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A Study to Assess the Effectiveness of - Circular Hip Massage on First Stage Labour Pain among Primigravida Mothers in PPK Hospital at Kanyakumari District

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Abstract: ***The study was undertaken to assess the effectiveness of circular hip massage on first stage labour pain among primigravida mothers in PPK hospital at Kanyakumari district. The overall aim of this research is to assess the effect of Circular Hip Massage on first stage labour pain among primigravida mothers. The researcher adopted a quantitative research approach with Quasi - Experimental, Pretest Posttest control group design using purposive sampling technique.60 primigravida mothers who fulfilled the inclusive criteria were selected. Pretest and Post test was done for both experimental and control group with Modified McGill Pain Questionnaires and in experimental group Circular Hip Massage was given for 30 mothers before posttest. The collected data were analyzed based on above mentioned objective using the descriptive and inferential statistics. The result shows that the Circular Hip Massage was effective in reducing the level of first stage labour pain among primigravida mothers. It was found that there was a significant reduction in level of labour pain among primigravida mothers after Circular Hip Massage. The paired't' test value was found to be 22.29, df =29, P<0.05. There was no association between the posttest level of labour pain with selected demographic variables in experimental group and control grou. Pain during labour is caused by contractions of the muscles of the uterus and by pressure on the cervix and it is more severe during first stage of labour. The results of the study concluded that the Circular Hip Massage was effective and it has no side effects and also it is a safe method in reducing the level of first stage labour pain.***

Keywords: circular hip massage, labour pain, primigravida mothers, first stage labour, pain reduction

1. Introduction

"Labour is the closets a women may ever to be the threshold between life and death while she is still very much alive". - Anne Frye.

Pregnancy in women is a unique exciting experience. It shows the women's wonderful creative and nurturing power. Child birth is one of the most marvelous and memorable segments in a woman's life. Feeling of confidence and a sense of emotional wellbeing is needed for a successful child birth.

Labour is a physiological process during which the products of conception (i. e., the fetus, membranes, umbilical cord, and placenta) are expelled outside of the uterus. Labour is achieved with changes in the biochemical connective tissue and with gradual effacement and dilatation of the uterine cervix, as a result of rhythmic uterine contractions of sufficient frequency, intensity, and duration. (Aaron B Caughey., 2009).

According to WHO, Normal labour is defined as low risk throughout, spontaneous in onset with the fetus presenting by vertex, culminating in the mother and infant in good condition following birth. Pain during labour is caused by contractions of the muscles of the uterus and pressure by the presenting part over the cervix. This pain may be felt as cramping in the abdomen, groin and back as well as an achy feeling. Some women experience pain in the thighs as well.

Labour pain is a major damper in the joy of having a baby. Labour pains are a fact of life that cannot be avoided. Although labour is often thought as one of the most painful events in human experience, women experience labour pain differently.

During labor pain, fear and anxiety can worsen mother labour process. They cause the release of stress hormones i. e. catecholamine, epinephrine, etc. which place in a hyper - aroused state that makes mother hypersensitive to pain. Catecholamines increase heart rate, increase blood pressure, slows down digestion, and blood supply away from internal organs and towards skeletal muscles and skin. All of these things in excess can cause complications in labor. Fear also leads to muscular tension, which increases mother's experience of pain. Using relaxation techniques can help to reduce the muscle tension. The concept of the fear - tension - pain triangle has arisen, when fear increases, tension increases, which then increase pain. The increased pain increases fear and hence it affects the labour process. (KeaneCM., 2004)

Labour pain is caused due to myometrial hypoxia during contractions, stretching of peritoneum over the fundus, stretching of cervix during dilatation and compression of nerve ganglions. Pain of cervical dilatation and stretching is referred to the back through the sacral plexus (Dutta. D. C., 2011).

The factors which influence the labour process are the contraction of uterus, condition of mother both physically and physiologically, intensity of pain, Emotional and

psychological issues from past can influence mother attitude toward pain, and mother ability to cope with labor pain. Reduced oxygen to uterine Muscle, Muscle tension, fear and anxiety make mother to pain. Thus, anything that can be done during labor to help the mother feel calm, relaxed, and safe can help to minimize the pain that mother's experience in labor. (Hilbers and Gennaro., 1996).

The first stage of labour begins with the painful contraction of uterus and ends with full dilatation of cervix. Even though uterine contractions are common throughout pregnancy and it is irregular and infrequent but when the labour begins the mother may experience regular, intermittent, powerful uterine contractions associated with pain during labour.

Massage is used to block the transmission of signals to the brain and also helps in the release of serotonin or endorphins. This inhibits the transmission of noxious nerve signals to the brain.

Circular hip massage is a cost-effective technique to reduce the severity of pain during first stage of labour in which upward and downward circular strokes are given on either side of the spine in the sacral region with controlled breathing. It stimulates the local release of chemicals which are responsible for relaxation of soft tissue and helps to reduce the level of labour pain.

The outcome of the Circular Hip Massage promote relaxation, relieve stress and anxiety, Helps to relieve pain, Improves blood circulation, Helps in stimulating muscles, Acts like sedative, Helps to alleviate depression. This will not only relax from stress and tension but will also give a general sense of well being. (Snyder, Benner., 2006)

Labour pain is described as the worst unbearable pain and a dangcrous event in a woman's life. But child birth can be a good experience with effective obstetric care and efficient nursing interventions in reducing the level of pain during labour.

An ideal method should be applied in order to ease out pain, stress and anxiety for to improve labour process. An ideal measure should meet the following criteria having the least possible side effects for mother and fetus, having permanent effect, could be administered easily, having appropriate sedative effect without interfering the uterine contraction. Hence circular hip massage during labour would change the delivery process into desirable experience by decreasing pain. Relieving stress and anxiety and providing comfort.

2. Objectives

- To assess the level of first stage labour pain among primigravida mothers in experimental and control group before circular hip massage.
- To assess the effectiveness of circular hip massage on first stage labour pain in experimental group with control group.
- To find out the association between the posttest level of first stage labour pain with selected demographic variables in the experimental group and control group.

Hypotheses

H1 There will be a significant difference in the first stage labour pain among primigravida mothers after circular hip massage in experimental group than the control group.

H2 There will be a significant association between the post test levels of first stage labour pain with selected demographic variables in the experimental group than the control group.

3. Methodology

3.1 Research Approach

In this study, the investigator has applied a quantitative approach in evaluating the effectiveness of circular hip massage in reducing first stage labour pain.

3.2 Research Design

The Investigator used a quasi-experimental research design in this study.

3.3 Variables

Variables are qualities, properties or characteristics of persons, things or situations that change or vary and are manipulated or measured in research.

Dependent variable: first stage Labour pain.
Independent variable: circular hip massage
Extraneous variables: Age, religion, educational status, occupation, monthly income, previous knowledge regarding labour pain.

3.4 Research Setting

The study was conducted in PPK hospital at Marthandam which is 3 kms away from Thasiah College of Nursing. It is a 150 bedded multispecialty hospital and has separate maternity wing which includes labour room, operation theatre, antenatal ward, postnatal ward and postoperative ward. It records more than 1300 normal vaginal deliveries every year. The monthly record of normal vaginal delivery is more than 120. The study was conducted in the labour room of this hospital.

3.5 Population

Population is defined as "The entire set of individuals or objects having some common characteristics" on whom the study is to be conducted.

Target Population

The target population in this study was the primigravida mothers who were in first stage labour in between the age group of 18 to 35 years who were admitted in PPK Hospital.

Accessible Population

Primigravida mothers with first stage of labour pain with a cervical dilatation of 3 - 8cm in PPK Hospital.

3.6 Sample size

The sample consists of 60 primigravida mothers, 30 for experimental group, and 30 for control group in PPK hospital who were fulfilling the inclusion criteria.

3.7 Sampling Technique

Purposive sampling technique was used in this study, as the investigator specifically selected only primi antenatal mothers who fulfilled the inclusive criteria.

3.8 Sample Selection Criteria

Inclusion criteria:
Primigravida mothers who were,

- available at the time of study.
- in the age group of 18 - 35 years.
- in first stage labour pain.
- who can understand Tamil or English.

Exclusive criteria:
Primigravida mothers who were,

- at high - risk during pregnancy.
- not willing to participate.
- at a risk of cephalopelvic disproportion and contracted pelvis.

3.9 Description of Tool

The tool was developed after an extensive review of literature, internet search and experts opinion. It helped the investigator to select the most suitable scale

Pre - test and post - test was conducted by using Modified McGill pain questionnaires which was used to collect the data from the primigravida mothers at PPK hospital.

The tool consists of two sections,
Section: A Demographic variables such as:
Age in years, Religion, Educational status, Type of occupation, Monthly income, previous knowledge regarding labour pain.

Section: B Modified McGill pain questionnaires
It consists of 22 items and intensity ranges (0 - 3) with maximum score of 66.
Scoring and interpretation for Modified McGill pain questionnaires:

Score Description
0 - no pain
1 - 22 - mild pain
23 - 44 - moderate pain
45 - 66 - severe pain

3.10 Plan for Data Analysis

The data collected was analyzed by using descriptive and inferential statistics.

Descriptive Statistics:
Frequency and percentage distribution was used for the analysis of demographic data mean and standard deviation was used to assess the pretest posttest level of first stage labour pain.

Inferential Statistics:
Chi - square test was used to find out the association between the pretest level of first stage labour pain and selected demographic variables. Paired‘t’ test was used for evaluating the effectiveness of circular hip massage.

3.11 Organization of the Data

The data collected were tabulated and presented as follows:

Section- A: Percentage Distribution of Samples According to the Selected Demographic Variables of Primigravida Mothers with First Stage labour pain.

Section- B: This section deals with the effect of Circular Hip Massage on reducing the level of first stage labour pain among the selected primigravida mothers.

Assess the Level of first stage labour pain among primigravida mothers in experimental and control group before circular hip massage

Comparison of the effectiveness of Circular Hip Massage on level of first stage labour pain among primigravida mothers in experimental group with control group.

Comparison of the post test score of first stage labour pain among primigravida mothers between experimental group and control group

Section- C: Association of the post test scores of first stage labour pain among the experimental group and control group with their selected demographic variable

Table 1: Percentage Distribution of Samples According to Demographic Variables

Sl. No	Demographic variables	Experimental group (N = 30)		Control Group (N = 30)	
		Frequency	%	Frequency	%
1	**Age in years**				
	18 – 21 yrs	0	0	0	0
	22 – 25	17	56.67	16	53.33
	26 – 30	13	43.33	14	46.67
	31 - 35	0	0	0	0
2	**Religion**				
	Hindu	9	30	10	33.33
	Christian	17	56.67	16	53.34
	Muslim	4	13.33	4	13.33
3	**Educational status**				

	Primary School	0	0	0	0
	Higher Secondary education	18	60	19	63.33
	Graduate	12	40	11	36.67
	Illiterate	0	0	0	0
4	**Occupation**	0	0	0	0
	Heavy	12	40	14	46.6
	Sedentary	18	60	16	53.33
	Unemployed				
5	**Income**				
	Rs.3000 – 7000	0	0	0	0
	Rs.7001 – 11, 000	12	40	11	36.66
	Rs.11, 001 – 15, 000	13	43.33	14	46.6
	Rs.15, 001 and above	5	16.67	5	16.67
6	**Previous knowledge regarding labour pain**				
	Elders	9	30	10	33.35
	Mass Media	5	16.67	4	13.33
	Education	4	13.33	5	16.67
	None	12	40	11	36.67

Section B:

Table 2: Assess the Level of Labour Pain in Both Experimental and Control group, N =60

Scores	Levels of Pain	Experimental group n = 30		Control group n = 30	
		Frequency	%	Frequency	%
Pretest score	None	0	0.00	0	0.00
	Mild	5	16.67	7	23.33
	Moderate	25	83.33	23	76.67
	Severe	0	0.00	0	0.00
Post test score	None	0	0.00	0	0.00
	Mild	30	100.00	0	0.00
	Moderate	0	0.00	30	100.00
	Severe	0	0.00	0	0.00

Table 3: Comparison of the Effectiveness of Circular Hip Massage on in reducing First Stage Labour Pain among Primigravida Mothers in Experimental Group and Control Group N = 60

Group	Pre test		Post test		Paired 't' test	P value
	Mean	SD	Mean	SD		
Experimental group	21.43	3.81	8.66	2.42	22.29	2.042
Control group	16.06	2.89	19.0	2.79	5.15	

*Significant at 0.05% (df=29)

Table 4: Comparison of Post test Level of First Stage Labour Pain in Experimental Group and Control Group Primigravida Mothers N= 60

Group	Post test		Unpaired 't' test	P – value
	Mean	SD		
Experimental group	8.66	2.42	15.21	2.0
Control group	19.0	2.79		

*Significant at 0.05% (df =58)

Section C

Table 5: Association of the Post test Scores of First Stage Labour Pain Among the Experimental Group and Control Group with Their Selected Demographic Variables, N=60

S. No	Demographic Variables	Experimental group (n=30)			Control group (n=30)		
		□2	df	Significance	□2	df	Significance
1.	Age	5.12	1	P > 0.05	3.45	1	P > 0.05
2.	Religion	0.25	2	P > 0.05	0.108	2	P > 0.05
3.	Educational status	0.20	1	P > 0.05	0.43	1	P > 0.05
4.	Occupation	0.43	1	P > 0.05	3.27	1	P > 0.05
5.	Monthly income	0.49	2	P > 0.05	1.35	2	P > 0.05
6.	Previous knowledge on labour pain	3.43	3	P > 0.05	0.93	3	P > 0.05

4. Discussion

The First Objective of the Study was to Assess the Level of First Stage Labour Pain Among Primigravida Mothers in Experimental and Control Group Before Circular hip Massage.

In Modified McGill Pain Questionnaires, the analysis of pretest, in experimental group of 30 samples, 25 (83.33%) had moderate level of labour pain and 5 (16.67%) had mild level of labour pain. In control group of 30 samples 23 (76.67%) had moderate level of labour pain and 7 (23.33%) had mild level of labour pain. So, it indicates that moderate and mild level of labour pain is common among primigravida mothers during first stage labour pain.

The findings of the study was supported by Wijmaet. al., (2001) conducted a comparative study on the labor pain among primiparous and multiparous women during 1st stage of labor.35 primiparous and 39 multiparous women were selected for the study by using random selection method. Verbal rating scale was used to collect the data. The data was analyzed by mean, SD and t test. The result of the study shows the primi para women reported higher level of pain than the multiparous women (t=0.735; p=0.01).

The Second Objective of the Study was to Assess the Effectiveness of Circular hip Massage on First Stage Labour Pain in Experimental Group with Control Group.

In Modified McGill Pain Questionnaires, the calculated 't' value for the pretest and posttest level of labour pain was 22.29 which is significant at $p < 0.05$. It shows that circular hip Massages shows a significant difference between the pretest and posttest score in Experimental group.

Similarly in Control Group the calculated 't' value for the pretest and posttest level of labour pain was 5.15. The corresponding table value was mild higher than the calculated value at $p<0.05$ significance level. So there was significant difference between the pretest and post test scores in Modified McGill Pain Questionnaires.

The present study finding was supported by Karami N K, Safarzehed A (2009) conducted an experimental study to evaluate the effort of message therapy on severity of labour pain among 75 primigravida women. The finding of the study shows that the pain severity at the first stage of labour pain was significantly difference between the experimental group and control group. At the start of active phase (P=0.009), end of transitional phase (P=0.014) and at the end of first stage (P=0.01) in the experimental group.

The Third Objective was to Find out the Association Between the Posttest Level of First Stage Labour Pain with Selected Demographic Variables in the Experimental Group and Control Group.

There is no significant association ($p < 0.05$) between the level of first stage labour pain and their selected demographic variables in experimental group and control group with respect to Modified McGill Pain Questionnaires. Hence the research hypothesis H2 is rejected. All the three objectives and one hypothesis have been retained in this study.

The present study finding was supported by Philomena, Fernandez (2013) conducted an experimental study to assess the effectiveness of massage on labour pain during first stage of labour among 40 primigravida mothers. The visual analogue scale was used to measure the level of labour pain. The significant difference was found in the experimental group ($t=9.869$, $p<0.05$). A significant difference was found between experimental and control group. Pretest ('t' 11.75, $p<0.05$). No significant association was found between level of pain and demographic variables in the experimental group.

5. Summary and Recommendation

Study Findings

The data was collected and analyzed by using descriptive and inferential statistics. During the post test in the Experimental group with Modified McGill pain questionnaires 30 (100%) had mild labour pain whereas the post test score and the post test in the control group with Modified McGill pain questionnaires 30 (100%) had moderate labour pain. In post test, mean score of level of labour pain in the experimental group with modified pain questionnaires was 8.66 and in control group is 19.0. There was significant difference between the experimental and control group which was computed through independent 't' test [t=15.21]. The score represents the effectiveness of circular hip massage. Hence the Research Hypothesis (H1) was accepted and it was inferred that Circular Hip Massage is effective in reducing the level of first stage labour pain among primigravida mothers in experimental group than the control group.

6. Conclusion

Labour pain increases according to the progress of labour. Circular hip massage was more effective in reducing the level of labour pain among antenatal mother during labour. In experimental group the primi mothers felt the reduction in level of labour pain with circular hip massage than the control group compassion of mean and standard deviations was found that there was a significant difference between the levels of labour pain among the mothers received circular hip massage

7. Limitations

- Since there were very few studies done on the effectiveness in national level, the investigator had a lot of difficulties in collecting the study materials for the review.
- The sampling size was limited to 60 (30 in experimental group and 30 in control group)
- The data collection period was limited to one month

8. Recommendations

The following steps can be undertaken to strengthen the study

- The study can be conducted among larger sample for the better generalization.
- The study can be conducted in different settings.
- Comparison between Circular Hip Massage and other non – pharmacological methods can be done.
- Circular Hip Massage can be included in the hospital policy.

References

[1] Benett RV, Brown LK. (2003). Myles textbook for midwives. Edinburgh: Churchill Livingstone.
[2] Bookhout, M. M., and Boissonault, W. G., (1988). Physical therapy management of Musculoskeletal Disorders during Pregnancy. Churchill - Livingstone, New York
[3] Gonzales H.; (2008). How to ease the pain during child birth. Philadelphia: Lippincott Wilkins and Wilkins.
[4] Lynna y Littleton, J. (2005). Maternity nursing care. Newyork: Thomson delmar learning.
[5] Melzack, R. & Wall, P. D. (1999). Textbook of pain mechanisms: A New Theory. Science. Edinburg, Churchill Livingston
[6] Denise. F. Polit, C. T. (2010). Essentials of nursing research. London: Wolters Kluwer, Lippincott Williams and wilkins.

[7] Durham L, Collins M. (2006). The effect of relaxation therapy among primimothers.15.1486
[8] Stark MA, miller MG. development and testing of nurses perceptions of the use of circular hip massage.2010; 18 (1); 36 - 38. Available from: http: //www.ncbi. nlm. nih. gov

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