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Effect of Ambulation on Labour Outcome during the first stage of Labour Among Primi Mothers

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Abstract: Background: Labor is one of the most important events in every women's life. A healthy mother and a healthy baby without complication is everyone's demand. Women experience many discomforts during labor and childbirth. Pregnant women commonly worry about pain, duration and process of labor.

Objective: To assess and compare the effect of ambulation on labor outcomes during the first stage of labor.

Methods: A quantitative research approach with only a posttest control group design was taken to conduct the study. A total of 60 Prime mothers having 37-42 weeks of gestation with single vertex presentation and spontaneous onset of labor in 1-2 centimeters of cervical dilatation (latent phase) were taken by purposive sampling technique. The test group was assigned to walk for two hours during the first stage of labor. The post-test was followed by assessing the progress of labour with the help of a Structured Observational checklist.

Results: The result of the study shows that mean & SD 17.16± 2.8 on labor outcome in the experiment group and the mean ± SD (13.5 ± 4.3) in the control group was statistically significant as evident from t = 3.91 at df 58 and p-value was 0.0001. It shows that ambulation has positive effects on labour outcomes.

Conclusion: Hence it was evident that ambulation 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. Based on the study findings, the recommendations were made for a study on a large sample and different settings.

Keywords: Ambulation, Labor Outcome, First Stage of Labor and Prime Mother.

Introduction

Pregnancy and childbirth are important moments in the lives of pregnant women and their families. Supporting women and their families during pregnancy and childbirth has a great impact on their health. Continuous labor support offers multiple benefits for mothers and

infants. The caregiver should be tactful, sensitive and respectful to the parturient women so she can give birth with dignity. The mothers should be encouraged to walk during the first - stage of labor to reduce the duration of labor with comfort as well as satisfaction[1]. Pregnant women commonly worry about pain, duration and process of labor[2]. The effect of upright maternal posture and ambulation during the first stage of labor is reported to decrease labour duration and improved fetal outcome. In different literature, it is found that mobility during labor provided great maternal comfort and tolerability to labor which resulted in decreased use of anesthesia and analgesia[3]. In the immediate post-operative period, the woman has a chance of uterine atone, excessive vaginal bleeding or incision bleeding and oliguria. The intervention of early ambulation prevents such types of complication[4]. Ambulation can reduce many complications by enhancing blood circulation, respiration, gastric motility, decrease rate of thrombophlebitis, and improve strength for physical work. Ambulation during 1st stage of labour can prevent later complications in life[5]. Through the literature review on freedom of moments in labor appears to facilitate the progress of labor and enhance childbirth satisfaction.

Statement of the problem

Effect of ambulation on labour outcome during the 1st stage of labour among primi mothers admitted in a selected hospital of Bhubaneswar.

Objectives

1. To assess the effect of ambulation on labor outcome in the first stage of labor.
2. To compare the effect of ambulation on labor outcome in the first stage of labor between experiment group and control group.
3. To find out the association of labor outcome in selected background data.

Material and methods:

A quantitative research approach with a post-test only design was followed to do the study. A total of sixty samples having thirty in each group were collected through purposive sampling technique. The criteria for sample collection were Prime mothers having 37-42 weeks of gestation, with single vertex presentation, spontaneous onset of labor in 1-2 centimeters of cervical dilatation in the latent phase and admitted in the labor ward of IMS and SUM Hospital, Bhubaneswar. The investigator assigned the samples to walk for 2 hours on a day in 15 min interval with 10 min duration in two hundred miter distance in the postnatal word. To collect the data self-structured Observation check-list was used to identify labor outcomes in the first stage of labor. After the intervention the labour outcome was assessed based on the progress of cervical dilatation in centimeters, cervical effacement in percentage, the interval of uterine contraction in minute, duration of uterine contraction in second, descent of the presenting part, duration of 1st stage of labor and delivery mode by pelvic examination, observation and record analysis (Table-3). The validity and reliability of the tool were established. The data were analyzed by descriptive and inferential statistics.

Result:

The distribution of samples represents that 54% of mothers in the experiment group and 60% in the control group were between the age of 19-25 years. Again, it also observed that 46% of

mothers in the test group and 40% of mothers in the pilot group were between age 26-30. Further, 33% of mothers in the experiment group and 47% of mothers in the control group were between 37-38 weeks of gestation. At the same time, 47% of mothers in the experiment group and 40% in the control group had gestation between 39-40 weeks. About 20% of in test group and 13% in the control group mothers were between 41-42 weeks of gestation.
Cervical dilatation in 83.3% postnatal mothers in the experiment group and 56.6% in the comparison group were well progressed whereas only 16.6% in the test group and 26.6% in the control group were slow progressed. Similarly, 90% of mothers in the treatment group and 50% in the control group had 100% cervical effacement. Only 10% in the experiment group and 40% in the pilot group had cervical effacement between 70-90%. Distribution of sample on uterine contraction in minute represents that 50% of mothers in the experiment group and 46.6% in the non-experiment group were between 16-20 min interval. A uterine contraction duration of 10-15 min interval 46.6% in the experiment group and 20% in non-experiment group. Only 3.3% in the experiment group and 33.3% in the non-experiment group had of uterine contraction duration of 21-25 min interval.

Duration of uterine contraction represents that almost 50% of mothers in both the group were between duration of uterine contraction. A duration of 15-20 second 46.6 % in the experiment group and 16.6% in the non-experiment group had 25-30 second. Further 3.3% in the experiment group and 26.6% in the non-experiment group were between 5-10 second duration of uterine contraction. Descent of the presenting part represents that the maximum number of samples i.e. 93.3% mothers in the test group and 46.65 in the non-experiment group had adequately descent. And 6.6% in the experiment group and 53.3% in the control group had inadequately descent.

Distribution of study subjects on the duration of the first stage of labor represents that maximum number of samples i.e. 53.3% in experiment group and 43.3% in the non-experiment group were between 12-14 hours duration of the first stage of labor, 30% mothers in experiment group were between 10-11 hrs duration and 16.6 in experiment group and 56.6% in the non-experiment group were between 15hours and more. Distribution of study subjects on the mode of delivery represents that the maximum number of samples i.e. 70% mothers in experiment group and 43.3% in the control group were vaginal delivery and 6.6% in experiment group and 50% in the non-experiment group were cesarean section delivery and 23.3% in experiment group and 6% in the non-experiment group were Ventus delivery.

A comparison of labor outcome between ‘experiment and control group’ reveals that the mean and SD score in the experiment group having 17.17±2.8 followed by non-experiment group 13.5±4.3 was statistically significant as evident from ‘t’ = 3.9 with df at 58 and p-value was 0.001. So, there was a significant difference in labor outcomes among prime mothers between the two groups (Table-1).

Association on labor outcome in selected demographic variables between “experiment and control group” reveals that there was no association on labor outcome in selected demographic variables as evident from the chi-square (x^2) values were 0.24 and 1.2 for df 2 at 0.05 level of significance for age and gestational age of sample respectively (Table-2).

Discussion

The present study reveals that there was a statistically significant difference between labor outcome with mean ± SD (17.17±2.8) of the experiment group and 13.5±4.3 in non-experiment group having t = 3.9 at df = 58 and the p-value was 0.0001 and there was no association on labor outcome in selected demographic variables. As the calculated chi-square values found to be 0.24 at df = 2, 'p' value-0.88 and 1.2 at df=2 & 'p' value-0.54 respectively.

A similar study conducted by V Savitha, Nayak S. and Poul S. to assess the comparison of the duration of labor among prime mothers. They observed that the duration of the first stage of labor between the experiment and the non-experiment group was a significant difference. Whereas the overall outcome of labor between the two groups has no significant difference. In the treatment group, the intensity of the pain (6.8) was less than the non-experiment group.

To an association, between the intensity of labor pain with demographic variables was not significant. Again it also shows 40% in the experiment group and 60% in the comparison group experienced severe pain intensity. Both oxytocin and cerviprime gel were used for augmentation of labour and 60% of mothers had undergone normal vaginal delivery in both the groups [6,9].

Again, it was supported by Ben Regaya L, 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].

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[8]. Nikolov A, et al found that fetal oxygen saturation depends on the position of the mother during delivery. Further, it tells that the fetal oxygen level was less in the supine position[10].

Conclusion

From the above study, it was concluded that ambulation has a significant effect on the 1st stage of labor outcome in prime mothers**.** Ambulation helps for early descent of the fetus by gravity influence during labor, increases uterine contraction intensity and frequency, helps in the progression of active labor and improving labor outcome. It is cost-effective and reduced medical interventions during labor.

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Ethical statement: This study was approved by the institutional ethical committee and the prior consent of the patient of the patients was taken before the collection of samples.

Conflict of interest: The author declares that there was no conflict of interest.

References:

[1] Klaus, M, Kennell, J, Robertson, S, Sosa, R. Effects of social support during parturitionOT6 on maternal and infant morbidity. BMJ 1986; 293:585–587

[2] Lubra A. Labour pain, Experiences, and intensity. Int J Nursing Pract 2005;14: 33-35

[3] Susan OA. Maternity newborn and women's health nursing (1st edition) Lippincott Williams and Wilkins publishers 2008(March 20) p-230-232.

[4] Van Stralin KJ, Terveer EM. The tortuous history of implementation of early ambulation after cesarean section. Rsm J JRSOC Med : 2007; 2: 90-96
[5] Brunner and Siddhartha. The textbook for medical surgical .11th edition, 2008: volume 1, published by welters Kluwer (India), Pvt pp-537**.**
[6] Savita V, Nayak S, Poul S.Effect of ambulation during the first stage of labour on labour pain and outcome of labour among prime mothers in a selected hospital, Mangalore. J South Asian Feder Obst &Gyane 2013;5(1):1-3.
[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 Gynecol Obstet Biol Reprod (Paris). 2010 Dec;39(8):656-62.
[8] 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.
[9] Christine L Roberts CL1, Algert CS, Olive Eon Impact of the first-stage ambulation on the mode of delivery among women with epidural analgesia. Claude d'Ercole, MD: 2004;44(6):489-918
[10] Nikolov A, Dimitrov A Kovachev I Akusherstvo I Ginekologiia. Influence of maternal position during delivery of fetal oxygen saturation Obstet Gynecol. 1996;88(5):797-800.

Table-1: Comparison on labor outcome between experiment and control group by mean SD, unpaired t-test and p-value. N-60

Group	Mean	SD	Unpaired t-test	p-value
Experiment	17.16667	2.8049	3.9034	0.000113***
Control group	13.5	4.3131		

*p≤0.05, statistically significant.

Table-2: Association on labor outcome in selected demographic variables between experiment and control group". N-60

Demographic Variables	chi-square value	df	P-value
Age	0.24	2	0.88 NS
Gestational age	1.2	2	0.54 NS

(p≤0.05l, level of significance)

Table-3: Scoring of self-structure observational checklist for labour outcome

Items for labour outcome	**Score**		
	3	**2**	**1**
Cervical dilation in cm	Well progressed (8-10 cm)	Progressed slowly (5-7 cm)	Not progressed (1-4cm)
Cervical effacement	100%effaced	61-90%effaced	30-60% effaced

Interval of uterine contraction in min	10-15 min	16-20 min	21-25 min
Duration of uterine contraction in second	25-30second	20-15second	5-10second
Descent of the presenting part	well descent	Descent	Not descent
Duration of the first stage of labor	10-11hrs	12-14 hrs	15 hrs and more
Type of delivery	Normal Vaginal delivery	Instrumental delivery	Operative delivery