

**A STUDY TO ASSESS THE EFFECTIVENESS OF SLOW PACED  
BREATHING ON PAIN PERCEPTION DURING FIRST  
STAGE OF LABOUR AMONG PRIMIGRAVIDA  
MOTHERS IN A SELECTED HOSPITAL  
AT KANYAKUMARI  
DISTRICT**



**A DISSERTATION SUBMITTED TO THE TAMILNADU  
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI  
IN PARTIAL FULFILLMENT FOR THE  
DEGREE OF MASTER OF SCIENCE  
IN NURSING**

**OCTOBER 2016**

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DISTRICT  
2014- 2016**

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## CERTIFICATE

This is to certify that the dissertation entitled, “ **A Study to assess the effectiveness of slow paced breathing on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanyakumari district**”, is a bonafide work done by Mrs. Ajitha Kumari.S.R, II year M.Sc (N), Global College of Nursing, Nattalam in partial fulfillment of the University rules and regulations for the award of M.Sc (N) degree under my guidance and supervision during the academic year October 2014 – 2016.

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Date:

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## TABLE OF CONTENTS

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<b>Chapter No</b>	<b>Contents</b>	<b>Page No</b>
<b>I</b>	<b>INTRODUCTION</b>	<b>1-10</b>
	Need for the study	3
	Statement of the problem	4
	Objectives of the study	4
	Hypothesis	5
	Operational definitions	5
	Assumptions	6
	Delimitations	6
	Conceptual framework	7
<b>II</b>	<b>REVIEW OF LITERATURE</b>	<b>11-17</b>
	Review of related Literature	11
<b>III</b>	<b>RESEARCH METHODOLOGY</b>	<b>18-26</b>
	Research approach	18
	Research design	18
	Variables	19
	Research setting	20
	Population	20
	Sample	21
	Sample size	21
	Sampling technique	21
	Sampling criteria	21
	Description of the tool	22
	Content validity	23
	Reliability	23
	Pilot study	23
	Data collection process	23
	Plan for data analysis	24
	Ethical Consideration	24

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<b>IV</b>	<b>DATA ANALYSIS AND INTERPRETATION</b>	<b>27-45</b>
<b>V</b>	<b>DISCUSSION</b>	<b>46-47</b>
<b>VI</b>	<b>SUMMARY, CONCLUSION, NURSING IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS</b>	<b>48-51</b>
	<b>REFERENCES</b>	<b>52-55</b>
	<b>APPENDICES</b>	

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## LIST OF TABLES

<b>Table No</b>	<b>Title</b>	<b>Page No</b>
1	Frequency and percentage distribution of samples according to demographic variables in experimental and control group	29
2	Frequency and percentage distribution of sample according to pre-test level pain perception in experimental and control group	37
3	Frequency and percentage distribution of sample according to post-test level pain perception in experimental and control group	39
4	Mean, Standard Deviation and unpaired 't' value on pre-test level of pain perception among primi mothers in experimental and control group	41
5	Mean, Standard Deviation and unpaired 't' value on post test level of pain perception among primi mothers in experimental and control group	42
6	Association between the pre- test level of pain perception and selected demographic variables	44

## LIST OF FIGURES

Figure No	Title	Page No
1.	Modified Ernestine wiedenbach's helping Art of Clinical Nursing Theory Model	10
2.	Schematic Representation of Research Methodology	26
3.	Distribution of samples according to age	31
4.	Distribution of samples according to education	32
5.	Distribution of samples according to occupation	33
6.	Distribution of samples according to monthly family income in Rupees	34
7.	Distribution of samples according to type of family	35
8.	Distribution of samples according to family support	36
9.	Distribution of samples according to the level of pain perception before intervention	38
10.	Distribution of samples according to the level of pain perception after intervention	40
11.	Mean post- test level of pain perception among experimental and control group	43

## LIST OF APPENDICES

Appendices	Title	Page No
I	Letter seeking permission to conduct the study	i
II	Ethical consideration	ii
III	Letter seeking experts opinion for the validity of tool	iii
IV	Evaluation criteria checklist for validation	iv
V	List of experts validated the tool	v
VI	Certificate of English editing	vi
VII	Informed consent	vii
VIII	Research tool	viii
	A. Demographic Performa	viii
	B. Numeric pain rating scale	ix
	C. Numeric pain rating scale in Tamil	x
IX	Procedure for slow paced breathing	xi

# **ABSTRACT**

## **Introduction**

Natural childbirth is a profound and powerful human experience which is a mixture of feeling of empowerment and accomplishment. Both pharmacological and non-pharmacological methods are available today and it is known that the non-pharmacological options involve less risk when used in this process. Breathing exercises helps labour women to relax and distract from the painful response.

## **Statement**

“A study to assess the effectiveness of slow paced breathing on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanyakumari District.”

## **Objectives**

- To assess the pre-test and post-test level of pain perception during first stage of labor in experimental and control group.
- To determine the effectiveness of slow paced breathing exercise by comparing the post-test level of pain perception of experimental and control group.
- To associate pre-test level of pain perception during labour with selected demographic variables.

## **Research Methodology**

The research design adopted for this study was quasi experimental design .The sample size was 60 (30 experimental and 30 control group) and was drawn through purposive sampling technique. The level of labour pain perception was assessed by using Numeric pain rating scale. Slow paced breathing was instructed to practice during contractions for 2 hours 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.

### **Findings of the study**

The mean post-test score on level of pain perception during first stage of labour in experimental group was 1.6, but in control group it was 2.5. The calculated unpaired 't' value was 5.92, which is more than the table value at 5% significance (table value=2.02). Hence, it was statistically significant at 5% ( $p < 0.05$ ). It shows that slow paced breathing is effective in reduction of pain perception during first stage of labour. Hence the research hypothesis ( $H_1$ ) is accepted. There is no significant association between demographic variables. Hence the research hypothesis ( $H_2$ ) is rejected.

### **Conclusion**

This study finding revealed that slow paced breathing exercise helps in reducing the level of pain perception among primigravida mothers in the experimental group. So this can be practiced as a Non-pharmacological method to relieve pain perception during labour in various settings.

# CHAPTER I

## INTRODUCTION

*“Giving birth should be your greatest achievement not your greatest fear”.*

**-Jane Weideman**

Childbirth is one of the most marvelous and memorable segment in a woman's life. It does not really matter if the child is the first, second or the third one. Each experience is unique and calls for a celebration. The fear and anxiety about child birth often prevents most women from enjoying this experience.

Series of events that take place in the genital organs in an effort to expel the viable products of conception (fetus, placenta, and the membranes) out of the womb through the vagina into the outer world is called labour. **(D.C.Dutta- 2015)**

Events of labor are divided into three stages. First stage starts from onset of true labor pain and ends with the full dilatation of cervix. Second stage starts from full dilatation of cervix and ends with the expulsion of the fetus from the birth canal. Third stage involves separation and expulsion of placenta and its membranes and fourth stage involves observation for at least one hour after birth.

The first stage of labor averages about 13-14 hours for a nullipara and about 6-7 hours for a multipara. Latent phase (early) involves dilatation from 0-3cm in which contractions are usually every 5-30 minutes, lasting for 10-30 seconds and of mild intensity. Active phase involves dilatation from 4-7cm, contractions are usually every 3-5 minutes; lasting 40-60 seconds and of mild to moderate intensity. Transitional phase involves dilatation from 8-10 cm, contractions are every 2-3 minutes, lasting 50-60 seconds and of moderate to strong intensity. Some contractions may last up to 90 second. **(Lowdermilk and Perry -2011)**

Pain is highly unpleasant and very personal sensation that cannot be shared with others. Although pain is a universal experience, its exact nature remains a mystery. **(Barbara Kozier et al 2007)**. Pain during labor is caused by the contraction

of the muscles of the uterus and by the pressure on the cervix. This is mainly manifested as cramping in the abdomen, groin and back, as well as a tired, achy feeling all over the body. Some women experience pain in their sides or thighs as well. Other causes of pain during labor include pressure on the bladder and bowels by the head and stretching of the birth canal and vagina. **(Hirsch Larrissa & Ural. H. Serdar -2011)**

Specific exercises and postures can help the pregnant women to adopt to the physical changes in her body during the childbearing years. They will help to ease the minor aches and pains during pregnancy and may also help to prevent long term postpartum problems. In addition, coping skills such as relaxation, positioning and breathing awareness will provide the mother with the practical means of managing labour. **(Eileen Brayshaw -2011)**

Breathing properly is vital for having an untroubled labour. Shallow and panic breathing are common when a person is frightened or is in a state of stress. During labour, pain makes the mother stressed and leads to panic breathing which would mean less flow of oxygen to the mother as well as for the baby. This may cause loss of control of the body and make labour a very hard process. However, breathing in a rhythmic manner during labour helps in increasing the flow of oxygen in the body. This ensures that there is plenty of oxygen available for both mother and baby during the crucial phase. **(New kids-center)**

Studies have shown that the risks associated with caesarian or assisted birth can be avoided altogether through the use of rhythmic breathing and other relaxation techniques. Slow paced breathing helps to release the endorphins into the body which are extremely useful in relieving overall physical pain and aches. Slow paced breathing is performed at approximately one half of the women's normal breathing rate. Slow paced breathing aids in relaxation and provides optional oxygenation. In the first stage of labor, such breathing techniques can promote relaxation of the abdominal muscles and thereby increase the size of the abdominal cavity. This approach lessens discomfort generated by friction between the uterus and abdominal wall during contractions. **(www.livestrong.com/labour and delivery)**



## NEED FOR THE STUDY

Pregnancy is a time of great change for a woman, not only for the obvious physical change in her body, even her emotional state changes several times throughout the day. Each woman comes into labor with a set of expectations: fear, preparation, pain threshold, personality and behavioral makeup, and ways of experiencing what is happening to her, which has to be maintained effectively. The time of labor and birth, though short in comparison with the length of pregnancy, is the most dramatic and significant period of pregnancy.

Labor pain is the most severe pain experienced by the women. Parity also influences labor pain, that is, primigravida women experience more pain during labor than multigravida mothers. Recent studies have shown that the incidence of caesarean sections is increasing throughout the developed and developing countries. Majority of women (68%) are requesting for caesarean section because of psychological indications. Women with adequate psychological support and relaxation techniques had reduced the incidence of caesarean section and 38% of them agreed for normal vaginal delivery.

In 2010, WHO had conducted a study in 137 countries by obtaining data on number of cesarean section being performed. Out of that a total of 54 countries had cesarean section below 10%, whereas 69 showed above 15%, 14 countries had rates between 10-15% and the number of cesarean sections in the said countries was 6.20 million, however in 2008 it was only 3.18 million. According to World Health Statistics (2012), 9% of all births in Asia were by cesarean section. Also, study revealed that in Asia some women preferring cesarean section because of fear of painful natural birth.

A quasi-experimental study was conducted in India to evaluate the effectiveness of slow paced breathing on pain perception during first stage of labor among primipara mothers. Slow paced breathing was taught to the experimental group before the labor pain started which they practiced during labor. Pain perception level was measured using pain intensity scale and facial pain scale. The investigator concluded that mothers who practiced slow paced breathing reported significant reduction in pain perception. The mean value of 4.28 in experimental group and 6.22

in the control group using pain intensity scale. The computed 't' value 6.35 reveals that slow paced breathing is effective at 5% level of significance.

The retrospective, descriptive survey design study conducted by East Carolina University (Greenville) in 2001 to examine which non-pharmacologic pain relief techniques is used by laboring women most often and also determined effectiveness of the chosen techniques. Out of the ten non-pharmacological strategies rated by the sample (N=46) paced breathing exercises, relaxation, acupressure and massage were found to be most effective.

The investigator during her clinical posting and interaction with mothers in labor had observed various behavioral responses like crying, hitting the labor table, biting of teeth tightly, etc. Mainly, mothers are not prepared mentally and physically to deal the happenings of pregnancy. Moreover, they sink into panic during the progress of labor. This could be controlled by relaxation technique like slow paced breathing. Hence, the investigator is interested to evaluate the effectiveness of slow paced breathing on pain perception among primigravida mothers. This study will help in providing better care during intrapartum period which gives a positive childbirth experience to the mother.

## **STATEMENT OF THE PROBLEM**

A study to assess the effectiveness of slow paced breathing on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanyakumari district.

## **OBJECTIVES OF THE STUDY**

The objectives of the study are:

- To assess the pre-test and post-test level of pain perception during first stage of labor in experimental and control group.
- To determine the effectiveness of slow paced breathing exercise by comparing the post-test level of pain perception of experimental and control group.
- To associate pre-test level of pain perception during labour with selected demographic variables.

## **HYPOTHESES**

H<sub>1</sub>: There will be a significant difference in the post-test level of pain perception between experimental and control group.

H<sub>2</sub>: There will be a significant association between pre-test level of pain perception and selected demographic variables among primigravida mothers.

## **OPERATIONAL DEFINITIONS**

### **Effectiveness**

Effectiveness refers to the change produced by an action or cause or producing an intended result.

In this study, effectiveness refers to the extent to which slow paced breathing has its positive impact on the pain perception among primigravida mother during first stage of labour assessed by Numeric pain rating scale

### **Slow paced breathing**

It is a type of breathing exercise in which slow, rhythmic deep breaths are taken through the nose and exhaled through mouth.

In this study, slow paced breathing is an exercise, which refers to a slow, rhythmic breath which will be half of the normal breathing count approximately (6-10 breaths/minute). Pre-test is assessed and instructed to practice slow paced breathing exercise for first 2 hours during contractions in active phase of first stage of labour and post-test is assessed at the end of contraction after 2 hours.

### **Pain perception**

It refers to perception of pain by an individual.

In this study, it refers to level of pain experienced by primigravida mother during first stage of labour in terms of subjective perception as measured with Numeric pain rating scale.

**First stage of labour**

It refers to the phase starting from onset of true labour pain and ends with full dilation of cervix (10cm). It is divided into three phases: latent phase (0-3cm), active phase (4-7cm) and transition phase (8-10cm).

In this study, first stage refers to the active phase (4-7 cm) cervical dilatation.

**Primigravida mother**

It refers to primigravida mother.

In this study, it refers to women become pregnant for first time in the age group of 21-30 yrs.

**ASSUMPTIONS**

The investigator assumes that:

- mothers prefer pain relieving measures during labor.
- slow paced breathing exercise may reduce pain perception during first stage of labor.

**DELIMITATIONS**

Study is delimited to;

Primigravida mothers who are:

- completed 37 weeks of gestation.
- willing to participate in the study.
- during first stage of labour.
- mothers whose age between 21-30yrs.

## CONCEPTUAL FRAME WORK

Conceptual framework is a whole of interrelated concepts or abstracts that are assembled together in some rational scheme by virtue of their relevance to common theme. A conceptual model provides for logical thinking for systemic observation and interpretation of observed data. It also gives direction for relevant questions on phenomena and points out solutions to practical problems as well as serves as a spring board for the generation of hypothesis to be used.

Shirley 1975 states, "The conceptual frame formalizes the thinking process. So that others may read and know the frame of reference basis to research problem.

Ernestine Wiedenbach (1970) introduced helping art of clinical nursing theory. In the study she described three concepts for effective clinical nursing.

Present study aims to evaluate the effectiveness of slow paced breathing exercise on pain perception during first stage of labour among primigravida mothers in a selected hospital. Conceptual framework of this study is based on Modified Ernestine Wiedenbach's helping art of Clinical Nursing theory.

**This theory has 3 factors:**

### ❖ **Central Purpose**

The nurse will have thought through the kind of results to be sought and will take action to obtain these results.

In this study, the investigator's central purpose is reduction of pain perception during first stage of labour.

### ❖ **Prescriptions**

Slow paced breathing exercise will help to reduce the labour pain perception.

### ❖ **Realities**

The five realities are identified by Wiedenbach are Agent, Recipient, framework, Goal, Means.

- (i) Agent – The agent is one who has personal attributes, capacities, capabilities, commitment and competence to provide demonstration.

In this study, the researcher is the agent. It refers to plan for providing slow paced breathing exercise to the primigravida mothers.

- (ii) Recipient – The recipient is one who receiving the plan.

In this study, primigravida mothers during active phase of first stage of labour are the recipient.

- (iii) Frame work – It is the situational factors that affect the nurse's ability to achieve nursing results.

In this study, labour room of Vinod hospital, Marthandam is the frame work.

- (iv) Goal –The goal is the end to be attained through nursing activity.

In this study, the goal is reduction of pain perception during labour.

- (v) Means –It refers to the action and devices through which the agent is enabled to reach the goal.

In this study, slow paced breathing exercise enables the investigator to reach the goal. Tool used to measure this by means of Numeric pain rating scale.

**The conceptualization of Nursing according to this theory consists of three steps as follows:**

Step 1: Identifying a need for help.

Step 2: Ministering the needed help.

Step 3: Validating the need for help.

### **1. Identifying a need for help.**

This step involves determining the need for help. The primigravida mothers were identified based on inclusion and exclusion criteria. Purposive sampling technique was used for selection of samples.

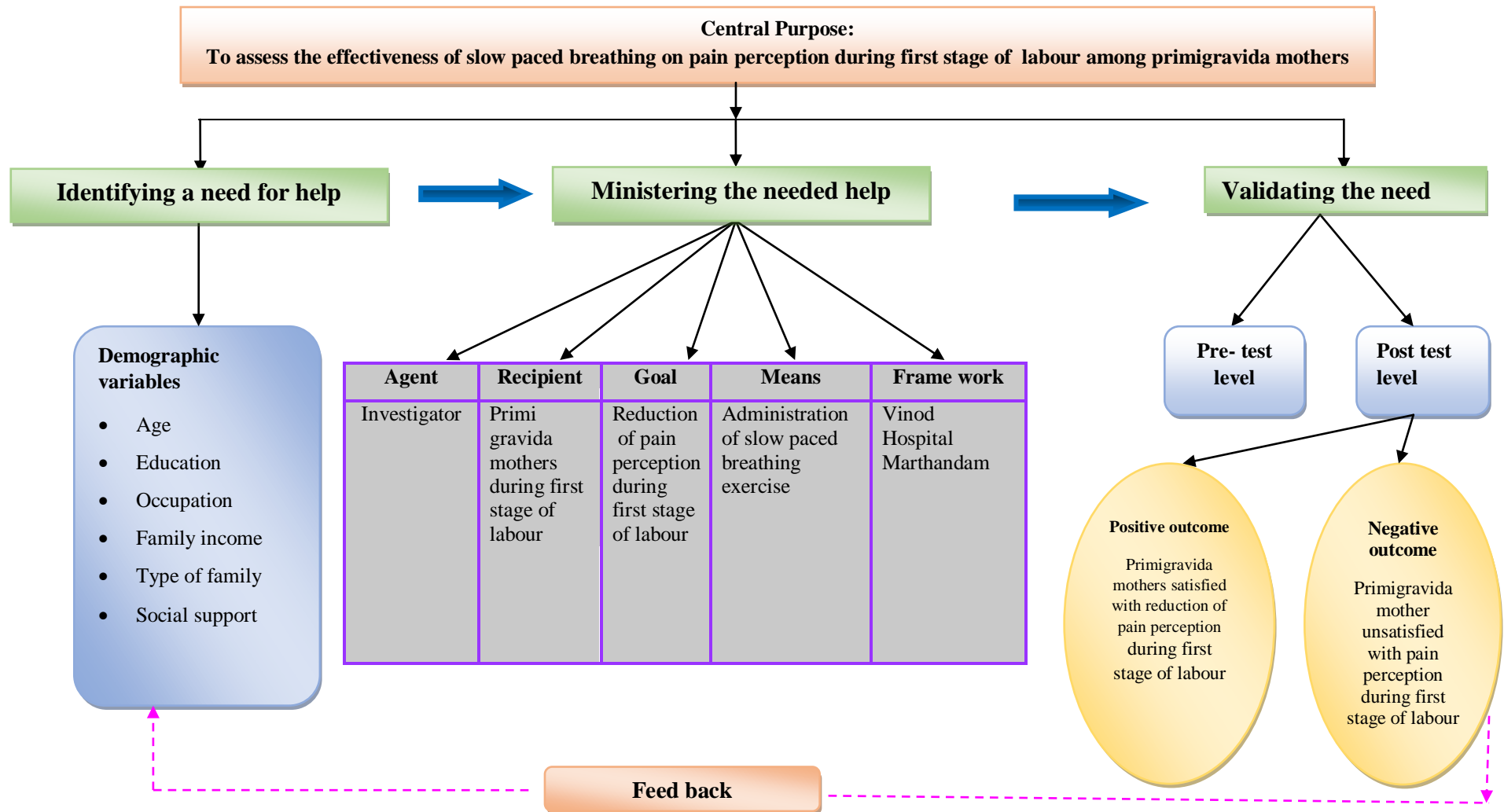
### **2. Ministering the needed help.**

This refers to provision of needed help.

In this study, after the selection of samples investigator demonstrate a slow paced breathing exercise to the primigravida mothers and instructed to perform during first 2 hours of contractions in between 4 cm to 7 cm cervical dilatation for experimental group and no intervention for control group.

### **3. Validating the need for help.**

The validation was done by comparing post test score after administration of slow paced breathing exercise for 2 hours during contractions for experimental group and no intervention for control group by using numeric pain rating scale. It is followed by analysis of data findings.



**Fig 1: Modified Ernestine wiedenbach's helping Art of Clinical Nursing Theory (1970)**



## CHAPTER II

### REVIEW OF LITERATURE

A review of literature is an extensive critical review of the extant literature on the research topic. It is an essential first step in those methodologies that require context to interpret and understand the research problem by locating it within the body of knowledge on the research topic. (Worrall and Carelley- 1997)

Literature review serves a number of important functions in the research process. It helps the researcher to generate ideas or to focus on a research topic. It also can be useful in pointing out the research design, methodology, meaning of tools and type of statistical analysis that might be productive in pursuing the research problem.

**Review of literature in this study is organized under the following headings.**

**Section: A)** Reviews related to slow paced breathing exercises

**Section: B)** Reviews related to pain perception of women in labor

**Section: C)** Reviews related to effect of slow paced breathing on labor pain perception.

#### STUDIES RELATED TO SLOW PACED BREATHING EXERCICES

**Dante. G. Simbulan (2015)** at Manila conducted a study on effectiveness of slow paced breathing on stress reduction by using heart rate variability measurements. A total of 100 samples are taken and 50 as experimental group. The study concluded that slow paced breathing exercises can slow down heart rate by prolonging the RR interval by increasing vagal inputs to the SA node.

**Hanze University of applied sciences (2014)** at Groningen conducted a study on effect of slow paced breathing on perceived stress and physiology among 20 healthy students, who are randomly assigned to two groups. The experimental group has taught to practice slow paced breathing exercises three times a day for one month. The study concluded that the ECG, Heart rate and muscle activity are normal in experimental group and their stress was reduced.

**Michael Mozer, Paul Fedel, et al (2014)** conducted a study on slow paced breathing on muscle sympathetic nerve activity, 10 young healthy males were studied. The subjects were instructed to rest supine and breathe at 6 breaths /minute each for 20 minutes. The study concluded that there was a significant decrease in neither plasma nor epinephrine, increase in blood flow and a reduction in MAP during these same periods.

**Ben Allen and Bruce. H. Friedman (2014)** USA conducted a study on positive emotion reduces dyspnea during slow paced breathing. In this study, 71 subjects were instructed to breath at 6 breaths/minute. Group A, paced their breathing by inhaling and exhaling as a vertical bar moved up and down. Group B, breathing was paced by a respiratory and self-reported dyspnea and emotional indices were recorded. The study concluded that positive emotion reduces dyspnea during slow paced breathing.

**Rajajeyakumar. M, et al (2014)** conducted a study on effect of slow rhythmic voluntary breathing pattern on isometric handgrip among health care students .In the study 60 subjects(17-20 years) are randomly selected as experimental and control group. The study duration was three months and the study concluded that blood pressure responses to isometric handgrip were higher in males, as compared to females. The rate pressure product (RPP) also decreased during isometric handgrip 60%.A decrease in systolic blood pressure and diastolic blood pressure was observed at the end of the study.

**Anderson. D. E. et al (2012)** conducted a study on device-guided slow breathing effects on end tidal carbon dioxide and heart rate variability .The study concluded that it is effect on end tidal carbon dioxide and heart rate variability.

**Arthur Craig, St. Joseph's hospital and Medical center (2010)** Chicago, conducted a study on controlled breathing at a slower rate can significantly reduce feelings of pain among fibromyalgia patients. Study concluded that those who do have some positive energy left in their mental battery can use it to reduce pain by breathing slowly, just like healthy normal.

**Arinola. O. Sanya and Ademaola. M (2000)**, Nigeria conducted a study on effects of controlled breathing on pain tolerance among physiotherapy clients. They took 60 samples and pain tolerance is assessed by visual analogue scale. The study concluded that the pain tolerance increases on controlled breathing on experimental group when compared with control group.

## **REVIEWS RELATED TO PAIN PERCEPTION OF WOMEN IN LABOR**

**Angel Rajakumari. G (2015)** India, conducted a study to evaluate the effectiveness of guided imaginary in pain perception and anxiety among primigravida mothers. The investigator used non probability purposive sampling technique for selection of samples 30 as study group and 30 as experimental group. Pretest is taken at 5cm cervical dilatation and post test at 7 cm cervical dilatation. The tool used was modified combined numerical categorical pain intensity scale and anxiety scale. The study revealed that there was high significant difference found in pain and anxiety at  $P < 0.001$  level between study and control group. Hence, study concluded that guided imaginary is effective in labour pain perception reduction.

**Sushree Sangeeta Priyadarsini, et al (2014)** conducted a quasi-experimental study in Odisha to assess the effectiveness of effleurage on labour pain. Convenient sampling technique was used to select 60 samples. Effleurage during first stage of labour for 30 minutes was administered for 30 experimental samples and routine care for next half as control group. The pre- test and post test score is assessed by numerical pain scale before and after the intervention. The difference between pre and post pain score was obtained by 't' test and the value (6.45) is greater than the tabulated value. Hence, it is found to be highly significant level at  $P = 0.05$  or 5% level of significant. So the study concluded that effleurage is effective in labour pain reduction during first stage of labour.

**Neetu, Poonam Sheoran, et al (2013)** conducted a quasi- experimental study at Haryana with the purpose to assess and compare labour pain intensity and labour outcomes after administering abdominal effleurage in experimental and no intervention in control group. Non probability purposive sampling technique was used to select the study samples total of 60 primi mothers were selected. Numerical pain intensity scale was used to assess the pain intensity before and after intervention.

The study revealed that abdominal effleurage was having significant effect on reducing the labour pain intensity during active phase but not effective during transition phase in experimental group. Also there was no significant effect on total duration of labour, fetal heart rate and finally the Apgar score of newborn at 5 minutes after birth.

**Katayon Vakilian and Afsaneh Keramet (2013)** Iran conducted an experimental study on effect of breathing technique with or without aromatherapy on the length of active phase and second stage of labor. The researcher took 50 primigravida mothers, samples were divided into 25 each and given aromatherapy for first half and routine care for second half .The study concluded that aromatherapy is effective in labor pain reduction.

**Reeja Mariam Joseph and Philomena Fernandez (2013)** Mangalore conducted a quasi- experimental study on effectiveness of jasmine oil massage on reduction of labor pain among primimother .The investigator took non probability sampling technique for sample section and 60 samples are selected of them randomly selected 30 each of experimental and control group. The pain intensity was assessed by verbal intensity pain scale. Data analysis done by assessing pre and post test and study concluded that jasmine oil massage is effective on labor pain reduction.

**Mahin Kamalifard, Shiva Toraby, et al (2012)** Tabriz conducted a study on efficiency of massage therapy and breathing techniques on pain intensity and physiological responses to labor pain .The researcher took 40 primi gravida mother, satisfying the inclusion criteria were selected and randomly divided for massage and breathing technique. The pain intensity is measured by numerical pain intensity scale. The study concluded that both techniques are effective on labor pain relief and decrease caesarean section rate.

**Wijma et al (2001)** conducted a comparative study on the labor pain among primi para and multipara women during 1<sup>st</sup> stage of labor. 35 primi parous and 39 multi parous 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 challenge for staff of a

delivery ward is to support the women in labor in a way that decreases fear, which in turn might reduce the women's need of pain relief.

**Cambell and Kurtz (2000)** conducted a descriptive study to evaluate the intensity of the labor pain at the two stages of cervical dilatation, (cervical dilation of 2-5cm and 6-10cm) at East Cardina University, school of nursing, Greenville, 78 women in labor were selected through convenient sampling technique. Using 3 self-reported measures such as VAS, present pain intensity scale and MC Gill pain questionnaire carried out the pain assessment. These were the one observational measure to rate behavioral index of pain. The data were analyzed by descriptive and inferential statistics. The result of the study shows that when the cervical dilation increased, there was significant increase in self-report pain and observed pain on all the cited measures ( $t=15.72$ ,  $P=0.01$ ). Pain was characterized as discomforting during early dilation and distressing horrible and excruciating as dilatation progressed.

#### **REVIEWS RELATED TO EFFECT OF SLOW PACED BREATHING ON LABOR PAIN PERCEPTION**

**Parneswari. P (2015)** conducted an experimental study on slow paced breathing on pain and behavioral responses during active phase of labour. The study consists of 30 groups both in experimental and control group. The pain assessed by modified numerical pain scale. The mean post test scores of degree of pain experienced by the primi mother in experimental group was Significantly lower than the control group. The study concluded that intensity of labour progress has improved through slow paced breathing.

**Dengsangluri, Jyoti. A. Salunkhe (2015)** conducted an experimental study on 48 subjects of them 24 in experimental and 24 in control group randomly allotted. The experimental group received slow breathing exercise during contraction for a duration of 45 minutes during contractions, where as routine care was provided to the control group. Pain level was assessed after each contraction with Wong weber's facial pain scale and behavioral checklist. The result showed that there was a significant difference between the mean pain score of experimental and control group ( $P<0.001$  as per t-test). So it reveals that slow breathing exercise is effective in decreasing the intensity of labour pain during first stage of labour.

**Kirandeep Kaur et al (2013)** conducted a quasi- experimental study to assess the effect of video on breathing exercises during labour among primigravida mothers admitted in tertiary care hospital, India. 40 samples were purposely selected, were randomly allocated 20 each into experimental and control group. The pain score during first stage of labour was recorded by using numeric pain rating scale. The study concluded that the practice of breathing exercises during labour help to reduce pain perception and duration of first and second stage of labour.

**Neela Jyothsna (2011)** conducted a quasi-experimental study to assess the effect of breathing techniques (slow paced) on labour pain perception in Bengaluru. The researcher selected 50 primigravida by purposive sampling technique and 25 experimental group were instructed and practice breathing exercise. Pre-test and post-test are assess by using visual analogue scale. The study concluded that breathing exercise was effective in reduction of labour pain perception.

**Elizabeth Thomas and Savita Dhiwar (2011)** conducted a study on effectiveness of patterned breathing exercise in pain reduction during first stage of labour in Pune city. The study design used was nonequivalent pre-test post-test control group design. Numeric pain intensity scale was used to assess the pain. Active phase of labour patients are selected and instructed to practice patterned breathing for experimental group. Pre-test was assesses on admission and post-test was assessed every one hour for 5 times. The study concluded that the mean post-test score of experimental group was lower than the control group. Hence, it is effective in reduction of labour pain perception.

**Binny Thomas (2011)** Mangalore conducted a study on effectiveness of slow paced breathing on pain perception of labour, design adopted was quasi-experimental time series. The researcher instructed to practice slow paced breathing and every 45 minutes interval pain score was assessed by using verbal intensity scale. The study concluded that slow paced breathing exercise was effective in reduction of labour pain when comparing with control group.

**Jaya Bharathi. B (2010)**, conducted a study on effective nursing interventions on pain during labour among primi mothers and the researcher used number of non –pharmacological methods which can help a women to relax during contractions.

The breathing techniques, massage and positioning are used. The study concluded that selected nursing interventions breathing exercises were effective in reducing labour pain.

**Pugh million, Gray and Strickland (1998)** conducted a study on first stage labor management, an examination of paced breathing and fatigue. A secondary analysis was conducted on a subset of a prospective longitudinal study of fatigue during the intrapartum period. The sample comprised 56 primi parous women in labor whose fatigue was measured every 2 hours and 6 hours after admission at each data point, the investigatory evaluated the method of breathing that participants used. The results show that during the latent phase of labor, women using paced breathing exhibited significantly more fatigue. It was concluded that it is appropriate for nurses, midwives, physician and doulas to encourage the use of paced breathing as an intervention in active labor.

**Kathylyn Hesson P.hd (1997)** conducted a study examined the breathing patterns of a small sample of women (n=21) during labor. The study also examined the different thoughts or cognitions the women experienced, during their early contraction and assessed whether these cognition, when classified as associative or dissociative in orientation, were related to breathing styles and length of labor. Respiration rate and tidal volume were monitored during and between contractions. The breathing results indicated considerable variation among women in individual respiration rate and tidal volume both between and during contractions. In addition marked variability was found in both the direction and degree of change in breathing frequency and tidal volume in response to contractions.

## **CHAPTER III**

### **METHODOLOGY**

Methodology is a significant part of any research which enables the researcher to organize the procedure of collecting reliable data for the problem under study or investigation. This chapter deals with the description of methodology and the various steps adopted to collect and organize data for the study.

According to POLIT & BECK (2011) research methods are the techniques used by the researcher to structure a study to gather and analyze information relevant to research question.

The methodology section includes the research approach, research design, variables, settings, population, sample, sample size, sampling technique, sampling criteria, development of the tool, description of the tool, validity, reliability, pilot study, data collection procedure, plan for analysis and ethical consideration.

#### **RESEARCH APPROACH**

According to Suresh. K.Sharma (2011) the research approach involves the description of the plan to investigate the phenomenon under study in a quantitative, qualitative or a combination of the two methods. Furthermore, it helps to decide whether the presence or absence as well as manipulation and control over variables.

The research approach used for this study was quantitative approach.

#### **RESEARCH DESIGN**

According to Kothari, a research design is the arrangement of conditions for collection & analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.



For the present study, quasi experimental pre and post test design is used.

Group	Pre-test	Intervention	Post-test
Experimental group	O1	Slow-paced breathing exercise	O2
Control group	O1	No intervention	O2

O1: Assessment of level of pain perception during first stage of labor in experimental group before intervention.

O2: Assessment of level of pain perception during first stage of labor in experimental group after slow paced breathing exercise and control group with no intervention.

## **VARIABLES**

Variables are qualities, properties or characteristics of person, things or situations that change or vary Chinn & Kramer stated that “Variables are concepts at different level of abstracts that are concisely defined to promote their measurement or manipulation within study”. Variables are classified as independent variables & dependent variables, Research variables, Demographic variables and extraneous variables.

### **Dependent variable**

Dependent variable is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain.

Dependent variable -pain perception among primigravida mothers during active phase of first stage of labor.

### **Independent variable**

It is a stimulus or activity that is manipulated or varied by the researcher to create the effect on the dependent variable.

Independent variable –slow paced breathing exercise.

**Demographic variables**

Age, education, occupation, family income, type of family, social support.

**SETTING OF THE STUDY**

According to Polit & Beck (2011) setting is the more specific places where data collection occurs. The selection of setting was done on the basis of feasibility of conducting the study, availability of subjects and cooperation of the authorities.

The study was conducted in Vinod hospital Marthandam, which is a well-known maternity center.

**POPULATION**

Polit & Beck (2011) stated that the term population refers to the aggregate or totality of all subjects or members that conform to a set of specifications. Population may be of two types –target population and accessible population.

TARGET POPULATION refers to the population that the researcher wishes to make a generalization.

In the study, the target populations were the primigravida mothers during first stage of labor.

ACCESSIBLE POPULATION refers to the aggregate of cases which confirm to the designed criteria and which is accessible to the researcher as the pool of subject or object.

In this study, the accessible populations were the primigravida mothers who were admitted with inclusion criteria during first stage of labor at Vinod hospital, Marthandam.

## **SAMPLE**

Polit & Beck (2012) stated that a sample consists of the subset of the population selected to participate in the research study.

The sample for the study was primigravida mothers during first stage of labor who met the inclusion criteria at Vinod hospital, Marthandam.

## **SAMPLE SIZE**

Sample size is the total number of study participants participating in a study. (Polit 2008).

In this study, the sample consists of 60 primigravida mothers during first stage of labour with cervical dilatation between 4-7cm, in which 30 as experimental group and 30 as control group admitted in Vinod hospital, Marthandam.

## **SAMPLING TECHNIQUE**

It is the process of selecting subject from a population in order to obtain information regarding a phenomenon in a way that represents the entire population (Polit 2008).

In this study, investigator selected the samples by purposive sampling method.

## **SAMPLING CRITERIA**

### **Inclusion criteria for sampling**

Primi mothers who were:

- ❖ admitted with 4-7 cm cervical dilatation.
- ❖ between 21-30 years of age.
- ❖ know to speak & understand Tamil, and English.
- ❖ willing to participate in the study.
- ❖ completed 37 weeks of gestation.

### **Exclusion criteria for sampling**

Mothers who were:

- ❖ delivered one or more child.
- ❖ having complicated pregnancy or labour.
- ❖ not willing to participate.
- ❖ under any form of labour anesthesia or analgesia.

### **DESCRIPTION OF THE TOOL**

Description of the tool refers to the explanation of the content of the tool. The investigator listed the number of items and the scoring for each item in the tool. The tool consists of two parts.

#### **SECTION-A**

A structured questionnaire schedule to collect the demographic variables such as age, education, occupation, family income, type of family, family support

#### **SECTION-B**

Pain is highly subjective. It can be assessed by various methods for its various characteristics. In this study, investigator used standardized numeric pain rating scale. Numeric pain rating scale is representing a continuum of intensity and has verbal description at each end that is 0-no pain and 10-worst pain, allowing the client total freedom in identifying the severity of pain by notifying any point on the continuum.

- 0 - No pain
- 1-3 - mild pain
- 4-6 - moderate pain
- 7-9 - severe pain
- 10 - worst pain

## **CONTENT VALIDITY**

Content validity refers to the degree to which an instrument measures what it is supposed to measure. To establish the content validity, baseline Performa and numeric pain rating scale was given to six experts: five from the department of obstetrics and gynecology nursing and one from obstetrician.

## **RELIABILITY**

Numeric pain rating scale is a standardized tool.

## **PILOT STUDY**

A pilot study is a small preliminary investigation which has the same general character as the main study. The investigator had obtained prior permission from the medical officer of PPK hospital Marthandam. Six primigravida mothers were selected and equally assigned to experimental and control group. The purpose of the study was explained to each sample and informed consent was obtained prior to the study. Confidentiality was assured to all the samples.

The investigator practiced slow-paced breathing exercise to 3 samples of experimental group and no intervention for samples of 3 control group. Pain perception was assessed by using numeric pain rating scale before and after the intervention. Data analysis was done using descriptive and inferential statistics.

## **DATA COLLECTION PROCEDURE**

After the approval of college dissertation committee, the investigator obtained formal permission from medical officer of Vinod hospital, Marthandam to conduct the main study. The data collection was done from 01-04-2016 to 30-04-2016. A total of 60 samples were selected according to inclusion criteria, from those who were admitted in the labour room for delivery, by purposive sampling technique. After explaining the objectives and purpose of the study to the primigravida mothers, their consent was obtained. The samples were divided into experimental and control groups consisting of 30 primigravida mothers in each group. Initially, the samples were interviewed in order to collect demographic data.

Pre-test score of the pain perception level was assessed by using numeric pain rating scale and recorded in both experimental and control group during active phase of labour. Then, in the experimental group, slow paced breathing was demonstrated and instructed to practice during each contraction for 2 hours under the supervision of the investigator. Same time, there was no such intervention for the control group. By the end of last contraction in the second hour, the post-test score was assessed for both experimental and control groups.

## **PLAN FOR DATA ANALYSIS**

Data analysis is the systematic organization and synthesis of research data and testing of Research hypothesis using those data. The obtained data was planned to be analyzed by both descriptive and inferential statistics on the basis of objectives and hypotheses of the study.

### **Descriptive statistics**

- Frequency and percentage distribution was used to describe the socio-demographic variables and level of labour pain perception.
- Mean, mean percentage and standard deviation was used for pre-test level of labour pain perception.

### **Inferential statistics**

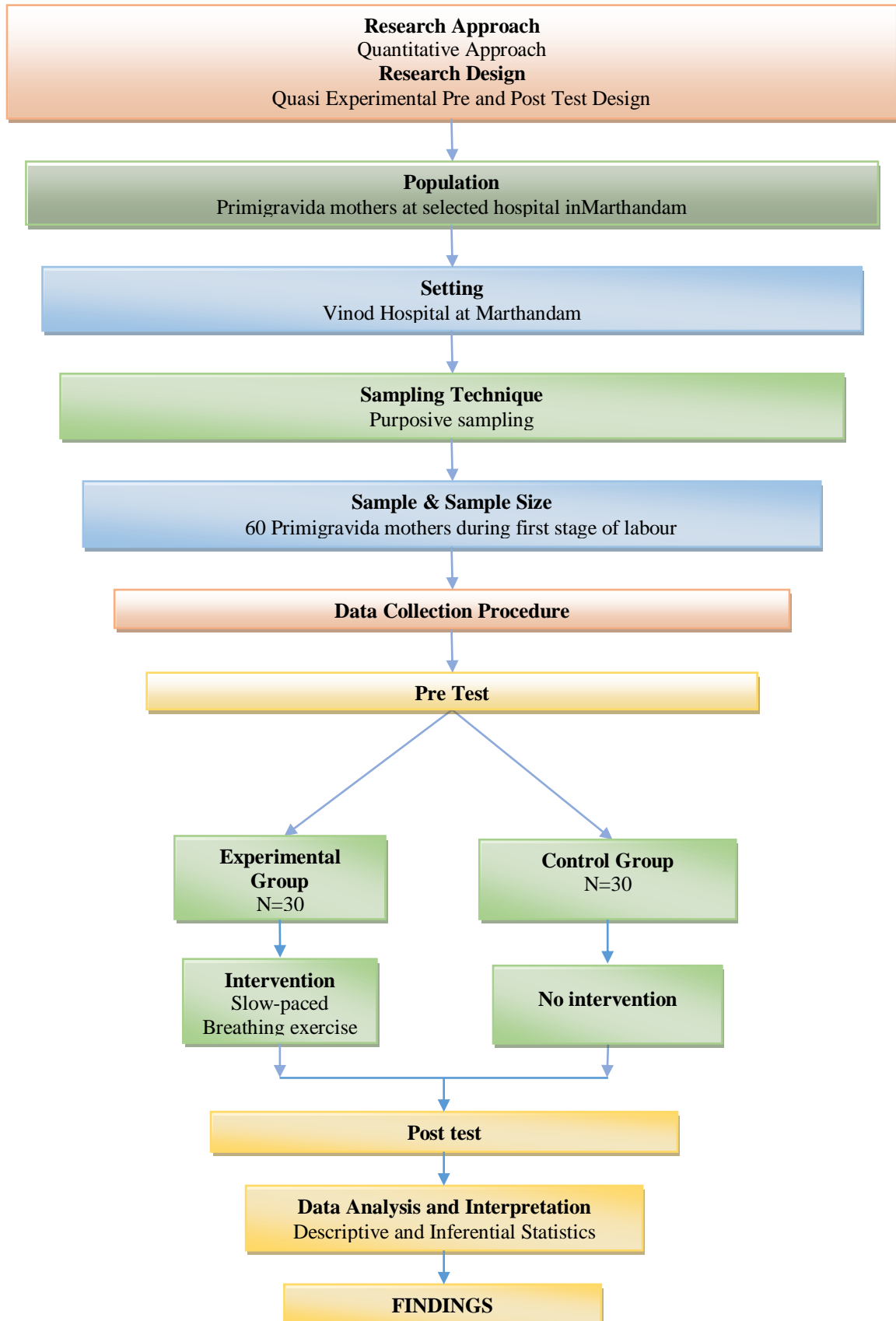
- Unpaired t-test - to compare post test level of pain perception among experimental and control groups.
- Chi- square - to determine the association between pre-test levels of labour pain perception with selected socio- demographic variables.

## **ETHICAL CONSIDERATIONS**

The investigator had taken permission from the Dissertation committee of Global College of Nursing, Nattalam and took written permission from selected hospital to conduct the study.

**SUMMARY**

Research methodology gives a bird's eye view of the entire process of tackling a research problem in a scientific and systematic manner. This chapter has deals with the research methodology of the study, research approach, design, setting, variables of the study, population, sampling technique, development of the tool, content validity, reliability of the tool, data collection procedure and plan for data analysis, in detail.



**Fig 2: Schematic Representation of Research Methodology**



## **CHAPTER – IV**

### **DATA ANALYSIS AND INTERPRETATION**

Research data must be processed and analyzed in an orderly fashion so that patterns and relationships can be discerned and validated and hypothesis can be tested. Quantitative data analyzed through statistical analysis includes simple procedures as well as complex and sophisticated methods.

This chapter presents the analysis and interpretation of data collected during labour from 60 Primi gravida mothers in order to determine their level of pain perception during first stage of labour.

The data obtained was analyzed by both descriptive and inferential statistics. The test scores were analyzed by the statistical mean and standard deviation. The significance of difference between mean score is interpreted by unpaired 't' test. The relationship and association were studied by chi-square test. The level of significance was tested at 5% ( $p = 0.5$ )

#### **Objectives of the study**

1. To assess the pre- test and post-test level of pain perception during first stage of labour in experimental and control group.
2. To determine the effectiveness of slow paced breathing exercise by comparing the post-test level of pain perception of experimental and control group.
3. To associate post-test level of pain perception of experimental and control groups with selected demographic variables.

#### **ORGANISATION OF THE FINDINGS**

In order to find out the relationship between variables and also to find out the effectiveness of slow paced breathing exercise during labour, data gathered were tabulated, analyzed and interpreted by using both descriptive and inferential statistics.

The data and findings are presented as follows:

### **Section I**

Frequency and percentage of the sample according to the demographic variables in experimental and control groups.

### **Section II**

Assessment of pre and post-test level of pain perception among primigravida mothers during labour in experimental and control group.

### **Section III**

- (i) Comparison of pre-test level of pain perception among primigravida mothers during labour in experimental and control group before intervention.
- (ii) Comparison of post-test level of pain perception among primigravida mothers during labour in experimental group after slow paced breathing exercise and control group with no intervention.

### **Section IV**

Association between pre-test level of pain perception during labour in experimental and control group with their demographic variables.

## SECTION I

**THIS SECTION DEALS WITH FREQUENCY AND PERCENTAGE OF THE SAMPLE ACCORDING TO THE DEMOGRAPHIC VARIABLES IN EXPERIMENTAL AND CONTROL GROUPS.**

**TABLE: 1**

**Frequency and percentage distribution of samples according to demographic variables in experimental and control group.**

n =60

Sl No	Demographic Variables	Experimental group		Control group	
		Frequency	%	Frequency	%
<b>1.</b>	<b>Age in years</b>				
	(a) 21- 24 years	13	43.3	11	36.67
	(b) 25 - 27 years	16	53.4	16	53.3
	(c) 28 - 30 years	1	3.3	3	10.0
<b>2.</b>	<b>Education</b>				
	(a) Illiterate	0	0	0	0
	(b) School level	14	46.67	13	43.3
	(c) Graduate	16	53.3	17	56.67
<b>3.</b>	<b>Occupation</b>				
	(a) Sedentary Worker	12	40.0	07	23.33
	(b) Moderate Worker	17	56.67	21	70.00
	(c) Heavy Worker	01	3.3	2	6.67
<b>4.</b>	<b>Family income in rupees</b>				
	(a) D 1000 – D 5000	11	36.67	18	60.00
	(b) D 6,000 – D 10,000	15	50.00	9	30.00
	(c) D 11,000 – D 15,000	4	13.33	3	10.00
<b>5.</b>	<b>Type of family</b>				
	(a) Joint	14	46.67	17	56.67
	(b) Nuclear	16	53.33	13	43.33
<b>6.</b>	<b>Social Support</b>				
	(a) Husband	16	53.33	07	23.33
	(b) Parents	07	23.33	07	23.33
	(c) Relatives	07	23.33	16	53.33

Table 1 describes the distribution in number and percentage of study samples according to their demographic variables. The distribution of sample according to the age in experimental group, out of 30 samples (43.3%) were 21-24 years, 53.3% were 25-27 years and 3.3% were 28-30 years of age. And in control group, 36.67% were 21-24 years, 53.3% were 25-27 years and 10% were 28-30 years of age.

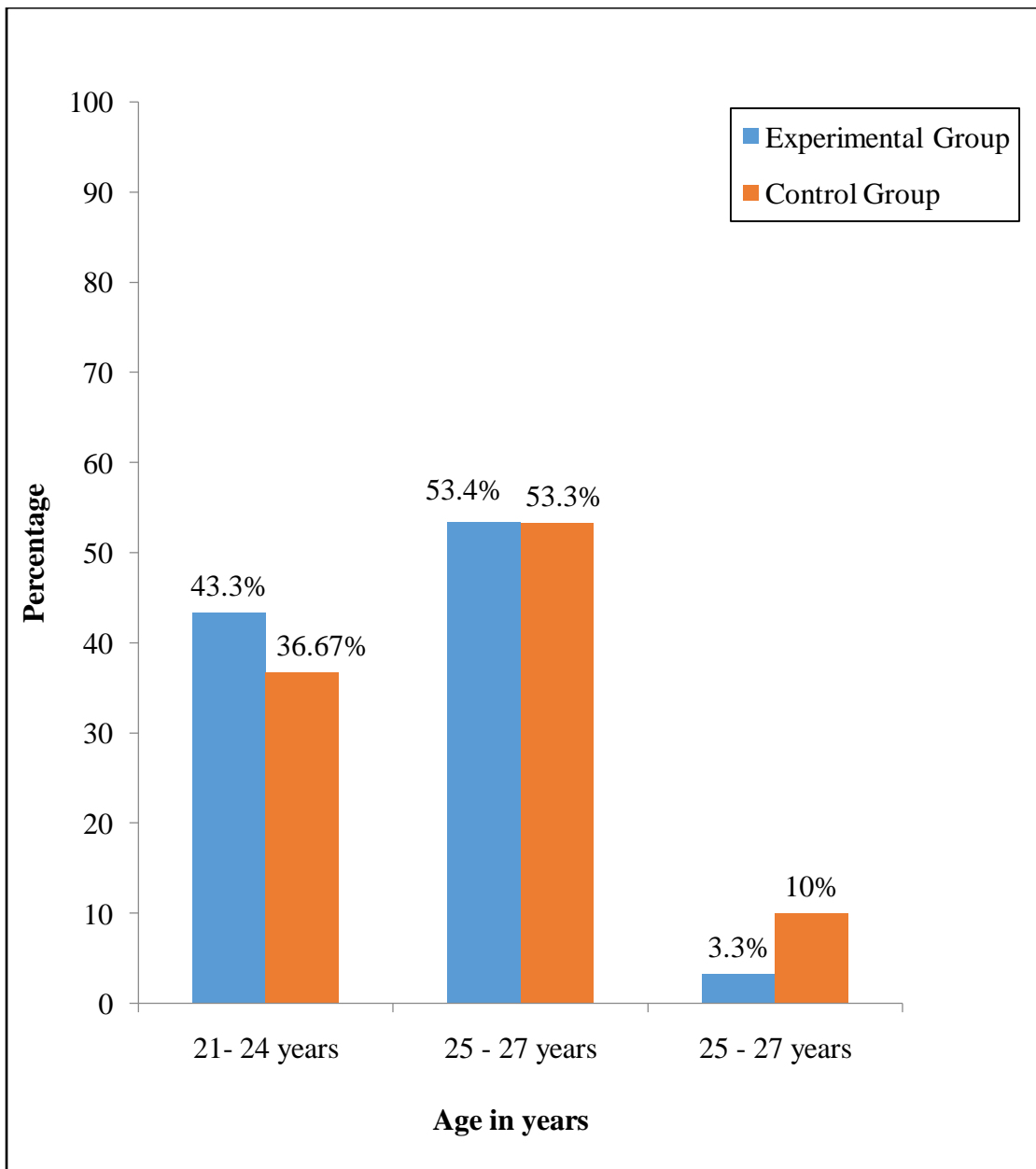
With regard to educational status of mother in the experimental group out of 30 samples, 0% were illiterate, 46.67% belonged to school level and 53.3% belonged to graduate level. And in control group, 0% were illiterate, 43.3% belonged to school level and 56.67% belonged to graduate level.

Distribution of samples according to occupation in experimental group, out of 30 samples 40% were sedentary worker, majority of them 56.67 % were moderate worker and 3.3% were heavy worker. And in control group, 23.33% were sedentary worker, majority of them 70% were moderate worker and 6.67% were heavy worker.

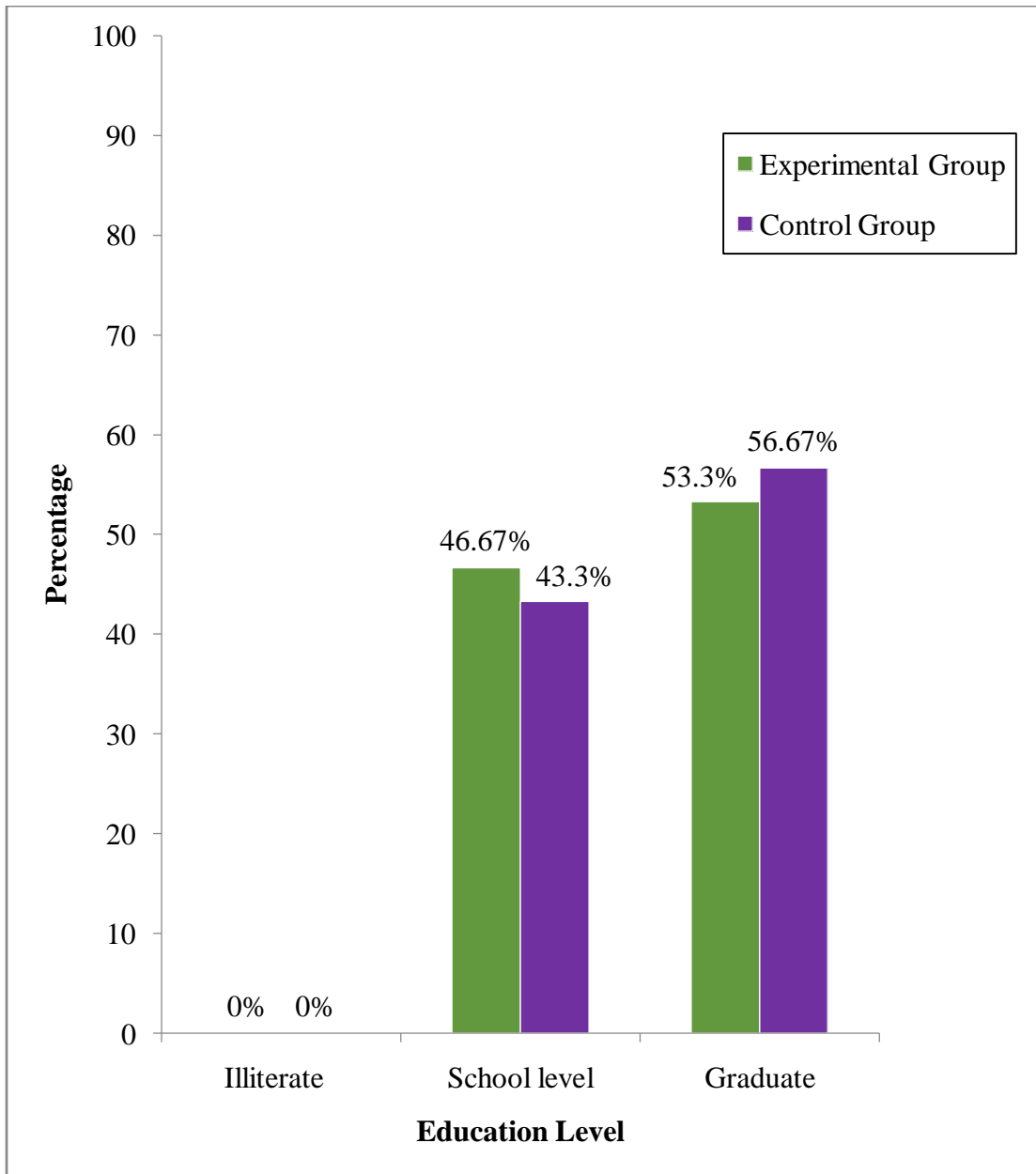
Distribution of samples according to monthly family income in the experimental group, out of 30 samples 36.67% has a monthly family income Rs.1000-5000, 50% has Rs.6000-10000 monthly family income and 13.33% has Rs.11000-15000 monthly family income. And in control group, majority has Rs. 1000-5000 monthly family income, 30% has Rs. 6000-10000 monthly family income and 10% has Rs. 11000-15000 monthly family income.

Dispersion of samples according to type of family, in the experimental group majority (53.3%) belongs to nuclear family and (46.67%) belongs to joint family. In control group, majority (56.67%) belongs to joint family and (43.33%) belongs to nuclear family.

Distribution of samples according to social support, in the experimental group majority (53.33%) belongs to husband, both parents and relatives has (23.33%) social support. In control group, belongs to (53.33%) were relatives, both husband and parents (23.33%).



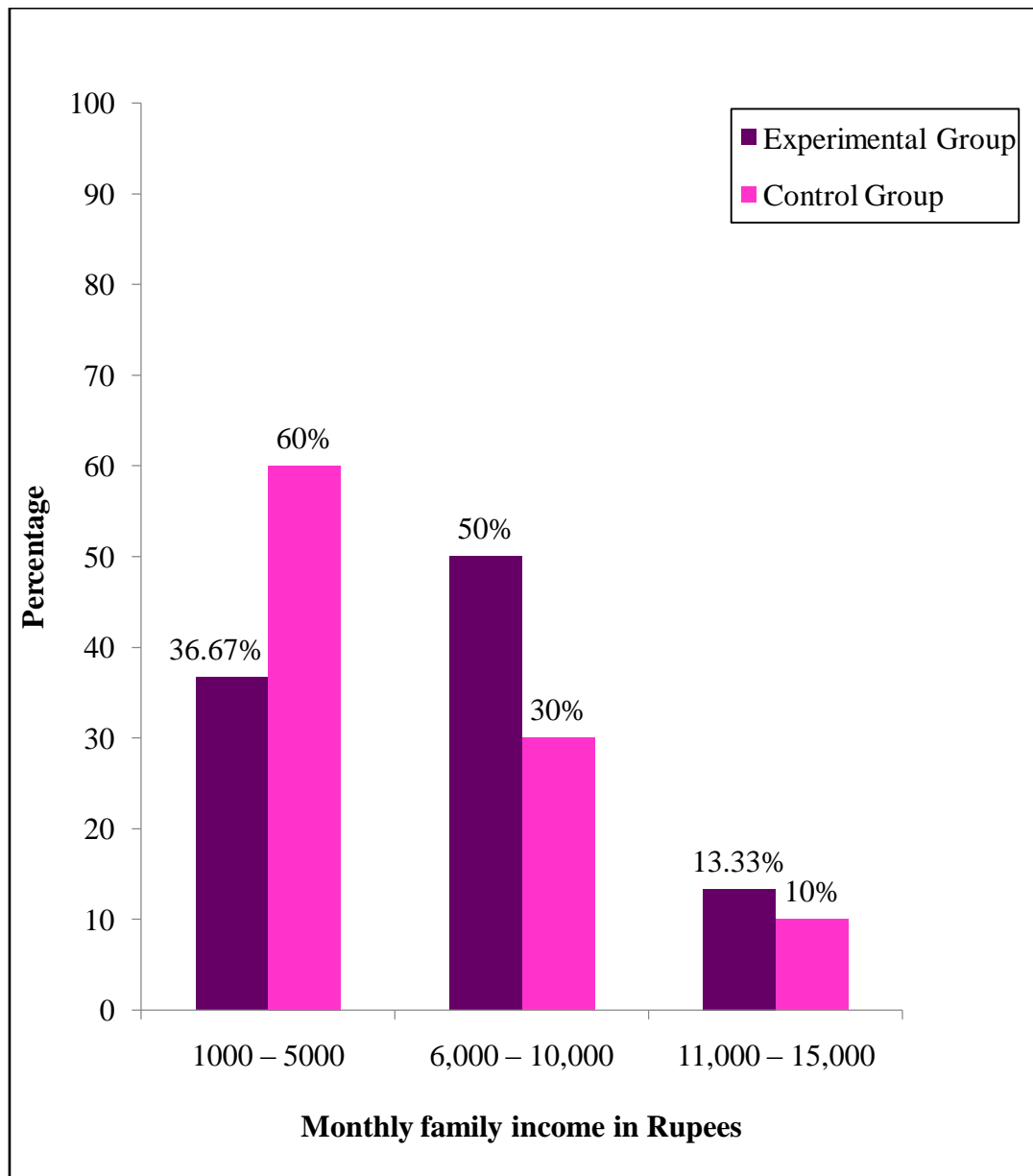
**Fig 3: Distribution of samples according to age**



**Fig 4: Distribution of samples according to education**

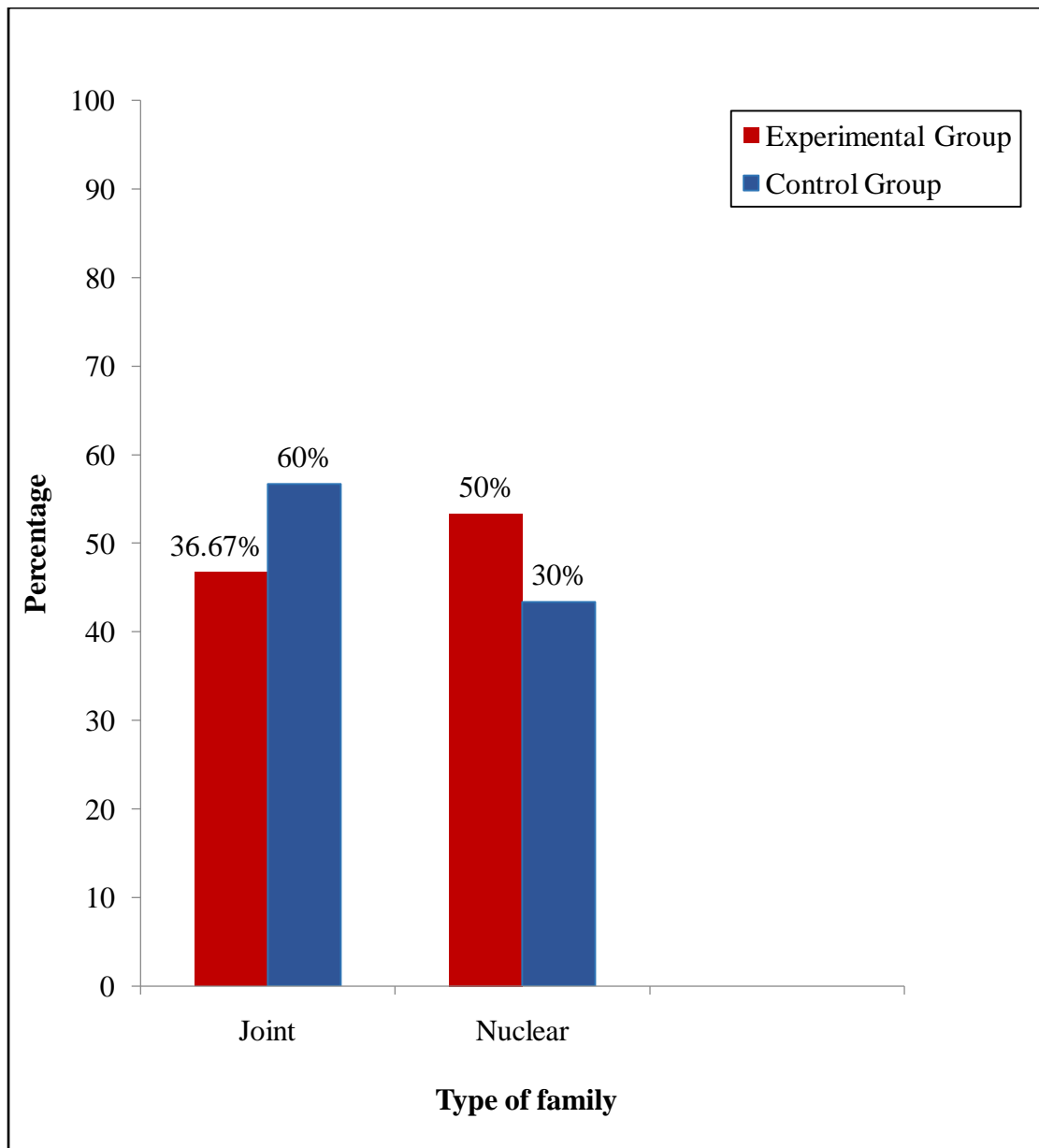


**Fig 5: Distribution of samples according to occupation**

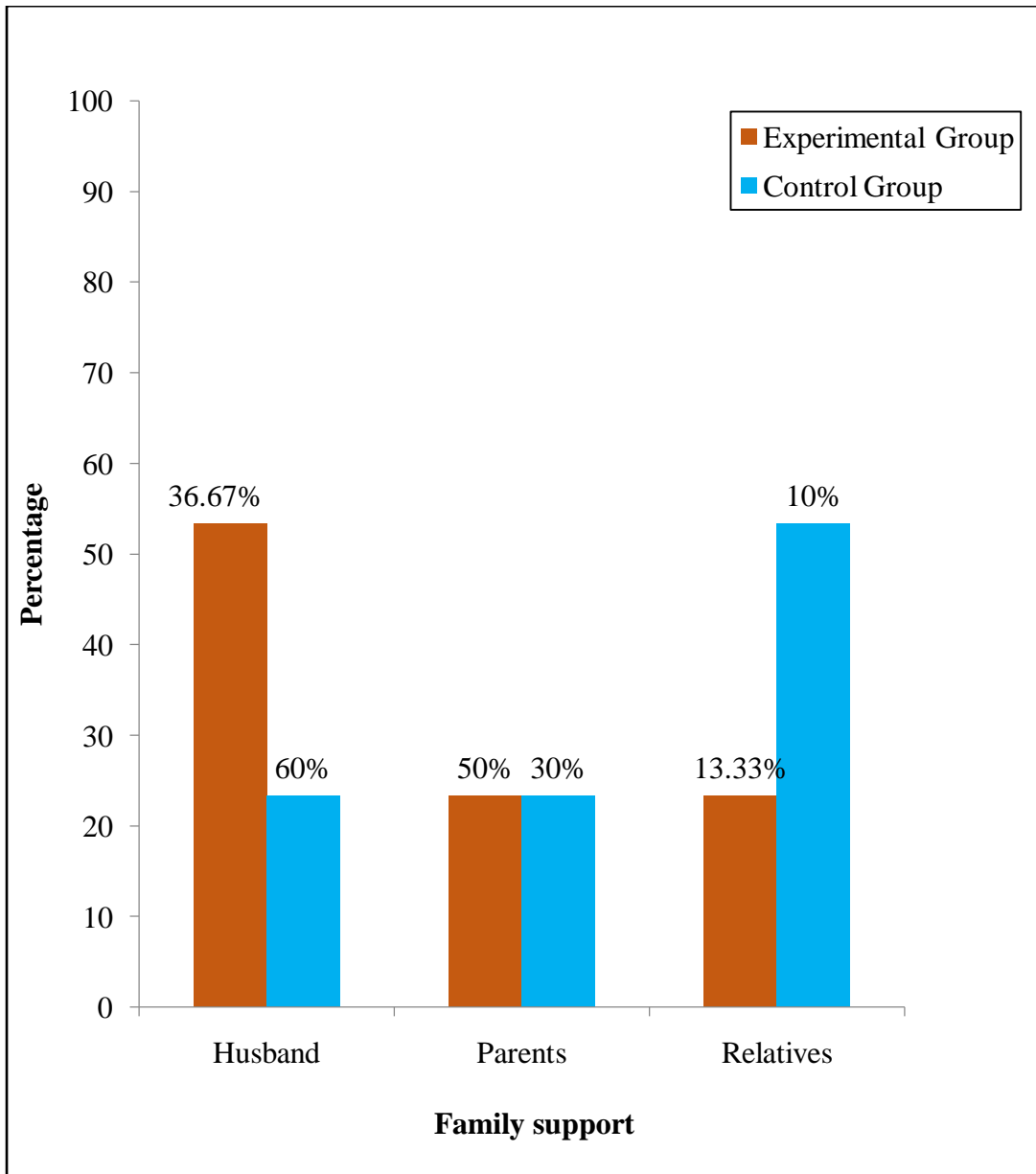


**Fig 6: Distribution of samples according to monthly family income in Rupees**





**Fig 7: Distribution of samples according to type of family**



**Fig 8: Distribution of samples according to family support**

## SECTION: II

**THIS SECTION DEALS WITH PRE AND POST-TEST LEVEL OF PAIN PERCEPTION AMONG PRIMIGRAVIDA MOTHERS DURING LABOUR IN EXPERIMENTAL AND CONTROL GROUP.**

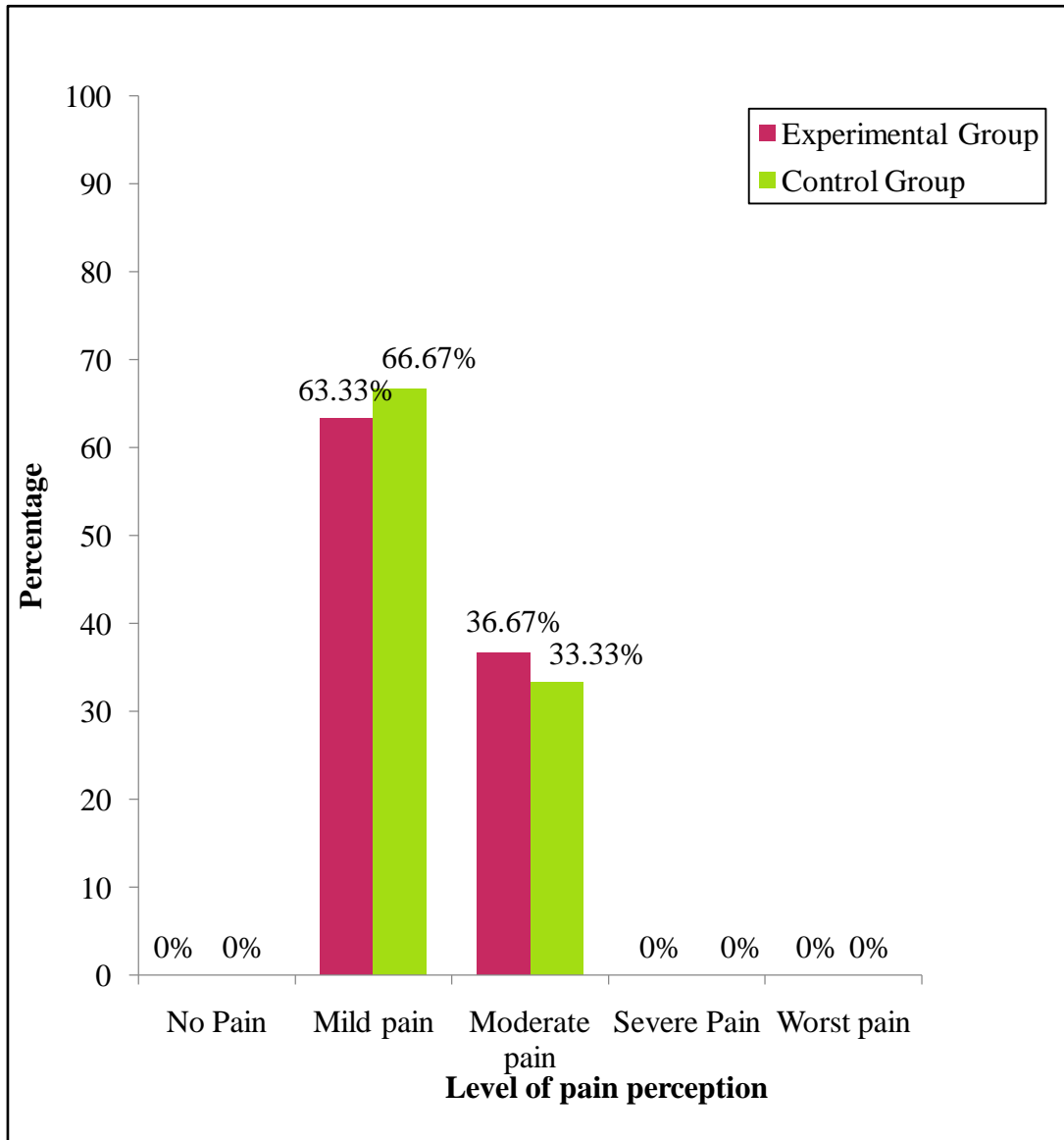
**TABLE: 2**

**Frequency and percentage distribution of samples according to pre-test level of pain perception of experimental and control group before intervention.**

Pain Score	Experimental group		Control Group	
	f	%	f	%
No pain (0)	0	0	0	0
Mild (1-3)	19	63.33	20	66.67
Moderate (4-6)	11	36.67	10	33.33
Severe (7-9)	0	0	0	0
Worst pain (10)	0	0	0	0

n= 30+30

The data presented in table 2 indicates that during pre-test, majority of the mothers i.e. 63.33% has mild pain and 36.67% has moderate pain in experimental group whereas 66.67% has mild pain and 33.33% has moderate pain in control group. None of them has no pain or severe pain during pre-test. The mean score revealed that pre-test score is similar for both group.



**Fig 9: Distribution of samples according to the level of pain perception before intervention**

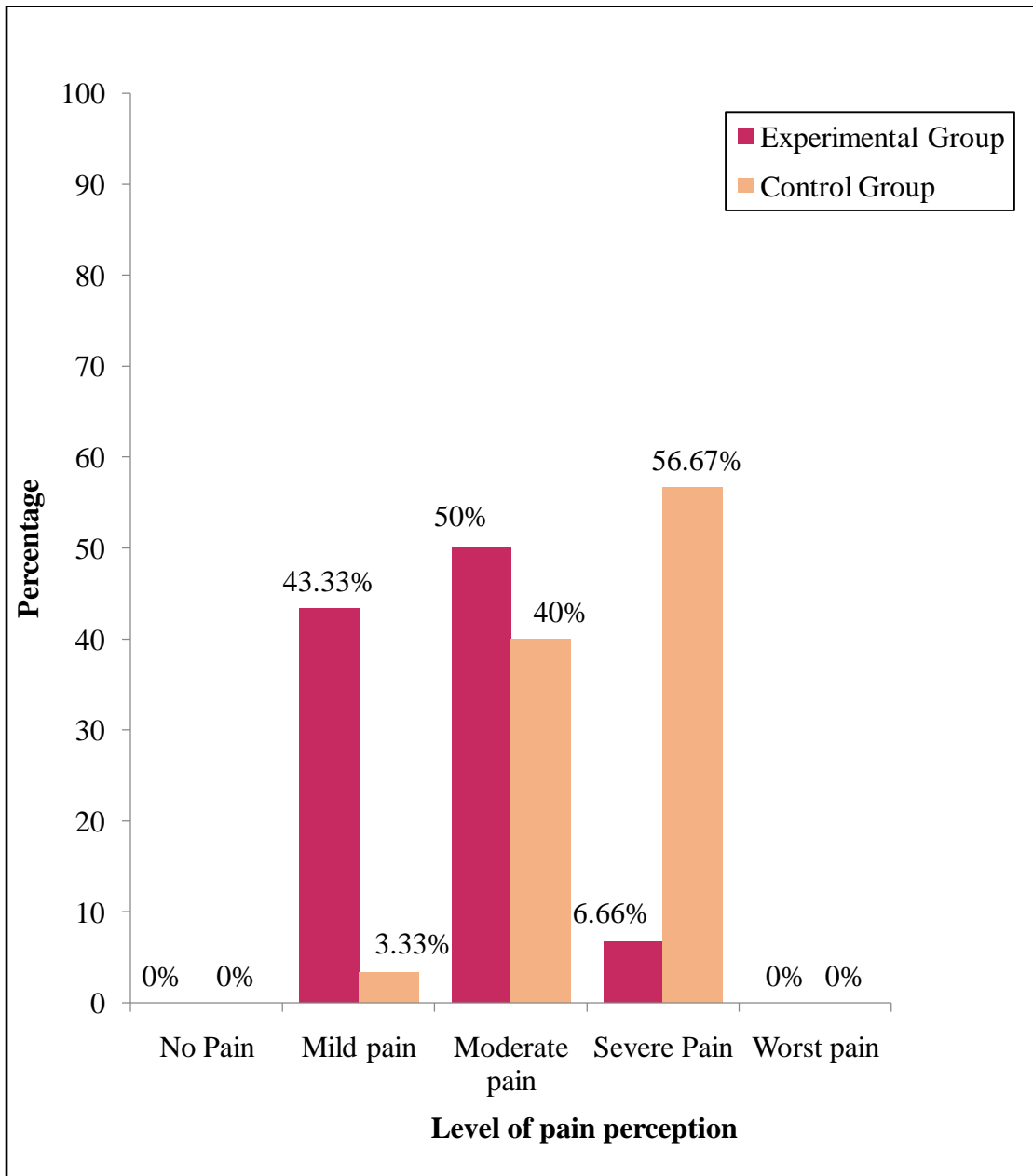
**TABLE: 3**

**Frequency and percentage distribution of samples according to post-test level of pain perception of experimental group after slow paced breathing and control group after no intervention.**

n= 30+30

Pain Score	Experimental		Control Group	
	f	%	F	%
No pain (0)	0	0	0	0
Mild (1-3)	13	43.33	01	3.33
Moderate (4-6)	15	50	12	40
Severe (7-9)	02	6.66	17	56.67
Worst pain (10)	0	0	0	0

The data presented in the table 3 indicates that majority of the mothers i.e. 50% of experimental group has moderate pain, 43.33% has mild pain and 6.6% has severe pain whereas 56.67% of control group has severe pain, 40% Of them has moderate pain and 3.33% has mild pain. None of them has no pain and worst pain.



**Fig 10: Distribution of samples according to the level of pain perception after intervention**

### SECTION III

**THIS SECTION DEALS WITH COMPARISON OF POST-TEST LEVEL OF PAIN PERCEPTION AMONG PRIMIGRAVIDA MOTHERS DURING LABOUR IN EXPERIMENTAL GROUP AFTER SLOW PACED BREATHING AND CONTROL GROUP AFTER NO INTERVENTION.**

**(i) Comparison of pre-test level of pain perception between experimental and control group before intervention.**

**TABLE: 4**

**Mean, Standard Deviation, Unpaired 't' value on Pre-test level of pain perception among primi gravid mothers in Experimental and Control Group before intervention.**

Group	Mean	Standard Deviation	Mean Difference	df	n=30+30
					Unpaired 't' value
Experimental	1.37	0.46	0.04	58	0.39*
Control	1.33	0.47	0.04		

\*Not significant at 5% level of significance

The data presented in table 4 indicates that the mean pre-test pain perception score of experimental group is 1.37 whereas for control group it is 1.33. Standard Deviation of experimental group is 0.46 and for control group is 0.47. The computed unpaired 't' value is 0.39 and table value is 2.02 at 5% significance. This indicates the calculated value is less than the table value. So it is not significant ( $p > 0.05$ ). That means both the groups are similar in nature and homogenous.

**(ii) Comparison of post-test level of pain perception among primigravida mothers during labour in experimental group after intervention and control group with no intervention.**

**TABLE: 5**

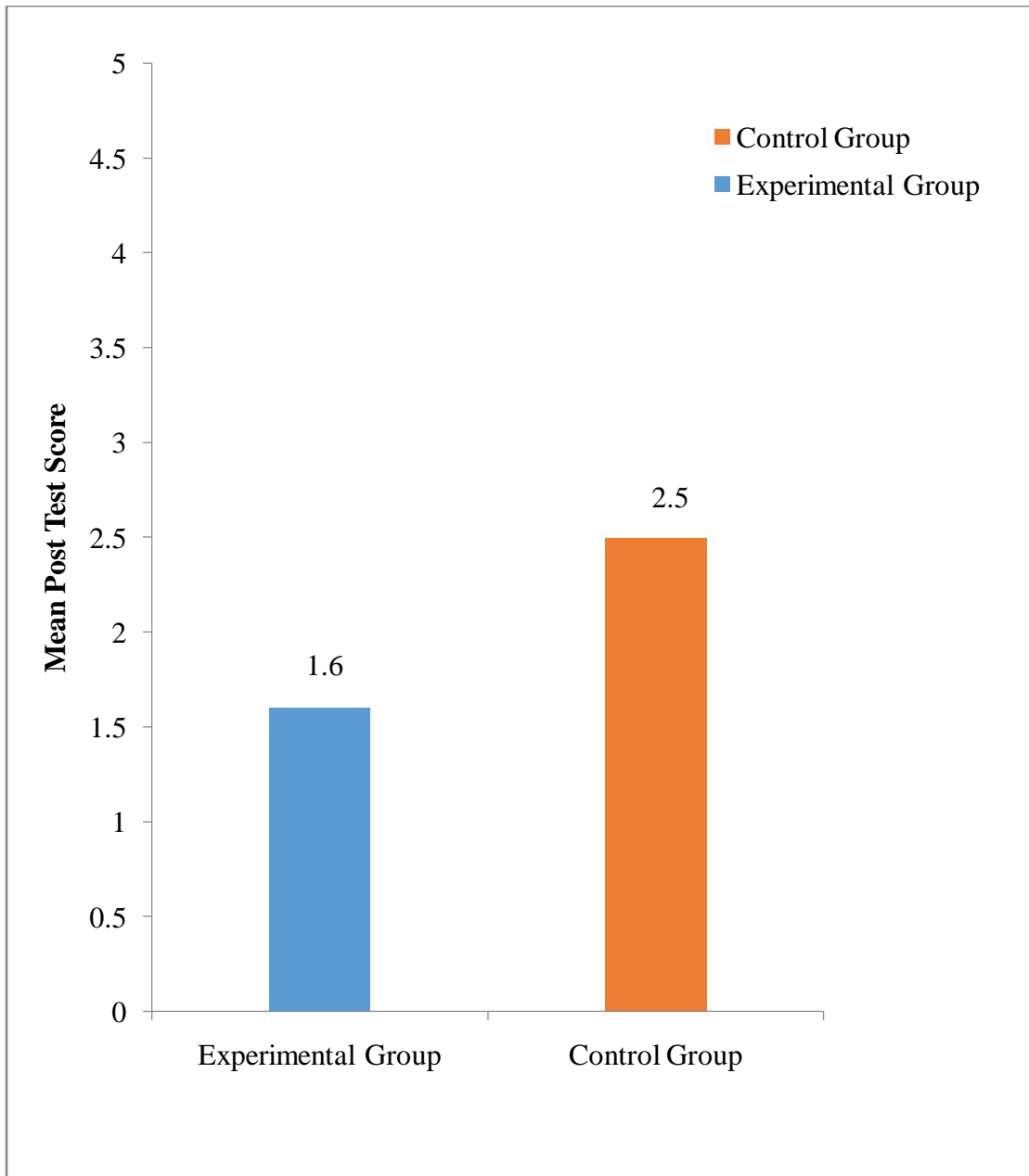
**Mean, Standard Deviation, Unpaired 't' value on Post-test level of pain perception among primi gravid mothers in Experimental after intervention and Control Group with no intervention.**

n = 30+30						
Sl. No	Group	Mean	SD	Mean Deviation	df	Unpaired 't' test
1.	Experimental	1.6	0.61	0.9	58	*5.92
2.	Control	2.5	0.56			

\*significance at  $p < 0.05$

The data represented in the above table using unpaired t test shows that there is a significant difference between mean post assessment pain perception of experimental and control group is 1.6 and 2.5 respectively. The computed unpaired t value 5.92 of the mean post assessment score is greater than the table value 2.02 at 5% level of significance. This shows that slow paced breathing exercise is effective in labour pain perception reduction.





**Fig 11: Mean post- test level of pain perception among experimental and control group**

## SECTION IV

**THIS SECTION DEALS WITH ASSOCIATION BETWEEN PRE-TEST LEVEL OF PAIN PERCEPTION DURING LABOUR IN EXPERIMENTAL AND CONTROL GROUP WITH THEIR DEMOGRAPHIC VARIABLES.**

TABLE 6

**Association between pre-test level of pain perception and the demographic variables.**

Sl. No:	Demographic variables	Frequency (f)	Percentage (%)	df	$\chi^2$	Significance level at 5%
1.	Age					
	(a) 21-24 years	24	40			
	(b) 25-27 years	32	53.33	8	0.66	15.51*
	(c) 28-30 years	04	6.7			
2.	Education					
	(a) Illiterate	0	0			
	(b) School level	27	45	8	0.6	15.51*
	(c) Graduate	33	55			
3.	Occupation					
	(a) Sedentary worker	19	32			
	(b) Moderate worker	38	63.3	8	2.48	15.51*
	(c) Heavy worker	3	5			
4.	Monthly family income					
	(a) 1000-5000	29	48.3			
	(b) 6000-10000	24	40	8	0.18	15.51*
	(c) 11000-15000	7	11.7			
5.	Type of family					
	(a) Joint	31	51.7			
	(b) Nuclear	29	48.3	4	0.39	9.49*
6.	Family support					
	(a) Husband	23	38.3			
	(b) Parents	14	23.3	8	0.42	15.51*
	(c) Relatives	23	38.3			

\*Not Significant at 5%

The above table shows the association of demographic variables with pain perception of experimental and control group. It revealed that there was no association between the pain perception among primigravida mothers with the selected demographic variables such as age, education, occupation, family income, type of family, family support at 5% level of significance.

## **SUMMARY**

This chapter concluded that the slow paced breathing exercise is effective in labour pain perception reduction. Also, there is no association with selected demographic variables such as age, education, occupation, family income, type of family and family support.

## CHAPTER V

### DISCUSSION

The numerical analysis is provided with meaning in this chapter. The study findings are discussed with reference to the objectives of the study. The result and discussion of the study is based on the findings obtained by statistical analysis.

The present study was undertaken to assess the effectiveness of slow paced breathing exercise on pain perception during first stage of labour. The study findings were discussed with reference to the objectives of the study. The results and discussion of the study was based on the findings obtained by statistical analysis.

#### **Objectives of the study**

- To assess the pre and post-test level of pain perception during first stage of labor in experimental and control group.
- To determine the effectiveness of slow paced breathing exercise by comparing the post-test level of pain perception of experimental and control group.
- To associate pre-test level of pain perception during labour with selected demographic variables.

#### **The first objective was to assess the pre and post-test level of pain perception during first stage of labour in experimental and control group.**

Among the 30 samples in experimental group, during pre-test none of them has no pain (0), 19 (63.33) has mild pain, 11 (36.67%) has moderate pain. In control group, 20 (66.67%) has mild pain, 10 (33.33%) has moderate pain. The mean pre-test score of experimental and control group are 1.37 and 1.33 respectively. That means both group are similar in nature.

During post-test, 13 (43.33%) has mild pain, 15 (50%) has moderate pain and 2 (6.66%) has severe pain in experimental group and in control group 1 (3.33%) has mild pain, 12 (40%) has moderate pain and 17 (56.67%) has severe pain.

#### **The second objective was to determine the effectiveness of slow paced breathing exercise by comparing post-test level of pain perception of experimental and control group.**

The mean post-test score on level of pain perception during first stage of labour in experimental group was 1.6, but in control group it was 2.5. The calculated unpaired 't' value was 5.92, which is more than the table value at 5% significance (table value=2.02). Hence, it was statistically significant at 5% ( $p < 0.05$ ). It shows that slow paced breathing is effective in reduction of pain perception during first stage of labour. Hence the research hypothesis ( $H_1$ ) is accepted.

The study finding was congruent with Parameswari. P (2015) conducted a quasi-experimental study on slow paced breathing on labour pain in India. 60 primi mothers were selected by purposive sampling technique. The study concluded that the mean post-test scores of degree of pain experienced by the primi mothers in experimental group was significantly lower than the control group.

**The third objective was to find out the association between the pre-test level of pain perception during labour with selected demographic variables.**

There is no association between pre-test score of pain perception with selected demographic variables such as age, education, occupation, monthly family income, type of family and social support. Here, for age, chi-square value was 0.66 and table value at 5% significance is 15.51 with  $df_8$ . In case of education, chi-square value was 0.6 (table value is 15.51 with  $df_8$ ). For occupation, chi-square value was 2.48 (table value was 15.51 with  $df_8$ ). In case of monthly income, calculated value was 0.18, but table value is 15.51 with  $df_8$ . When considering type of family calculated value was 0.39 (table value is 9.49 with  $df_4$ ). For social support, chi-square value was 0.42 and table value is 15.51 with  $df_8$ . So there is no association between level of pain perception and demographic variables. Hence, the research hypothesis ( $H_2$ ) is rejected.

By submitting up the entire research finding:

1. The research hypothesis ( $H_1$ ) there is a significant difference in the post-test level of pain perception between experimental and control group was accepted.
2. The research hypothesis ( $H_2$ ) there is a significant association between Pre-test level of pain perception and selected demographic variables among primigravida mothers was rejected. Hence,  $H_2$  is rejected.

## CHAPTER – VI

### SUMMARY, CONCLUSION, NURSING IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter presents the summary of the study and conclusion drawn from the study. It also explains the limitation of the study, implication of the study for different areas like nursing education, nursing practice, nursing administration and nursing research. It presents the recommendations for future research in this field.

#### **Summary**

The study adopts quasi-experimental pre and post test research design to assess the effectiveness of slow paced breathing on labour pain perception during first stage of labour. The data was collected from two groups of primigravida mothers, 30 from the experimental group and 30 from control group. Samples were selected by purposive sampling technique. In this study, the independent variable was slow paced breathing exercise and the dependent variable was level of labour pain perception. Modified Ernestine Wiedenbach's helping art of clinical Nursing Theory model (1970) systems model was used to evaluate the effect of slow paced breathing exercise on level of labour pain perception. The tools used in the study consist of two parts. Section A was demographic variables and Section B was numeric pain rating scale to assess the pain perception level. The data were collected and analyzed using descriptive and inferential statistics. The level of significance was assessed by  $p < 0.05$  to test the hypotheses.

#### **Findings**

The findings of the study revealed that the mean pre-test score of experimental group was  $1.37 \pm 0.46$  and the score of the control group was  $1.33 \pm 0.47$ . The computed unpaired 't' value is 0.39 and the table value is 2.02 ( $P > 0.05$ ), which is not significant. This means both the groups are similar in nature and homogenous. The difference of post-test score between the experimental and the control groups was statistically highly significant. The unpaired 't' value is 5.92 where the table value is 2.02 at 5% level of significance ( $p < 0.05$ ). This shows that slow paced breathing exercise is

effective in reduction of labour pain perception. Hence the research hypotheses ( $H_1$ ) is accepted.

In the association of demographic variables like age, education, occupation, family income, type of family and family support was not associated with the level of pain perception among primi gravid mothers. Hence the research hypothesis ( $H_2$ ) is rejected.

### **Conclusion**

Labour pain is highly unpleasant and very personal sensation that cannot be shared with others. To ease the pain and improve the behavioral response of the mother non-pharmacological management can be used which will give better results.

The study findings revealed that slow paced breathing exercise helps in reducing the level of pain perception among primigravida mothers in the experimental group. So this can be practice in various settings during labour.

### **Implications**

The researcher has derived the following implications from the study results which are vital concern to the field of nursing service, nursing administration, nursing education and nursing research.

The findings of the research have the following implications.

#### **Nursing practice**

- Nurse midwives should have an in-depth knowledge on physiological changes during labour.
- Understand the importance of research findings on labour pain management.
- Midwives can teach the breathing exercises for the mother during the antenatal period. Also, they can teach and encourage the mother to perform slow paced breathing exercise from the beginning of labour process.

#### **Nursing education**

- ❖ Nurses with higher education and up-to-date knowledge will provide a cost effective and quality client care.

- ❖ Nurse education needs to include non- pharmacological pain relief measures like breathing exercise, massage etc. in the curriculum of nursing education.
- ❖ Educate the students about various alternative therapies for labour pain management.
- ❖ Encourage the students for effective utilization of evidence based practice.

### **Nursing Administration**

- Nursing administration should take an initiative in creating policies or plans in providing education to women during pregnancy and help them in safe delivery.
- Nurse Administrator needs to facilitate the utilization of evidence based nursing care aspects in day to day practice to formulate policies and make necessary changes in health care delivery system in the hospital.
- Nurse Managers can plan for ante natal classes for breathing exercise as well as video assisted programme on OPD basis in order to prepare the mother to perform during intrapartum period.
- Nurse Administrator can arrange and conduct workshop, conferences, and seminars on non-pharmacological methods to reduce labour pain perception.
- Provide opportunities for nurse midwives to attend training programs on complementary therapies for labour pain management.

### **Nursing research**

- Nurses should conduct research on other non-pharmacological measures to assess the effectiveness.
- Disseminate the findings of research through conferences, seminars and through journals.

### **LIMITATIONS**

1. The sample size of the patient for the experimental and control group was only 30 and hence generalization not possible.
2. The data collection period was only one month.
3. Extraneous variable are controlled to some extend only.
4. The study was limited only to primigravida mothers.



**RECOMMENDATIONS**

1. Similar studies can be conducted on large number of samples.
2. A similar study could be conducted on multiparous women to know the effectiveness.
3. A comparative study could be conducted with other non- pharmacological measures of pain relief.
4. An experimental study could be undertaken in different settings like Private hospitals and Government hospitals.

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## APPENDIX: I

## LETTER SEEKING PERMISSION TO CONDUCT THE STUDY



Tel. (O) : 273297  
270753

## GLOBAL COLLEGE OF NURSING

Recognised by the TNC & INC  
Affiliated to Tamil Nadu Dr. M.G.R. Medical University  
Edavilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165,  
K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

Lr.No:GCN/72/04/2016

01/04/2016

To

Medical Superintendent,  
Vinod Hospital,  
Main Road,  
Marthandam.

Sir,

**Sub:** Permission seeking letter for the conduct of research-Reg.

This is to request you to kindly permit Mrs.AJITHA KUMARIS.R, 2<sup>nd</sup> year M.Sc. (N),  
from Global College of Nursing to conduct her research study in your esteemed Hospital.

### STATEMENT OF THE STUDY

"A STUDY TO ASSESS THE EFFECTIVENESS OF SLOW PACED  
BREATHING EXERCISE ON PAIN PERCEPTION DURING FIRST STAGE  
OF LABOR AMONG PRIMMOTHERS IN A SELECTED HOSPITAL AT  
KANYAKUMARI DISTRICT"

So kindly consider this letter and do the needful.

Thanking You,



Yours,  
*Principal*  
Principal  
GLOBAL COLLEGE OF NURSING  
Edavilagam, Nattalam,  
Kanyakumari District : 629 185



Permitted  
*T. Vinod Kumar*  
Dr. T. VINOD KUMAR M.B.B.S., D.O.  
Vinod Hospital  
Railway Station Road,  
near New Bus Stand, Marthandam  
Reg. No.: 49528

## APPENDIX: II

### ETHICAL CONSIDERATION



Tel. (O) : 273297  
270753

## GLOBAL COLLEGE OF NURSING

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Affiliated to Tamil Nadu Dr. M.G.R. Medical University  
Edavilagam, Nattalam, Kanyakumari District.

Off: S.G. Multi Speciality Hospital, Old Theatre Jn, Pammam, Marthandam - 629 165,  
K.K. Dist., Tamil Nadu. Mob : 9443606955, 9944110448.

#### ETHICAL CLEARANCE CERTIFICATE

Mrs. Ajitha Kumari S.R. (Obstetrical & Gynecological Nursing)

Sub: Your letter dated 25/04/2015 for the approval of above reference study and its related documents.

Ref: "A study to assess the effectiveness of and slow paced breathing on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanayakumari District" Ethics committee of Global College of Nursing, Edavilagam, Nattalam, Marthandam. Reviewed and discussed the study proposal the documents submitted by you related to the content of the above referenced study and its meeting held on 04/05/2015.

The following Ethical committee members were present at the meeting held on 04/05/2015.

S.No.	Name	Profession	Position in the committee
1.	Prof. Josephine Ginigo	Nursing	Chair Person
2.	Dr. Sam.G.Jeba Joselin	Medical	Basic Medical Scientist
3.	Mrs. Vijila Berlin	Nursing	Clinician
4.	Adv. Sreenivasan	Legal	Legal Exports
5.	Prof. A. J. Benzam	Social	Social Scientist
6.	Dr. Ahilan	Management	Philosopher
7.	Mr. Sujin	Lay person	Community Person

After due Ethical and scientific consideration, the ethics committee has approved the above presentation submitted by you.

Date : 04/05/2015  
Place: Nattalam



With Regards

.....  
**Prof. Josephine Ginigo**  
Ethics Committee Chair Person  
Principal  
GLOBAL COLLEGE OF NURSING  
Edavilagam, Nattalam,  
Kanyakumari District - 629 165

**APPENDIX: III****LETTER SEEKING EXPERT'S OPINION FOR VALIDITY OF TOOL**

From

Ajitha Kumari S.R  
II year M.Sc (N)  
Global College of Nursing,  
Nattalam, Marthandam

To

Respected Sir/Madam,

I am doing II year M.Sc (Nursing) in Global college of Nursing, Nattalam, Marthandam. As a partial fulfillment of the course, I have chose a topic of my interest **“A study to assess the effectiveness of slow paced breathing exercise on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanyakumari District”**. I have prepared demographic data and standardized tool. I hereby kindly request you to evaluate the tool based on the evaluation criteria. Your opinion and suggestions will help me to the successful completion of my study.

Thanking you,

Yours truly,

Marthandam.

Date :



## APPENDIX: IV

### EVALUATION CRITERIA: CHECK LIST FOR VALIDATION

#### Introduction

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

#### Interpretation of column

Column I : Meets the criteria

Column II : Partially meet the criteria

Column III : Does not meet the criteria

Serial No	Criteria	1	2	3	Remarks
1	Scoring - Adequacy - Clarity - Simplicity				
2	Content - Logical sequence - Adequacy - Relevance				
3	Language - Appropriate - Clarity - Simplicity				
4	Practicability - It is easy to score - Does it precisely - Utility				

Signature :

Any other Suggestion

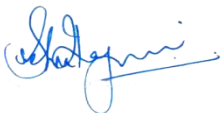




Name :

Designation :

Address :

## APPENDIX – V

### LIST OF EXPERTS WHO HAVE DONE VALIDATION OF THE TOOL

1.	<p><b>Mrs. Selva Rajini.S M.Sc (N)</b></p> <p>Reader</p> <p>Grace College of Nursing, Padanthalummodu</p>	
2.	<p><b>Mrs.Tarsis Henita H.J. M.Sc (N)</b></p> <p>Associate Professor</p> <p>CSI College of Nursing, Karakkonam</p>	
3.	<p><b>Mrs.Joylet M.Sc (N)</b></p> <p>Reader</p> <p>CSI College of Nursing, Marthandam</p>	
4.	<p><b>Mrs. Felecia Jane M.Sc, (N)</b></p> <p>Nursing Lecturer</p> <p>Thasiah College of Nursing Marthandam</p>	
5.	<p><b>Mrs.Suji R.K M.Sc (N)</b></p> <p>Assistant Professor</p> <p>Grace College of Nursing Padanthalummodu</p>	

**APPENDIX- VI**

**CERTIFICATE OF ENGLISH EDITING**

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Mrs. Ajitha Kumari S.R. M.Sc (N) of Global College of Nursing, Nattalam, Marthandam has done a dissertation **“A study to assess the effectiveness of slow paced breathing exercise on pain perception during first stage of labour among primigravida mothers in a selected hospital at Kanyakumari District.**

This study was edited for English Language appropriateness by\_\_\_\_\_

Signature:

## APPENDIX- VII

### INFORMED CONSENT

**Dear mothers,**

I, Mrs. Ajitha Kumari S.R. M.Sc (N) II year student of Global College of Nursing, Nattalam, Marthandam conducting a study to **“assess the effectiveness of slow paced breathing exercise on pain perception during first stage of labour among primigravida mothers”** as a partial fulfillment of the requirement for the degree of M.Sc (Nursing) under the Tamil Nadu Dr. M.G.R. Medical University. I assure you that information obtained will keep confidential. So, I request you to kindly co-operate with me and participate in this study by giving your frank and voluntary consent.

Thank you.

Signature

**APPENDIX- VIII****SECTION A****DEMOGRAPHIC PROFORMA**

**Instructions: The investigator places a(√) mark in the corresponding space to response of the subjects**

1. Age in years
  - (a) 21-24
  - (b) 25-27
  - (c) 28-30
2. Education
  - (a) Illiterate
  - (b) school level
  - (c) graduate
3. Occupation
  - (a) Sedentary Work
  - (b) moderate work
  - (c) heavy worker
4. Family income in rupees/month
  - (a) D 1000-D 5000
  - (b) D 6000-D 10000
  - (c) D 11000-D 15000
5. Type of family
  - (a) joined
  - (b) nuclear
6. Social support
  - (a) husband
  - (b) parents
  - (c) relatives

**SECTION B****NUMERIC PAIN RATING SCALE**

**Instruction:** Please place a (√) mark on the scale to indicate the amount of pain you are experiencing considering 0 as 'no pain' and 10 as 'worst pain possible.'

0	1	2	3	4	5	6	7	8	9	10
No pain					worst pain					

**Grading of pain score**

Score	Degree of pain
0	No pain
1-3	Mild pain
4-6	Moderate pain
7-9	Severe pain
10	Worst pain

## SECTION: C

## வலியின் அளவியல்

அறிவுரை: நீங்கள் வலியின் அளவைக்குறிக்க (✓) குறி இடுக.  
வலியின் அளவு 0 - வலி இல்லை, 10 - மிகவும் மோசமான வலி.

0 1 2 3 4 5 6 7 8 9 10

--	--	--	--	--	--	--	--	--	--	--

வலி  
இல்லை

மிகவும்  
மோசமான  
வலி

## வலியின் அளவு பட்டியல்

மதிப்பெண்	வலியின் அளவு
0	வலி இல்லை
1-3	லேசான வலி
4-6	மிதமான வலி
7-9	அதிகமான வலி
10	மோசமான வலி

## **APPENDIX- IX**

### **PROCEDURE FOR SLOW PACED BREATHING**

#### **Step 1**

Instruct the mother to lie down in a side lying posing when the contraction begins.

#### **Step 2**

Instruct her to take a deep breath.

#### **Step 3**

Instruct her to concentrate on a focal point. Example wall clock, picture etc.

#### **Step 4**

Breathe in through the nose and out through mouth in a slow and rhythmic manner at a rate of 6 – 10 breath per minute (approximately).

#### **Step 5**

Advise her to take a deep breath, when the contraction ends.

#### **Conclusion**

Slow paced breathing is helpful in reducing the level of labour pain perception. Women must practice this during each contraction for reduction of pain perception.