EFFECTIVENESS OF PACED BREATHING ON LABOR PAIN PERCEPTION AMONG PRIMI MOTHERS DURING FIRST STAGE OF LABOR IN A SELECTED HOSPITAL, KANYAKUMARI DISTRICT

DISSERTATION SUBMITTED TO

THE TAMILNADU Dr. M. G. R. MEDICAL UNIVERSITY, CHENNAI,

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE

DEGREE OF MASTER OF SCIENCE IN NURSING

OBSTETRICS AND GYNAECOLOGICAL NURSING

APRIL 2014

CERTIFICATE

Certified that this is a bonafide work of Mrs **REMYA S. NAIR,** final year M.Sc., (Nursing) student of St Xavier's Catholic College of Nursing, Chunkankadai, submitted in partial fulfilment of the requirement for the Degree of Master of Science in Nursing to The Tamil Nadu Dr. M. G. R. Medical University, Chennai under the Registration No. **301221902.**

College Seal:

Signature of the Principal: _____

Dr. A. Reena Evency, M. Sc., (N), Ph.D., (N),

Principal,

St. Xavier's Catholic College of Nursing,

Chunkankadai, Nagercoil, Kanyakumari District,

Pin Code- 629 003.

EFFECTIVENESS OF PACED BREATHING ON LABOR PAIN PERCEPTION AMONG PRIMI MOTHERS DURING FIRST STAGE OF LABOR IN A SELECTED HOSPITAL, KANYAKUMARI DISTRICT

Approved by the dissertation committee on: **27th December 2012**

Professor in Nursing Research: _____

Dr. A. Reena Evency, M. Sc., (N), Ph.D., (N),

Principal,

St. Xavier's Catholic College of Nursing,

Chunkankadai, Nagercoil, Kanyakumari District,

Pin Code- 629 003.

Clinical Speciality Guide   : _____

Mrs. S. Anita Mary Leena, M. Sc., (N),

Head of the Department,

Obstetrics and Gynaecological Nursing,

St. Xavier's Catholic College of Nursing,

Chunkankadai, Nagercoil, Kanyakumari District,

Pin Code- 629 003.

Medical Expert   : _____

Dr. F. Caroline Felicia Mary, M.D. DGO.

Director and Consultant,

Caroline John Hospital,

Asaripallam Road, Nesamony Nagar, Nagercoil

Pin Code- 629 001.

_____   _____

Signature of the Internal Examiner   Signature of the External Examiner

with date   with date

ACKNOWLEDGEMENT

I wish to express my humble and sincere gratitude to **God Almighty** for his endless grace, love, care and blessings showered on me to complete and present this Dissertation successfully.

I express my heartfelt thanks to **Rev. Fr. Dominic M. Kadatchadhas,** Correspondent and **Rev. Fr. Dr. Maria William,** Co-correspondent, St. Xavier's Catholic College of Nursing, Chunkankadai for their encouragement at each level of this study.

I express my heart felt gratitude to **Dr. A. Reena Evency, M. Sc., (N), Ph.D., (N),** Principal, St. Xavier's Catholic College of Nursing, Chunkankadai for her valuable support, suggestions and immense direction for conducting this study in a successful way.

I express my respectful thanks to **Mr A. George Joe Kumar, M. Sc., (N).,** Vice Principal and II year MSc., (N) Class Co-ordinator, St. Xavier's Catholic College of Nursing, Chunkankadai for his valuable suggestions and continuous support which made my study smooth and successful.

I express my sincere and exclusive thanks to my clinical speciality guide **Mrs S. Anita Mary Leena, M. Sc., (N).,** Head of the Department of Obstetrics and Gynaecological Nursing, for her constant support, suggestions and catalytic encouragement at each level which enabled me to complete this study successfully.

I express my sincere thanks to **Dr. A. Judie, M. Sc., (N), Ph. D., (N)**, Dean, S R M College of Nursing for her valuable suggestions and support.

It is the most pleasant time to express my sincere and exclusive thanks to **Mrs Jenila, M.Sc., (N), Ms Brinda, M.Sc.,(N), Mrs Ajitha Mini, M.Sc., (N), Mrs Nancy Mary, M.Sc.,(N), Mrs Shiny Mary, M.Sc.,(N) and Mrs Amalit Vimala, M.Sc., (N)** Lecturers of the Department of Obstetrics and

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURES

ABSTRACT

An experimental study was conducted to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in a selected hospital, Kanyakumari District.

The investigator used true experimental pre test post test Control group design with sample size 60 by Simple random sampling technique (Lottery method), and Numerical pain scale as the tool for assessing the level of labor pain perception. Paced breathing exercise taught for the Study group and the level of pain perception was assessed by Numerical pain scale after each contractions. The data gathered were analyzed by descriptive and inferential statistical methods and interpretations were made on the basis of the objectives of the study.

Majority of the demographic variables in study group, 22(73%) of them belonged to 23-26 years of age, 15(50%) of them were Hindus , 17 (57%) of them were graduates, 13(43%) of them were private employees, 21(70%) of them were earning monthly family income of Rs.6001-10000, 22(73%) of them living in rural area, 13(43%) of them belonging to extended family and the demographic variable in Control group, 15 (50%) of them belonged to 23-26 years of age, 13(43.3%) of them were Hindus, 15 (50%) of them were graduates, 13(46.6%) of them were private employees, 21(70%) of them were earning monthly family income of Rs.6001-10000, 23(77%) of them living in rural area and 10 (33.3%) were belonging to nuclear, joint and extended family respectively.

During pre test both study group and control group, 60 (100%) had severe pain. During post test, in study group, 14 (46.6 %) had mild pain, 16(53.3 %) had moderate pain and none had severe pain. In control group, 27(90%) had severe pain, 3(10%) had moderate pain and none had mild pain. There was significant difference in the pre test and post test level of pain perception in study group and control group at 5% significant level.

In post test, mean score of level of pain perception of the study group was 3.5 and the mean score of the control group was 7.6. There was significant difference between the study group and control group computed through independent 't' test. (t=17.88). The score represents the effectiveness of paced breathing on reduction of labor pain at 5% significant level. There was no association between the post test levels of pain perception with the selected demographic variables. Researcher concluded as per the study that the pain experienced by the mothers during labor can be reduced by performing paced breathing exercises which is cost effective and best method. This study statistically proved the effectiveness of paced breathing in reducing labor pain.

CHAPTER-I
INTRODUCTION

Childbirth is one of the most marvellous and memorable segments 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. Childbirth is a process by which the baby inside the womb adjusts itself to its surroundings and passes out of the uterus to be born as a new individual in the world.

Onset of labor involves uterine distension due to stretching effect of myometrium by growing fetus and liquor amni. Hypothalamic pituitary adrenal axis prior to onset of labor increases the release of oxytocin from pituitary, which synthesizes receptors for oxytocin in the myometrium and decidua. Acceleration of mysosomal disintegration in amnion cells results in increased prostaglandin synthesis. Prostaglandin is important to maintain the labor by ripening the cervix. And also synthesis of myometrial contractile proteins takes place that increases the excitability of myometrial cell membranes. Events of labor are divided into four stages. The first stage starts from onset of true labor pain and ends with the full dilatation of cervix or it is called "cervical stage". The second stage starts from full dilatation of cervix and ends with the expulsion of the fetus from the birth canal. The third stage involves separation and expulsion of placenta and its membranes and the 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 takes place usually every 5-20 minutes, lasting for 20-40 seconds and of mild intensity, the contractions progress to about every 5 minutes and establish a regular pattern. Active phase involves dilatation from 4-7cm, contractions takes place usually every 2-5 minutes; lasting 30-50 seconds and of mild to moderate intensity. While reaching the active phase; dilatation averages 1.2 cm/hour in the nullipara and 1.5 cm/hour in the multipara. Transitional phase involves dilatation from 8-10 cm, contractions are every 2-3minutes, lasting 50-60 seconds and of moderate to strong intensity. Some contractions may last up to 90 seconds.

Pain in labor is nearly a universal experience. Pregnant women commonly worry about the pain they will experience during labor and child birth. The discomfort as experienced during labor has specific origins. During the first stage of labor uterine contractions cause cervical dilatation, effacement and uterine ischemia (decreased blood flow and therefore the local oxygen deficit) resulting from contraction of the arteries to the myometrium. The discomfort from cervical changes and uterine ischemia is visceral pain.

Pain thresholds cause the amount of pain experienced to be unique to each individual. Anxiety and fear are commonly associated with increased pain during labor. Mild anxiety is considered normal for a woman during labor and birth. However, excessive anxiety and fear cause more catecholamine secretions, which increase the stimuli to the brain from the pelvis because of decreased blood flow and increased muscle tension, which in turn magnifies the pain. Thus as fear and anxiety heighten, muscle tension increases, the effectiveness of the uterine contraction decreases, the experience of discomfort increases and a cycle of increased fear and anxiety begins.

Although most women report that labor is painful, most physicians have surprisingly little understanding of the nature of labor pain. Pain is a subjective experience involving a complex interaction of physiologic, psychosocial, cultural, and environmental influences. During the first stage of labor, women usually perceive the visceral pain of diffuse abdominal cramping and uterine contractions. In the second stage of labor, there is a sharper and more continuous somatic pain in the perineum. Pressure or nerve entrapment caused by the fetus's head can cause severe back pain or leg pain. Nulliparous women generally experience more sensory pain during early labor, while multiparous women may experience more intense pain during the late first stage and the second stage of labor, as a result of rapid fetal descent.

Cultural values and learned behaviours influence perception and response to acute pain. Women's expectations about labor pain often are confirmed by their experience of childbirth. Anxiety and fear of pain correlate with a higher reported experience of pain. A woman's confidence in her ability to cope with labor is the best predictor of pain during the first stage of labor, accounting for nearly one third of the reported variance in pain.

Women rate labor pain as more intense than their caregivers do. Cultural gaps between the patient and caregiver can exacerbate this difference. The birth environment affects a woman's experience of pain and her ability to cope with pain during labor. Many clinicians assume that a major determinant of maternal satisfaction with childbirth is effective pain relief during labor. There are both affective and cognitive components to maternal satisfaction. A woman's sense of satisfaction with her childbearing experience changes over time; when measuring maternal satisfaction, the amount of time that has elapsed since the birth may be a key methodological factor.

Relaxation, preparation, and knowledge are essential aspects of a positive birth experience. Relaxation is a stage of low arousal in which bodily responses such as muscle tension, heart rate, breathing rate and metabolism diminish so as to bring these functions in to equilibrium. Practicing relaxation techniques will help the mothers in labor. Stress hormones can make labor longer, and tense muscles can cause more pain. Releasing tension is the key to manage labor pain and the sense of control during labor. When a muscle is working very hard, it requires more blood flow to bring extra nutrients and oxygen. By the time when the mothers are ready to give birth, uterus will be the largest and strongest muscle in their body. During its powerful contractions, uterus will need all the blood it can get. If other muscles are getting tensed, the blood flow to the uterus will be reduced and it will work less efficiently. So for a more efficient labor, it is important to keep the other muscles relaxed.

Background of the Study

Learning about the technical aspects of childbirth is definitely valuable, but even the thickest medical textbook won't answer the question that burns brightest in many expectant mothers' minds. Labor is a different experience for every woman, with pain ranging from mild to extreme. Even the epidural reactions vary widely. Few mothers experiences that "Labor is like a box of chocolates, they never know what they are going to get." Many mothers experience that their contractions felt like an extreme version of menstrual cramps, while others compared them to cramps from gas, the stomach flu, or a charley horse. Another few women described the contractions as a "tightening" rather than a cramping. Some women described labor as more of a pounding or punching feeling. In

some cases, the labor pain was decidedly more sharp than dull. Several mothers felt a burning sensation during the contractions and crowning. Labor certainly is not a trip to the beach, but many women described the wavelike effect of the contractions.

Undoubtedly delivery is a painful experience for all of the women except a few. The labor pain results from some physiological and psychological causes. If the woman looks at the pain with a psychological view, her feeling toward it would be changed. Pain is a phenomenon that has not been understood and discovered completely yet and its clinical measurement could be really difficult. The individual experiences of the pain would be considered as a reliable source for its comprehension and only the individual can explain her experience. The pain is what was experienced by someone and it exits whenever she/he talks about it.

Statistics of World Health Organization show caesarean section rate has been growing worldwide. According to policy of World Health Organization (WHO), the reasonable percentage of Caesarean Section is 10-15 percentages worldwide; however, increased rates of caesarean section are related to additional caesarean deliveries for 0.8-3.2 million in low-income countries and for 4.0-6.2 million in middle and high-income countries. Caesarean rate is above 15 percentages for 50 percentages of countries on the average. Although Caesarean section must be just performed based on medical indications, elective Caesarean rate is rising. Fear of childbirth is one the most important factors causing women especially nulliparous women to be interested in elective Caesarean section. The amount of this fear depends on many factors, such as personality, history and experiences. Since this fear is not decreased even after psychological counselling, it is necessary to relieve the pain of normal delivery by offered methods. These pain relief techniques are classified as pharmacological and non-pharmacological groups; non-pharmacological group includes methods helping women to cope with pain in labor and pharmacological methods are for relieving the labor pain.

In a study which was conducted on 288 Swedish women, 28 percentage of them evaluated labor pain as a positive condition and 41 percentage of them considered it as the worst experience that they had. Fear of labor pain is one of the most important reasons that make women go for a caesarean section. In a study on reasons for tendency to the

caesarean section in Iran, fear of the labor pain was reported as 37.2 percentages. The pain tolerance is the individual's endurance and the acceptance of the pain in a specified range. It may differ in different people and could be influenced by the individual's physical, psychological and cultural conditions. Reaction to the pain is also different in each person. Culture, gender, religious beliefs, and age can affect one's assumption of pain and their reaction to it.

The pain of labor and delivery is one of the things that worry the mother about having a baby. This is certainly understandable, because labor is painful for most women, Larissa Hirsch, MD Feb (2008). It is possible to have labor with relatively little pain, but it is wise to prepare ourselves by planning some strategies for coping with pain. Alleviating the anxiety about pain is one of the best ways to ensure that we will be able to deal with it when the time comes.

Sellers (2004) states that there is no perfect method to relieve labor pain. All methods involve trade-offs between risks and benefits. Therefore women need full information from the best evidence available on the benefits and risks of labor pain control methods. Such information needs to be passed on to patients well before labor begins so they can weigh the options, obtain answers to questions, clarify preferences and make careful arrangements that will accommodate their needs and preferences.

Perry and Lowdermilk (2006) corroborate the fact that a woman's pain during childbirth is unique to her and that it is influenced by a variety of factors, including physiological factors (e.g. endorphins level and maternal position), cultural background, anxiety levels, previous childbirth experience, preparation for childbirth, the comfort and support given by nurses and significant others, the quality of labor and the birth environment. As indicated previously, clinical experiences support the role of negative events in exacerbating chronic pain (Roy, as cited in Thomas 1997) Page and McCandlish (2006) also state that anxiety about pain has been shown to be a strong predictor of negative experience during labor, lack of satisfaction with birth and poor postnatal emotional well-being.

Regular and reasonable exercise can help strengthen the muscles and prepare the body for the stress of labor. Exercise can also increase the endurance, which will come in handy if mothers have a long labor.

The Lamaze technique is the most widely used method in the United States. The Lamaze philosophy teaches that birth is a normal, natural, and healthy process and those women should be empowered to approach it with confidence. Lamaze classes educate women about the ways they can decrease their perception of pain, such as through relaxation techniques, breathing exercises, distraction, or massage by a supportive coach. Lamaze approach takes a neutral position toward pain medication, encouraging women to make an informed decision about whether it is right for them.

The Bradley method (also called Husband-Coached Birth) emphasizes a natural approach to birth and the active participation of the baby's father as birth coach. A major goal of this method is the avoidance of medications unless absolutely necessary. The Bradley method also focuses on good nutrition and exercise during pregnancy and relaxation and deep-breathing techniques as a method of coping with labor. Although the Bradley method advocates medication -free birth experience, the classes do prepare parents for unexpected complications or situations, like emergency Caesarean sections. Some women choose to give birth using no medication at all, relying instead on relaxation techniques and controlled breathing for pain. Conscious relaxation involves progressive relaxation of muscle groups in the entire body. Breathing patterns include deep abdominal respirations for most as labor progresses, shallow breathing toward the end of the first stage, and until recently, and breath holding for pushing with contractions in the second stage of labor.

Teaching the mother to relax uninvolved muscles while her uterus contracts. Lamaze teachers believe that chest breathing lifts the diaphragm off the contracting uterus thus giving it more room to expand.

Breathing technique and relaxation techniques are being followed to reduce the labor pain. Breathing technique such as relaxed breathing through the nose and out through the mouth. This is done during the beginning and the end of each contraction. Relaxing techniques include focusing (favourite, fixed or selected objects will be focused by the mother), imagery (the woman is encouraged to focus on a pleasant scene, or

picture, a place she feels relaxed or an activity she enjoys), feedback relaxation (common feedback mechanism, the woman and her support person verbalize the word "relax" at the onset of each contraction and throughout it as needed) and music therapy.

Many of non-pharmacological pain relieving measures say that promotion of relaxation of the muscles, which increases blood supply to the paining muscles, promotes release of endogenous opiates (endorphin) and less stimulation of free nerve endings which are closing the gate of pain perceptions.

.

Significance and Need for the Study

Child birth is a natural biological process and therefore the pain associated with it is also perceived as normal and natural. The nature of the pain experienced during labor depends on the physical and emotional status of the women. Parity also plays a part in women's pain perception and experience during labor. The cervix of a multigravida woman often softens before the onset of labor and therefore is not as sensitive as the cervix of a primigravida woman. The intensity of uterine contractions is greater and the length of labor is often longer in primigravida women, Levasseur et al (2003). In normal labor, primigravida women usually experience more pain than multigravida women, Sellers (2004).

Patients' previous exposure to pain often influences their later reaction to pain. Coping mechanisms that were used in the past may affect patients' judgement about how the pain will affect their lives and what measures are within their control to manage pain White and Duncan (2002). The primigravida women experience more intense pain during labor compared to multi gravida. The primigravida mothers do not know which the intense level of pain is and how to manage with that because they do not have any past experience.

A descriptive study was conducted by Joyce Nilima James, Kunder Samuel Prakash (2012) to assess the awareness and attitudes towards labor pain and labor pain relief of urban women attending a private antenatal clinic in Chennai, India. Prepared questionnaire was handed over to the primiparous women to be filled up while waiting for the antenatal check-up and assessed for their expectations about labor pain. Study

concluded that there is sufficient awareness that labor is painful and that there are ways to relieve labor pain.

Both pharmacological and non-pharmacological methods are used to reduce the pain perception during labor. Labor and delivery medications may pose risk for the mother, such as hypertension and the fetus as bradycardia, so their use must always be against the alternative risk to the mother. The job of the nurse in labor and delivery is not only to ensure a safe delivery but also to create a positive and satisfying experience. Many simple, effective, low -cost methods to relieve labor pain can be initiated by nurses, midwives, or physicians with the potential benefits of improved labor progress, reduction in the use of riskier medications, patient satisfaction, and lower costs.

Relaxation techniques are designed to help the woman achieve a deep level of relaxation of muscles not directly involved in the work of labor. Deliberate, controlled learned breathing patterns are directly linked to optimum relaxation. Each breathing pattern is used according to need, not according to the particular stage of labor. Relaxation and breathing may contribute more to a woman's ability to cope with labor pain than to actually reduce that pain. When using non pharmacologic techniques, a woman may prefer to close her eyes or may want to concentrate on an external focal point. Classes emphasize the eyes open on a focal point helps her concentrate on something outside her body and thus away from the pain from concentration.

Elizabeth Thomas, Savita dhiwar (2011) conducted an experimental study to assess the effectiveness of Patterned Breathing Technique in reduction of pain during first stage of labor among primigravidas admitted in labor units of selected hospitals of Pune city. Non-Probability purposive sampling technique was followed to select 60 primigravida women in the first stage of labor and a Non Equivalent Pre-test Post-test control group design was used. Study concluded that practicing selected Patterned breathing technique was effective in reducing pain among primigravida women during first stage of labor.

Kalaimathi (2007) conducted a study on effectiveness of slow paced breathing on pain perception during first stage of labor among 40 primipara women at KMCH, Coimbatore. Study reported that slow paced breathing was an effective method for reduction of pain perception of the mother from 6.22 to 4.28 (t = 7.96, P < 0.01) and introvert personality perceived more pain than extravert personality.

Adams and Bianchi (2005) states that breathing awareness and breathing patterns enable a woman to better control her response to labor. Breathing awareness and use of different breathing levels can increase a laboring woman's confidence and ability to cope with contractions and reduce discomfort. Breathing patterns are more effective when learned and practiced before labor begins. When the woman becomes aware of her breathing rhythm and depth as she inhales and exhales, she is better able to adjust her breathing levels as labor progresses**.**

Health education is an integral part of maternal child nursing care. During pregnancy, intrapartum and postpartum period, nurses educate mother about health behaviours that enhance positive maternal infant outcome. During the period of labor, primi mothers experiencing more intense pain than the multigravida as there is increased intensity and duration of labor. So it was felt that educating primi women about relaxation techniques would help to improve pain tolerance during labor.

This motivated the investigator to find out the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor. The study aims at comparing the effect of performing and not performing paced breathing on relieving labor pain among primi mothers in the study group and control group.

Statement of the Problem

A true experimental study to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in a selected hospital, Kanyakumari District.

Objectives of the Study

1. To assess and compare the level of pain perception before and after paced breathing in the study group and control group.
2. To evaluate the effectiveness of paced breathing on the level of labor pain perception among primi mothers in the study group.
4. To associate the post test level of labor pain perception with selected demographic variables in study group and control group.

Hypotheses

H1: There is a significant difference in the pre and post test level of pain perception among primi mothers between the study group and control group

H2: There is significant association between the post test level of pain perception with the selected demographic variables of primi mothers in study and control group.

Assumptions

- The perception of labor pain may differ from mother to mother.
- Paced breathing may have no adverse effect on mothers with labor pain

Operational Definitions

1. Evaluate:-

Evaluation refers to the identification of difference between pre test and post test level of pain perception and finding (or) judging the effectiveness of paced breathing on labor pain perception among primi mothers.

2. Effectiveness:-.

Effectiveness is the significant reduction in the pain perception level among primi mothers during first stage of labor in study group and can be measured by comparing with control group.

3. Slow Paced breathing:-

Slow Paced breathing refers to slow, rhythmic, repetitive breaths which will be half of the normal breathing count that will be demonstrated to the primigravida during the first stage of labor.

At the beginning of each contraction, a deep breath is taken in through the nose, then exhale through mouth, loud enough that others can hear the exhale. When a contraction ends, another deep cleansing breath should be taken, perhaps also yawning or stretching to release tension. Duration of breaths should be 8-9 breaths/1minute.

4. Pain perception:-

      Pain perception refers to the severity of pain experienced by the primi mothers during the first stage of labor as measured by Numerical Pain Scale.

5. Primi mothers:-

      Primi mothers are those with full term first pregnancy who completed 37 weeks of gestation who are admitted in the labor room in active phase of labor.

6. First stage of labor:-

      First stage of labor refers to the phase when the cervix is dilated more than 4 cm as identified by per vaginal findings.

Delimitations

- The study is delimited to primi gravida women who are in first stage of labor in the selected hospital.
- Study period limited for 4 weeks.

Projected Outcome

      Paced breathing exercise will minimize the level of pain perception among primi mothers during first stage of labor.

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. The model 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. The conceptual framework which suits the present study is based on General System Theory of Ludwig Von Bertalanffy (1968) as explained by Newby (1996).

According to Ludwig Von Bertalanffy, a system is composed of a set of interactive elements and gets each system distinct from environment in which it exits. In all systems activities can be resolved into an aggregation of feedback circuits such as input, throughput and output. The feedback circuits helps in maintenance of an intact system.

Present study aims at evaluating the effectiveness of paced breathing on labor pain perception during first stage of labor. Conceptual framework of this study is based on the system model.

The model consists of three phases:

1) **Input**

It is the energy transformed by the system. It refers to the target groups with their characteristics such as age of mother, Religion, education, occupation, family monthly income, area of residence, type of family and the assessment of pre test level of pain perception in Study group and Control group with Numerical pain scale.

2) **Throughput**

It is a process that occurs at some point between the input and output process, which enables the input to be transferred as output in such a way that it can be readily used by the system. According to Ludwig Von Bertalanffy, throughput is defined as the process

by which the system processes output and release output. In this study throughput refers to intervention phase that was the performance of paced breathing exercise by mothers in the Study group to relieve the labor pain. .

3) Output

According to the system theory, "output refers to the energy, matter, or information that leaves the system". In the present study, output is considered as the level of pain perception by primi mothers during first stage of labor after performing paced breathing exercise. It will be received in the form of post test level of labor pain perception during first stage of labor in study group through Numerical pain scale.

4) Feedback

According to this system theory, feedback refers to the output that is returned to the system and it allows it to monitor itself overtime to a steady state known as equilibrium or homeostasis. Feedback may be adequate, moderate or inadequate .For the present study, feedback 'positive' indicates relief from pain, 'negative' indicates poor relief and 'neutral' indicates no specific changes in the pain level. Here the researcher finds out

- Relationship between pre test and post test level of pain perception in study group and control group through Numerical pain scale.

- Association between post test level of pain perception between study group and control group with selected demographic variables.

INPUT

THROUGHPUT

OUTPUT

PRE TEST

Assessment of demographic variables and pre test level of pain perception by Numerical pain scale during first stage of labor in Study and Control groups

STUDY GROUP

Intervention with Paced breathing exercise to relieve labor pain.

STUDY GROUP

Reduction in the pain perception level

CONTROL GROUP

No intervention given by the researcher

CONTROLGROUP

Less reduction in the pain perception level

FEED BACK

Positive-Relief from pain in Study group

Mild pain

Moderate pain

Severe pain

Conceptual framework based on Ludwig Von Bertalanffy (1965) [as citied by Christensen J. Paula and Kenny] general system model

Fig.1.1

CHAPTER-II
REVIEW OF LITERATURE

Review of Literature is an essential part of scientific research. It involves systematic identification, critical review of scholarly publications, summary of written materials that contain information on a research problem.

This is sub divided as:-

Section A: - Studies related to the first stage of labor

Section B: - Studies related to pain relief during the first stage of labor

Section C: - Studies related to Paced breathing exercise

Section D: - Studies related to Paced breathing on Labor pain perception

Section A:-Studies related to the first stage of labor

Wong et al and Ohel et al (2012) conducted a randomized control study regarding epidurals and progression of labor from Parkland hospital among primi para mothers. Study found that the duration of the first stage was shorter in women who received an epidural before 4 cm dilation compared to women who didn't.

Susila. C, Gowri. G (2012) conducted a quasi-experimental study regarding non-pharmacological strategies on labor outcome among primi mothers during first stage of labor using purposive sampling technique. Experimental group received interventions with respiratory exercise, muscle relaxation and lumbo sacral massage during the active phase of first stage and the control group was maintained only with routine nursing care and labor outcomes as measured by Sturrock's labor coping scale. Study concluded that mothers have higher labor coping ability while using non pharmacological strategies.

Cochrane Researchers (2009) conducted a study regarding lying down during the early stages of childbirth may delay progress using data from 21 studies carried out in developed countries involving 3,706 women, found that the first stage of labor was significantly shorter for women who kneel, stand up, walk around sit upright as opposed to lying down. The researchers found that the first stage of labor was around an hour shorter in those who adopted upright positions compared to those who lay down.

Margareta Eriksson, Lars-Ake Mattson (2008) conducted a randomised prospective study of two hundred women to either the 'early bath group' or the 'late bath group'. The women in the 'early bath group' had a bath before a cervical dilatation of 5 cm, while the women in the 'late bath group' had a bath after the cervix was 5 cm dilated, the women in the 'early bath group' had a longer time period from established labor to delivery (9.8 hours) compared to the 'late bath group' (8.5 hours) ($p < 0.004$). A higher proportion of women in the 'early bath group' needed oxytocin administration compared to the 'late bath group' ($p < 0.01$).

Parsons et al (2007) studied labor duration and outcomes among the women, food intake during the latent phase of labor. A subsequent analysis, compared birth outcomes among 82 women who chose to eat food during early labor only, 10 who ate during established labor only, 31 who ate during both early and established labor, and 94 who chose to consume clear fluids only during early and established labor. Study found out that eating during the early phase of the first stage of labor was associated with labor averaging 2.16 hours longer; eating during both early and established phases of labor was associated with a mean of 3.5 hours longer labor.

Songkhla province (2006) conducted a quasi-experimental study related to the effect of the presence of family members, during the first stage of labor, on childbirth outcomes. Experimental research design was implemented using 114 pregnant women (study group n = 56; control group n = 58). The findings revealed a significant difference in anxiety scores between the experimental and control group. The results suggest having a relative present during intrapartum period reduces a women's anxiety.

Section B: - Studies related to pain relief during first stage of labor

Fariba Fahami MSc et al (2011) conducted a clinical trial study of effect of heat therapy on pain severity in primigravida women, 64 low risk nulliparous women were randomly divided into two heat therapy and routine care groups. In addition to the routine cares, warm bags were used for the heat therapy group for the low back, from cervix dilatation of 3-4 cm to the end of the labor's first stage and for perineal at the second stage. The results of research showed a significant decrease in the pain intensity in the heat therapy group at the first stage and the second stage of labor and comparing two groups showed significant difference (p < 0.001).

B. Jayabarathi (2010) conducted a true experimental study regarding effective nursing interventions on pain during labor among primi mothers. The comparison of post assessment level of pain perception of primi mothers showed that unpaired 't' test value was 4.384 which was statistically highly significant at p< 0.001 level. Study concluded that selected nursing interventions (massage, breathing exercise and positions) to the primi mothers were effective in reducing their labor pain perception.

Dowswell T, Bedwell C (2009) conducted randomized controlled trials in Transcutaneous Electrical Nerve Stimulation (TENS) for pain relief in labor applies controlled mild electrical stimulation to the skin by means of electrodes, it provides no compelling evidence for TENS having any analgesic effect during labor but during TENS application, pain (p) scores are significantly lower (p <0.0001) and shows a high degree of patient satisfaction with this method.

Cluett E.R, Burns E (2009) A Cochrane review regarding Immersion in water in labor and birth found that water immersion during the first stage of labor reduces the use of analgesia and reported maternal pain, without adverse effects on labor duration, operative delivery or neonatal outcome.

Smith C.A, Collins C.T, Cyna A.M, et al (2006) conducted randomized controlled trials for complementary and alternative therapies for pain management in labor involving acupuncture, acupressure, aromatherapy, hypnosis, massage and

relaxation techniques. The trials of acupuncture showed a decreased need for pain relief. Women who were taught self-hypnosis had decreased requirements for pharmacological analgesia, including epidural analgesia, and were more satisfied with their pain management in labor compared with controls.

Khodakarami, Safarzadh, FathiZadeh (2006) conducted a clinical trial semi-experimental study to evaluate the effect of massage therapy on severity of labor pain among 60 primiparous women using random sampling technique. The massage is administered on sacrum, buttocks, shoulders, waist, foot and hand during different phases of labour and the severity of pain was measured by using visual analogue scale in both groups at the cervical dilation of 4 centimetres, 8 and 10 centimetres The result demonstrated that the mean of pain severity at the first stage of labor was significantly different between the experimental group and control group at the start of active phase (p = 0.009), end of transitional phase (p = 0.0141) and also, the duration of the first stage of the labor was differently in experimental and control group.

Tsui MH, Ngan Kee WD, Ng FF, et al (2006) conducted a double blinded randomised placebo-controlled study of intramuscular pethidine for pain relief in the first stage of labor. Study revealed that it is effective within 15 minutes and lasts for 2-3 hours and showed that an intermittent, incremental regime with repeated small-dose PCA boluses of remifentanil provided effective and reliable analgesia during labor and delivery.

Lee et al (2004) conducted a true experimental study to evaluate the effects of SP6 acupressure on labor pain. 75 women in labor were randomly assigned to either the SP6 acupressure (n = 36) or SP6 touch control (n = 39) group using double-blinded method. Labor pain was measured four times using Visual Analogue Scale. There were significant differences between the groups in pain scores at all times following the intervention, immediately after the intervention (P = 0.012), 30 min after the intervention (P = 0.021) and 60 min after the intervention (P = 0.012). Study concluded that the total labor time (3 cm of dilatation to delivery) was significantly shorter in the SP6 acupressure intervention group than in the control group (P = 0.006).

Sasitorn Phumdoung, PhD, RN, Marion Good (2003) conducted randomized controlled trials regarding the effect of music on sensation and distress of pain in Thai primiparous women during the active phase of labor. Randomization with a computerized minimization program was used to assign women to a music group (n 55) or a control group (n 55). Women in the intervention group listened to soft music without lyrics for 3 hours starting early in the active phase of labor. In this controlled study, music—a mild to moderate strength intervention consistently provided significant relief of severe pain across 3 hours of labor and delayed the increase of affective pain for 1 hour.

Lawrence Leeman, Patricia Fontane (2003) conducted randomized controlled trials regarding effectiveness of intradermal injections of sterile water in the sacral area to decrease back pain in labor. Four randomized controlled trials included in one review found a significant reduction in back pain for 45 to 90 minutes based on visual analog scale. Three of the trials found that women who received injections of sterile water were more interested in receiving the injections in a subsequent labor than women who received saline injections.

Section C:-Studies related to Paced breathing exercise

Sood R, Sood A (2013) conducted a randomized blinded clinical trial of Paced breathing compared with usual breathing for hot flashes using an audio CD, participants in the active arms practiced paced breathing at 6 breaths/minute for 15 minutes, either once or twice a day, whereas the control arm practiced usual breathing at 14 breaths/minute for 10 minutes/day. Feasibility was assessed through self-report questionnaires. Participants in all arms reported hot flash reductions during the 9 weeks, 52 percentages for paced breathing twice a day, 42 percentages for paced breathing once a day, and 46 percentages for usual breathing.

Robert Fasman Mary C. Davis (2010) conducted an experimental study to assess the effects of slow breathing on affective responses to pain stimuli. The study examined whether breathing rate affected self-reported pain and emotion following thermal pain stimuli in women with fibromyalgia syndrome (FM: $n = 27$) or age-matched

healthy control women (HC: *n* = 25). FM and HC were exposed to low and moderate thermal pain pulses during paced breathing at their normal rate and one-half their normal rate. Study concluded that compared to normal breathing, slow breathing reduced ratings of pain intensity and unpleasantness, particularly for moderately versus mildly painful thermal stimuli.

Dr.Kyung-Hoon-Choe (2006) conducted study regarding effectiveness of device-guided paced breathing for lowering blood pressure & peripheral resistance, measured by Systemic Vascular Resistance Index [SVRI] and other hemodynamic parameters, heart rate, and blood pressure of 22 hypertensive patients. The patient group was part of a 70-patient multi-centre study using RESPERATE for fifteen minutes a day throughout an eight week period. Overall, patients experienced a significant blood pressure reduction (average) of 12.6/5.3 mmHg (p<0.001) without a change in heart rate.

,

Section D:- Studies related to paced breathing on labor pain perception

Kirandeep Kaur, Avinash Kaur Rana, Shalini Gainder (2012) conducted a quasi-experimental study to assess the effect of video on breathing exercises during labor on pain perception and duration of labor among the primi gravida mothers admitted in tertiary care hospital, India. Forty mothers, purposely selected, were randomly allocated; 20 each into experimental and control group. The study group participants were shown a video on 'breathing exercises during labor, before the onset of labor and performance of exercises during labor was assessed through the checklist. Study concluded that the practice of breathing exercises during labor help to reduce pain perception & duration of first and second stage of labor.

NH Sahin *(*2006) conducted a quasi-experimental study to determine the effect of breathing techniques and nurse-administered massage on the pain perception of pregnant woman during labor. The study investigators provided information about labor, breathing techniques and massage to the pregnant women assigned to the study group at the beginning of labor (latent phase). These women received nurse-administered massage and were encouraged to breathe and perform self-administered massage. Study results demonstrated that nursing support and patient-directed education concerning labor and

non-pharmacological pain control methods (breathing and cutaneous stimulation techniques) were effective in reducing the perception of pain by pregnant women (when provided in the latent labor phase before delivery), leading to a more satisfactory birth experience.

T.C. Suguna (2002) conducted a quasi-experimental study to evaluate the effectiveness of paced breathing on labor pain perception among women in labor at Rajaji hospital, Madurai was undertaken with 60 samples. The research approach was post test only control group design and sampling technique was Non-probability purposive sampling technique. Modified Visual analogue pain perception scale was used to assess the pain perception level. Study findings revealed that 96.6 percentages of the women in the Study group had moderate pain perception level after practicing paced breathing.

CHAPTER-III
RESEARCH METHODOLOGY

Research methodology is the systematic way to solve the research problem. It consists of all general and specific activities from identification of problems to final interpretation and conclusion. This phase of study deals with research approach, research design, variables , setting of study, population, sample, sample size, sampling technique, criteria for sample selection, research tool, content validity, pilot study, reliability of the tool, method of data collection, protection of human rights and plan for data analysis.

Research approach

Quantitative research approach was used in this study.

Research Design

True Experimental Pre test Post test Control group design

The diagrammatic representation of this design is as follows:

RO1 X O2

RO1   O2

Study group	RO1	X	O2
Control group	ROI	-	O2

 R: - Random selection.

OI: - Labor pain perception in the pre test

X: - Intervention with paced breathing exercise

O2:- Labor pain perception in post test

Variables

      Independent variable: - Paced breathing

      Dependant variable: - Labor pain perception

Setting

      The setting of the study was PPK hospital, Marthandam, 300 bedded multispecialty hospital which is located in KanyaKumari district. PPK hospital is located 35 kilometres away from St. Xavier's Catholic College of Nursing, Chunkankadai. It has all facilities like Casualty, Labor ward, Operation theatre, Antenatal ward, postnatal ward, Postoperative ward and other specialities. PPK hospital records more than 200 deliveries every month. This hospital is well known for its maternal care. This hospital was selected to have more samples.

Population

    Target population: - The study comprises of all primi mothers who are in the first stage of labor admitted in PPK hospital.

     Accessible population: - Primi mothers who are in the first stage of labor admitted in PPK hospital.

Sample

   Selected primi mothers who fulfilled the inclusion criteria and were admitted in the labor room of PPK hospital.

Sample size

    The sample size was 60 primi mothers. 30 in the study group and 30 in the control group.

Sampling Technique

    Samples were selected using **Simple Random Sampling technique** through the lottery method.

Criteria for sample selection

Inclusion Criteria

1. Primi mothers who were above 37 weeks of gestation with true labor pain.

2. Who were in the active phase of first stage of labor (4 to 7cm of cervical dilatation).

Exclusion criteria.

1. Mothers who were chronically ill such as generalized weakness.
2. Mothers with high risk pregnancy such as Pregnancy Induced Hypertension, Gestational Diabetes Mellitus, Cardiac problem, multiple pregnancy, malposition and Antepartum Haemorrhage.

Description of tool

The Tool used in this study consisted of the following sections. (**Annexure VII**)

Section A: Deals with the demographic variables of the mothers. It includes age in years, religion, education, occupation, family monthly income, area of residence and type of family.

Section B: Numerical pain scale for measuring the level of pain perception.

The scale was categorized as follows:

'0' denotes - No pain

'1-3' denotes - Mild pain

'4-6' denotes - Moderate pain

'7-10' denotes - Severe pain

The maximum score is '10' and minimum score is '0'

Description of Intervention (Annexure X)

Slow paced breathing exercise is a type of breathing exercise in which constant, steady, deep breaths are taken through the nose and exhaled slowly through the mouth.

- Start with a deep cleansing breath, which is done by:
  - ➢ Inhale through the nose, keeping shoulders relaxed.
  - ➢ Exhale through the mouth, letting go of all the tensions in the body.
- Inhale through nose to a count of 4 – in, 2, 3, and 4.
- Exhale through mouth to a count of 4 – out, 2, 3, and 4.
- Repeat inhale and exhale throughout the contractions.
- When contraction ends, deep cleansing breath is taken.

Content validity

The content was validated by three experts in the field of Obstetrics and Gynaecological Nursing and two medical experts in the field of Obstetrics and Gynaecology. (**Annexure III, IV, V**)

Reliability of the tool

The reliability of the tool was checked by Inter rater method and the score obtained was r= 0.78 which shows that the tool is reliable.

Pilot study

The pilot study was conducted in the labor room of Dr. Radakrishnan hospital, Kulasekharam. The investigator obtained permission from the Principal of St. Xavier's Catholic College of Nursing, Chunkankadai and the Director of the hospital prior to the study. The study was conducted among 6 primi mothers. 3 primi mothers in study group and 3 in control group. The Study group received intervention of paced breathing exercise and the control group was not given any treatment and the level of pain perception was assessed by Numerical Pain Scale. Analysis of data was done using descriptive and inferential Statistics. The tool and the instrument were found feasible and practicable. In the demographic data, in spite of monthly income, it has been changed as family monthly income after the pilot study.

.

Data collection Procedure

The data were collected within the given period of one month after obtaining a written permission (**Annexure II)** from the administrator and the consultant in PPK hospital. Random sampling technique (Lottery method) was used to select the samples in the Study group and Control group. Once the mother was received into the labor room, a lot was taken and the mother was selected under the respective group as per the lot. Table 3.1 shows the number of samples selected each day. Verbal consent had taken from each and every samples and the purpose and nature of the study was explained to them. Pre test was conducted to both the Study and Control groups and Numerical pain scale was used to assess the level of pain perception. Study group received intervention of paced breathing exercise that is a type of breathing exercise in which constant, steady, deep breaths are taken through the nose and exhaled slowly through the mouth. Mothers performed this exercise starting with a deep cleansing breath at the beginning of each contractions, then inhaled through the nose, keeping the shoulders relaxed and exhaled through the mouth loud enough that others can hear the exhale. Mothers repeated inhalation and exhalation throughout the contractions and when the contraction ends, a deep cleansing breath had taken. The mothers practiced Paced breathing technique during each contraction from the beginning of contraction and continued till the contraction ceased, in front of the investigator. As, the variations in the pain level could not be completely assessed by a single post test observation because as the time passes the intensity of uterine contractions also increases; hence the pain level would also increase. Therefore, 3 observations at the interval of every 15 minutes were recorded using Numerical Pain Scale for 2 hours. Similarly, in the control group, 3 post test scores were recorded using the same Numerical Pain Scale for assessment of pain level at the interval of every 15 minutes without practicing Paced breathing technique.

Table 3.1.Data collection period, Number of samples and Method of data collection

Data collection period (17-06-13---13-07-13)	Number of samples		Method of data collection
	Study group	Control group	
17.06.13	3	-	Simple random sampling (Lottery method)
18.06.13	2	2	
19.06.13	2	1	
20.06.13	3	-	
21.06.13	2	-	
24.06.13	2	1	
25.06.13	-	3	
26.06.13	1	1	
27.06.13	2	1	
28.06.13	2	1	
01.07.13	1	1	
02.07.13	-	2	
03.06.13	2	2	
04.07.13	1	2	
05.07.13	2	1	
08.07.13	1	1	
09.07.13	-	3	
10.07.13	1	3	
11.07.13	1	2	
12.07.13	1	1	
13.07.13	1	2	

Plan for Data Analysis

Both descriptive and inferential statistics were used to analyse the collected data. Descriptive statistics was used to analyse the demographic variables in terms of frequency and percentage.

Descriptive Statistics:-Frequency, mean and standard deviation for categorical data to find out the difference between pre and post test scores in study and control groups (**Annexure VIII).**

Inferential Statistics:-Independent 't' test, Paired 't' test and chi-square test was used to find out the effectiveness of paced breathing in the study group and the association between level of pain perception with the selected demographic variables (**Annexure VIII).**

Protection of human rights

The proposed study was conducted after the approval of the Dissertation committee of St. Xavier's Catholic College of Nursing, Chunkankadai. Permission was obtained from the director and administrator of PPK hospital, Marthandam. (**Annexure II).** Verbal consent was obtained from each and every sample. Assurance was given to the study subjects regarding confidentiality of the data collected.

CHAPTER-IV
DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of the data collected from the primi mothers. This chapter also represents the findings of the study. The data collected from the samples were tabulated, analyzed and presented in tables and interpreted under the following sections based on the objectives and hypotheses of the study. (**Annexure VII**). The chapter consists of four sections.

Section A: Distribution of primi mothers according to their selected demographic variables in Study and Control groups.

Section B: Distribution of primi mothers according to the level of pain perception in the pre and post test.

Section C: Comparison of post test level of pain perception among primi mothers in Study and Control groups.

Section D: Association between the level of pain perception and their selected demographic variables in Study and Control groups.

SECTION-A

FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THEIR SELECTED DEMOGRAPHIC VARIABLES IN STUDY AND CONTROL GROUPS.

Table 4.1: Distribution of primi mothers according to their selected demographic variables in Study and Control groups.

N=60

Sl no	Demographic variables	Study group n=30		Control group n=30	
		(f)	(%)	(f)	(%)
1.	**Age in Years**				
	18-22	5	16.6	5	16.6
	23-26	22	73.3	15	50
	27-30	3	10	8	26.6
	31-34			2	6.6
2.	**Religion**				
	Hindu	15	50	13	43.3
	Christian	15	50	13	43.3
	Muslim			4	13.3
	Others				

3.	**Education** Secondary				
	Higher secondary	13	43.3	14	46.6
	Graduate	17	56.6	15	50
	Post graduate			1	3.3
4.	**Occupation** Government employee	3	10	2	6.6
	Private employee	13	43.3	13	43.3
	Business	7	23.3	5	16.6
	Home maker	7	23.3	10	33.3
5.	**Family monthly Income** Less than 2000				
	2001-6000	9	30	6	20
	6001-10000	21	70	21	70
6.	More than 10000			3	10
	Area of residence Rural	22	73	23	77
	Urban	8	27	7	23
	Semi-Urban				
7.	**Type of family** Nuclear	9	30	10	33.3
	Joint	8	26.6	10	33.3
	Extended	13	43.3	10	33.3
	Separated				

Table 4.1 depicts the distribution of primi mothers according to the age group. It shows that in study group. 5(16.6%) of them belonged to the age group between 18 and 22; 22(73.3%) of them belonged to 23 - 26 years of age and 3(10%) of them belonged to 27-30 years of age. In control group, 5(16.6%) of them belonged to 18-22 years of age. 15(50%) of them belonged to 23-26 years of age. 8(26.6%) of them belonged to 27-30 years of age. 2(6.66%) of them belonged to 31-34 years of age.

Allocation of primi mothers according to the religion shows that in study group, 15(50%) of them were Hindus. 15(50%) of them were Christians. In control group, 13(43.3%) of them were Hindus. 13(43.3%) of them were Christians and 4(13.3%) of them were Muslims.

Dispersion of primi mothers according to education represented that in study group, 13(43.3%) of them were educated up to higher secondary and 17(56.6%) of them were graduates. .In control group, 14(46.6%) of them were educated up to higher secondary. 15(50%) of them were graduates and 1(3.3%) of them were postgraduates.

Scattering of primi mothers according to occupation shows that in study group 3(10%) of them were government employees. 13(43.3%) of them were private employees and7 (23.3%) of them were doing business and 7(23.3%) of them were home makers. In control group, 2(6.66%) of them were government employees. 13(43.3%) of them were private employees. 5 (16.6%) of them were doing business and 10(33%) of them were home makers.

Distribution of primi mothers according to family monthly income shows that in study group, 9(30%) of them were earning a monthly income of Rs.2001-6000. 21(70%) of them were earning a monthly income Rs. 6001-10000. In control group, 6(20%) of them were earning a monthly income of Rs.2001-6000.21(70%) of them were earning a monthly income Rs.6001-10,000 and 3(10%) of them were earning above 10001.

Allocation of primi mothers according to the area of residence shows that in study group, 22(73.3%) of them were living in rural area and 8(26.6%) of them were living in

urban area. In control group 23(76.6%) of them were living in rural area and 7(23.3%) of them were living in urban area.

Scattering of primi mothers according to the type of family shows in study group, 9(30%) of them belonged to nuclear family. 8(26.6%) of them were belonged to joint family and 13(43.3%) of them belonged to extended family. In control group, 10(33.3%) of them belonged to nuclear family.10 (33.3%) of them belonged to joint family and 10(33.3%) of them belonged to extended family.
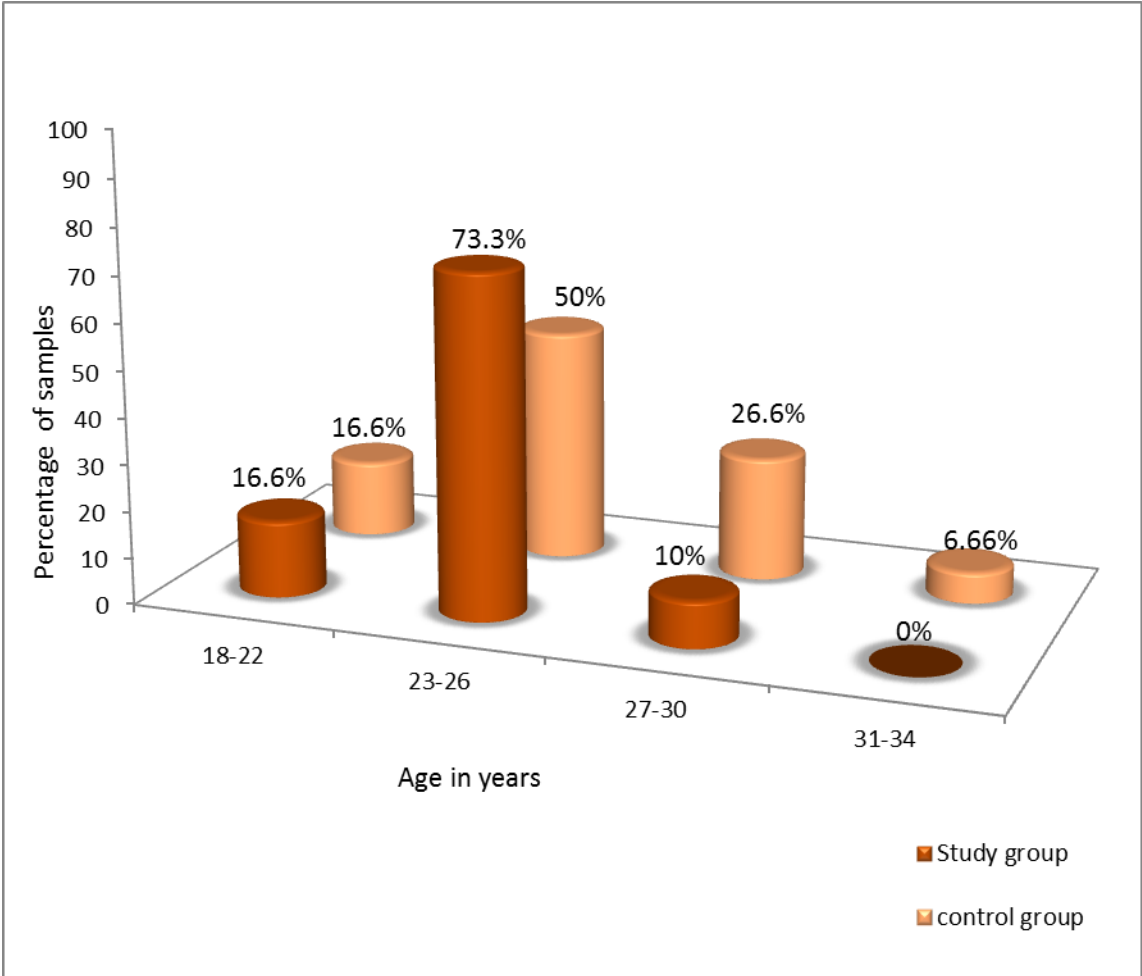
Distribution of primi mothers according to the age in years

Figure 4.1
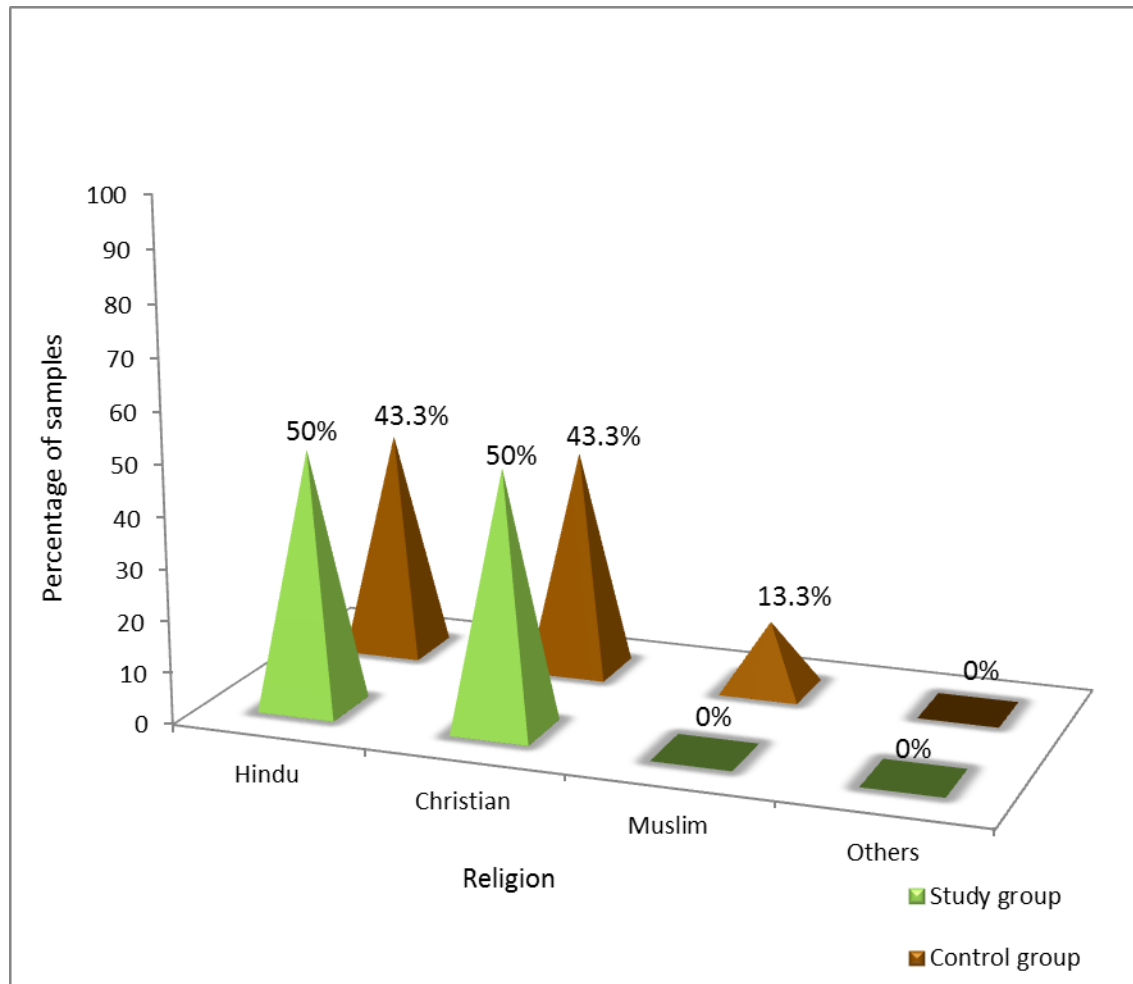
Allocation of primi mothers according to the Religion

Figure 4.2
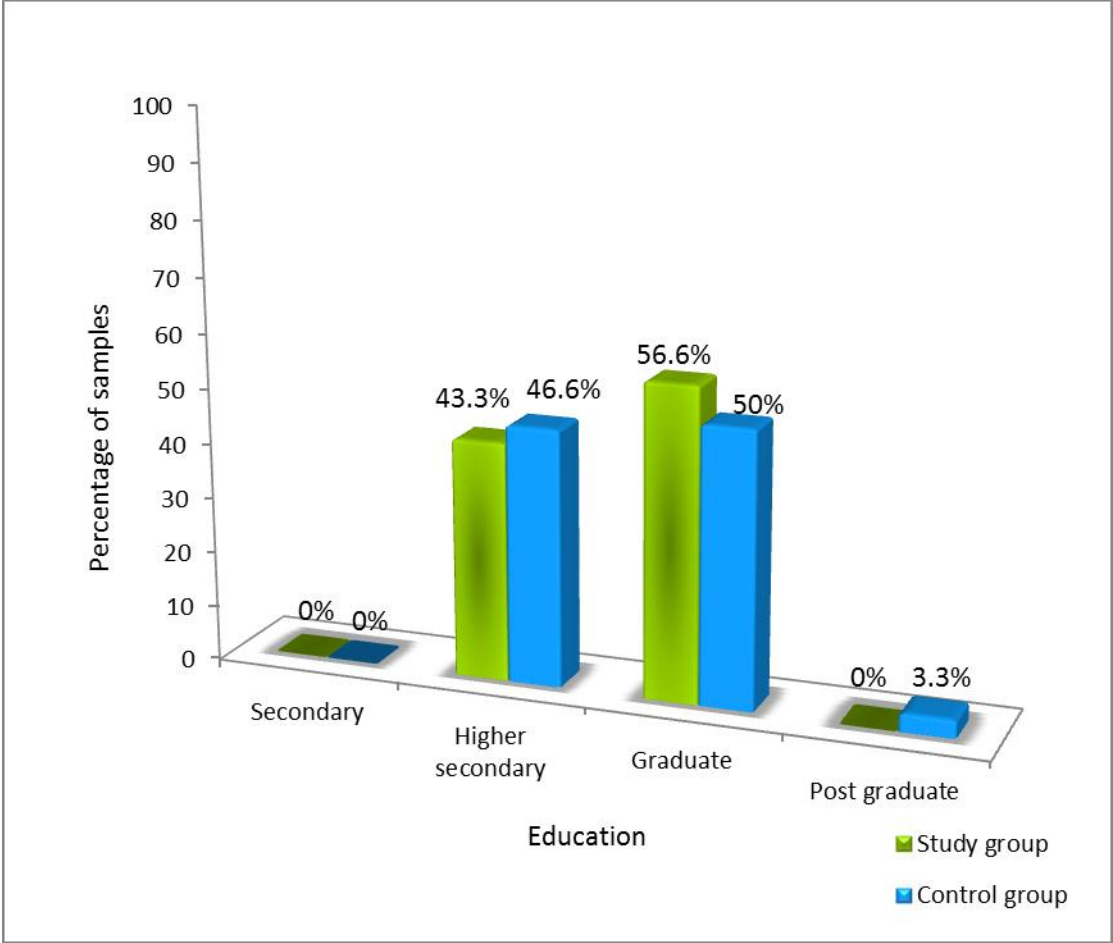
Dispersion of primi mothers according to Education

Figure: 4.3

Scattering of primi mothers according to Occupation

Figure: 4.4
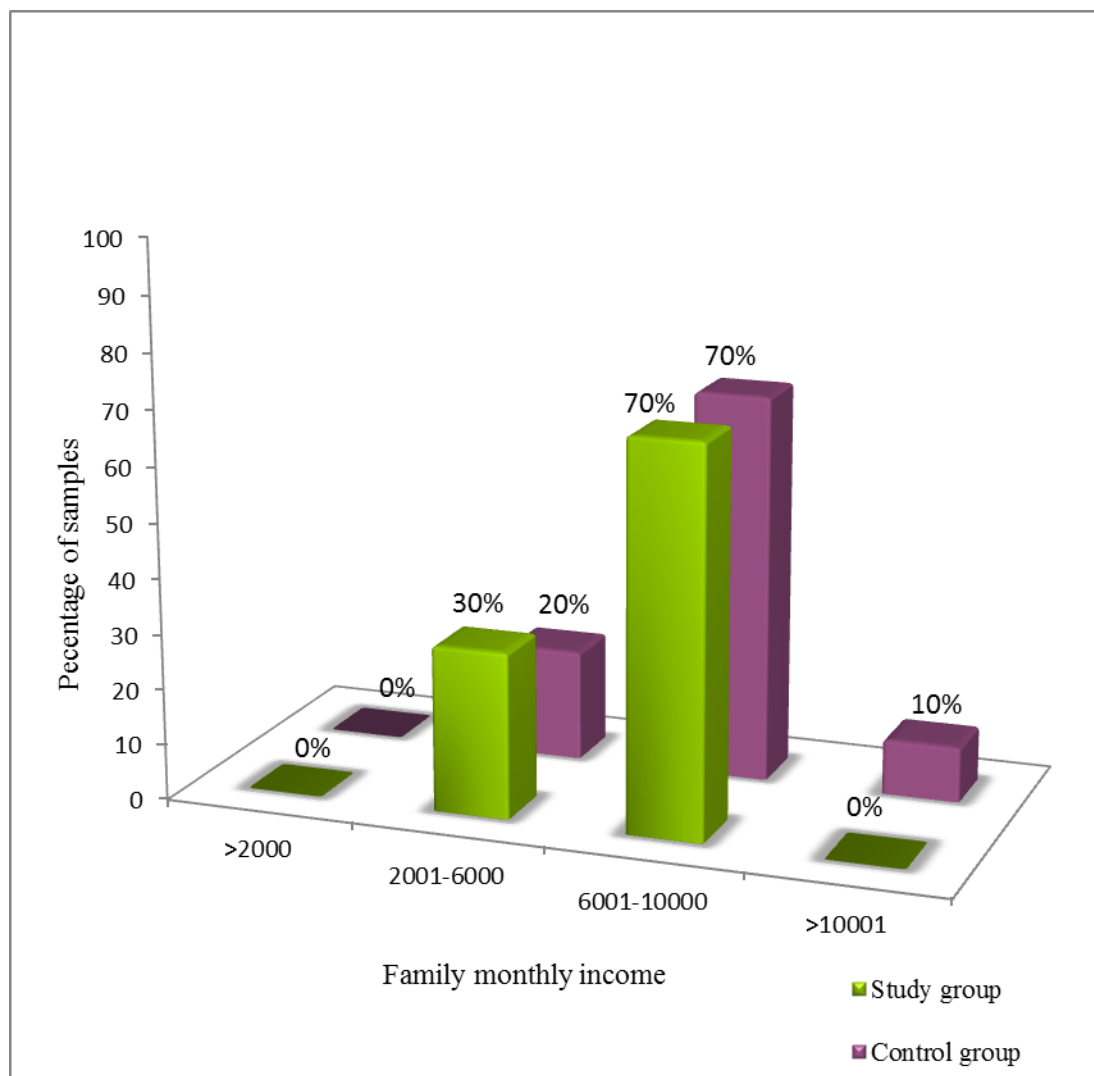
Distribution of primi mothers according to Family monthly income

Figure: 4.5
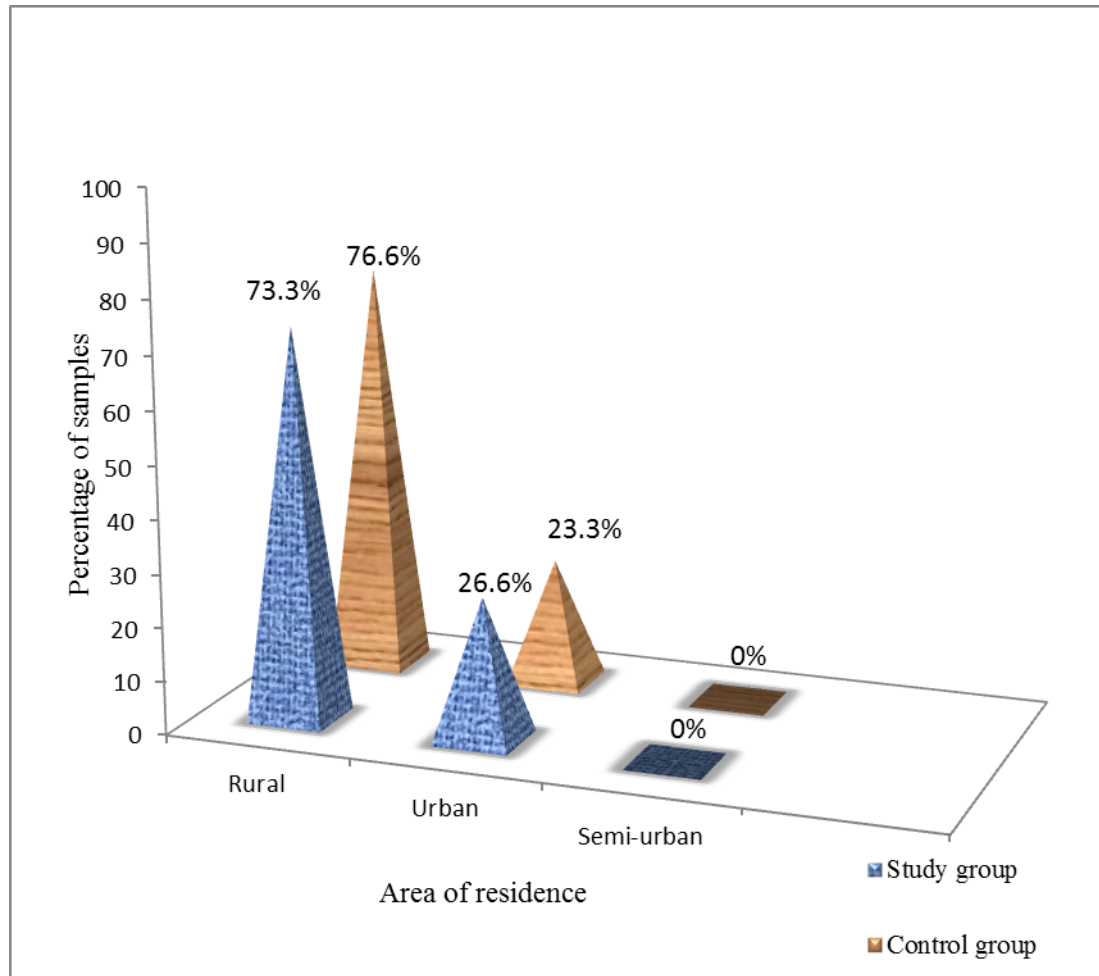
Allocation of primi mothers according to the Area of residence.

Figure: 4.6
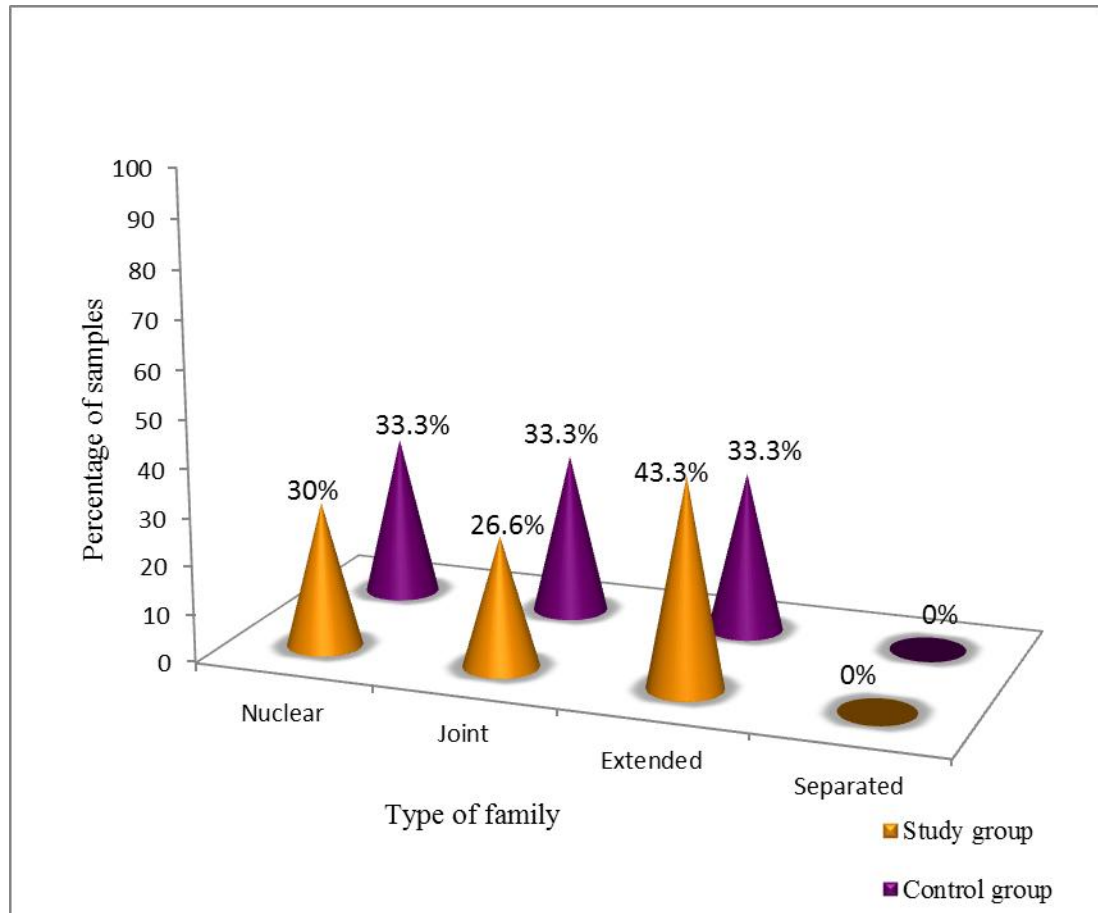
Scattering of primi mothers according to the type of family

Figure: 4.7

SECTION- B

DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THEIR LEVEL OF PAIN PERCEPTION IN THE PRE AND POST TEST

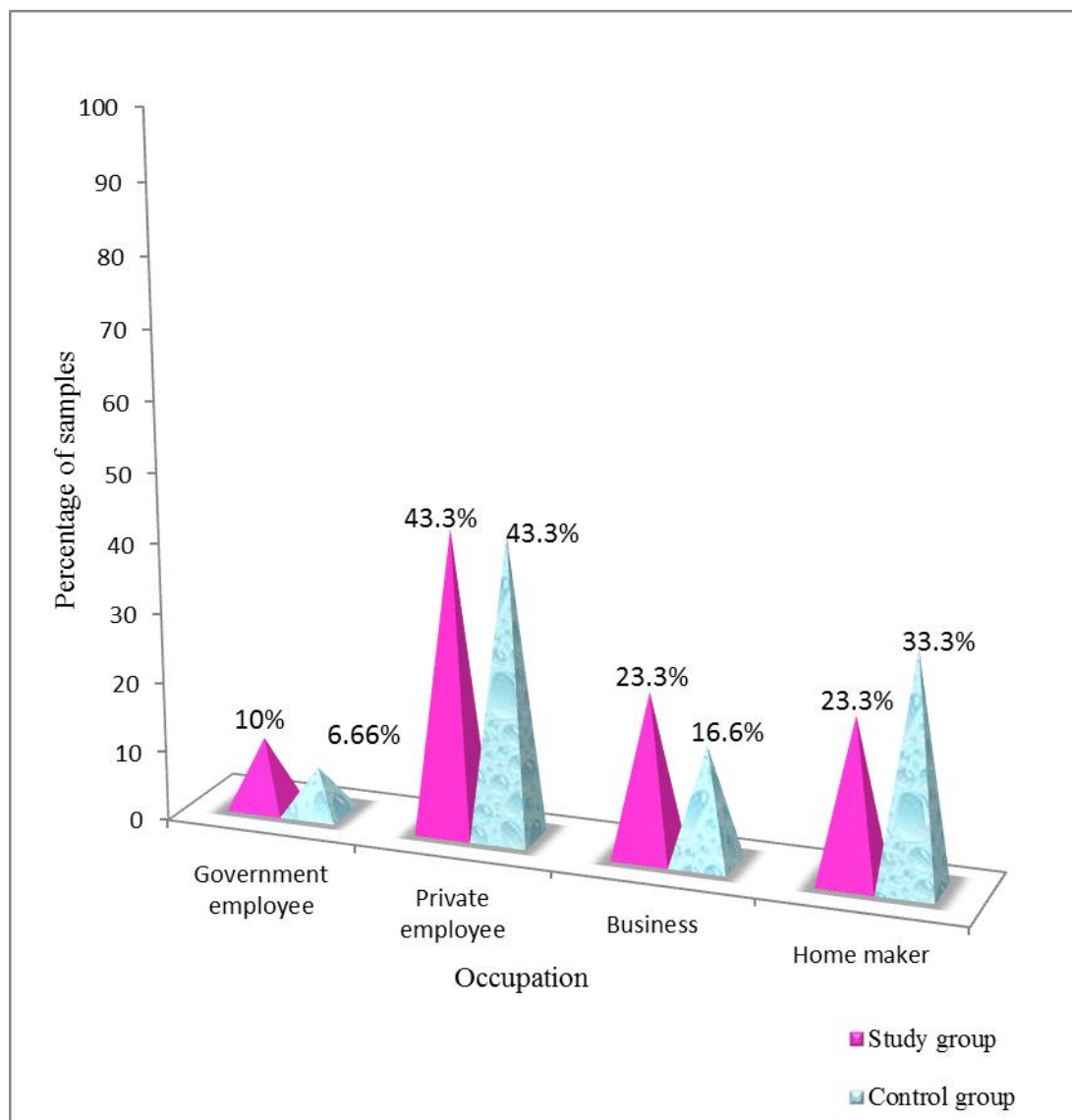Table: 4.2 Frequency and Percentage distribution of primi mothers according to the pre and post test level of pain perception in Study group and Control group.

N=60

Sl no	Level of Pain Perception	PRE TEST				POST TEST			
		Study group n=30		Control group n=30		Study group n=30		Control group n=30	
		F	%	F	%	F	%	F	%
1.	Mild Pain					14	46.6		
2.	Moderate Pain					16	53.3	3	10
3.	Severe Pain	30	100	30	100			27	90

Table (4.2) shows that in the pre test of the Study group 30(100%) had severe pain and none had moderate or mild pain. In Control group, 30(100%) had severe pain and none had moderate or mild pain.

In the post test of the Study group, 14(46.6%) had mild pain, 16(53.3%) had moderate pain and none had severe pain. In Control group, 27(90%) had severe pain, 3(10%) had moderate pain and none had mild pain.
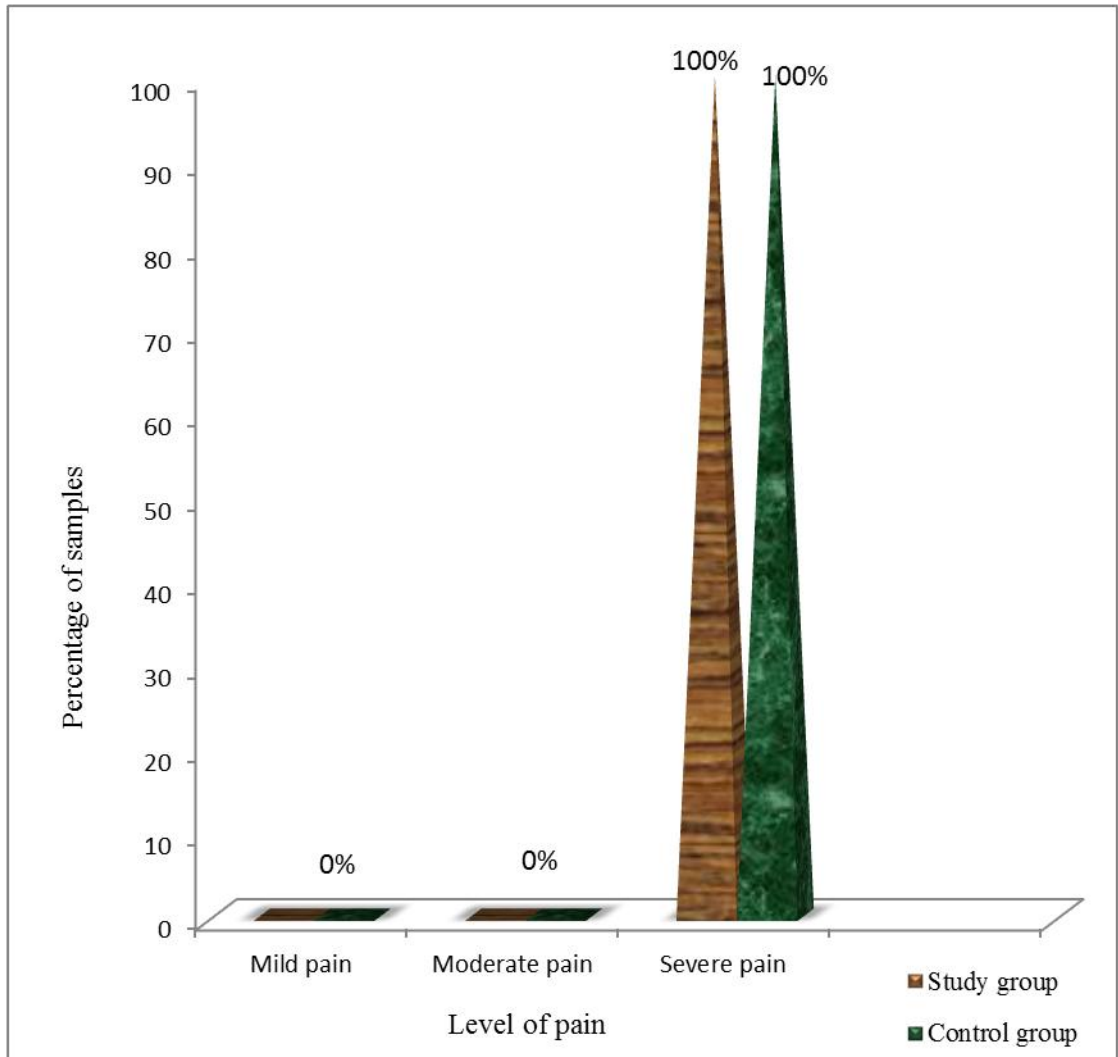
Distribution of primi mothers according to the pretest level of pain perception

Figure: 4.8
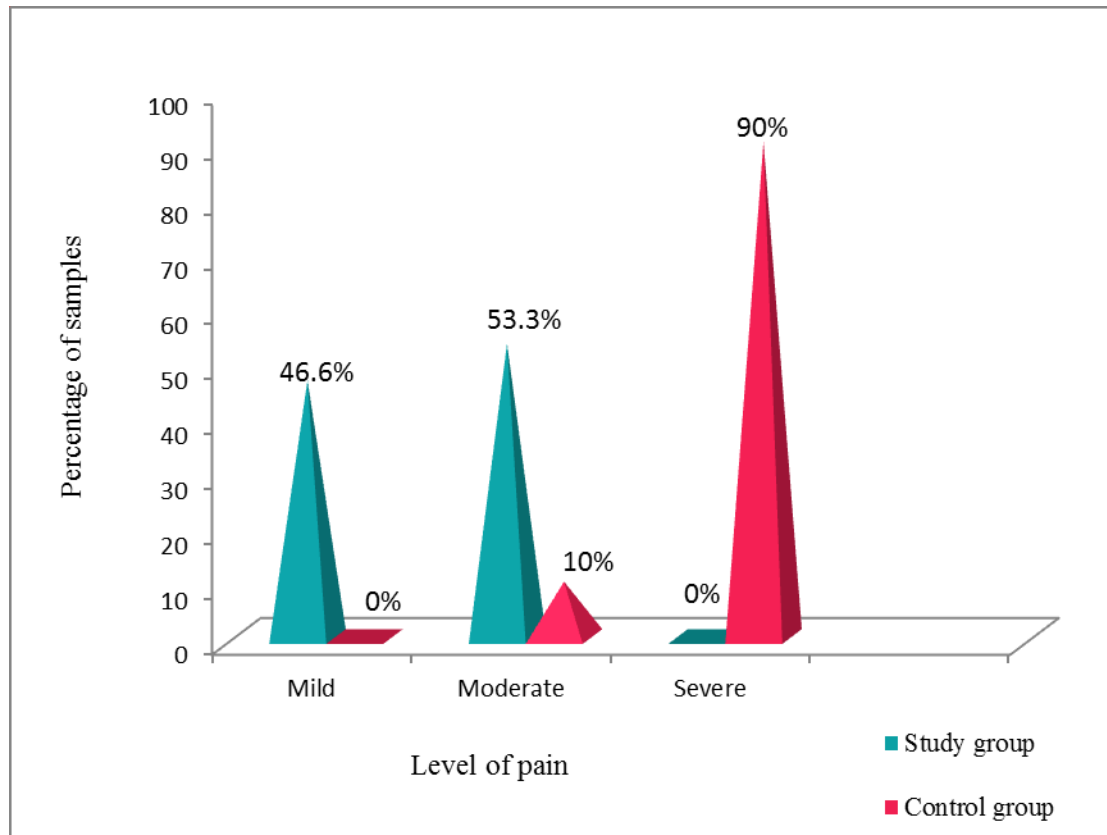
Distribution of primi mothers according to the post test level of pain perception

Figure: 4.9

SECTION-C

COMPARISON OF PRE AND POST TEST LEVEL OF PAIN PERCEPTION AMONG PRIMI MOTHERS IN STUDY GROUP AND CONTROL GROUP.

Table: 4.3 Comparison of mean, standard deviation and mean difference of primi mothers on pretest and post test level of pain perception in Study group and Control group.

N=60

Sl no	Group	Mean		Standard deviation	Mean difference	t value
		Pre test	Post test			
1	Study group	8.4	3.5	0.83	4.9	32.66
2	Control group	7.8	7.6	0.61	0.20	1.71

(Table 4.3) reveals the mean of Study group and mean of Control group. Standard deviation and paired't'value was calculated to determine the statistical significance of difference.

The obtained Study group pre test mean value 8.4 is higher than the post test value 3.5. The mean difference between Study group pre test and post test value is 4.9 and the obtained't' value is 32.66 and it is significant.

The obtained Control group pre test mean value 7.8 is higher than the post test value 7.6. The mean difference between Control group pre and post test value is 0.20 and it is lower than that of Study group mean difference value. The obtained't' value is 1.71 and it found not significant.

The mean difference between Study group and Control group and the 't' value is significant. It is inferred that the level of pain perception was significantly lower in Study group after Paced breathing.

The research hypothesis was retained.
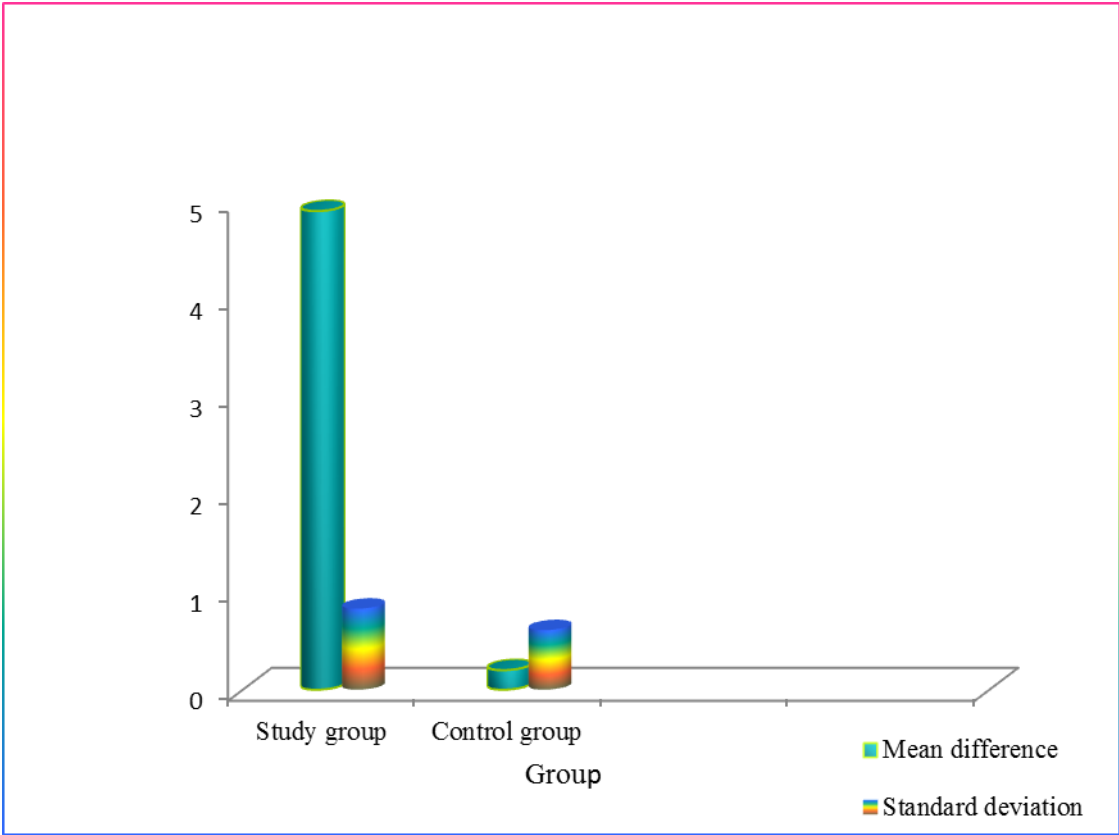
Comparison of Mean difference and Standard deviation in Study group

Figure: 4.10

Table: 4.4 Comparison of mean, standard deviation and mean difference of primi mothers on post test level of pain perception in Study and Control groups.

N=60

Sl no	Group	Mean	Standard deviation	Mean difference	't' value
1	Study group	3.5	0.86	4.1	17.88
2	Control group	7.6	0.93		

(Table :4.4) reveals the mean value of Study and Control group in post test, Standard deviation and independent t value was calculated to determine the statistical significance of difference.

The obtained Study group mean value 3.5 is lower than the Control group value 7.6. The mean difference between Study and Control group is 4.1 and the obtained 't' value is 17.88 and it is significant .The mean value of Study group is significantly lower than the mean value of Control group.

The mean differences between the Study group and Control group and't' value is significant. It is inferred that the level of pain perception was significantly less in Study group after Paced breathing.

The research hypothesis H1 is accepted.
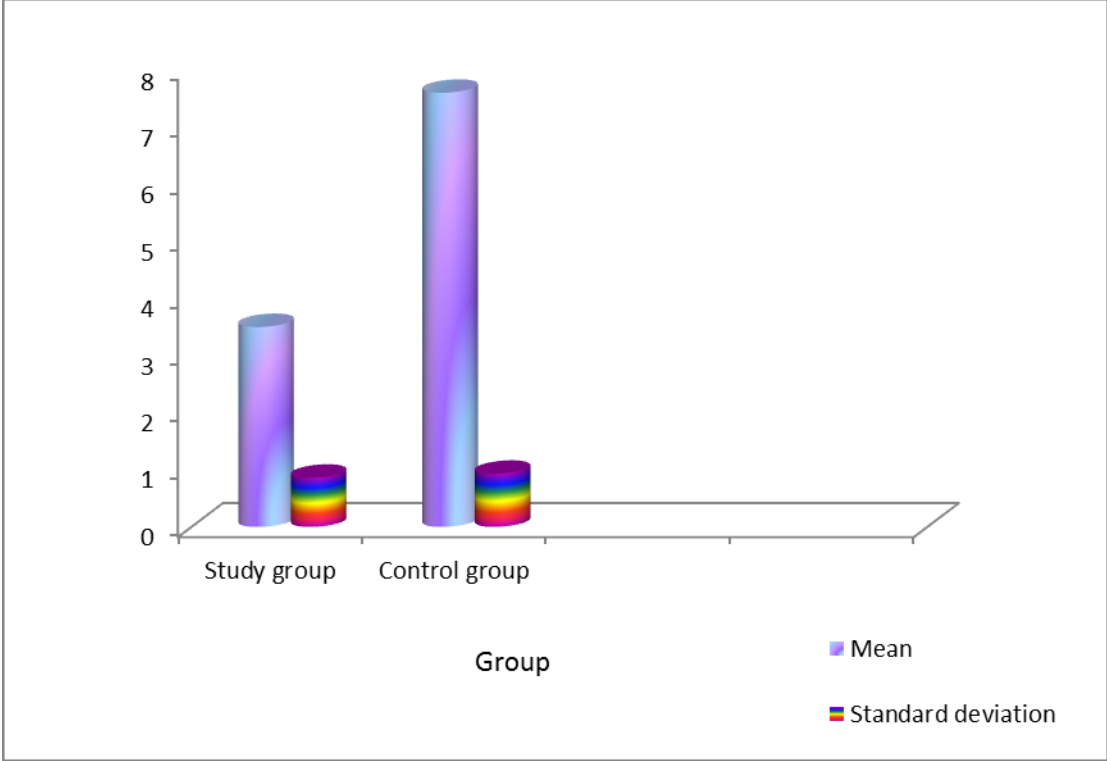
Comparison of Mean and Standard deviation in post test level of pain perception

Figure:4.1

SECTION- D

ASSOCIATION BETWEEN THE POST TEST LEVEL OF PAIN PERCEPTION WITH THEIR SELECTED DEMOGRAPHIC VARIABLES IN STUDY AND CONTROL GROUP

Table: 4.5 Association between the post test level of pain perception with their selected demographic variables in Study and Control group.

N=60

Sl no	Demographic variables	Study group n=30			Control group n=30		
		d(f)	Chi-square	Table value	d(f)	Chi-square	Table value
1	Age in Years	6	4.66	12.59	6	2.94	12.59
2	Religion	6	0	12.59	6	0.91	12.59
3	Education	6	2.0	12.59	6	1.3	12.59
4	Occupation	6	11.37	12.59	6	0.83	12.59
5	Family monthly income	6	2.05	12.59	6	2.72	12.59
6	Area of residence	4	2.10	9.49	4	0.16	9.49
7	Type of family	6	2.05	12.59	6	2.23	12.59

(p>0.05 −indicates significant association)

In the Study group, the calculated chi-square value for Age in years is 4.66, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than

the observed value 4.66. This indicates that there is no association between the level of pain perception and the age in years. The calculated chi-square value for religion is 0, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 0. This indicates that there is no association between the level of pain perception and religion. The calculated chi-square value for Education is 2.0, degree of freedom is 6, and the table value is 12.59. The table value 12.59 is higher than the observed value 2.0. This indicates that there is no association between the level of pain perception and education. The calculated chi-square value for Occupation is 11.37, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than that of observed value 11.37. This indicates that there is no association between the level of pain perception and occupation. The calculated chi-square value for family monthly income is 2.05, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 2.05. This indicates that there is no association between the level of pain perception and family monthly income. The calculated chi-square value for area of residence is 2.10, degree of freedom is 4, and the table value is 9.49.The table value 9.49 is higher than the observed value 2.10. This indicates that there is no association between the level of pain perception and area of residence. The calculated chi-square value for type of family is 2.05, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 2.05. This indicates that there is no association between the level of pain perception and type of family. There is no association in the level of pain perception with any of the selected demographic variable such as age in years, religion, education, occupation, family monthly income, area of residence and type of family.

In the Control group, the calculated Chi-square value for age in years is 2.94, degrees of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 2.94. This indicates that there is no association between the level of pain perception and age in years. The calculated chi-square value for religion is 0.91, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 0.91.This indicates that there is no association between the level of pain perception and religion. The calculated chi-square value for education is 1.3, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is

higher than the observed value 1.3. This indicates that there is no association between the level of pain perception and education. The calculated chi-square value for Occupation is 0.83, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 0.83. This indicates that there is no association between the level of pain perception and Occupation. The calculated chi-square value for family monthly income is 2.72, degree of freedom is 6 and the table value is 12.59. The table value 12.59 is higher than the observed value 2.72. This indicates that there is no association between the level of pain perception and family monthly income. The calculated Chi-square value for area of residence is 0.16, degrees of freedom is 4 and the table value is 9.49. The table value 9.49 is higher than the observed value 0.16. This indicates that there is no association between the level of pain perception and area of residence. The calculated Chi-square value for type of family is 2.23, degrees of freedom is 6 and the table value is 12.59.The table value 12.59 is higher than the observed value 2.23. This indicates that there is no association between the level of pain perception and type of family. There is no association in the level of pain perception with any of the selected demographic variables.

Hence, the H2 is not accepted.

CHAPTER –V

DISCUSSION

This study was done to evaluate the effectiveness of Paced breathing on labor pain perception among primi mothers during first stage of labor in a selected hospital, kanyakumari district.

Demographic variables of primi mothers.

Majority of the primi mothers in the demographic profile of study group, 22 (73.3%) of them belonged to 23 to 26 years of age, 15 (50%) of them were both Hindus and Christians, 17 (57%) of them were graduates, 13(43.3%) of them were private employees, 21(70%) of them were earning a monthly income of Rs.6001 to Rs.10000, 22(73.3%) of them were living in rural area and 13 (43.3%) of them belonged to extended family.

But in control group, 15(50%) of them belonged to 23 to 26 years of age, 13 (43.3%) of them were both Hindus and Christians, 15 (50%) of them were graduates, 13(43.3%) of them were private employees, 21(70%) of then earning a monthly income of Rs.6001 to Rs.10000, 23(76.6%) of them were living in rural area and 10 (33.3%) of them belonged to nuclear, joint and extended family.

Minority of the primi mothers in the demographic profile of study group, 3 (10%) of them belonged to 27 to 30 years of age, 13 (43.3%) of them were educated upto higher secondary, 3 (10%) of them were Government employees, 9(30%) of them were earning monthly income of Rs.2001 to 6000, 8(26.6%) of them were living in urban area and 8 (26.6%) of them belonged to joint family.

But in control group, 2(6.66%) of them belonged to 31 to 34 years of age, 4(13%) of them were Muslims, 1 (3%) of them was a post graduate, 2(6.66%) of them were Government employees, 3(10%) of them were earning above Rs.10001 and 7(23%) of them were living in urban area.

The first objective of the study is to assess and compare the level of pain perception before and after paced breathing in the study group and control group.

During pre test, in study group among 30 primi mothers, all of them had severe level of pain perception and in control group also, all the 30 mothers had severe level of pain perception. During post test, in Study group, 14(46.6%) had mild pain, 16(53.3%) had moderate pain and none had severe pain. In Control group, 27(90%) had severe pain, 3(10%) had moderate pain and none had mild pain.

The obtained Study group pre test mean value 8.4 is higher than the post test value 3.5. The mean difference between Study group pre test and post test value is 4.9 and the obtained't' value is 32.66 and it is found significant.

The obtained Control group pre test mean value 7.8 is higher than the post test value 7.6. The mean difference between Control group pre and post test value is 0.20 and it is lower than that of Study group mean difference value. The obtained't' value is 1.71 and it found not significant. Hence H1 is accepted.

The present study was supported by Gaston-Johansson F, Turner-Norvell K (2000) who speaks about progression of labor pain in primiparas and multiparas. The purpose of this study was to systematically describe the dimensions of pain during the progression of labor in primiparas and multiparas. Fifty primiparas and 88 multiparas were assessed for pain when the cervix was dilated 2-4 cm, 5-7 cm, and 8-10 cm. The sensory component of in labor pain was more severe than the affective component for both primiparas and multiparas throughout labor and delivery except during Stage III when primiparas reported more intense affective pain. Primiparas reported more intense sensory pain in Stages I and III and more intense affective pain in all three stages of labor than the multiparas even though they consumed significantly more pain medications than the multiparas. So it indicates that even though labor pain is a normal physiological process, it can be reduced by some measures.

Based on Ludvig Von Bertalanffy General system model, in the first phase 'input', the researcher assessed the demographic variables and pre test level of pain perception by Numerical pain scale among primi mothers in the study and control group. In the second

phase 'throughput', the researcher gave intervention to the study group with paced breathing exercise and no intervention to the control group. Then compared the pre test and post test level of pain perception among primi mothers in study group and control group.

The second objective of the study is to evaluate the effectiveness of paced breathing on the level of pain perception among primi mothers in the study group.

In the study group, 14 (46.6%) had mild pain, 16 (53.3%) had moderate pain and none had severe pain. In Control group, 27(90%) had severe pain, 3(10%) had moderate pain and none had mild pain. It reveals the mean value of Study and Control group, Standard deviation and independent t value was calculated to determine the statistical significance of difference.

The obtained Study group mean value 3.5 is lower than the Control group value 7.6.The mean difference between Study and Control group is 4.1 and the obtained 't' value is 17.88 and it is significant .The mean value of Study group is significantly lower than the mean value of Control group.

The mean differences between the Study group and Control group and 't' value is significant .It is inferred that the level of pain perception is significantly less in Study group after Paced breathing.

T.C. Suguna (2002) conducted a quasi-experimental study to evaluate the effectiveness of paced breathing on labor pain perception among women in labor at Rajaji hospital Madurai was undertaken with 60 samples. The research approach was post test only control group design and sampling technique was Non-probability purposive sampling technique. Modified Visual analogue pain perception scale was used to assess the pain perception level. Study findings revealed that 96.6 percentages of the women in the Study group had moderate pain perception level after practicing paced breathing.

Based on the model, the third component, 'output' reveals that there was reduction in the level of pain perception in study group after performing paced breathing exercise and less pain relief in control group as the researcher had not given any intervention to the control group. The fourth component 'feedback' states positive, which infers that paced

breathing is effective in reducing labor pain perception among primi mothers in Study group.

The third objective of the study is to associate the post test level of labor pain perception with selected demographic variables in study and control groups.

In the study group, there is no significant association in the level of pain perception ($p < 0.05$) with none of the selected demographic variables. There is no association in the level of pain perception with age, religion, education, occupation, family monthly income, area of residence and type of family.

In the control group, there is no significant association in the level of pain perception with none of the selected demographic variables. There is no association in the level of pain perception with age, religion, education, occupation, family monthly income, area of residence and type of family.

Therefore, H2 is not accepted.

CHAPTER-VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATION

This chapter consists of four sections. In the first two sections, the summary and conclusion are presented. In the last two sections, the implications for nursing practice and recommendations for further research are presented.

Summary

Quantitative approach with True Experimental research design was used to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers. The conceptual framework for the study was based on **Ludwig Von Bertalanffy (1968), [as cited by Christensen J. Paula and Kenny W. Janet (1995)] General System Model.** The first part of the tool was a structured questionnaire to collect the demographic variables. The standardized Numerical Pain Scale was the second part used to assess the level of pain perception in pre and post test. Simple Random sampling technique was used to select the samples and data were collected from 60 primi mothers who are in the first stage of labor of PPK Hospital, Marthandam, Kanyakumari District.

The data were collected and analyzed using descriptive and inferential statistics. To test the hypotheses, independent 't' test, paired 't 'test and chi square test were used. The level of significance was assessed by $p < 0.05$ to test the hypothesis.

The Major Findings

The demographic variables in the study group, 5(16.6%) of them belonged to the age group between 18 and 22. 22(73.3%) of them belonged to 23 - 26 years of age and 3(10%) of them belonged to 27 - 30 years of age. According to the religion, 15(50%) of them were Hindus and 15 (50%) of them were Christians. According to education, 13(43.3%) of them were educated up to higher secondary and 17(56.6%) of them were graduates. As per their occupation, 3(10%) of them were government employees.13 (43.3%) of them were private employees and7 (23.3%) of them were doing business and 7 (23.3%) of them were home makers. According to family monthly income, 9(30%) of them were earning a monthly

income of Rs.2001-6000. 21(70%) of them were earning a monthly income of Rs.6001-10000. Distribution of primi mothers according to the area of residence, 22(73.3%) of them were living in rural area and 8(26.6%) of them were living in urban area and according to type of family, 9(30%) of them were belonged to nuclear family. 8(26.6%) of them were belonged to joint family and 13(43.3%) of them belonged to extended family.

In control group, 5(16.6%) of them belonged to 18-22 years of age. 15(50%) of them belonged to 23-26 years of age. 8(26.6%) of them belonged to 27-30 years of age.2 (6.66%) of them belonged to 31-34 years of age. According to religion, 13(43.3%) of them were Hindus. 13(43.3%) of them were Christians and 4(13.3%) of them were Muslims. Distribution of primi mothers according to education, 14(46.6%) of them were educated higher secondary.15 (50%) of them were graduates and 1(3.3%) of them was a post graduate. According to occupation, 2(6.66%) of them were government employees. 13(43.3%) of them were private employees. 5(16.6%) of them doing business and 10(33%) of them were home makers. As per their family monthly income,6(20%) of them were earning a monthly income of Rs.2001-6000. 21(70%) of them were earning a monthly income of Rs.6001-10,000 and 3(10%) of them were earning above 10001.According to area of residence, 23(76.6%) of them were living in rural area and 7(23.3%) of them were living in urban area and distribution of samples according to the type of family,10(33.3%) of them were belonging to nuclear family. 10(33.3%) of them belonged to joint family and 10(33.3%) of them belonged to extended family.

In the pre test, the Study group 30(100%) had severe pain and none had moderate or mild pain. In Control group, 30(100%) had severe pain and none had moderate or mild pain. In the post test, the Study group, 14(46.6%) had mild pain, 16(53.3%) had moderate pain and none had severe pain. In Control group, 27(90%) had severe pain, 3(10%) had moderate pain and none had mild pain.

The obtained Study group pretest mean value 8.4 is higher than the post test value 3.5. The mean difference between Study group pre test and post test value is 4.9 and the obtained't' value is 32.66 and it is significant. Similarly in Control group pre test mean value 7.8 is higher than the post test value 7.6. The mean difference between Control group pre and post test value is 0.20 and it is lower than that of Study group mean difference value. The obtained't' value is 1.71 and it found not significant.

During post test, the obtained Study group mean value is 3.5 which is lower than the Control group value 7.6. The mean difference between Study and Control group is 4.1 and the obtained 't' value is 17.88 and it is found significant which is computed through independent 't' test. The mean value of Study group is significantly lower than the mean value of the Control group.

The mean differences between the Study group and Control group and 't' value is significant. It is inferred that the level of pain perception was significantly less in Study group after Paced breathing.

Conclusion

Meeting the needs of the new mother and family is one of the primary responsibilities of a midwife. It's like a ghost which haunts every first pregnancy, making more frequent appearances as the due date approaches. Labor, The birth, more specifically; "the pain". It was typical of most first-time mothers in being not so much scared of childbirth, but feared of labor pain. Relaxation really is the key to managing birth pain, as a frightened mind and tense body will not easily open up to release the baby. Breathing often reflects a state of relaxation or excitation. When at rest, breathing is usually slow and rhythmic and when we get tensed, breathing may be erratic, or we may hold our breath. Controlling breathing may help becoming aware of our state so that we can stay relaxed. Breathing techniques are helpful to many women in labor .The theory behind childbirth breathing patterns is based on the concentration required to focus on breathing. During a contraction, thought process is redirected from a pain response such as tension and breath holding to a learned relaxed breathing response. The successful development of a relaxed response to painful stimuli is most effective through a lot of practice. This study statistically proved the effect of paced breathing at 5% significant level.

Implications in nursing

Nursing service

Paced breathing is an effective relaxation technique to reduce labor pain. The steady rhythm of breathing can provide a calming effect and provides more circulating oxygen,

more nutrients, energy and strength to mother and baby. The main benefit is that it allows less adrenaline to be released into the body, which helps to reduce the sensation of fear and pain and less energy is lost .In hospitals during the mother's stay at antenatal and intranatal ward, it is the prime responsibility of the nurses to provide adequate information to the mother about paced breathing exercise. This could be achieved by giving incidental teaching or by providing teaching materials to the mother so that it would be useful for the mother while she is struggling with pain.

Nursing education

Student nurses can be trained to assess the level of labor pain by using various pain scales. Encourage them to practice various interventions to reduce the labor pain. Explanation should be given regarding the use of paced breathing exercise in reducing labor pain. The nursing students should be taught the importance of reducing labor pain and ways to enhance more comfort during a labor process. Nurse educators should orient the students towards various forms of relaxation techniques to relieve labor pain.

Nursing administration

The nurse administrator coordinates her activity along with the curative aspects of care among primigravida mothers who are in labor by participating, practising and supervising paced breathing exercise in reduction of labor pain. Nursing administrator can organize in-service education programme regarding the effectiveness of paced breathing on labor pain perception for staff nurses. Hospitals and birthing centres should provide guidelines regarding ways to reduce labor pain.

Nursing research

Nursing research is to be done to find out the various innovative methods to improve the labor outcome by reducing labor pain among primigravida mothers. The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted. Large scale study can be conducted on the same intervention.

Recommendations

- Similar study can be conducted as a comparative study between Primigravida and multigravida women in different settings.
- Similar study can be conducted as a comparative study between the regular hospital routine.
- The study can be conducted on large sample size to generalize the results of the study.

Limitation

- The duration of intervention was limited to the active phase of first stage of labor, so the pain tolerance level during the second stage was not observed.

REFERENCE

Text book reference

1. Artal, R. Wiswell, R.L. (1986). Exercise in pregnancy. Baltimore: Williams & Wilkins Publishers.

2. Basavanthappa, B T. (2007). Nursing Research. New Delhi: Jaypee Publications.

3. Bell, R. Neill, M.O. (1994). Exercise and pregnancy, a review. Mosby publications.

4. Bennet, R. L. (2001). Textbook of Midwives. 13th edition. Churchill Livingstone Publications.

5. Berry, P .H. Milk, L. Wilson. (2010). Maternal Child Nursing Care. New York: Mosby Publications.

6. Bhasker, N. (2012). Midwifery and Obstetrical Nursing. Bangalore: Emmess Medical Publications.

7. Bing, E.D. (1975). Moving through pregnancy: the complete exercise guide for today's woman. New York: Bantam Books.

8. Bobak, J.B. (1997). Maternity Care. The Nurse & the Family. California: C V Mosby Company.

9. Clapp, J.F. (1994). A clinical approach to exercise during pregnancy. Clinics in Sports Medicine.

10. Diane, M. F. (2008). Textbook of Midwives. 15th edition. Churchill Livingstone Publications.

11. Dutta, D. C. (2004). Textbook of Obstetrics. 6th edition. New Delhi: New Central Book Agency Pvt. Ltd.

12. Elliot, J. (2001). Oxford Dictionary & Thesaurus. 3rd edition. New York: Oxford University.

13. George, J. B. (2011). Nursing Theories. New Delhi: Pearson Publications.

14. Jacob, A. (2012). Comprehensive Textbook of Midwifery and Gynaecological Nursing. 3rd edition. New Delhi: Jaypee Brothers Medical publishers.

15. Jayasutha, A. (1996). Study to determine the effect of selected antenatal exercises on outcome of labor in primigravida women, MSc (N) Dissertation. Manipal University.

16. Jitendar, P. (2004). Pocket Dictionary of Medicine and Allied Health. New Delhi: Jaypee Brothers.

17. Kinney, S. M. James, S. R. Murray, S. S. (2009). Maternal Child Nursing. Missouri: Elsevier Publications.

18. Kothari, C. R. (2010). Research Methodology. New Delhi: New Age International Publishers.

19. Martin, E. A. (2005). Oxford Concise Medical Dictionary. 6th edition. Noida: Oxford University Press.

20. Menon, M. (2006). Clinical Obstetrics. 10th edition. Chandigarh:Orient Longman Publishers.

21. Munro, B.H. (2005). Statistical Methods for Health Care Research. New Delhi: Lippincott Publications.

22. Neelam, K.S. (2010). Midwifery & Gynaecological Nursing. Pee Vee Publications.

23. Nichols, H.F. (1997). Maternal new born Nursing, Theory and practice. Philadelphia: W.B.Saunders Company.

24. Olds, London. Ladwing. (1995). Maternal New born Nursing. New York: Benjamin Cummings Publication.

25. Pillitteri A. (2007). Maternal and Child Health Nursing. New York: Lippincott Williams.

26. Polit D F. (2010). Nursing Research. New Delhi: Lippincott Williams.

27. Reader. Marlin. (1996). Maternity Nursing family newborn and women's health care. 18th edition. Mosby Company.

28. Saldanha ,H .A. (2004) .A study to evaluate the effects of breathing exercises on duration, outcome of labour and behaviour responses of gravid women during the 1st stage of labour in a selected hospital,M. Sc. Nursing dissertation submitted to RGUHS. Bangalore.

Journal Reference

29. Birrer, R.B. (1990). Exercise during pregnancy. Journal of Family Practice. 30: 717.

30. Brown, W. (2002).The benefits of physical exercise during pregnancy. J Sci Med Sport. 5(1)

31. Bharathi, B.J. (2010). Effective nursing intervention on pain during labour among primi mothers. Nursing Journal of India. 6 (2).

32. Hesson, K. Hill, T. (1997). Variability in breathing patterns during latent labor. Journal of Nurse-Midwifery.42 (18).

33. Kalaimathy, A. (2011). Assessing pain perception of primipara mothers during labor. Nightingale Nursing Times. July 7(4).

34. Kanji, N. (2000). Management of pain through autogenic training, Journal of Nurse Midwifery.6 (3).

35. Karkada, E.C. Noronha, J.A. D'Souza SRB. (2010). Preparing primigravida women for childbirth-behavioural responses to labor pain & outcome of labor. International Journal of Nursing Education. 2(1).

36. Patterson, J. (1997). Labor breathing exercises. Journal of Nurse-Midwifery .42(2).

37. Ricci, S.S. Kyle, T. (2011).Maternity And Paediatric Nursing. New York.

38. Susila, C. (2012). Non-pharmacological strategies during labor. Journal of Obstetrics and Gynaecology, TNNMC.1 (1).

39. Vijayalakshmi, S. (2011). Pain perception of primigravida mothers during labor with effleurage. Nightingale Nursing Times. Sep.7 (6).

Net Reference

40. americanpregnancy.org › Labor and Birth

41. books.google.co.in/books? isbn=0795317182

42. filipspagnoli.wordpress.com/stats.../statistics...labor.../statistics-on-child-labour

43. http://www.ijwhr.net/?_action=articleInfo&article=3301

44. http://online.birthandbabies.com/classes/104-comfort-supports-in-labour/pages/3-how-can-i-relax-during-labor

45. https://play.google.com/store/apps/details?id=com.apps.paced.breathing

46. https://www.ihs.gov/.../CB-ChildbirthExercisesRelaxationProvider.pdf

47. hrhonline.org/documents/baby book/labor_coping

48. intranet.tdmu.edu.ua/.../17_Management%20of%20Discomfort.html.

49. kb.psu.ac.th/psukb/bit stream/2553/1431/7/287856_ch2

50. medind.nic.in/nad /t13/i1/nadt13i1p1.

51. midwifeinsight.com/articles/pain-relief-during-labor-and-birth

52. pregnancy.answers.com/labor/breathing-techniques-to-use-during-labor

53. www.ncbi.nlm.nih.gov/PubMed/22990758

54. www.perfectbreathing.com/pace-breathing

55. www.babies.sutterhealth.org/laboranddelivery/labor/ld_breathe.html

56. www.ehow.com › Sports & Fitness

57. www.harthosp.org/portals/1/images/.../childbirth_relaxingtechniques.pdf

58. www.rguhs.ac.in/cdc/onlinecdc/uploads/05_N269_9492

59. www.cheshire-med.com/...birth/comfort_measures_in_labor.html

60. www.birthsource.com/scripts/article.asp?articleid=404

61. www.rguhs.ac.in/cdc/onlinecdc/uploads/05_N269_9492.

62. www.rguhs.ac.in/cdc/onlinecdc/uploads/05_N003_20484

63. www.uptodate.com/.../nonpharmacological-approaches-to-management.

ANNEXURE-I

LETTER SEEKING PERMISSION TO CONDUCT THE

STUDY

St. XAVIER'S CATHOLIC COLLEGE OF NURSING

Chunkankadai, Nagercoil,
Kanyakumari District,
Tamil Nadu - 629 003.

Tel : College : 04651 - 231740
Cell : 9840307884
Fax : 04651 - 230914
E-mail : xaviers_nursing@yahoo.com
reenaevancy@yahoo.com
Website : www.xaviersnsg.edu.in

Dr. A. REENA EVENCY, M.Sc. (N)., Ph.D.,
Principal

06.05.2013

To

The Director,

P PK Hospital,

Marthandam.

Respected Madam/ Sir,

Mrs. Remya.S.Nair is a student of M.Sc Nursing programme from the Clinical Speciality, Obstetrics And Gynaecological Nursing in our college. She is conducting a study on **"An experimental study to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in selected Hospital at Kanyakumari district"**

This is for the research project to be submitted to the Tamilnadu Dr. M.G.R Medical university in Partial fulfillment of university requirement for the award of M.Sc. Nursing Degree and will be beneficial in understanding and improving the health of the mothers during intranatal period.

As a part of her study she needs to encourage the mother to perform paced breathing exercise and observe the pain perception during first stage of labor in your hospital. So permission may kindly be granted for her to conduct the study at your esteemed Hospital. She will abide by the rules and regulations of your Hospital.

Thanking you,

Yours faithfully,

PRINCIPAL
St. XAVIER'S CATHOLIC COLLEGE OF NURSING
CHUNKANKADAI
NAGERCOIL - 629 002
K. K. DIST.

ANNEXURE-II

LETTER GRANTING PERMISSION TO CONDUCT THE RESEARCH STUDY

PPK ⊕

PPK HOSPITAL

Main Road, Marthandam - 629 1

Ph : 04651- 270135, 273245, 273255
E-mail:ppkvijayakumar@gmail.com

31
லருட
மருத்துவ
சேவை

24/06/2013

Ref.No.PPK/L21/2013

To

The Principal

St. Xavier's Catholic College Of Nursing,

Chunkankadai,

Nagercoil – 629 003

Kanyakumari Dist.

Sir / Madam,

<u>Sub</u>: Approved Permission to Undergo Research Project - Regarding

We are glad to inform that we approved permission to your college Nursing

Student **Mrs. Remya S. Nair**, M.Sc. Nursing to undergo Research project on **"An**

Experimental study to evaluate the effectiveness of paced breathing on Labour

pain perception among primi mothers during first stage of Labour" in our

Hospital from 17-06-2013 to 17-07-2013.

We trust that your student will abide our hospital rules and regulations.

Thanking You

Yours truly

A. MADHIVANAN
ADMINISTRATIVE OFFICER
PPK HOSPITAL
MARTHANDAM - 629 165

QUALITY HEALTH CARE WITHIN YOUR REACH

ANNEXURE-III

LETTER SEEKING EXPERTS OPINION FOR THE VALIDITY OF THE TOOL

From,

Mrs. Remya.S.Nair,

M.Sc. Nursing II year,

St. Xavier's Catholic college Of Nursing,

Chunkankadai.

To,

Dr. F. Caroline Felicia Mary. M.D. DGO,

Caroline Hospital,

Nagercoil.

Respected Sir/ Madam,

Sub: Requisition to expert opinion and suggestion for the content validity.

I REMYA.S.NAIR, M.Sc. Nursing II year student of St. Xavier's Catholic College Of Nursing, Chunkankadai, have selected the following topic, **"An experimental study to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in a selected hospital, Kanyakumari District"** for my dissertation to be submitted to Tamilnadu Dr. M.G.R. Medical University in the partial fulfillment of the requirement for award of Master of science in Nursing.

I request you to go through the items and give your valuable suggestions and opinions to develop the content validity of the tool. Kindly suggest modifications, addition and deletions if any in the remarks column.

Thanking You,

Place: Chunkankadai.   Yours sincerely,

Date: (REMYA.S.NAIR)

ENCLOSURE:

1. Problem statement, objectives, and hypothesis of the study.

2. Demographic profile.

3. Numerical pain Scale.

ANNEXURE IV

EVALUATION CRITERIA CHECKLIST FOR VALIDATION

INSTRUCTIONS:

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

Interpretation column:

Column I – meets the criteria.

Column II - Partially meets the criteria.

Column III – does not meet the criteria.

S. NO	CRITERIA	1	2	3	REMARKS
1.	**Scoring** **-adequacy.** **-clarity.** **-simplicity.**				
2.	**Content** **-logical sequence.** **-adequacy.** **-relevance.**				
3.	**Language** **-Appropriate.** **-clarity.** **-simplicity.**				
4.	**Practicability** **-easy to score.** **-precise.** **-utility.**				

Signature: Any other Suggestions:

Name:

Designation:Address

CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

INSTRUCTION:

Kindly review the demographic variables for the pain perception. Kindly give your suggestions regarding the accuracy, relevance and appropriateness of the content. Kindly (✔) against specific columns.

PART-I

Validation of Demographic variables.

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1					
2					
3					
4					
5					
6					
7					

PART-II

Validation of pain scale scoring

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1					
2					
3					
4					

ANNEXURE V

LIST OF EXPERTS VALIDATED THE TOOL

1. Dr. F. Caroline Felicia Mary. M.D. DGO.
   Director and Consultant,
   Caroline John Hospital,
   Asaripallam Road,
   Nesamony Nagar
   Nagercoil – 629001.

2. Dr. V.Indumathi, MD. DGO.
   Consultant,
   Radhakrishnan Hospital
   Kulasekharam.-629161
   .

3. Dr. Judie, M.Sc.(N) Ph. D., (N),
    Dean
   S R M College of Nursing,
   Chennai.

4. Mrs. S. Suguna, M.Sc.(N), Ph.D. (N)
   Reader,
   Nehru College of Nursing,
   Vallioor.

5. Mrs. Margaret, M.Sc., (N)
   Reader,
   Annammal college of Nursing,
   Kuzhithurai.

ANNEXURE-VI

CERTIFICATE OF EDITING

M. SAVARIAPPAN .M.A, B.Ed.

Rtd P.G. Assistant ENGLISH

ARULAGAM,

547, VALANAR STREET,

PUNNAI NAGAR

NAGERCOIL-629004.

KANYAKUMARI DISTRICT.

Date:13/01/2014

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled **"A true experimental study to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in selected hospital, Kanyakumari district"** by **Mrs. Remya S. Nair** has been checked for accuracy and correctness of English usage and that the language used in presenting the paper is lucid, unambiguous, free of grammatical or spelling errors and apt for the purpose.

M. Saviariappan

M. SAVARIAPPAN, M.A., B.Ed.,

Rtd. P.G. Asst. (English).

13-1-14

ANNEXURE VII

TOOL FOR DATA COLLECTION

PART I: STRUCTURED QUESTIONNAIRE TO COLLECT DEMOGRAPHIC DATA

Demographic Variables.

1. Age in Years

   a) 18-22
   b) 23-26
   c) 27-30
   d) 31-34

2. Religion

   a) Hindu
   b) Christian
   c) Muslim
   d) Others

3. Education

   a) Secondary
   b) Higher Secondary
   c) Graduate
   d) Post graduate

4. Occupation

   a) Government employee
   b) Private employee
   c) Business
   d) Home maker

5. Family Monthly Income

   a) Less than Rs.2000
   b) Rs.2001-6000
   c) Rs.6001-10000
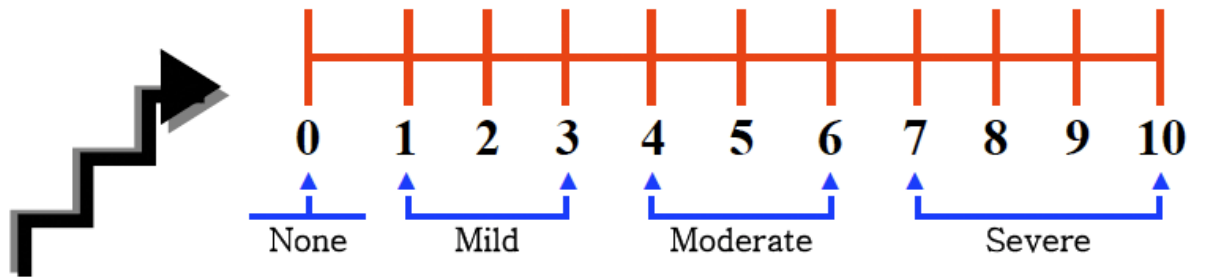   d) More than Rs.10001

6. Area of Residence

a) Rural
b) Urban
c) Semi-Urban

7. Type of Family

a) Nuclear
b) Joint
c) Extended
d) Separated

PART-II- NUMERICAL PAIN SCALE TO ASSESS THE LEVEL OF PAIN PERCEPTION

The total score is '10' as maximum and '0' as minimum.

'0 ' - No pain.

'1-3' - Mild pain (nagging, annoying, interfering little with ADLs)

'4-6'-   Moderate (interferes significantly with ADLs)

'7-10 '- Severe (disabling, unable to perform ADLs)

ANNEXURE-VIII

FORMULAS USED FOR STATISTICAL ANALYSIS

Descriptive Statistics

Mean

$$\bar{X} = \frac{\Sigma x}{n}$$

Standard deviation

$$s = \sqrt{\frac{\Sigma(x - \bar{x})^2}{n - 1}}$$

Inferential Statistics

Paired 't' test

$$t = \frac{\bar{d}}{\sqrt{s^2 / n}}$$

Independent 't' test

$$t = \frac{\left| \bar{x_1} - \bar{x_2} \right|}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

Chi-Square test

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

ANNEXURE-IX

CERTIFICATE OF STATISTICAL ANALYSIS

TO WHOM SO EVER IT MAY CONCERN

Certified that the dissertation paper titled **"A true experimental study to evaluate the effectiveness of paced breathing on labor pain perception among primi mothers during first stage of labor in a selected hospital in kanyakumari district** done by **Mrs. Remya.S.Nair,** has been checked for the accuracy in statistical analysis and interpretation and apt for its purpose.

Signature

Dr. G. IMMANUEL
Assistant Professor
Centre for Marine Science & Technology
Manonmaniam Sundaranar University
Rajakkamangalam - 629 502
K. K. District, Tamilnadu, India

ANNEXURE-X

PACED BREATHING EXERCISE

Slow Paced breathing exercise

Slow paced breathing exercise is a type of breathing exercise in which constant, steady, deep breaths are taken through the nose and exhaled slowly through the mouth.

- Start with a deep cleansing breath, which is done by:
  - ➢ Inhale through the nose, keeping shoulders relaxed.
  - ➢ Exhale through the mouth, letting go of all the tensions in the body.

- Inhale through nose to a count of 4 – in, 2, 3, and 4.

- Exhale through mouth to a count of 4 – out, 2, 3, and 4.

- Repeat inhale and exhale throughout the contractions.

- When contraction ends, deep cleansing breath should be taken

Duration of breaths should be 8-9 breaths/1minute.