk parturient mothers.

PLAN FOR DATA ANALYSIS:

Data analysis is the systematic organization and synthesis of research data and testing of research hypothesis by using the obtained data (Polit & Beck 2004). Analysi sand interpretation of data were carried out with descriptive statistics like frequency distribution, percentage, mean, stand deviation and inferential statistics like paired 't' test. The association between the demographic variables, obstetric variables and dependent variables were analyzed with the help of ANOVA.

ANALYSIS AND INTERPRETATION

Frequency and Percentage Distribution of Demographic Variables and obstetric variable oflow risk parturient mothers

(N=60)

Demographic Variables	Control Group		Experimental Group	
	f	%	f	%
Age in years				
≤20	-	-	-	-
21 to 25	17	56.67	20	66.67
26 to 30	13	43.33	10	33.33
>30	-	-	-	-
Education				
No formal education	05	16.67	03	10.00
Primary School	10	33.33	12	40.00
High & higher sec. School	07	23.33	07	23.33
Graduate	07	23.33	05	16.67
Post Graduate and above	01	3.33	03	10.00
Type of work				
Sedentary worker	8	26.67	5	16.67
Moderate worker	18	60.00	24	80.00
Heavy worker	4	13.33	1	3.33
Type of family				
Nuclear	15	50.00	7	23.33
Joint	15	50.00	23	76.67
Area of residence				
Urban	16	53.33	0	0.00
Rural	11	36.67	26	86.67
Semi urban	3	10.00	4	13.33

Obstetrical Variable	Control Group		Experimental Group	
	f	%	f	%
Gestational Age in weeks				
37 to 38	1	3.33	-	-
39 to 40	15	50.00	24	80.00
41 to 42	14	46.67	6	20.00
Height in cms				
<145 cm	9	30.00	3	10.00
>145 cm	21	70.00	27	90.00

Weight gain duringpregnancy				
10 kg	-	-	-	-
12 kg	24	80.00	27	90.00
>12 kg	14	20.00	3	10.00
Number of antenatal visit				
No visit	4	13.33	-	-
1 to 3 times	16	53.33	13	43.33
>3 times	10	33.33	17	56.67
Pain management during first stage of labour				
Systemic analgesia	-	-	-	-
Inhalation analgesia	-	-	-	-
Epidural analgesia	-	-	-	-
None	30	100	30	100
Type of delivery				
Nor. Vaginal delivery	30	100	30	100
Forceps delivery	-	-	-	-
Vacuum delivery	-	-	-	-
LSCS	-	-	-	-
Maternal complications during delivery				
Shoulder dystocia	-	-	-	-
Postpartum hemorrhage	-	-	-	-
Dysfunctional labour	-	-	-	-
None	30	100	30	100
Fetal Complications				
Prolapsed cord	-	-	-	-
RDS & Asphyxia	-	-	-	-
Meconium Aspiration	-	-	-	-
None	30	100	30	100

It can be noted from table-I that in control group the most of the study participants 56.67% were in the age group of 21-25 years, and 43.33 % were belong in the age group of 26 -30 years.60% mothers are doing moderate work followed by 26.67 % are doing sedentary work and few of the them i.e.13.33 % are doing heavy work . 50% were living equally in Joint and nuclear family and 53.3% are residing in urban and 36.67 % residing in rural and few of them 10 % are residing in semi urban. In terms of parturient mothers education maximum of 33.33 % were educated up to primary school level and minimum of 3.33 % were studied above post graduate.

Most of the low-risk pregnant women 66.67% in the experimental group were in the age group between 21-25 years , followed by 33.33 % were in the age group of 26 -30 years. Majority of them 80% were moderate workers, 76.67 % were living in joint family, 86.67% residing at rural area. In terms of parturient mothers education maximum of 40.00 % were educated up to primary school level and minimum of 10.00 % were studied above post graduate and no formal education respectively.

In terms of obstetrical history in control group 50% belonged to the gestational age between 39-40weeks and 70% of them were above 145cm in height. Majority of them i.e.,80% were gained weight about 12 kg during pregnancy, 53.33% had antenatal visit 1-3 times. All of them delivered normally received no pain management and none of them developed either maternal or fetal complications during labour.

In the experimental group majority of the study participants i.e. 80 % were in the gestational age between 39-40 weeks and 90 % obtained weight gain about 12kg in the antenatal period . More than half of them i.e. 56.67 % had attended antenatal clinic more than 3 times .All of them delivered normally received no pain management and none of them developed either maternal or fetal complications during labour.

According to duration of first stage of labour 70% of them had <6hours in the experimental group whereas none of them in the control group.

Table -2 Comparison of mean and standard deviation of feotomaternal parameters beforeand after ambulation in control and experimental group of low risk parturient mothers

(N=60)

Feotomaternal parameters	CONTROL GROUP					EXPERIMENTAL GROUP				
	Before therapy		After therapy		't' value	Before therapy		After therapy		t' value
	M	SD	M	SD		M	SD	M	SD	
Fetal Heart Rate	148.60	50.30	139.23	2.41	-1.03	139.45	1.56	139.58	1.55	1.466
Maternal Pulse Rate	82.66	8.35	82.18	6.84	-1.02	80.63	0.45	80.67	0.76	0.249
Uterine Contraction Frequency	2.90	0.49	3.1	0.25	2.31*	3.15	0.30	2.22	0.24	16.38
Uterine Contraction Duration	52.56	5.93	48.3	8.01	0.16*	53.69	6.31	68.10	7.86	9.02***
Systolic Blood Pressure	118.25	11.61	114.85	7.45	1.69	116.75	2.912	117.64	2.60	1.27
Diastolic Blood Pressure	74.81	6.92	74.52	3.43	0.22	78.15	2.93	77.59	4.39	1.363
Cervical dilatation	1.03	0.18	2.03	0.35	16.33	1.00	0.0	2.45	0.17	46.08***
Station descent	-2.00	0.0	-0.82	0.52	12.41	-2.00	0.0	-0.09	0.59	17.78***

***-Significance at P<0.001

Table 2:It is inferred that mean and standard deviation of frequency of uterine contraction in control group was high in after therapy (M=3.1,SD=0.25) in comparison with before therapy(M=2.9,SD=0.49) . The mean and standard deviation of frequency of uterine contraction duration in control group was high in after therapy (M=52.56,SD=5.93) in comparison with before therapy(M=48.3,SD=8.01)The difference was found statistically significant at 95% level of significance. Remaining all the variables are not significant .Hence the Null hypothesis Ho_1 was accepted.

The mean and standard deviation of frequency of uterine contraction in experimental group was high before therapy (M=3.15, SD=0.30) in comparison with after therapy (M=2.22, SD=0.24). Duration of uterine contraction was low in before therapy (M=53.69, SD=6.31) than after therapy (M=68.10, SD=7.86). The result was statically significant at 99.9% level of significance. Hence Null hypothesis Ho1 was rejected

In terms of cervical dilation and station descent in experimental group calculated mean value 1.00 ,-2.00 and standard deviation M=0.00,0.00 before therapy and mean value 2.45,-0.09 and standard deviation 0.17,0.59 , after therapy respectively .The calculated t value 46.08 in cervical dilation and 17.78 in station decent were highly significant at P<0.001level

This shows that ambulation during first stage of labour increases the duration of uterine contraction ,cervical dilation ,station decent and decreases the frequency of uterine contraction.

Table -3 Comparison of mean and standard deviation of level of labour pain before and aftertherapy in control and experimental group of low risk parturient mothers.

(N=60)

Group	Before therapy		After therapy		t' value
	Mean	S.D	Mean	S.D	
ControlGroup	6.64	0.82	7.80	0.56	-7.398
Experimental Group	6.15	0.75	5.05	0.72	12.39***

***: Significant at p<0.001

Table -3 inferred that mean and standard deviation of pain score of experimental group low risk parturient mothers were low in after therapy (M=5.05, SD=0.72) in comparison with before therapy level of pain score (M6.15, SD=0.75). In control group aftertherapy pain score was high (M=7.99, SD=0.534) in comparison with the level of pain score before therapy (M=6.64, SD=0.9994). The difference was found statistically significant at 99% level of significance and can be attributed to the effectiveness of Ambulation during first stage of labour. Thus the null hypothesis H_{o2} was rejected.
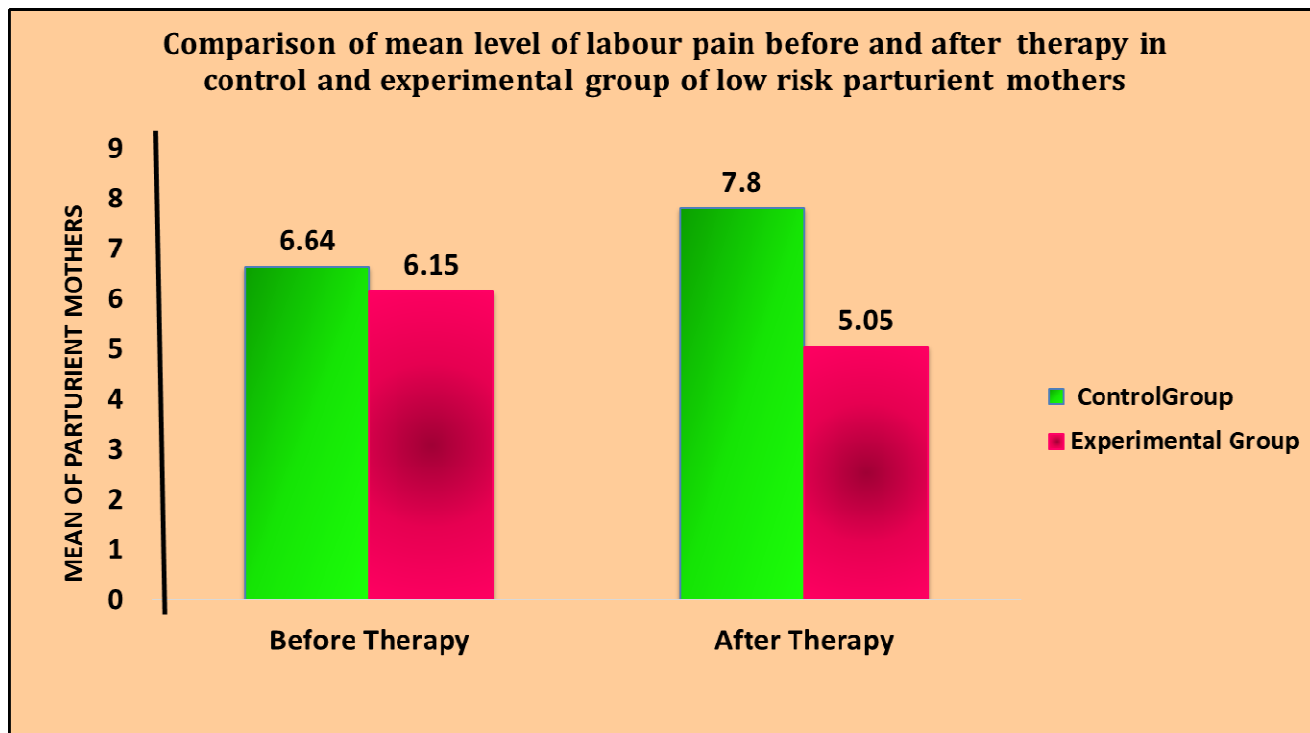
Comparison of mean level of labour pain before and after therapy in control and experimental group of low risk parturient mothers

Fig-17: Comparison of mean level of labour pain before and aftertherapy in control and experimental group of low risk parturient mother

Table 4 Association between the selected demographic variables and fetal heart rate after therapy in control and experimental group of low risk parturient mothers.

(N=60)

Demographic variables	Control group (n=30)			Experimental group(n=30)		
	Mean	SD	't' Value	Mean	SD	't' Value
Age in years						
≤20	-	-		-	-	
21 to 25	138.84	2.76	-1.076	139.64	1.30	0.290
26 to 30	139.74	1.83		139.44	2.03	
>30	-	-		-	-	
Education						
No formal education	138.20	3.75		132.10	1.00	
Primary school	139.27	2.25		139.98	1.08	
High & Higher secondary	139.82	1.82	0.572	139.11	2.09	0.912
Graduate	138.12	3.31		139.63	0.78	
Post graduate and above	140.05	2.19		139.20	1.08	
Type of work						
Sedentary worker	140.27	1.06		138.98	2.85	
Moderate worker	138.85	2.78	1.040	139.66	1.22	1.799
Heavy worker	138.80	2.31		140.50	1.34	
Type of family						
Nuclear	139.27	2.69	-0.284	139.66	1.22	-0.701
Joint	138.98	2.17		139.50	1.18	
Area of residence						
Urban	139.35	2.69		-	-	
Rural	138.80	2.31	0.157	132.10	1.00	0.249
Semi urban	138.12	3.31		139.50	1.18	

Table 5 Association between the selected demographic variables and maternal pulse rate in control and experimental group of low risk parturient mothers.   (N=60)

Demographic variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	SD	't' Value	Mean	SD	't' Value
Age in years						
≤20	-	-		-	-	
21 to 25	81.16	1.02	1.359	80.73	0.68	0.545
26 to 30	80.67	0.96		80.55	0.93	
>30	-	-		-	-	
Education						
No formal education	80.63	1.70		80.82	0.89	
Primary school	81.25	0.81		80.56	0.63	
High & higher Sec.	80.57	0.86	0.718	80.82	0.89	1.096
Graduate	81.22	1.16		80.23	0.68	
Post graduate and above	80.80	1.69		81.60	0.68	
Type of work						
Sedentary worker	80.47	0.76		80.84	1.20	
Moderate worker	81.24	1.01	1.984	80.66	0.67	0.497
Heavy worker	80.60	1.20		80.00	0.45	
Type of family						
Nuclear	81.00	1.13	0.267	139.68	1.25	-0.701
Joint	80.90	0.91		139.22	2.39	
Area of residence						
Urban	81.02	1.12		-	-	
Rural	80.83	0.93	0.121	139.57	1.65	0.249
Semi urban	81.00	1.00		139.62	0.63	

Table 6 Association between the selected demographic variables and uterine contraction duration in control and experimental group of low risk parturient mothers.

(N=60)

Demographic variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	SD	't' Value	Mean	SD	't' Value
Age in years						
≤20	-	-		-	-	
21 to 25	34.38	4.54	-0.436	44.08	15.77	0.089
26 to 30	35.15	4.99		43.55	15.46	
>30	-	-		-	-	
Education						
No formal education	31.33	2.31		-	-	
Primary school	35.27	4.97		44.03	13.19	
High & Higher sec.	32.89	3.10	1.581	41.40	14.70	0.461
Graduate	37.56	2.82		53.43	30.76	
Post graduate and above	37.85	11.81		43.50	24.13	
Type of work						
Sedentary worker	32.37	2.68		39.02	4.24	
Moderate worker	35.58	5.04	1.677	45.05	17.0	0.323
Heavy worker	34.12	5.20		40.80	10.10	
Type of family						
Nuclear	35.05	5.74	0.381	43.71	14.34	-0.105
Joint	34.39	3.48		44.56	19.80	
Area of residence						
Urban	34.77	5.13		-	-	
Rural	33.68	2.98	1.130	43.02	14.00	-0.524
Semi urban	38.23	7.12		49.65	24.67	

Table 7 Association between the selected demographic variable and contraction frequency in control and experimental group of low risk parturient mothers.   (N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Age in years						
<20	-	-		-	-	
21 to 25	13.13	2.20	1.094	15.99	10.39	1.461
26 to 30	12.13	2.69		11.87	5.08	
>30	-	-		-	-	
Education						
No formal education	13.10	2.42		13.97	8.86	
Primary school	12.36	2.69		15.48	10.00	
High & Higher. Sec	13.37	2.63	0.983	13.97	8.86	0.140
Graduate	11.23	1.56		14.77	9.79	
Post graduate	14.55	0.07		9.90	10.08	
Type of work						
Sedentary worker	12.50	3.14		10.84	0.78	
Moderate worker	12.88	2.19	0.132	15.59	9.96	0.666
Heavy worker	12.26	2.59		10.30	0.56	
Type of family						
Nuclear	13.18	2.34	1.097	15.22	9.87	0.835
Joint	12.21	2.52		12.66	6.01	
Area of residence						
Urban	13.25	1.69		-	-	
Rural	11.71	3.16	1.459	14.80	9.33	0.300
Semi urban	13.37	2.49		13.42	8.44	

Table 8 Association between the selected demographic variable and cervical dilatation in control and experimental group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Age in years						
<20	-	-		-	-	
21 to 25	1.59	0.37	-1.545	2.41	0.18	2.267
26 to 30	1.81	0.41		2.53	0.10	
>30	-	-		-	-	
Education						
No formal education	1.43	0.11		2.43	0.21	
Primary school	1.63	0.44		2.41	0.19	
High & Higher Sec	1.70	0.33	1.030	2.48	0.15	0.605
Graduate	1.77	0.47		2.43	0.21	
Post graduate & above	2.12	0.53		2.60	0.39	
Type of work						
Sedentary worker	1.41	0.18		2.54	0.13	
Moderate worker	1.78	0.45	2.970	2.42	0.17	1.391
Heavy worker	1.81	0.24		2.60	0.14	
Type of family						
Nuclear	1.71	0.42	0.293	2.44	0.17	-0.639
Joint	1.67	0.39		2.48	0.17	
Area of residence						
Urban	1.80	0.41		-	-	
Rural	1.51	0.26	1.879	2.44	0.18	-1.071
Semi urban	1.75	0.66		2.50	0.08	

Table-9 Association between the selected demographic variable and station of fetal head in control and experimental group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Age in years						
≤20	-	-		-	-	
21 to 25	-1.41	0.94	-0.500	-0.81	0.60	0.088
26 to 30	-1.23	1.01		-0.83	0.34	
>30	-	-		-	-	
Education						
No formal education	-1.33	1.15		-1.2	0.17	
Primary school	-1.45	0.93		-0.89	0.34	
High & Higher Sec	-1.33	1.00	0.113	-0.62	0.69	1.256
Graduate	-1.20	1.09		-1.2	0.17	
Post graduate	-1.00	1.41		-1.0	0.10	
Type of work						
Sedentary worker	-2.00	0.00		-0.76	0.22	
Moderate worker	-1.00	1.03	3.643	-0.82	0.57	0.088
Heavy worker	-1.50	1.00		-1.0	1.23	
Type of family						
Nuclear	-1.33	0.97	0.000	-0.79	0.57	0.726
Joint	-1.33	0.97		-0.91	0.32	
Area of residence						
Urban	-1.25	1.00		-	-	
Rural	-1.45	0.93	0.139	0.77	0.10	2.785
Semi urban	-1.33	1.15		-1.15	0.09	

Table 10 Association between the Selected Obstetrical Variables and Fetal Heart Rate in Control and Experimental Group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37to38	138.40	-		-	-	
39 to 40	138.54	2.24	1.482	139.61	1.63	0.249
41 to 42	140.02	2.49		139.45	1.33	
Height in cms						
<145 cm	138.68	2.77	-0.748	139.58	1.55	0.129
>145 cm	139.46	2.26		-	-	
Weight gain during pregnancy						
10 kg	-	-		-	-	
12 kg	139.65	2.80	0.813	139.22	2.59	-0.413
>12 kg	138.90	2.08		139.67	1.23	
Number of antenatal visit						
No visit	138.72	2.09		-	-	
1 to 3 times	138.94	2.75	0.549	139.25	2.06	-0.938
>3 times	139.88	1.95		139.83	1.00	
Complications during antenatal period						
Anemia	138.62	3.26		-	-	
PIH	-	-	-1.102	-	-	0.002
GDM	-	-		-	-	
No complications	139.69	1.41		139.58	1.55	

Duration of first stage of Labour						
≤ 6 hours	138.72	2.80		139.22	2.50	
7-8 hours	139.64	2.75	1.326	139.65	2.80	0.543
9-10 hours	130.88	1.41		139.88	1.95	

Table 11 Association between the selected obstetrical variables and maternal pulse rate in control and experimental group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37to 38	81.60	-		-	-	
39 to 40	81.11	0.90	0.686	80.72	0.78	0.697
41 to 42	80.73	1.14		80.48	0.72	
Height in cms						
<145 cm	80.72	1.08	-0.776	80.67	0.76	0.00
>145 cm	81.05	0.99		-	-	
Weight gain during pregnancy						
10 kg	-	-		-	-	
12 kg	81.03	1.11	0.370	80.55	1.09	-0.320
>12 kg	80.89	0.96		80.70	0.68	
Number of antenatal Visit						
No visit	80.42	1.06		-	-	
1 to 3 times	81.21	1.06	1.273	80.92	0.83	1.588
>3 times	80.75	0.86		80.48	0.66	
Complications during antenatal period						
Anemia	81.30	1.24		-	-	
PIH	-	-		-	-	
GDM	-	-	1.60	-	-	0.00
No complications	80.68	0.72		80.67	0.76	
Duration of first stage of Labour						
< 6 hours	82.03	1.11		80.92	1.09	
7-8 hours	80.40	0.96	1.379	80.70	0.83	0.750
9-10 hours	81.21	0.86		88.02	0.76	

Table 12 Association between the selected obstetric variables and uterine contraction duration in control and experimental group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37to 38	37.00	-		-	-	
39 to 40	34.88	4.08	0.156	43.47	14.45	-0.248
41 to 42	34.38	5.49		45.65	20.26	
Height in cms						
<145 cm	34.53	4.61	-0.141	43.91	15.40	-0.00
>145 cm	34.79	4.81		-	-	
Weight gain during pregnancy						
10 kg	-	-		-	-	
12 kg	33.29	3.08	-1.599	47.02	20.62	0.436
>12 kg	35.80	5.43		43.13	14.27	
Number of antenatal Visit						
No visit	38.17	6.25				
1 to 3 times	34.34	4.46	1.316	38.45	4.41	-1.988
>3 times	33.93	4.23		48.08	19.31	

Complications during antenatal period						
Anemia	35.60	5.28		-	-	
PIH	-	-	0.874	-	-	-0.00
GDM	-	-		-	-	
No complications	34.04	4.19		43.91	15.40	
Duration of first stage of Labour						
< 6 hours	34.04	0.25		38.45	6.25	
7-8 hours	36.43	4.46	1.231	38.17	4.46	1.216
9-10 hours	34.34	4.23		33.93	4.43	

Table 13 Association between the Selected Obstetrical Variables and Uterine Contraction Frequency in Control and Experimental Group of low risk parturient mothers.   (N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37	10.30	-	1.253	-	-	0.787
38 to 39	12.25	2.56		15.15	9.64	
40 to 42	13.35	2.25		12.50	6.69	
Height in cms						
<145 cm	13.18	2.15	0.755	14.62	9.09	-
>145 cm	12.49	2.57		-	-	
Weight gain during Pregnancy						
10 kg	-	-		-	-	
12 kg	13.97	1.41	2.994	13.47	6.16	-0.449
>12 kg	11.72	2.64		14.91	9.77	
Number of antenatal Visit						
No visit	13.24	2.39		-	-	
1 to 3 times	12.64	2.47	0.110	14.84	10.09	0.111
>3 times	12.56	2.63		14.45	8.56	
Complications during antenatal period						
Anemia	12.77	1.94		-	-	
PIH	-	-	0.155	-	-	0.000
GDM	-	-		-	-	
No complications	12.64	2.82		14.62	9.09	
Duration of first stage of labour						
< 6 hours	13.18	2.15		14.84	6.16	
7-8 hours	11.72	2.64	0.153	14.82	9.77	0.142
9-10 hours	15.15	9.64		13.82	2.63	

Table 14 Association between the Selected Obstetrical Variables and Cervical Dilatation in Control and Experimental Group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37to 38	1.50	-		-	-	
39 to 40	1.68	0.41	0.128	2.43	0.18	2.096
41 to 42	1.71	0.41		2.53	0.08	
Height in cms						
<145 cm	1.63	0.37	-0.512	2.45	0.17	0.00
>145 cm	1.71	0.42		-	-	
Weight gain during pregnancy						
10 kg	-	-		-	-	
12 kg	1.65	0.35	-0.421	2.53	0.12	1.706
>12 kg	1.71	0.44		2.43	0.17	

Number of antenatal visit						
No visit	2.07	0.43		-	-	
1 to 3 times	1.56	0.38	3.073	2.43	0.18	-0.530
>3 times	1.73	0.33		2.46	0.16	
Complications during antenatal period						
Anemia	1.73	0.42		-	-	
PIH	-	-	0.499	-	-	0.00
GDM	-	-		-	-	
No complications	1.65	0.39		2.45	0.17	
Duration of first stage of labour						
< 6 hours	1.88	0.28		1.84	0.28	
7-8 hours	1.86	0.26	0.195	1.82	0.29	0.195
9-10 hours	1.84	0.28		1.86	0.26	

Table 15 Association between the Selected Obstetrical Variables and Level of Station Decent in Control and Experimental Group of low risk parturient mothers.

(N=60)

Demographic Variables	Control Group(n=30)			Experimental Group (n=30)		
	Mean	S.D	't' Value	Mean	S.D	't' Value
Gestational age in weeks						
37to38	-2.00	-		-	-	
39 to 40	-1.33	0.97	0.245	-0.77	0.54	1.379
41to 42	-1.28	0.99		-1.03	0.39	
Height in cms						
<145 cm	-1.33	1.00	0.000	-0.82	0.52	0.000
>145 cm	-1.33	0.97		-	-	
Weight gain during pregnancy						
10 kg	-	-		-	-	
12 kg	-1.69	0.75	-1.949	-0.73	0.21	0.750
>12 kg	-1.06	1.03		-0.84	0.57	
Number of antenatal visit						
No visit	-0.50	1.00		-	-	
1 to 3 times	-1.50	0.89	1.885	-0.65	0.66	1.522
>3 times	-1.40	0.97		-0.95	0.35	
Complications during antenatal period						
Anemia	-1.23	1.01		-	-	
PIH	-	-	0.500	-	-	0.000
GDM	-	-		-	-	
No complications	-1.41	0.94		-0.82	0.52	
Duration of first stage of labour						
< 6 hours	-1.33	0.97		1.33	0.63	
7-8 hours	-1.28	0.99	0.245	0.64	0.34	1.432
9-10 hours	-1.23	1.01		0.72	0.24	

It was observed from Table 4 there was no significant association between the selected demographic variables such as age, educational status, type of work ,type of family ,area of residence ,and the fetal heart rate and. Hence Null hypothesis H03 was accepted.

It was noted from Table 5 that there was no significant association between the selected demographic variables such as Age, Educational status, Type of work, Type of family and the Area of residence and Maternal pulse rate. Hence null hypothesis H03 was accepted.

Table 6 denotes that there was no significant association between the selected demographic variables such as Age, Educational status, Type of work, Type of family, Area residence and Contraction duration. Hence null hypothesis H03 was accepted.

It was noted from Table 7 that there was no significant association between the selected demographic variables such as Age, Educational status, Type of work, Type of family, Area residence and Contraction frequency. Hence null hypothesis H03 was accepted.

Table 8 depicts that there was no significant association between the selected demographic variables such as Age, Educational status, Type of work, Type of family and the Area residence and cervical dilatation. Hence null hypothesis H03 was accepted.

It can be inferred from Table 9 that there was no significant association between the selected demographic variables such as Age, Educational status, Type of work, Type of family and the Area of residence and Station of fetal head. Hence null hypothesis H03 was accepted.

Table 10 denotes that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Complications during antenatal period and fetal heart rate. Hence null hypothesis H03 was accepted.

Table 11 depicts that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Complications during antenatal period and maternal pulse rate. Hence null hypothesis H03 was accepted.

Table 12 denotes that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Complications during antenatal period and Uterine Contraction Duration. Hence null hypothesis H03 was accepted.

Table 13 depicts that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Complications during antenatal period and Uterine Contraction Duration. Hence null hypothesis H03was accepted

Table 14 inferred that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Complications during antenatal period and Cervical dilation. Hence null hypothesis H03 was accepted.

Table 15 depicts that there was no significant association between the selected Obstetrical variables such as Gestational age in weeks, duration of first stage of labour, Weight gain during pregnancy, Number of antenatal visit, Complications during antenatal period and Level of station descent. Hence null hypothesis H03 was accepted.

This study was carried upon sixty low risk parturient mothers who were with labour pain in the labour ward, Hind Hospital. Their pain score and fetomaternal parameters during the first stage of labour was assessed every one hour before and after ambulation. The discussion is presented under the following heading:

➢ Demographic variables and obstetric variables in control and experimental group of low risk pregnent women

➢ Mean and Standard Deviation of Fetomaternal Parameters before and after therapy in control and experimental group of low risk pregnent women

➢ Assessment of level of satisfaction on ambulation in experimental group of low risk pregnent women

➢ Association between the selected demographic variables and Feto maternal parameters after therapy in control and experimental group of low risk pregnent women

➢ Association between selected obstetric variables and, Feto maternal parameters after therapy in control and experimental group of low risk pregnent women

Demographic variables of the low risk parturient mothers

Majority of the parturient mothers in the control and experimental group were in age group of 21-25 years, it could be interpreted that the public had adequate awareness about the opportune time for pregnancy. This view was highlighted by Mathews and Hamilton, (2012) in their study that the average age of mothers at the time of birth increased from 24.6 in 1970 to 27.2 in 2010.Beckman et al., (2014) also had found that women order than 35yrs have an increased incidence of sub fertility and inability to conceive. since majority of the mothers were home maker (80%, 60%) they can take adequate rest during pregnancy and can be free from psychological stress, which is an important factor in promoting maternal as well as fetal well being.

Significant percentage of mothers were educated up to primary school level (46.67%, 36.67%) which can be recognized as a facilitating factor to understand the structured interview. According to the census held in 2001 by national literacy mission, the percentage of female literacy mission, the percentage of female literacy has increased from 8.86% in 1951 to 54.16% in 2001. This view was emphasized by as study finding of Ortigo so and karchemer (1996) that the educational level of the patient is a determining factor

to the attitude and knowledge of the people towards their own health.

Majority of the mothers (86.67%) are residing in rural areas where it is difficult for them to utilize the service in maternity centers, but then public had adequate awareness to seek services rendered by the center more effectively. Most of the mothers (76.67%) were in joint families. Joint families are like micro organism of the entire world. The researcher assumed that form the joint family the parturient will get lot of support which may promote the well-being of the mothers as well as the family members will teach about the changes which occur during labour as the coping measures which is to be adopted during labour.

Most of the mothers (86.67%, 53.33%), had received information regarding ambulatory nursing care through family members It showed that ,though the mothers received information regarding ambulation, they had never practice during their labour process.

Obstetric Variables of low risk parturients mothers:

Most of the parturient mothers (80%) were in the gestational age between 38- 39 weeks. The findings on gestational age can be interpreted that labour process in appropriate gestational age will promote positive labour outcome without any fetomaternal complications. Almost all of them (56.67%, 33.33%) have attended more than three antennal visits. It was remarkable to find that all the mothers had attended more than 3 antenatal visits which can be interrupted that mothers as well as the family members are well known and much aware about the importance of regular antenatal checkup for the maternal and fetal well-being. This view was consistent with the target of the millennium development goal (MDG) which is to achieve by 2015, the universal access to reproductive health which makes antenatal care coverage at least one visit and at least four visit for the improved service delivery.

Duration of first stage of labour was <6 hours in the experimental group whereas none of they had in the control group. This findings make sure that the intervention of ambulation was very effective in shortening the labour. This study was supported by Ricci (2017) who reported that walking help to speed labour by adding benefits of gravity and changes to the shape of the pelvis.

Both control and experimental group parturient mothers neither used any pain management during first stage of labour nor experienced any maternal or fetal complications during labour. All of them had normal vaginal delivery in both the group. As the

intervention, ambulation in the experimental group does not create any untoward reactions during labour. These findings assure that the midwives can practice this intervention to reduce the labour pain perception and make the child birth experience as a memorable event.

None of them in both control and experimental group had not developed any fetal and maternal complications during labour. This study was supported by Bloom who found that ambulation did not impair the process are result in harm to the mother or fetus.

Mean and standard deviation level of pain before and after therapy in control and experimental group of low risk pregnent women.

The mean and standard deviation of pain scores of the control group parturient mothers were high after therapy (M=6.64, SD=0.994) compared to the level of pain score before the therapy (M=6.15, SD=0.75).Since low risk pregnant women have longer labors perceive more pain and are more likely to use pharmacologic support. The nurse needs to understand each woman experiences. The pain is reduced during labour by ambulatory nursing care and hence it can be incorporated in nursing practice. As this non-pharmacological pain relief measures during child birth is safe, simple, non- invasive and cost-effective, it can practiced by the midwife in the first stage of labour midwives play vital role in making the parturient to have reduced pain perception co-operation for the child birth, every mother will remember the midwives who helped to have pain relief during child birth.

Mean and standard deviation of fetomaternal parameters of the low risk pregnant women

In the control group the mean and standard deviation of fetomaternal parameters such as frequency of uterine contraction (M =3.15, SD=0.30) were low before the therapy compared with the scored after the therapy. The mean and standard deviation of duration of uterine contraction were high before the therapy (M=53.69, SD=6.31) compared to after the therapy at p<0.01. The frequency of uterine contraction before the therapy were high (M=3.15, SD=0.30) compared to after the therapy (M=2.22, SD=0.24) at p<0.01.As labour progress the uterine contraction increases which may cause discomfort to the mothers. Enkin et al., (2000) reported that when they allowed to walk it will enhance uterine action, relieves distractions from labour comfort and provides opportunities for close interaction with the care provider as they help her to walk. And also supported by Emily that in walking contractions are less comfortable and more efficient.

The mean score of cervical dilatation of the control group mothers was low (M=2.03, SD=0.35) compared to experimental group (M=2.45, SD=0.17). The mean score of fetal station were more advanced in experimental group (M=0.09, SD=0.59) than in control group mothers (M=0.82, SD=0.52).

Association between demographic variables and fetomaternal parameters

In experimental group there was no significant association between age, education, type of work, area of residence irrespective of the demographic variables all the fetomaternal parameters were not changed before and after therapy. Hence no statistics could be calculated for association between demographic variable and fetomaternal parameters after the therapy in control and experimental group.

In control and experimental group there was no significant association between the demographic variables and fetomaternal parameters after the therapy. This denotes that fetomaternal parameters were not influenced by demographic variables and hence the ambulatory nursing needs to be enhanced by the midwives by practicing complementary and alternative therapies during child birth.

Association between obstetric variables and fetomaternal parameters

In the control and experimental group there was no significant association between the obstetric variables and the fetomaternal parameters before and after the therapy .Hence the study exhibits that there was no relationship between the obstetric variable and fetomaternal parameters. In the control and experimental group there was no significant association between the obstetric variable and fetomaternal parameters before and after therapy.

Summary

This chapter has dealt about the discussion on the various aspects of study findings. This chapter comprises of demographic and obstetric variables of parturient mothers level of labour pain, before and after therapy in control and experimental group, fetomaternal parameters of parturient mothers in control and experimental group, association between the selected demographic variables and level of labour pain before and after therapy in control and experimental group, association between selected obstetric variables and level of labour pain, are discussed with supporting study findings

Conclusion:

The analysis of the results showed that in the experimental group the level of labour pain was reduced after the therapy, duration of uterine contraction was increased and frequency was decreased. It enhances more cervical dilatation and advances station decent. This implied that the ambulation has an effect on reduction of pain during labour.

Implications Nursing practice

Nurses have a major role in assessing and providing necessary dimensional therapy to decrease the level of pain if low risk pregnant women during labour. Many non pharmacological measures are available to reduce the level of labour pain but being simple and non invasive ambulatory nursing care can be easily adopted into practice.

Nurses need to accept the responsibility of helping mothers to gain knowledge on importance of ambulation during first stage of labour and guide them to practice the same. They should also provide conducive environment for ambulation in the labour room. Maternity nurses can play a major role in implementing this care in day today nursing practice by explaining the optimal usage of it. The same intervention can be formulated as a teaching module that can be included as one of the teaching material in mother craft classes.

Nursing Education

As ambulation and its advantages during labour were should be included in the curriculum student should teach mothers, the need for ambulation during first stage of labour during their practices and becoming knowledgeable about its clinical importance during labour. Promotion of ambulatory nursing care must be routine component in education. This should can serve as educative tool for staff nurses working in maternity units by continuous maternity nursing education. For educated mothers, this study can be used as an example of learning material.

Nursing administration

Nursing leaders are challenged to meet the health needs of low risk mothers who are in labour by effective organization and management. It is essential to promote ambulatory nursing care and to develop audit based on ambulatory procedure in collaboration with other health care providers to ensure practice of ambulation care and it need for the mothers in first stage of labour. The media can be used to portray the advantage of practices of first stage labour ambulatory nursing care.

Nursing research:

There is a need for extensive and intensive research in this area. Research is needed to examine the role of nurse in educating and encouraging the mothers to practice first stage labour ambulatory nursing care and its impact on labour steps should be taken to develop and implement the research utilization by

preparing nurses to read, critique and use research in their practice. They can be encouraged to identify and receives research base, transforming protocol in clinical it to see whether it is producing predicted results.

Recommendations:

➢ This study can be conducted on a larger sample to generalize results.

➢ A comparative study can be conducted between primi and multigravidae parturients mothers

➢ Maternal health education centre can include this evidence based study to educate them in their antenatal period as part of child birth classes.

➢ A comparative study can be conducted between various alternative complementary methods to reduce pain perception during labour.

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