

Research Article

Effectiveness of Modified Paced Breathing Technique on Labor Pain Towards Labor Outcome among Mothers During First Stage of Labor

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A B S T R A C T

Introduction: "Birth is an experience that demonstrates that life is not merely function and utility, but form and beauty." Cultural values and learned behavior influence and response to acute pain. Female's expectations for the labor pain often are confirmed by their experience of childbirth. Anxiety and fear of pain correlate with a higher reported experience of pain. Breathing exercises can help for the mothers to reduce and the mind divert for the labor pain. All pregnant women's are happy with this news at the end of this journey all women's having the fear for the labor pain. Breathing exercise can help for the relive the pain level during the labor.

Materials and Methods: The research design for this study was quasi experimental design. The sample size was 40 (20 Experimental and 20 control group) and was drawn through Non-Probability Purposive Sampling Technique. The level of labor pain was assessed by using Wong Baker's Faces pain rating scale. Modified paced breathing technique was instructed to practice during contractions for 1 hour during active phase for experimental group. Pre-test was assessed before intervention and Post-test done after intervention for both group. The data gathered were analyzed by descriptive and inferential statistical method.

Result: The mean post-test score on level of pain during first stage of labor in experimental group was 5.5, but in control group it was 8.35. The calculated t' value was 6.007 which is more than the table value at 5% significance. It was statistically significant at 5% ($p < 0.05$). It shows that Modified paced breathing technique is effective in reduction of pain during first stage of labor. Hence, the research hypothesis (H1) is accepted. There is significant association between demographic variables. Hence, the research hypothesis(H2) is accepted.

Conclusion: This study finding revealed that Modified paced breathing technique helps in reducing the level of pain among mothers in the experimental group. So this can be practiced as a Non- pharmacological method to relieve pain during labor in various settings.

Keywords: Labor Pain, Paced Breathing Technique, Anxiety, Childbirth

Introduction

The panic and worry for birth frequently prevents most women from loving this experience. Series of events that take place in the genital organs in an effort to expel the viable products of conception like fetus, placenta, and membranes out of the womb by the vagina into the outer world its labor. (D.C. Dutta- 2015).The 1st stage of labor be around about 12-14 hr for a primigravida and about 6-8 hr for multigravida. Latent phase means quick includes dilatation from 0-3cm in which contractions are typically every 5-30 min, long-term for 10-30 sec of mild acuity. Active phase it's a dilatation from 4-7cm, contractions are typically each 3-5 min; lasting 40-60 sec of mild toward moderate acuity. Transitional phase it's a dilatation from 8-10 cm, contractions are each 2-3 min, lasting 50-60 seconds and of moderate to strong acuity. Specific contractions may up to 90 sec. (Lowdermilk and Perry -2011) .Procedures of labor are shared into the 4 stages. The 1st phase starts from beginning of true delivery pain and finished with full dilatation of cervix or it's called the cervical stage. The 2nd phage starts since the full dilatation of cervix and finished with the expulsion of fetus. The 3rd phase is the parting and removal of placenta and membranes. The 4th phase is the observation for the 1 hr later delivery.

Statement of the Problem

"A study to evaluate the effectiveness of modified paced breathing technique on labor pain towards labor outcome among mothers during first stage of labor in selected maternity hospitals Anand and kheda district."

Objectives of the Study

1. To assess the level of pain in mothers during first stage of labor in experiment and control group
2. To evaluate the effectiveness of modified paced breathing technique on labor pain in mother during first stage of labor in experimental group
3. To compare the effectiveness of modified paced breathing technique towards labor outcome in experimental and control group
4. To find out the association between labor pain with their selected demographic variables among mothers

Hypothesis

H1: There will be significant difference between the level of pain and labor outcomes of experimental group at 0.05 level of significance

H2: There will be significant association between the pre test level of pain with the selected demographic variables at 0.05 level of significance

Material and Methods

Research approach: The research approach used for this study was quantitative approach.

Research design: For this study , quasi experimental pre and post test design is used.

Variables: There are 3 types of variables consider under the study as follows

- **Dependent variable:** Labor outcome of mother
- **Independent variable:** Modified paced breathing technique
- **Demographic variable:** such as Age (in Years), Education, Occupation, Type of family, Social support, Gestational age, Gravida, Any source of information regarding breathing technique.

Setting of the study: The study was conducted in Dr. N D Desai medical college and Hospital, C G General Hospital, uttarsanda, Sarla prasruti gruh Hospital, Anand, which is a well known maternity center.

Sample: The sample for the study was mothers during first stage of labor who met the inclusion criteria

Sample size: In this study , the sample size is 40 mothers during first stage of labor with cervical dilation 4 cm in which 20 as experimental group and 20 as control group.

Sampling technique: In this study, investigator selected the samples by Non probability purposive sampling technique

Sampling Criteria

Inclusive Criteria

1. Primimothers and multiparous mothers between 36 to 40 weeks of gestation
2. Mothers those who are willing to participate
3. The mothers who are in first stage of labor after 4 cm dilation of cervix until the full dilatation cervix
4. Who know and follow the interactions in Gujarati and Hindi language
5. Multiple pregnancy without complication

Exclusion Criteria

1. Mother who will not be available at the time of data collection
2. Mother having complication like hypertension, diabetes, heart disease, asthma

Tool for Data Collection

Section I: Socio-demographic Data

Section II: Wong Baker's Faces pain rating scale

Pilot Study

Four mothers were selected and equally assigned to experimental and control group. The investigator practiced Modified paced breathing technique to 2 sample of experimental group and no intervention for samples of 2 control group. Pain was assessed by using Wong Baker's Faces pain rating scale before and after the using intervention. Data analysis was done using descriptive and interferential statistics.

Result

Section I: Analysis of Socio-Demographic Characteristics of Mothers

Table No. I Frequency and percentage distribution of demographic variables of mothers in experimental and control group

(N=40)

S.No.	Demographic Data	Experimental Group		Control Group	
		Frequency (N=20)	Percentage	Frequency (N=20)	Percentage
1	Age in years				
	<24 Years	10	50%	10	50%
	25-30 Years	10	50%	9	45%
	31-35 Years	0	0%	1	5%
	36 & Above	0	0%	0	0%
2	Education				
	Non-Formal	3	15%	3	15%
	Primary	4	20%	6	30%
	Secondary	6	30%	8	40%
	Higher secondary	6	30%	1	5%
	Graduate & Above	1	5%	2	10%
3	Occupation				
	Housewife	17	85%	17	85%
	Government job	0	0%	0	0%
	Private job	2	10%	1	5%
	Labour work	1	5%	2	10%
4	Type of family				
	Joint	15	75%	17	85%
	Nuclear	5	25%	3	15%
	Extended	0	0%	0	0%
5	Social Support				
	Husband	10	50%	5	25%
	Parents	10	50%	9	45%
	Relative	0	0%	6	30%
	Health Personnel	0	0%	0	0%
6	Gestational Age				
	36-37 Weeks	1	5%	2	10%
	38-39 Weeks	15	75%	15	75%
	40 & Above	4	20%	3	15%
7	Gravida				
	Primigravida	12	60%	10	50%
	Multigravida	8	40%	10	50%
8	Sources of Info.				
	Family member	8	40%	5	25%
	Health Personnel	4	20%	7	35%
	Book	0	0%	0	0%
	Social Media	6	30%	6	30%
	Neighbors & Friend	2	10%	2	10%

Section 2: Distribution of Statistical Value of Pretest and Post- Test Score of Labor Pain Regarding Modified Paced Breathing Technique Among Mothers in Experimental and Control Group.

Table 2. Frequency and percentage distribution of mothers according to level of labor pain before and after administration of Modified Paced Breathing Technique

Pretest & Posttest	Level of Labor Pain	Experimental Group		Control Group	
		No. (20)	%	No. (20)	%
Pretest Level of labor Pain	No Pain (0)	0	0%	0	0%
	Mild Pain (1-3)	0	0%	5	25%
	Moderate Pain (4-6)	4	20%	9	45%
	Severe Pain (7-9)	13	65%	6	30%
	Worst Pain (10)	3	15%	0	0%
Posttest Level of labor Pain	No Pain (0)	0	0%	0	0%
	Mild Pain (1-3)	4	20%	0	0%
	Moderate Pain (4-6)	13	65%	3	15%
	Severe Pain (7-9)	3	15%	9	45%
	Worst Pain (10)	0	0%	8	40%

(N=40)

The above table 2.1 describes the percentage distribution of labor pain score before and after administration of Modified Paced Breathing Technique in pretest experimental group 4(20%) had moderate labor pain, 13 (65%) had severe pain, 3 (15%) had worst pain and none of them having mild, no pain. In the Posttest experimental group 4 (20%) had mild labor pain, 13 (65%) had moderate labor pain, 3(15%) had severe pain, and none of them having worst pain and no pain.

In the pretest control group 5 (25%) had mild labor pain, 9 (45%) had moderate labor pain, 6 (30%) had severe pain, none of them having worst pain and no pain. In the Posttest control group 3 (15%) had moderate labor pain, 9 (45%) had severe labor pain, 8(40%) had severe pain, and none of them having mild and no pain.

Table 3. Mean and Standard Deviation in experimental and control group of mothers according pretest and post-test level of labor pain regarding Modified Paced Breathing Technique

(N=40)

Measurement	Level of labor pain			
	Experimental Group		Control Group	
	Mean	SD	Mean	SD
Pretest	7.6	1.56	5.55	1.84
Posttest	5.5	1.43	8.35	1.56

The above table 2.2 shows the pretest and posttest mean and SD in experimental and control group. In the experimental group pretest mean score was 7.6 and SD was 1.56, in Posttest mean score was 5.5 and SD was 1.45

In the control group pretest mean score was 5.55 and SD was 1.84, in Posttest mean score was 8.35 and SD was 1.56.

Section 3: Effectiveness of Modified Paced Breathing Technique on Labor Pain Among Mothers in Experimental Group

Table 3. Paired t-test analysis for the significance of pre-test and post-test level of Labor pain before and after administration of modified paced breathing technique among mothers in experimental group

(N)=40

Labor Pain	Enhancement score		Paired ttest	P-value
	Mean	SD		
Experimental Group	2.10	0.718	13.07** S df= 19	P<0.05 Sig.= 0.000

Note: *- denotes significant at 0.05 level at (i.e. P<0.05) (S)= SIGNIFICANT AT 0.05 LEVEL

The above table 3.1 depicts the outcome of paired t-test analysis carried over to assess the statistical significance of pre-test and post-test mean score labor pain regarding

modified paced breathing technique among mothers in experimental group. The mean enhancement score was 2.10, standard deviation was 0.718, and paired t-test value was 13.88, $df=19$ was found to be significant 0.05 level.

Hence that there exists significance effectiveness of modified paced breathing technique

before and after administration regarding labor pain among mothers.

It evidenced that there is a significant difference in level of labor pain after the intervention of modified paced breathing technique among mothers. The labor significantly reduced.

Conclusion

After the detailed analysis, this study leads to the conclusion as continuous ongoing assessment helped to evaluate the performance of breathing technique during pregnancy and labor. Practice of breathing exercises conditioned the mother to breathe and relax during contractions to control the experience of pain in mothers.

This study has clearly highlighted the need to practice the breathing technique during pregnancy and to perform it during labor. This study has concluded that Modified paced breathing technique have positive effect on labor outcome during first stage of labor. Breathing technique will help the mothers in tolerating the pain.

Summary

The study was quasi-experimental pre and post test research design to assess the effectiveness of Modified paced breathing technique on labor pain during first stage of labor. The data was collected from two groups of mothers, 20 from experimental group and 20 from control group. Sample were selected by Non probability purposive sampling technique. In this study, the independent variable was Modified paced breathing technique and the dependent variable was Labor outcome of mother. Modified Ernestine Wiedenbach's helping art of clinical Nursing Theory model (1970) systems model was used to evaluate the effect of Modified paced breathing technique on labor pain. The tools used in the study consist of two parts. Section A was demographic variables and Section B was Wong Baker's faces pain rating scale to assess the pain level. The data were collected and analyzed using descriptive and inferential statistics. The level of significant was assessed by $p < 0.05$ to test the hypotheses.

Ethical clearance: The study was approved by the institutional ethical committee of Dinsha Patel college of nursing, research committee, there are total 15 members in the committee from various field. The ethical approval reference number is DPCNIEC/4062100007 and a formal written permission was gathered from the authority of or

Principal of Institute prior to data collection.

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