

A STUDY TO ASSESS THE EFFECTIVENESS OF PACED BREATHING EXERCISE ON PAIN PERCEPTION AMONG WOMEN IN FIRST STAGE OF LABOUR ADMITTED IN ADESH HOSPITAL, BATHINDA , PUNJAB.

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Abstract

Background: Paced breathing is approximately half of the normal breathing rate and it can be used during contraction. Slow paced breathing provides the best oxygenation in calming and the least fatiguing of women in labour. **Objectives:** To assess the level of pain perception among women in first stage of labour in experimental and control group. To evaluate the effectiveness of paced breathing exercise on pain perception among women in first stage of labour in experimental group. To compare pre test and post test score of pain perception among women in experimental and control group. To find out association between the level of pain perception with selected socio- demographic variable among women in first stage of labour. **Material and methods:** A Quasi- experimental design with an evaluative approach was used to select 30 postnatal mothers in experimental group and 30 in control group by using Non- probability convenience sampling technique. To assess the effectiveness of paced breathing exercise on pain perception among women in first stage of labour in both the experimental group and control group. The experimental group had received the paced breathing exercise; they were instructed to inhale for 2-4 seconds and exhale for 4-6 seconds and asked to continue this exercise in active phase and transient phase throughout the labour. The data was collected by using structured observational checklist and standardized numerical pain rating scale. **Result:** There was a significant improvement in pain perception in experimental group as compared to women in control group.

Conclusion: The study result shows that the Paced breathing exercise is an effective method to improve the labour pain perception among women in first stage of labour.

Keywords: Assess, effectiveness, paced breathing exercise, pain perception, women in first stage of labour.

I. INTRODUCTION

The motherhood is a great responsibility and it is women's highest crown of honors. Therefore maintaining good health during pregnancy, intranatal and postpartum period is very important especially in the present stressful life¹. Pregnancy is a condition, not an illness; a pregnant woman is not sick.² The fear and anxiety about child birth often prevents most women enjoying this experience.³ Labour is a complicated process involving biological, psychological, and cultural influences.⁴ First stage it start from the onset of true labour pain and ends with full dilatation of the cervix. It is, in other words, the "cervical stage" of labour. Its average duration is 12 hours in primigravida and 6 hours in multiparae.⁵ Labour pain is severe, unpleasant and traumatizing feeling. It is also an individualized phenomenon with both sensory and emotional elements. It arises from dilatation of cervix and the lower uterine segment. In the first stage of labor the lower uterine segment and the cervix of the uterus get gradually stretched causing visceral pain.⁶ Perception of pain, including pain of uterine contraction, is a complex process that involves interaction of both central and peripheral mechanisms and continuous interchange of information among nociceptive and descending anti nociceptive pathways. Pain perception involves sensory, emotional, behavioral and environmental factors.⁷ Paced breathing is approximately half of the normal breathing rate, which can be used during contraction, slow paced breathing provides the best oxygenation, is calming and the least fatiguing of the breathing technique. The method begins with a very simple technique that is used as long as possible.⁸ Breathing techniques were reported as the most effective pain relieving technique used during labour. The antenatal women require education in preparation for childbirth and pain reduction strategies. The primi mothers feel unawareness, fear and anxiety as a result in an uncooperative attitude and a stressful childbirth experience. So we need to teach primi mothers an alternative therapy to cope with labour pain.⁹

This present study was undertaken to assess the intensity of pain experienced by the parturient in first stage of labor before and after implementation of selected paced breathing to assess the level of anxiety experienced by the parturient during first stage of labor before and after selected paced breathing and also to evaluate the effectiveness of selected paced breathing on pain perception and anxiety level during first stage of labour.¹⁰

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of paced breathing exercise on pain perception among women in first stage of labour admitted in adesh hospital, Bathinda , Punjab.

OBJECTIVES:

1. To assess the level of pain perception among women in first stage of labour in experimental and control group.
2. To evaluate the effectiveness of paced breathing exercise on pain perception among women in first stage of labour in experimental group.
3. To compare pre test and post test score of pain perception among women in experimental and control group.
4. To find an association between the level of pain perception with selected socio- demographic variable among women in first stage of labour.

II. Materials and Methods

Research Approach: Evaluative research approach was used.

Research Design: Quasi- experimental, one group Pre-test and Post-test control group design was adopted.

Setting of the Study: The study was conducted in Adesh Hospital, Bathinda, Punjab.

Target Population: The target population is the aggregate of cases about which the researcher would like to generalize. In the present study, it includes women who were in first stage of labour.

Sample: The sample for the present study constitutes 60 women in first stage of labour, 30 in experimental group and 30 in control group.

Sampling technique: Non-probability convenience sampling technique was used to select the sample for this study.

Development of tool for data collection:**Tool 1:****1. Description of the tool****Section A -Socio demographic variables****Section B -Standardized Numerical Pain Rating Scale:**

The scale has been classified into no pain, mild pain, moderate pain, severe pain and worst pain. The pain scale is divided into 10 parts. Each choice is assigned a corresponding number.

Score keys:

1 to 3 = Mild pain

4 to 6 = Moderate pain

7 to 9 = Severe pain

10 = Worst pain

2. The level of pain was assessed in latent phase (1- 3 cm) 1- observation of the first stage of labour by standardized numerical pain rating scale and structured observational checklist in both experimental and control group as pre-test. The experimental group had received the paced breathing exercise; they were instructed to inhale for 2-4 seconds and exhale for 4-6 seconds and asked to continue this exercise in active phase and transient phase throughout the labour process. Whereas the control group was received the routine care.

3. The level of pain perception was assessed for the both the experimental and control group as posttest by structured observational checklist and standardized numerical pain rating scale as follows:

- Active phase (4- 7 cm) = 2 observations
- Transient phase (8- 10 cm) = 2 observations

Tool 2: Structured observational checklist

The structured observational checklist was used to assess the behavior responses of the women during first stage of labour.

Scoring interpretation:

1. Symptoms present - scoring 1

2. Symptoms absent - scoring 0

Overall scoring given as follows:

- 0 – 6 (below 30%) = Mild discomfort
- 7 – 14 (30 – 70%) = Moderate discomfort
- 15 – 20 (above 70%) = Severe discomfort

III. Results**Organization and presentation of the data:**

The data collected were edited, tabulated, analyzed, interpreted and findings obtained were presented in the form of tables and diagrams represent under following sections:

Section I: Frequency and percentage distribution of socio demographic variables of women in first stage of labour in experimental group and control group.

Section II: Findings related to assessment of level of pain perception among women in first stage of labour in experimental group and control group in pre test.

- Mean and standard deviation of pre- test pain score of pain perception among women in first stage of labour in experimental group and control group.

Section III: Findings related to effectiveness of paced breathing exercise.

- Mean, S.D, df, p value and paired “t” test of experimental and control group.

Section IV: Findings related to comparison of pre- test and post- test score of pain perception among women in first stage of labour in experimental and control group.

- Mean, S.D, df, p value and unpaired “t” test of experimental and control group.

Section V: Association between the level of pain perception score with socio-demographic variables.

Table-1: Frequency and percentage distribution of socio-demographic variables of women in first stage of labour in experimental and control group.

Socio -demographic Variables		N=60			
		Experimental group		Control group	
		Frequency (f)	Percentage	Frequency(f)	Percentage
Age in years	18-23 years	2	7%	4	13%
	24-28 years	19	63%	16	53%
	29-35 years	9	30%	10	33%
	>35 years	0	0%	0	0%
Educational status	No Formal Education	1	3%	0	0%
	Primary Education	12	40%	15	50%
	Secondary Education	9	30%	7	23%
	Higher Education	8	27%	8	27%
Religion	Sikh	20	67%	21	70%
	Muslim	1	3%	1	3%
	Christian	0	0%	0	0%
	Others	9	30%	8	27%
Type of family	Nuclear	18	60%	19	63%
	Joint	12	40%	11	37%
Area of residence	Rural	15	50%	19	63%
	Urban	14	47%	11	37%
	Sub-Urban	1	3%	0	0%
Occupation	House Wife	19	63%	20	67%
	Agriculture	1	3%	1	3%
	Government Job	1	3%	5	17%
	Private Job	9	30%	4	13%

Nutritional status	Vegetarian	24	80%	27	90%
	Mixed	6	20%	3	10%
Period of gestation in weeks	37-38	3	10%	0	0%
	39-40	27	90%	30	100%
	>40	0	0%	0	0%
Mode of labour	Spontaneous Labour	10	33%	14	47%
	Induction with Pitocin	20	67%	16	53%
Duration of 1st stage of labour	>12 hour	10	33%	16	53%
	9-12 hour	20	67%	14	47%
	5-8 hour	0	0%	0	0%
	<4 hour	0	0%	0	0%
Parity	Primi Para	19	63%	17	57%
	Multi Para	11	37%	13	43%
	Grand Multipara	0	0%	0	0%

Table 2: Frequency and percentage distribution of pain perception among women in first stage of labour in experimental group and control group in pre test.

N=60

Category	Score	Pre-test			
		Experimental group		Control group	
		Frequency	Percentage	Frequency	Percentage
Severe Discomfort	15-20	0	0%	0	0%
Moderate Discomfort	7-14	4	13.3%	3	10%
Mild Discomfort	0-6	26	86.7%	27	90%

Table-3: Pain perception score among women in first stage of labour in experimental group and control group in pre-test.

Experimental Group		Control Group	
Mean	S.D.	Mean	S.D.
5.53	0.937	5.33	0.884

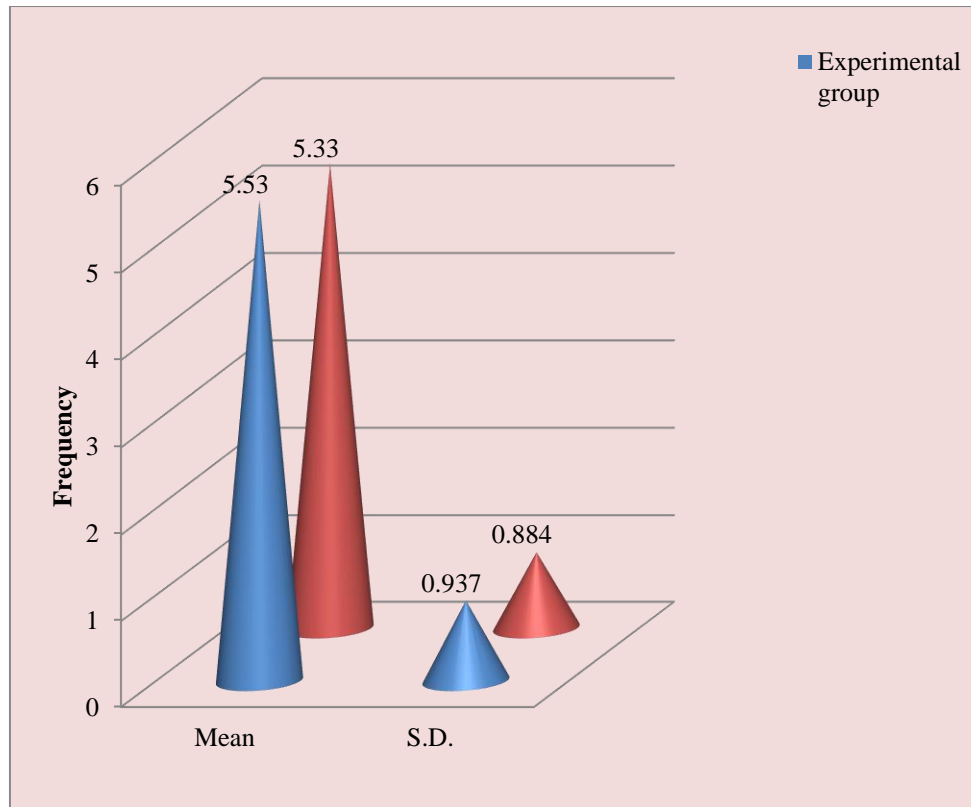


Figure-1: The 3-D cone depicts the mean and S.D. in experimental group and control group in pre-test.

Table 4: Phase wise mean, S.D. of pain perception of women in first stage of labour in latent phase in experimental and control group in pre-test.

't' Test		N=60					
		Mean	S.D.	't' test	df	P Value	Result
Latent phase 1-observation	Experimental	2.33	0.66	0.779	58	0.439	NS
	Control	2.20	0.66				

Table 5: Frequency and percentage distribution of pain perception among women in first stage of labour in experimental and control group in post test.

Score Level	Post-test			
	Experimental group		Control group	
	Number	Percentage	Number	Percentage
Severe Discomfort (above 70%) (15-20)	0	0%	8	26.7%
Moderate Discomfort (30 – 70%) (7-14)	7	23.3%	22	73.3%
Mild Discomfort (below 30%) (0-6)	23	76.7%	0	0%

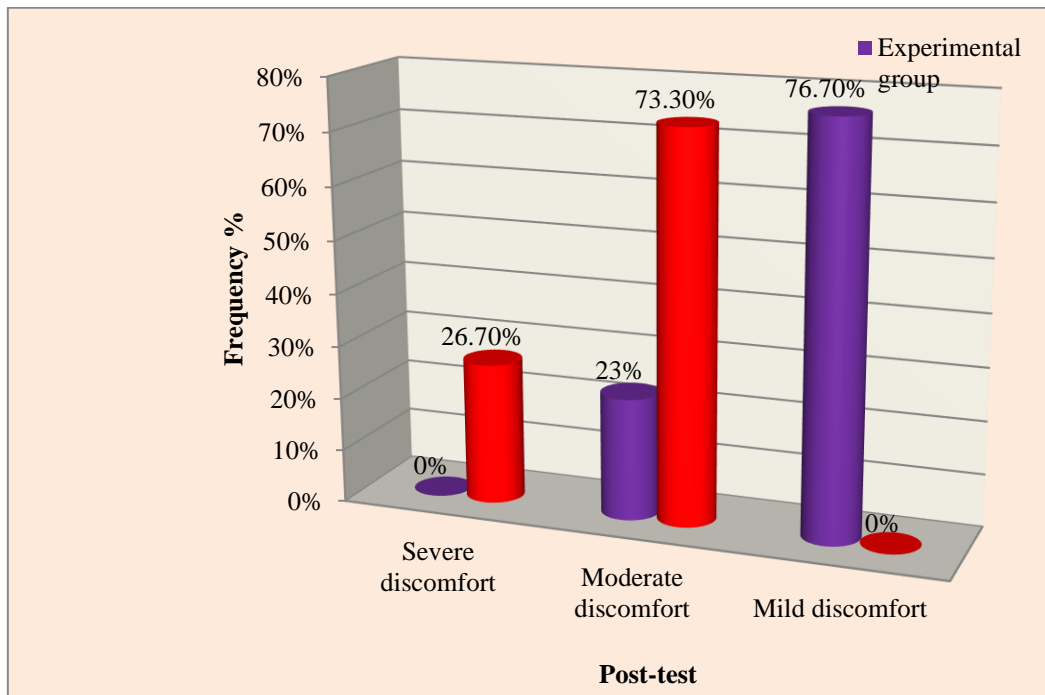


Figure -2: the clustered cylinder reveals the frequency and percentage distribution of pain perception in experimental group and control group in post-test.

Table 6: Pain perception score among women in first stage of labour in experimental group and control group in post-test.

Paired 't' test		Mean	S.D.	Df	't' value	P value
Experimental group	Pre-test	5.533	0.937	29	1.795 NS	0.0831
	Post-test	5.63	1.033			
Control group	Pre-test	5.33	0.884	29	12.672 S	0.000
	Post-test	12.20	2.398			

N=60

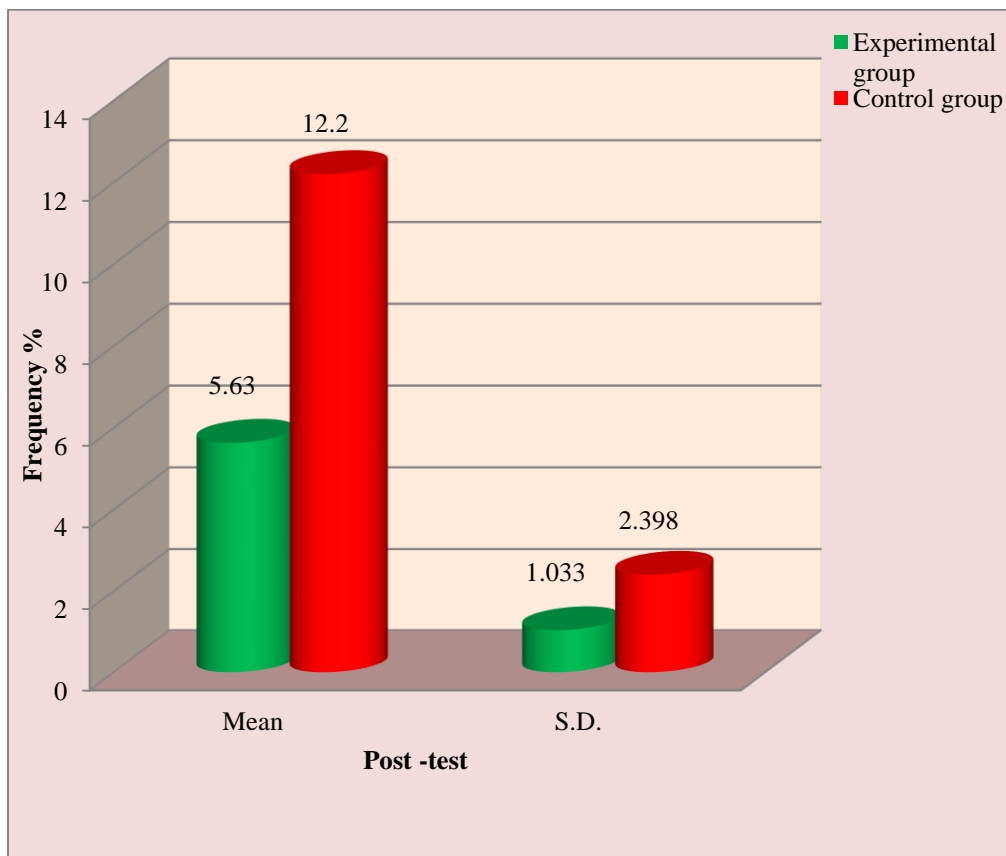


Figure-3: the clustered cylinder depicts the mean and S.D. in experimental group and control group in post -test

Table 7: Frequency and percentage distribution of women in first stage of labour in experimental group and control group. N=60

Score level	Experimental group				Control group			
	Pre-test		Post-test		Pre-test		Post-test	
	N	f (%)	N	f (%)	N	f (%)	N	f (%)
Severe Discomfort (above 70%) (15-20)	0	0%	0	0%	0	0%	8	26.7%
Moderate Discomfort (30 – 70%) (7-14)	4	13.3%	7	23.3%	3	10%	22	73.3%
Mild Discomfort (below 30%) (0-6)	26	86.7%	23	76.7%	27	90%	0	0%

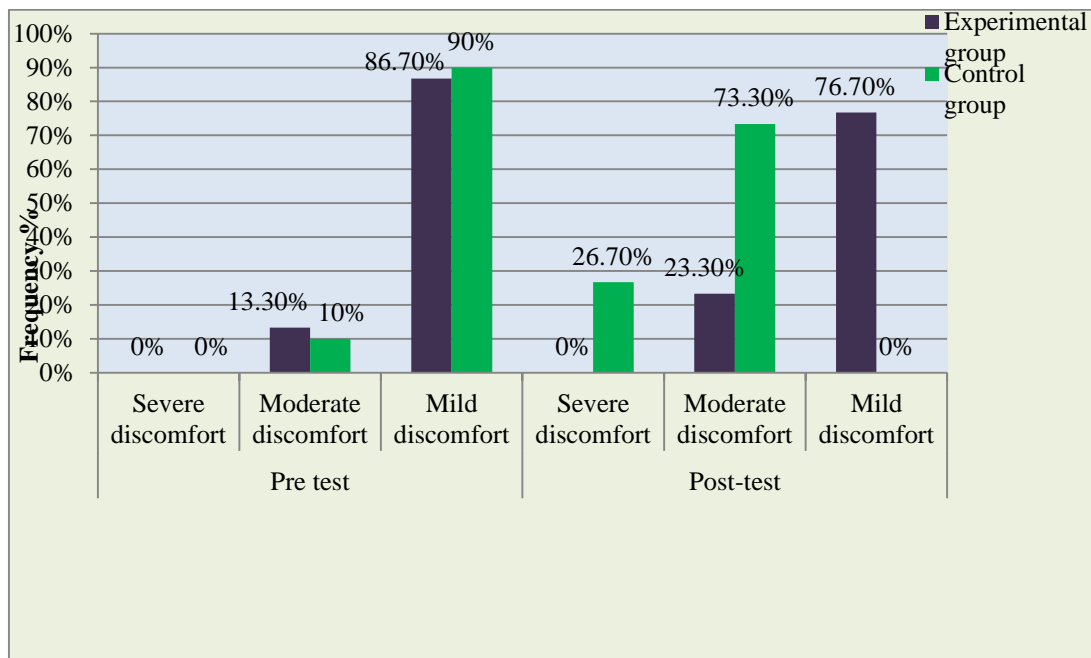


Figure-4: the clustered column shows frequency and percentage of pre-test and post-test of pain perception score among women in first stage of labour in experimental group and control group.

Table 8: Comparison of pre test and post test pain perception score among women in first stage of labour between experimental group and control group.

Unpaired 't' test		Mean	S.D	df	't' value	P value
Pre-test	Experimental group	5.533	0.937	58	0.85 NS	0.3987
	Control group	5.33	0.884			
Post-test	Experimental group	5.63	1.033	58	13.773 S	0.0000
	Control group	12.20	2.398			

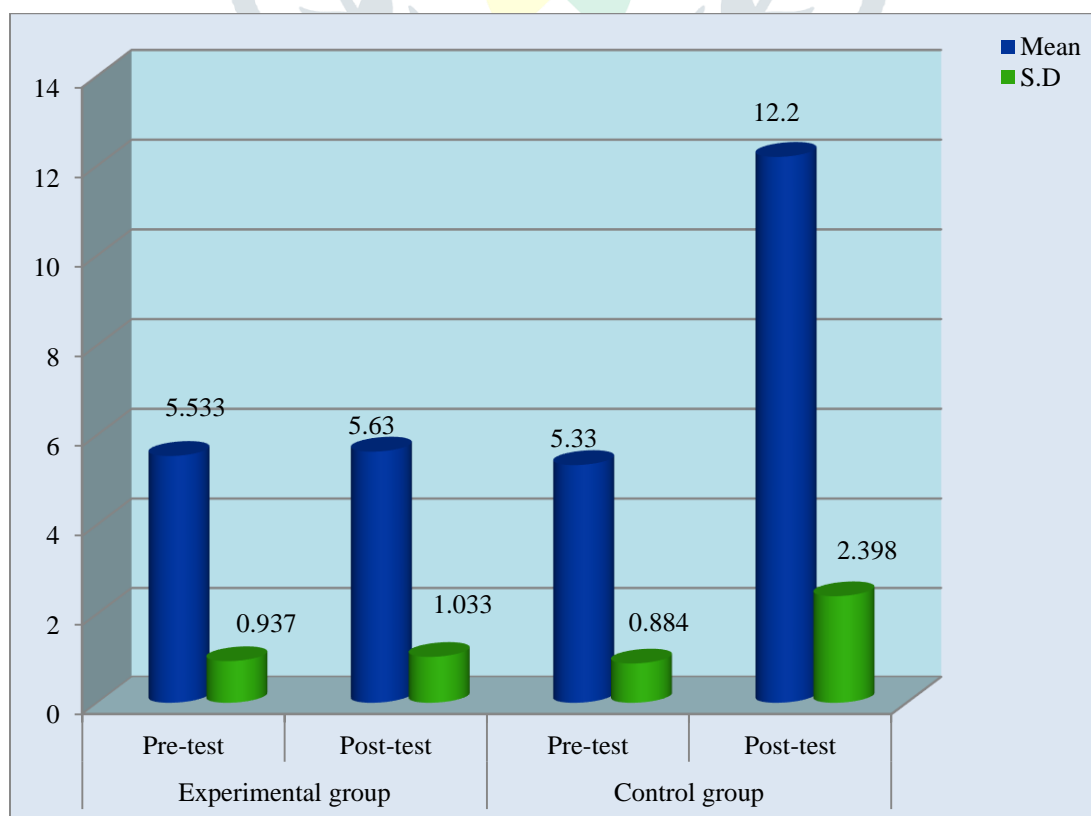


Figure-5: The clustered cylinder shows mean and S.D. of pain perception among women in first stage of labour in experimental group and control group.

Table 9: Phase wise mean and S.D. of pain perception score among women in first stage of labour in active phase and transient phase in experimental group and control group in post-test.

N=60

't' Test		Mean	S.D.	't' Test	df	P Value	Result
Active phase 1 Observation	Experimental	7.50	1.04	10.014	58	<0.001	S
	Control	5.07	0.83				
Active phase 2 observation	Experimental	8.37	0.61	21.019	58	<0.001	S
	Control	4.90	0.66				
Transient phase 1 observation	Experimental	9.07	0.64	7.305	58	<0.001	S
	Control	7.60	0.89				
Transient phase 2 observation	Experimental	9.80	0.41	13.342	58	<0.001	S
	Control	7.87	0.68				

Table-10: Association between the pain perception among women in first stage of labour with their selected socio-demographic variables in experimental group.

N= 60

Socio demographic variables	Opts	Association of observational score with socio-demographic variables in post experimental group.						
		Sever discomfor t	Moderate discomfor t	Mild discomfor t	Chi square test(X ²)	df	Table value	P value
Age in years	18-23 years	1	1	0	0.649	2	5.991	0.723 NS
	24-28 years	5	14	0				
	29-35 years	2	7	0				
	>35 years	0	0	0				
Education status	No Formal Education	1	0	0	3.580	3	7.815	0.311 NS
	Primary Education	2	10	0				
	Secondary Education	3	6	0				
	Higher Education	2	6	0				
Religion	Sikh	6	14	0	0.568	2	5.991	0.753 NS
	Muslim	0	1	0				
	Christian	0	0	0				
	Others	2	7	0				
Type of family	Nuclear	4	14	0	0.455	1	3.841	0.500 NS
	Joint	4	8	0				
Area of	Rural	6	9	0	2.8	2	5.9	0.244

residence	Urban	2	1 2	0	25		91	NS
	Sub-Urban	0	1	0				
Occupation	House Wife	4	1 5	0	2.4 88	3	7.8 15	0.477 NS
	Agriculture	0	1	0				
	Government Job	0	1	0				
	Private Job	4	5	0				
Nutritional status	Vegetarian	7	1 7	0	0.3 84	1	3.8 41	0.536 NS
	Mixed	1	5	0				
Period of gestation in weeks	37-38	2	1	0	2.7 27	1	3.8 41	0.099 NS
	39-40	6	2 1	0				
	>40	0	0	0				
Mode of labour	Spontaneous Labour	5	5	0	4.1 76	1	3.8 41	0.041 S
	Induction with Pitocin	3	1 7	0				
Duration of 1st stage of labour	>12 hour	5	5	0	4.1 76	1	3.8 41	0.041 S
	9-12 hour	3	1 7	0				
	5-8 hour	0	0	0				
	<4 hour	0	0	0				
Parity	Primi Para	5	1 4	0	0.0 03	1	3.8 41	0.954 NS
	Multi Para	3	8	0				
	Grand Multipara	0	0	0				

Table-10: depicts association between the pain perception with their selected socio-demographic variable in experimental group. In the present study there was a significant association between pain perceptions with their socio-demographic variables of women such as mode of labour, duration of first stage of labour while there was no significant association between pain perception with their socio-demographic variable of women such as age (in year), educational status, religion, type of family, occupation, nutritional status, period of gestation in weeks and parity.

Table-11: Association between the pain perception among women in first stage of labour with their selected socio-demographic variables in control group.

N= 60

Socio-demographic variables	Opts	Association of observational score with socio-demographic variables in post control group.						
		Sever discomfort	Moderate discomfort	Mild discomfort	Chi square test (X^2)	df	Table value	P value
Age in years	18-23 years	0	0	4	4.0 38	2	5.991	0.1 33 NS
	24-28 years	0	4	12				
	29-35 years	0	0	10				
	> 35	0	0	0				

	years							
Educatio n status	No Formal Educatio n	0	0	0	0.0 10	2	5.991	0.9 95 NS
	Primary Educatio n	0	2	13				
	Seconda ry Educatio n	0	1	6				
	Higher Educatio n	0	1	7				
Religion	Sikh	0	2	19	1.3 60	2	5.991	0.5 07 NS
	Muslim	0	0	1				
	Christian	0	0	0				
	Others	0	2	6				
Type of family	Nuclear	0	1	18	2.9 21	1	3.841	0.0 87 NS
	Joint	0	3	8				
Area of residence	Rural	0	3	16	0.2 71	1	3.841	0.6 03 NS
	Urban	0	1	10				
	Sub- Urban	0	0	0				
Occupati on	House Wife	0	3	17	1.0 10	3	7.815	0.7 99 NS
	Agricult ure	0	0	1				
	Govern ment Job	0	1	4				
	Private Job	0	0	4				
Nutrition al status	Vegetari an	0	4	23	0.5 13	1	3.841	0.4 74 NS
	Mixed	0	0	3				
Period of gestation in weeks	37-38	0	0	0	N A			
	39-40	0	4	26				
	>40	0	0	0				
Mode of labour	Spontan eous Labour	0	0	14	4.0 38	1	3.841	0.0 44 S
	Inductio n with Pitocin	0	4	12				
Duration of 1st stage of labour	>12 hour	0	4	12	4.0 38	1	3.841	0.0 44 S
	9-12 hour	0	0	14				
	5-8 hour	0	0	0				
	<4 hour	0	0	0				
Parity	Primi Para	0	4	13	3.5 29	1	3.841	0.0 60 NS
	Multi Para	0	0	13				
	Grand Multipar a	0	0	0				

Table-11: The above table shows association between the pain perception with their selected socio-demographic variable in control group. In the present study there was a significant association between pain perceptions with their socio-demographic variables women such as mode of labour, duration of first stage of labour. There was no significant association between pain perception with their socio-demographic variables of women such as age in year, educational status, religion, type of family, occupation, nutritional status, period of gestation(in weeks) and parity.

IV. Conclusion

The findings revealed that there was an improvement in pain perception in experimental group as compared to control group. There was a statistically significant difference between the pre-test and post- test score of pain perception between experimental group and control group significant <0.05 . Hence the research ($H_{1.1}$) hypothesis was accepted.

Recommendations for further study:

On the basis of the findings of the study the following recommendations have been made:

1. Similar study can be undertaken with a large sample to generalize the findings.
2. The study can be conducted in different settings, private hospitals and primary health care centers with similar facilities.
3. A descriptive study can be conducted to assess the knowledge and attitude of nurse midwives on complementary alternative therapies for labour pain management.
4. A comparative study can be conducted between primi gravid women and multi gravid women to assess the effectiveness paced breathing exercise.
5. A comparative study can be done to evaluate the effect of breathing exercise and massage therapy on pain perception among women in first stage of labour.

LIMITATIONS:

1. The sample size was limited to 60 women in first stage of labour.
2. The study was confined to a small sample selected by non-probability convenience sampling technique.
3. The study setting was limited to women in first stage of labour who are admitted in Adesh Hospital, Bathinda.

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