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A study to assess the effect of ambulation in reduction of labour pain among pregnant women in the regional hospital Kullu. (HP)

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Abstract

Aim: To assess the effect of ambulation in reduction of labour pain among pregnant women during the first stage of labour at Regional hospital Kullu. The study was conducted in Regional Hospital, Kullu, HP. Quasi experimental randomized control group design was used. The study comprised 40 pregnant women, with first stage of labour. 20 in Experimental group and 20 in Control group who fulfilled the inclusion criteria by using purposive Sampling Technique. Visual analogue scale was used to assess the reduction of labour pain among pregnant women in pre test and post test. After pre test ambulation therapy is given to the experimental group for 15 minutes and 30 minutes rest will continue up to 4-6 hours and post test was done. Data analysis was done by using descriptive and inferential statistics.

Results: Mean pre-test pain score in control and experimental group was 6.650 ± 2.3005 and 6.100 ± 2.0235 respectively which was not significantly different. Mean post-test score was 5.80 ± 2.0157 and 3.450 ± 1.6376 in control and experimental group respectively which was significantly different ($P < 0.05$). Test score after ambulation therapy was significantly lower (3.450 ± 1.6376) when compared with test score before ambulation therapy (6.100 ± 2.0235). The P value was highly significant ($P < 0.0001$).

Conclusion: The present study shows that ambulation therapy is effective in reducing labour pain in pregnant women.

Keywords: Labour pain, visual analogue scale, ambulation, pregnant women

Introduction

Ambulation or freedom of movement is important in making the birth of your baby easier. It is the best way for you to use gravity to help your baby come down and to increase the size and shape of your pelvis. It allows you to respond to pain in an active way, and it may speed up the labor process [1]. Expecting a baby is definitely one of the most joyful experiences in women's life. The child birth for a mother is an important contribution to parenthood and is highly personal and individual experience. Labour process starts with the onset of regular uterine activity associated with effacement and dilatation of the cervix and descent of the presenting part through the cervix [2].

Labour pain relief is an important aspect of women's health that has been historically neglected [3]. The child bearing women experiences many demanding sensation and discomfort during labor and child birth pregnant women commonly worry about the pain, duration and process of labour [4]. Ambulation or upright positions during labour have a number of physiological benefits, including the effect of gravity and increased pelvic dimensions, which may decrease the need for instrumental deliveries [5]. Restricting women's movement may result in worse birth outcomes and may decrease women's satisfaction with their birth experiences. Activity provides distraction from discomfort, a sense of greater personal freedom, and a chance to release the muscle tension that can increase pain. In fact, women who use movement in labor report that it is an effective method of relieving pain [6]. Management of pain in labour has a beneficial effect on both mother and fetus. The methods used for the management of labour pain is divided into two groups: pharmacological and non-pharmacological methods [7].

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The pharmacological methods include analgesia, which reduces or decreases awareness of pain and anesthesia which causes partial or complete loss of sensation, but such drugs has many adverse effects. They may cause maternal hypotension that decreases blood flow to the placenta resulting in foetal hypoxia and acidosis. The non-pharmacological methods include counter pressure, therapeutic touch, walking, rocking, application of heat and cold, transcutaneous electrical nerve stimulation (TENS), showers, breathing techniques, listening to music, imaginary, childbirth education and reflexology [8]. 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 [9]. However, when laboring women are encouraged to move and do not have restrictions, they walk and change position frequently [10]. 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 [11].

Materials and methods

In order to evaluate the effectiveness of ambulation on first stage of labour among pregnant women. Quasi experimental non randomized control group design was adopted. The study was conducted in Regional Hospital, Kullu, HP. The investigator selected 40 samples, 20 in experimental group and 20 in control group who fulfilled the inclusion criteria by using purposive sampling technique. Prior to data collection procedure, researcher gave self introduction to each pregnant woman and explained the purpose of the study. Structured interview was used to collect demographic variables; Visual analogue pain intensity scale was used to assess the reduction of labour pain. The collected data were analyzed and interpreted by using descriptive and inferential Statistics Data Analysis & Interpretation Selection And Development Of Tools Section-A: The structured interview schedule was used to collect demographic variables such as age, education, body built, daily activity, gravid, gestational period, cervical dilatation, membrane. Section-B: It consists of Visual analogue Numerical pain intensity Scale was to assess reduction of labour pain among pregnant women. Scoring procedure Section II: Pain was assessed by using 0-10 visual analogue numerical rating scale in which 0 represented absence of pain and mild pain (1-3), moderate pain (4-6) severe pain (7-10).

Results

Table 1: Frequency and percentage distribution of pregnant women according to their selected demographic variables, n=40

| S. No | | Control Group (n=20) | | Experimental Group (n=20) | |
|-------|---------------------------------|----------------------|-----|---------------------------|-----|
| 1 | Age in Years | | | | |
| | 18-22 | 10 | 50 | 12 | 60 |
| | 23-27 | 5 | 25 | 6 | 30 |
| | 28-33 | 5 | 25 | 2 | 10 |
| 2 | Education | | | | |
| | Illiterate | - | - | 2 | 10 |
| | Primary | 14 | 70 | 13 | 65 |
| | graduate | 5 | 25 | 4 | 20 |
| | Above Graduate | 1 | 5 | 1 | 5 |
| 3 | Body Built | | | | |
| | Thin | 12 | 60 | 14 | 70 |
| | Moderate | 8 | 40 | 6 | 30 |
| | Obese | - | - | - | - |
| 4 | Daily Activity | | | | |
| | Mild | 6 | 30 | 5 | 25 |
| | Sedentary | 3 | 15 | 2 | 10 |
| | Heavy | 11 | 55 | 13 | 65 |
| 5 | Gravida | | | | |
| | PrimiGravida | 20 | 100 | 20 | 100 |
| | Multi Gravida | - | - | - | - |
| 6 | Gestaional period | | | | |
| | 8 Month | - | - | - | - |
| | 9Month | 20 | 100 | 20 | 100 |
| | >9Month | - | - | - | - |
| 7 | Cervical Dilatation | | | | |
| | Latent Phase | 20 | 100 | 20 | 100 |
| | Active Phase | - | - | - | - |
| | Transitional Phase | - | - | - | - |
| 8 | Chorio amniotic membrane | | | | |
| | Intact | - | - | - | - |
| | Ruptured | 20 | 100 | 20 | 100 |

Table 1 shows that in control group, 10(50%) belongs to the age group of 18-22years, 14(70%) were had primary education, 12(60%) were thin body built, 11(55%) of them were doing heavy work, 20(100%) are primigravida

mothers, 20(100%) were 9months gestational period, 20(100%) latent phase of cervical dilatation and 20(100%) were membrane was ruptured.

In experimental group, 12(60%) of them belong to the age group of 18-22 years, 13(65%) were had primary education, 14(70%) were thin body built, 13(65%) of them were doing heavy work, 20(100%) are primigravida mothers, 20(100%)

were 9 months gestational period, 20 (100%) latent phase of cervical dilatation and 20(100%) were membrane was ruptured.

Table 2: Frequency and percentage distribution of pre & post-test in reduction of labour pain in control and experimental

| S. No | Level of pain | Control Group (n=20) | | | | Experimental Group (n=20) | | | |
|-------|---------------|----------------------|----|-----------|----|---------------------------|----|-----------|----|
| | | Pretest | | Post test | | Pretest | | Post test | |
| 1 | No pain | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 2 | Mild Pain | 4 | 20 | 6 | 30 | 4 | 20 | 4 | 20 |
| 3 | Moderate pain | 6 | 30 | 13 | 65 | 11 | 55 | 15 | 75 |
| 4 | Severe pain | 10 | 50 | 1 | 5 | 5 | 25 | 0 | 0 |

Table 2 depicts in control group, most of the pregnant women 10(50%) had severe pain followed by moderate pain 6(30%) and mild pain 4(20%). In experimental group, most of pregnant women were in "moderate pain" group 11(55%).

It was followed by severe pain 5 (25%) and mild pain 4(20%). There was no pregnant woman in "no pain" group in both groups.

Table 3: Comparison of mean, Standard deviation and 't' value score between experimental and control group on labour pain pregnant women, n=20

| Labour pain | Pre Test (Mean & SD) | Post Test (Mean & SD) |
|--------------------|----------------------|-----------------------|
| Control Group | 6.650±2.300 | 5.80±2.0157 |
| Experimental group | 6.100±2.023 | 3.450±1.6376* |
| T score | 0.803 | 4.047 |
| P value | 0.427 | <0.0001 |

* Significant at $p < 0.001$ level

Table 3 depicts shows that there was no significant difference ($P > 0.05$) =between pre-test score in control (6.650±2.3005) and experimental group (6.100±2.0235). However; post-test pain score was significantly lower

($P < 0.0001$) in experimental group (3.450±1.6376) when compared with post-test score in control group (5.80±2.0157).

Table 4: Association of reduction of labour pain among pregnant women in control group and experimental group in pre and post test, n=40

| Demographic variables | Control Group (n=20) | | | | Experimental Group (n=20) | | | |
|------------------------|----------------------|---------|-----------|---------|---------------------------|---------|-----------|---------|
| | Pre-Test | | Post-test | | Pre-Test | | Post-test | |
| | χ^2 | p value | χ^2 | p value | χ^2 | p value | χ^2 | p value |
| 1. Age in years | 29.33 | 0.009 | 16.67 | 0.274 | 16.75 | 0.270 | 13.77 | 0.615 |
| 2. Educational status | 15.73 | 0.330 | 14.95 | 0.381 | 14.05 | 0.867 | 18.83 | 0.761 |
| 3. Body Built | 17.92 | 0.012 | 9.93 | 0.193 | 7.63 | 0.336 | 10.02 | 0.264 |
| 4. Daily Activity | 24.67 | 0.038 | 20.50 | 0.115 | 15.22 | 0.363 | 17.56 | 0.350 |
| 5. Gravida | - | - | - | - | - | - | - | - |
| 6. Gestational period | - | - | - | - | - | - | - | - |
| 7. Cervical dilatation | - | - | - | - | - | - | - | - |
| 8. Membrane | - | - | - | - | - | - | - | - |

From the table 4 it was observed that between the control and experimental group there was high statistical significant difference found in reduction of labour pain with a demographic variables such as age, education, body built, daily activity ($p < 0.05$).

Discussion

Ambulation & mobility are known to positively influence the women comfort level in labour, help her better cope up with pain and enhance here sense of control [12]. Table 3 depicts that in control group, labour pain score was 5.80[SD=2.0157], where as in control experimental group 3.450[1.637] & 't' value for level of pain was 4.047 and for duration of first stage of labour was 12.349. So, it was concluded that the ambulation was effective in reducing the labour pain. Due to ambulation pain was reduced. There was high statistical significance at $p < 0.0001$ level. The effect of ambulation was supported by the findings in a similar study which was conducted in which two hundred mothers were

randomly assigned to one of two groups: first group (100 parturient) authorized to ambulate and second group (100 parturient) confined to bed in dorsal or lateral recumbence. The results of the study showed that ambulation reduces (for about 34%) the duration of the first stage of labour significantly ($P < 0.0001$) [2].

From the table 4, it was observed that between the control and experimental group there was high statistical significant difference found in reduction of labour pain with a demographic variables such as age, education, body built, daily activity ($p < 0.05$). In another supported study conducted in two hundred and twenty one women with uncomplicated pregnancies, were randomly divided into two groups, ambulatory and non-ambulatory. The result of the study showed that there was significant difference in labour duration (2.89+/-1.83hr vs.3.94+/-2.17hr; $P = 0.001$). This study concluded that walking shortens the labour duration [13].

Conclusion

Labour being the end of the long expectation of pregnancy, marks the beginning of the extra uterine life of the newborn. To mark a good beginning, the process and experience of labour should not be a misery for the mother. There are a variety of discomforts that a woman will experience during labour. Reducing these discomforts is an important part of good nursing care ^[14]. Non- pharmacologic methods like walking and birthing ball helps to decrease these comfort it is reduce the labour pain. It will enhance the mother to deliver the baby normally. Nurses should play a vital role in reduction labour pain with ambulation and other non-pharmacological methods such as birth ball, reflexology, musical therapy, hydrotherapy ^[15]. Maternal and child health unit should be motivated to utilize non pharmacological methods to reduce labour pain.

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