International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.9756/INTJECSE/V14I5.497 ISSN: 1308-5581 Vol 14, Issue 05 2022

EFFECTIVENESS OF MATERNAL POSITIONS ON LEVEL OF PAIN DURING THE FIRST STAGE OF LABOUR AMONG PRIMIGRAVIDA MOTHERS IN HOSPITALS MUMBAI

Smt Chitrarekha Jiwalal Khandekar[1], Dr Marudhar Aman[2], Kalpana Kamble[3]
[1]PhD Scholar, Nims University Rajasthan, Jaipur, India.
[2]Associate Professor, NIMS University Rajasthan, Jaipur India.
[3]Lecturer, Institute of Nursing Education, Sir J.J.Hospital Campus, Mumbai, India.

Abstract:
Background: Labour pain is a universal and unique experience for childbearing women but threshold of this pain varies between individuals. For some it resembles menstrual cramps. Pain intensity varies widely and generally increases as labour progresses. Pain experienced during labour is probably the most painful event in the lives of the women. Objective: To assess the effectivenessof maternal positions on level of pain among primigravida mothers. Design: Quasi-experimental, pre-test post test one group design. Setting: Hospitals in Mumbai Maharashtra. Participant: 100 primigravida mothers 36-42 weeks of pregnancy fulfilling the inclusion criteria were selected by non-probability purposive sampling technique.Methods: maternal positionsare implemented during intrapartum period and level of pain perception assessed with observation check list tool facial pain scale and WHO Modified Partograph, during first stage of labour. Level of pain assessed with ongoing assessment tool. Collected data was analyzed by using descriptive and inferential statistics. Results:There is a statistical significant difference between pre test and post test facial pain readings. The calculated chi square value of 38.86 is more than the chi square table value 7.81 for a df=3. Hence it can be said that there is a significant change in facial pain scale before and after intervention of positioning on level of pain among prima gravid mothers. Hence alternate hypothesis (H_1) is accepted for facial pain scale comparison in experimental group. Conclusions: Maternal positions hadpositive effect on progress of labor, decreased duration of the three stages of labor, better neonatal outcomes and improving parturient women's satisfaction with assumed position. The study recommended that all parturient women in low-risk labor should be informed about the benefits of assuming upright positions during first stage of labor, and be encouraged and supported to use them.

Keywords: Effectiveness, Maternal positions, level of pain, First stage of labour,Primigravida mother.

Introduction:

Pregnancy and childbirth is one of the graceful time in every woman's life which bring physical and emotional changes in the body. Pregnancy is one of the biggest imagination and it changes into a worse dream when labour pain progress.

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, shorter first and second stages of labor, required less pain relief medication.

The effects of different maternal positions during labour on maternal-fetal and neonatal outcomes are rarely in agreement and available evidences in this field are often controversial and fragmentary. The vertical positions may benefit from "gravity effect" potentially able to reduce aortocaval compression, to make uterine contractions effective and to favour a better fetus alignment in the birth canal and to increase pelvic outlet diameters, reducing intrapartum maternal and neonatal complications.

Actively promoting and encouraging women to mobilize during childbirth is a safe, effective way of providing optimum care to healthy women, it is a cost-effective way of reducing complications. Mobilization improves frequency, strength and length of contractions, decreases the use of oxytocin to augment labour and improves oxygen supply to the fetus. It improves alignment of pelvic bones and the shape and capacity of pelvis, and optimizes the good fit between fetus and pelvis.[1].

Simkin and O'Hara (2002) recommend encouraging women to labor and deliver in whichever position is most comfortable for and familiar to them. Changing positions throughout labor, including upright, side lying and gravity neutral positions, may result in more efficient labors. Positioning such as hands and knees are recommended for rotating the fetus from occipitoposterior presentation to occipitoanterior presentation, while ambulating, swaying/rocking or squatting aid in correcting slow progress in dilation or descent.[2]

Romano and Lothian (2008) advised standing, kneeling or squatting to aid gravity in bringing the fetus down and protecting the birth canal and the fetus from excessive pressure that may cause excessive fetal hypoxia or distress. Gravity neutral positions, such as kneeling on all fours, side lying and semi-sitting, allow women to rest between contractions and help conserve energy during contractions. Squatting is recommended in labor because it widens the pelvic diameter creating more room for the baby to descend. Interspersing upright positions with other positions is shown to decrease pain and shorten labor as long as the change in position is voluntary and guided by the mother. [3]

Afaf Mohamed MohamedEmam et al. (2018) conducted study on Upright versus recumbent position during first stage of labor among primipara women on labor outcomes. Quasi experimental design was used. The study was conducted in the labor unit in obstetric department at Benha University Hospital. A purposive sample of 100 parturient women in first stage of labor were recruited in the study, they divided into two groups; upright group (50) and recumbent group (50). Data were collected by Structured Interviewing questionnaire sheet, Structured Observational Checklist. Results revealed that high statistical significant difference between the upright and recumbent groups in term of decreases interval and increases duration, frequency and intensity of uterine contraction, cervical dilatation and fetal head descent/fifth among the upright group. While the recumbent group showed less progress. Moreover, the recumbent group expressed more pain score, consume longer duration of 1st, 2nd, 3rd stage of labor than the upright group and statistical significant difference in Apgar score of the neonate during both first and fifth minute. In addition, the upright group had higher satisfaction scores compared to those assumed recumbent positions ($p < .001$). [4]

Need of the Study:

As per the census of India in 2016, birth rate is 19.3 births/1000 populations and death rate is 7.3 deaths/1000 populations, it indicates that there is rapid increase in India's population. The fertility rate in India is 2.2 children born/woman. Out of 1000 mothers, 130 mothers undergo prolonged labour. With this there are many complications expected for both mother and baby, associated with prolonged labour. Maternal mortality rate of India for the period 2016-18, as per the latest report of the national registration system data is 113/100,000 live births, declined by 17 points, from 130/100,000live births in 2014-16.

India's maternal mortality ratio has improved to 103 in 2017-19 from 113 in 2016-18. This is according to the special bulletin on MMR released by the Registrar General of India March 14, 2022

Nurses providing care in first stage of labor need to provide clear, consistent, and evidence based explanation of both the risks and benefits of the used positions and enable women to make decisions about the position choices which will afford the most comfort. Moreover, increasing a woman's sense of control may have the effect of decreasing the need for analgesia.[5]

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.

Statement of the problem: Assess the effectiveness maternalpositions onlabour level of pain among primigravida mothers in hospital Mumbai.

Aim: The aim of this study was to evaluate the effectiveness maternalpositions on level of pain among primigravida mothers in hospital Mumbai.

Objectives:

1)To assess the level of pain during the first stage of labour among primigravida mothers in experimental group.

2) To assess the effectiveness of maternal positions in first stage of labour among primigravida mother in experimental group.

3) To compare the level of pain before and after intervention in experimental group.

Hypothesis:

H_{01} -There will be no significant association between maternalpositions and level of pain among primigravida mothers.

H_1- There will be significant association between maternalpositions and level of pain amongprimigravida mothers.

H_{02}-There will be no significant difference between level of pain in experimental before and after intervention.

H_2 - There will be significant difference between levels of pain in experimental before and after intervention.

Dependent variables: Level of pain

Independent variable:Maternal positions

Inclusive Criteria:
- Primigravida mothers in first stage of labour pain.
- Willing to participate in the study.
- Admitted inlabour room of hospital in Mumbai.
- Available during data collection.

Exclusive Criteria:
- Primigravida mothers with any medical condition such as pregnancy induced hypertension, gestational diabetes mellitus etc
- Who are not willing to participate
- Multi gravida mothers.
- Fetal complication.

Materials and Methods:

Research approach: An evaluate approach was considered as the appropriate measure to evaluate theon level of pain among primigravida mothers.
Study design: Quasi-experimental Pre-test & Post-test one group design.
Research setting: The study was conducted in labour room of hospital in Mumbai on Primigravida mothers in first stage of labour pain.
Sample size:The sample consisted of 100 primigravida mothers with full term of gestation.
Sampling technique: Non-probability purposive sampling technique was used to select the sample.

Development of Tool: - Observational Check List
Section I: Socio Demographic Variables
Section II: Facial Pain Scale Chart 1 To 10
Section III: Who Modified Partograph
Section IV: Labour Outcome

Plan for Data Collection Process:
1. Formal permission will be obtain from concerned authority (NIMSUniversity) to conduct study.
2. Obtain permission from Dean /Superintendent of respective hospital to conduct the datacollection.
3. Informed consent of the subject /sample will be taken prior to the study.
4. Select the sample through non- probability purposive sampling technique.
5. Explain about purpose of study and take written consent from sample.

A quantitative research approach with a pretest and posttestone group design was followed to do the study. A total of 100 samples were collected through non – probability purposive sampling technique. The criteria for sample collection were primigravida mothers having 36-42 weeks of gestation, 1-7 centimeters of cervical dilation in the first stage of labour, positioning given for 15 minutes. To collect the data self structured observation check list was used to identify level of pain in the first stage of labour. After thematernal positions the level of pain was assessed based on the progress of cervical dilation in centimeters, cervical effacement in percentage, descent of the presenting part, intensity of uterine contraction, duration of first ,second and third stage of labour and mode of delivery.

Positioning Was Done In Following Steps:
1. Explain the purposes and procedure to the primi gravida mother.
2. Allow the primigravida mother to stand in erect position.
3.Standing and walking in upright and mobile position
4. Allow the patient to walk with appropriate gait for10 steps forward and backward for 5 min.
5. Sitting on firm chair or bed comfortable with pillows.
6. Sitting in upright position for 5min.

7. Make the woman to sit on knees for 5 min.
8. Make to sit in comfortable position.
9.Explain to take long breath during the contraction.

Results:

Table 1: Comparison of Facial Pain in Experimental Group.

Facial Pain Scale	Experimental Group		Chi-square	p-value	Whether significant at 0.05
	Pre-test	Post-test			
a) No pain -(o)	31	1	38.86	<0.001	Yes
b) Mild pain- (1-3)	57	68			
c) Moderate to severe- (4-6)	12	27			
d) Very severe -(7-9)	0	4			
e) Worst pain - (10)	0	0			

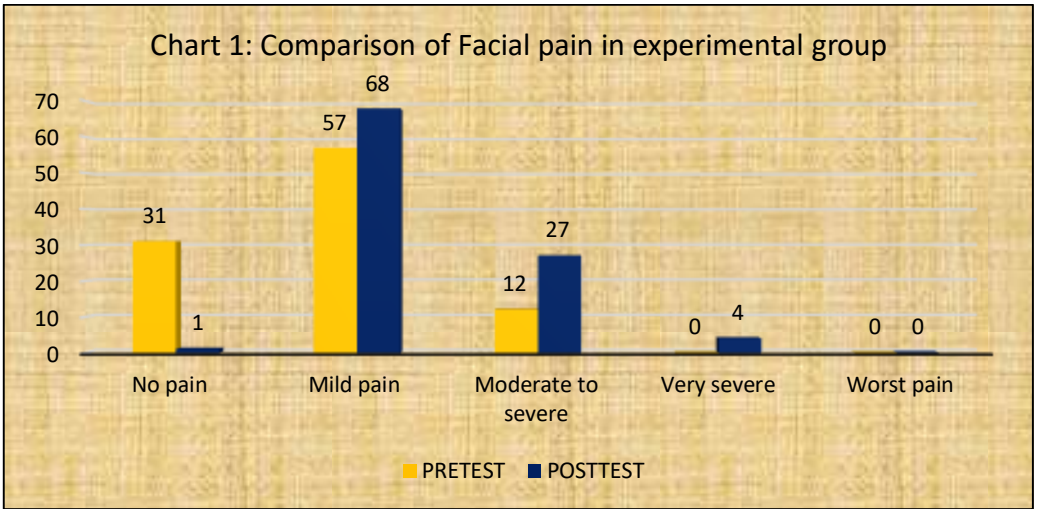


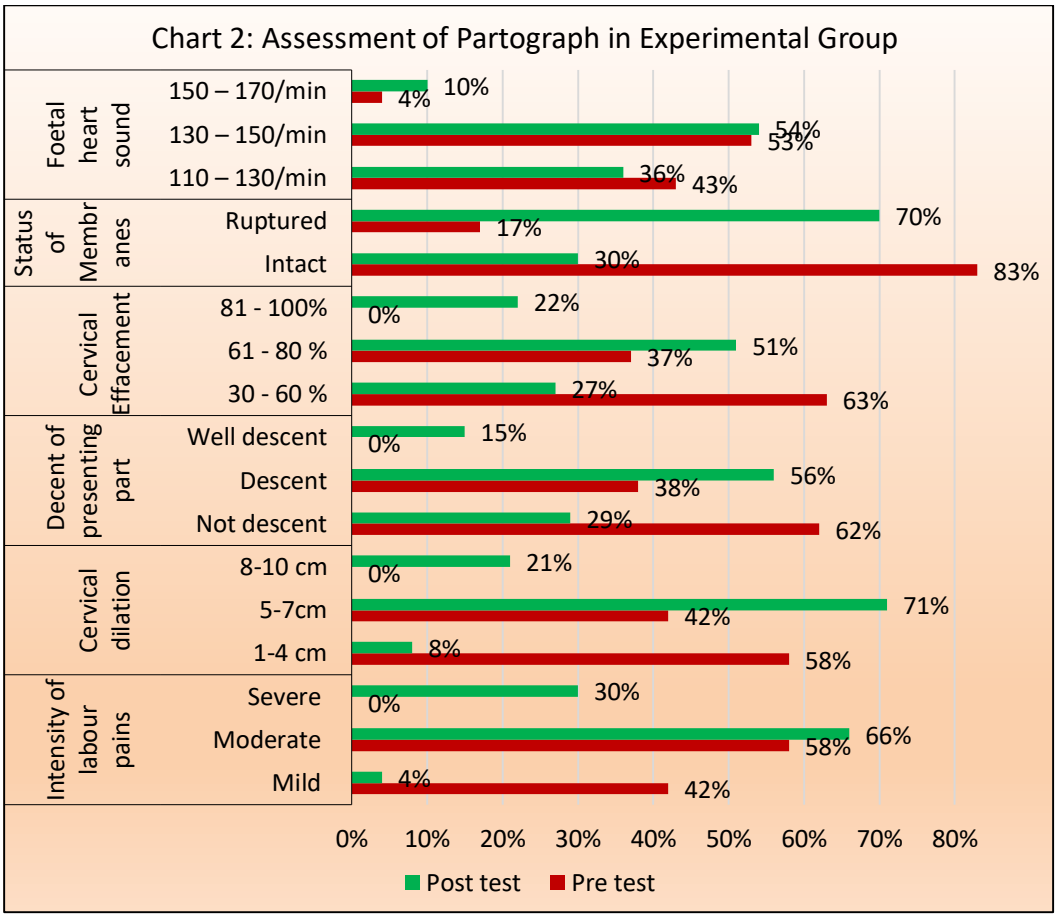
Table 1 and figure 1 illustrates the comparison of pre test and post test facial pain among experimental group prima gravida mothers in hospital of Mumbai.

It shows that there is astatistical significant difference between pre test and post test facial pain readings. The calculated chisquare value of 38.86 is more than the chisquare table value 7.81 for a df=3. Hence it can be said that there is a significant change in facial pain scale before and after intervention of maternal positions on level of pain among prima gravid mothers. Hence alternate hypothesis (H_1)is accepted for facial pain scale comparison in experimental group.

Table 2: Assessment of Partograph in Experimental Group.

WHO Modified Partograph	Experimental Group		Chi-square value	p-value	Whether significant at 0.05 level
	Pre-test	Post-test			
1) Intensity of labour pains			61.98	<0.001	Yes
a) Mild	42	4			
b) Moderate	58	66			

c) Severe	0	30			
2) Cervical dilation					
a) 1-4 cm	58	8	66.32	<0.001	Yes
b) 5-7cm	42	71			
c) 8-10 cm	0	21			
3) Decent of presenting part					
a) Not descent	62	29	30.4	<0.001	Yes
b) Descent	38	56			
c) Well descent	0	15			
4) Cervical Effacement					
a) 30 - 60 %	63	27	38.63	<0.001	Yes
b) 61 - 80 %	37	51			
c) 81 - 100%	0	22			
5) Status of Membranes					
a) Intact	83	30	57.62	<0.001	Yes
b) Ruptured	17	70			
6) Fetal heart sound					
a) 110 – 130/min	43	36	3.55	0.314	No
b) 130 – 150/min	53	54			
c) 150 – 170/min	4	10			



Above table 2 and chart 2 assesses theWHO modified partograph parameters by comparing pre test and post test results among experimental group prima gravid mothers. It is seen that partograph parameters such as Intensity of labour pains, Cervical dilation, Descent of presenting part, Cervical effacementand Status of membranes are found to be significant at 0.05 levels as the calculated chi square values for the above parameters are more than their respective chi square table values. Whereas the partograph parameterof Fetal heart sound is found to be not significant at 0.05 levels as the calculated chi square values is less than its respective chi square table values. Thusstatistically there is a significant difference between pretest and posttestPartograph parameters within experimental group like Intensity of labour pains, cervical dilation, Descent of presenting part, cervical effacement and Status of membranes. Hence alternate hypothesis (H_1) is accepted for them. Whereas null hypothesis (H_0) is accepted for the Partograph parameter Fetal heart sound among experimental group prima gravid mothers.

Discussion:

The current study aimed to assess the influence of maternal positions during the first stage of labor on labor progress of primi gravid mothers. This aim was achieved through the current study findings which revealed faster progress of labor among the maternalpositions during the first stage of labor compared to those in the post test group.

Another study was conducted by Lawrence & Lewis L, et al (2013) on the effect of different movements and positions during 1st stage of labor in total duration, mode of delivery and maternal and fetal outcome. It supports ambulation in the first stage of labor can decrease the labor duration, cesarean delivery, use of epidural, and negative effects on mothers and baby's wellbeing.[6]

The study was supported by Ben RegayaL that the upright position helps in reducing the first stage of labor duration, the intensity of pain and the use of oxytocin. The mode of delivery by use of the instrument and cesarean section also reduced. The upright position helped to improve the maternal and the fetal outcome. [7]

Recommendation:

- Maternal and child health unit should be motivated to utilize maternal positions as a non- pharmacological 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.
- Non pharmacological pain management should be emphasized in nursing curriculum.
- Training programs for the nurses can be given on complementary therapies.

Conclusion:

Position changes and ambulation are recommended to promote labor progress by encouraging fetal descent and optimal fetal presentation. In addition to the physical and hormonal benefits, movement and more precisely the choice of movement, enhances the mother's sense of self-efficacy and control while reducing her perception of pain, by increasing endogenous oxytocin, providing regulation to beta-endorphins and reducing excessive and inappropriate epinephrine-norepinephrine levels produced by stress.

It was evident that positioning during the first stage was effective in improving labor outcome, helps in early descent of the fetus, increases coordination of uterine contraction intensity and frequency among prime mothers.

Authors Contributions:

This work was carried out in collaboration among all authors. All authors read and approval the final manuscript.

References:

1. Edmonds K. Dewhurst's Textbook of Obstetrics and Gynecology. 8th ed. preterm Labor. 2015.
2. Simkin, P. P., & O'Hara, M. (2002). Nonpharmacologic relief of pain during labor: Systematic reviews of five methods. American Journal of Obstetrics and Gynecology, 186(5), S131- S159.
3. Romano, A. M., & Lothian, J. A. (2008). Promoting, protecting and supporting normal birth: A look at the evidence. Journal of Obstetric, Gynecologic & Neonatal Nursing, 37(1), 94- 105.
4. Afaf Mohamed MohamedEmam et al. (2018) Upright versus recumbent position during first stage of labor among primipara women on labor outcomes. Journal of Nursing Education and Practice, Vol. 8 (7).
5. Hodnett ED, Gates S, Hofmeyr GJ, et al. Continuous support for women during childbirth. Cochrane Database of Systematic Reviews. 2012. PMid:23076901
6. Lawrence A1, Lewis L, Hofmeyr GJ, Dowswell T, Styles C., Maternal positions and mobility during first stage labour, Cochrane Database Syst Rev 2009; 15;(2): CD003934.
7. Ben Regaya L, Fatnassi R, Khlifi A, Fékih M, Kebaili S, Soltan K, Khairi H, Hidar S. Role of deambulation during labour: A prospective randomized study. J GynecolObstet Biol Reprod (Paris). 2010 Dec;39(8):656-62.