# EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITALS IN COIMBATORE

**By**

**Reg.No : 301721104**

**A DISSERTATION SUBMITTED TO THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGEE OF MASTER OF SCIENCE IN NURSING**

**OCTOBER - 2019**

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## CERTIFIED THAT THIS IS THE BONAFIDE WORK OF

**Reg. No: 301721104**

PPG College of Nursing

Coimbatore

SIGNATURE: —————————————— COLLEGE SEAL

**Dr. P. MUTHULAKSHMI, M.Sc (N)., M.Phil., Ph.D.,**

Principal,

PPG College of Nursing,

Coimbatore – 35.

## A DISSERTATION SUBMITTED TO THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGEE OF MASTER OF SCIENCE IN NURSING

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**APPROVED BYTHE DISSERTATION COMMITTEE ON OCTOBER 2018**

PRINCIPAL           :           _____

**Dr. P. MUTHULAKSHMI, M.Sc (N).,M.Phil, Ph.D.,**
Principal
PPG College of Nursing
Coimbatore – 35.

RESEARCH GUIDE  :           _____

**Prof. Kalaivani, M.Sc (N)., Ph.D**
Department of Obstetrics and Gynaecology,
PPG College of Nursing,
Coimbatore – 35.

MEDICAL GUIDE    :           _____

**Dr. Saratha, MD, D.G.O,**
Department of  Obstetrics and Gynaecology,
Ashwin Hospital,
Coimbatore-14.

**A DISSERTATION SUBMITTED TO THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGEE OF MASTER OF SCIENCE IN NURSING**

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# PLAGIARISM CERTIFICATE

This is to certify that this dissertation work titled **EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITALS IN COIMBATORE** of the candidate **STARLIN THANGARATHI. A** with registration Number **301721104** for the award of MSC Nursing in the branch of **OBSTETRICS AND GYNECOLOGY**. I personally verified the **PLAGIARISMCHECKER X.COM** website for the purpose of plagiarism Check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows 16 percentage of plagiarism in the dissertation.

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# CHAPTER-I

# CHAPTER-I

# INTRODUCTION

*"Whenever a woman is in labour, she has pain, because her hour has come; but when she gives birth to the child, she no longer remembers the anguish because of the joy that a child has been born into the world."*

**John 16:21**

## Introduction

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

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

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

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

Nancy KL(1996) Non-pharmacological methods like relaxation, breathing techniques, positioning/movement, massage, hydrotherapy, hot/cold therapy, music, guided imagery, acupressure, and aromatherapy are some self-help comfort measures women may initiate during labour to achieve an effective coping level for their labour experience without any maternal and foetal complications.

Bowers BB(2002) Breathing exercises as labour support is a non-pharmacological measures which helps to focus on breathing and reduce the pain during delivery. It makes contraction more manageable, so breathing exercise cannot be under estimated, since it is proved through experiments and experience of many mothers. The childbirth experience is not only memorable in a woman's life, but also colours the life of the women and through her the entire family.

## Need for the study

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

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

In 2010, WHO had conducted a study in 137 countries by obtaining data on number of cesarean section being performed. Out of that a total of 54 countries had cesarean section below 10%, whereas 69 showed above 15%, 14 countries had rates between 10-15% and the number of cesarean sections in the said countries was 6.20

million, however in 2008 it was only 3.18 million. According to World Health Statistics (2012), 9% of all births in Asia were by cesarean section. Also, study revealed that in Asia some women preferring cesarean section because of fear of painful natural birth.

A quasi-experimental study was conducted in India to evaluate the effectiveness of slow paced breathing on pain perception during first stage of labor among primipara mothers. Slow paced breathing was taught to the experimental group before the labor pain started which they practiced during labor. Pain perception level was measured using pain intensity scale and facial pain scale. The investigator concluded that mothers who practiced slow paced breathing reported significant reduction in pain perception. The mean value of 6.30 in experimental group and 8.70 in the control group using pain intensity scale. The computed "t" value 5.174 reveals that slow paced breathing is effective at 5% level of significance.

Jaya Bharathi B(2010) An experimental study was conducted to assess the effective nursing intervention (breathing exercise, massage and position) on pain perception during first stage of labour among primi mothers in a selected hospital at Chennai .The sample comprised of 30 subjects each in experimental and control group selected by simple random sampling technique. Data was collected using a structured questionnaire and visual analogue scale. The comparison of pre-assessment level of pain perception between experimental and control group revealed that unpaired 't-test' value was 0.158 which does not show any statistical significance and 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 and no significant association was found in post-assessment level of labour pain perception of experimental and control groups with selected demographic variables. The study reveals that selected nursing interventions (breathing exercise, massage and positions) to the primi mothers were effective in reducing their labour pain perception.

Nancy KL(1996) Relaxation is thought to increase pain tolerance through a number of mechanisms including reduction of anxiety, decreased catecholamine response, increased uterine blood flow and decreased muscle tension. This relaxation is mainly enhanced by a specific breathing pattern during contraction. Relaxation may

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be enhanced through concentration on a specific breathing pattern during contractions that may help a woman to cope with labour pain.

Psharmacological managements are available to reduce pain but it has more side effects .When non pharmacological measures like, breathing exercise, acupressure, music therapy etc are used, which can help in reducing labour pain and also minimizes the risk of side effects for the mother and foetus. In the maternity setting no non-pharmacological methods are used. Non-pharmacological methods do not require any special training and method of administration and is also easy and inexpensive. So the researcher intended to do the study.

## Statement of the problem

Effectiveness of breathing exercises on labour pain among primi mothers at selected hospital in Coimbatore.

## Objectives of the Study

The objectives of the study are to:

1. To assess the pre-test, post test level of labour pain in experimental group.

2. To determine the effectiveness of breathing exercise on labour pain among primi mothers.

3. To compare the level of labour pain between experimental and control group.

4. To find out the association between the level of pain with selected demographic variables.

Hypotheses

$H_1$:    There will be a significant reduction in level of pain among primi mothers who receives breathing exercise.

$H_2$:    There will be a significant association between the level of pain with selected demographic variables of primi mother.

## Operational definitions

1. **Effectiveness**: Effectiveness refers to the extent to which the breathing exercise has impact on the reduction of labour pain among primi mothers in the first stage of labour as measured by visual analogue scale

2. **Breathing exercise:** The process of respiration, during which air is inhaled into the lungs through the mouth or nose due to muscle contraction and then exhaled due to muscle relaxation.

3. **Labour:** In this study, labour refers to first stage of labour that is the period from 3 cm to 10 cm cervical dilatation as identified by per vaginal examination findings with adequate uterine contractions.

4. **Pain:** refers to discomfort and unpleasant subjective feelings experienced by the subject during first stage of labour as measured by visual analogue scale.

5. **Primi mothers:** refers to the woman who delivers for the first time

## Assumptions

The study assumes that:

- Primi Mothers experiences more pain during labour.

- Individuals differ in pain perception.

- Mothers prefer pain relieving measures during labour

- Breathing exercise will be effective in relieving labour pain.

# CHAPTER-II

# CHAPTER-II

# REVIEW OF LITERATURE

Kothari CR(1989) The term review of literature refers to the activities involved in identifying and searching for information on a topic and developing a comprehensive picture of the state of knowledge on the topic.

Review of literature is an integral component of any scientific research. This chapter deals with the review of published and unpublished research studies and non-research literature related to the present study.

- Labour pain

- Labour pain perception.

- Pharmacological measures of pain relief and its effect on the mother and baby.

- Non – pharmacological measures of pain relief and its effect on mother

- Effect of breathing practice on pain reduction

## Labour pain

Lowe K.N(2002) Pain is a multidimensional phenomenon that varies for each and every individual. The agency for healthcare policy and research guide for acute pain management says that, "The single most reliable indicator of the existence and intensity of pain and any resultant distress is the patient's self report". Pain is an unpleasant, complex, highly individualized phenomenon with both sensory and emotional components. Many physiologic, Psychosocial and environmental factors influence the nature and degree of pain experienced by the laboring woman and how she will respond and cope with the pain.

Lowe N (1996) Labour is usually painful.  Labour pain is caused by uterine contractions and the dilatation of the cervix and by the stretching of the vagina and pelvic floor to accommodate the presenting part. The perception of acute pain during labour originates with the transmission of noxious sensory input to the central nervous system.

These painful stimuli are said to be transmitted by thoracic, lumbar and sacral nerves. Visceral pain during labour from the uterus and cervix is transmitted by thoracic 10-lumbar 1 (T10-L1) during labour, fear and anxiety can worsen our pain. They cause the release of stress hormones (catecholamines: epinephrine, etc.) which place in a hyper-aroused state that makes hypersensitive to pain. Catecholamines increases the heart rate, increase blood pressure, slow down digestion and shunt blood supply away from internal organs and toward skeletal muscles and skin.

The labour consists of three phases: latent phase, active phase and transitional phase. In latent phase mother experience mild to moderate contractions that last 30 to 45 seconds and are spaced five to 20 minutes apart. In active phase contractions will grow stronger and longer that usually lasts from two and a half and the cervix dilates to seven centimeters, contractions come every three to four minutes and typically last for 40 to 60 seconds. During transitional labor, the last, most intensive, and fortunately the shortest of the phases of labor (generally lasting from 15 minutes to an hour), the cervix dilate from seven centimeters to its final ten centimeters. Contractions are very strong at this point — usually 60 to 90 seconds long, and with intense peaks. (www.whattoexpect.com).

## Labour pain perception

Baloch S(2010) conducted a descriptive study on 400 labour women at Obstetrics and Gynaecology Department Liaquat University Hospital Hyderabad/Jamshoro from January 2006 to July 2006. All the women with associated medical problems were excluded. Two questionnaires were completed containing demographic details, antenatal record, mode of onset of labour, labour duration, ambulation, use of various pharmacological agents and women's personal experiences regarding pain perception and future family planning. Data was collected and analyzed on simple percentage basis. Results shows that an acceptable birth experience in 136 (34%) cases, while 264 (66%) patients found it an exhausting painful experience. Common factors which favour good experience included lower socioeconomic class 67 (57.98%), rural population (54.68%), multiparous women (68.08%), prior knowledge of labour pains (69.31%), spontaneous labour (86.89%), use of pharmacological agents (76.04%) and co-operative staff attitude (89.27%). 87.5% had a positive attitude for future child bearing. The study concluded

that Childbirth can be a good experience with effective antenatal counseling. A highly professional attitude and tender loving care is the key to a pain free labour.

Bala A(2009) conducted a study to evaluate changes in pain threshold before, during and after labour in a prospective clinical trial. Forty pregnant women at term were included. Pain threshold in 18 specific pressure points was evaluated using a dolometer. Woman underwent pain threshold assessment at term before labour, during the active phase of labour and postpartum. Subjective pain intensity was assessed by the parturient using the Verbal Rating Scale (VRS). Pain threshold was significantly higher during active phase of labour. There was a significant decline in pain threshold after labour as compared to pain threshold during labour (2.507+/- 0.947 and 2.608+/-1.023, respectively, p-0.01). Pain intensity using the VRS score was higher during labour than before labour (4.8+/-and 2.4+/-2.6 p<0.001). It was found that, there is a significant rise in pain threshold during labour in term pregnancies. This rise may have an intended protective effect during the intense labour pain experience .A study conducted to determine the knowledge, desire and access to pain relief measures in labour as well as perception of labour pain. This is a cross sectional study of two hundred and fifty five women in two tertiary institutions in northeastern Nigeria. Patients attending the antenatal clinics or lying in ward of the hospital after delivery were interviewed and questionnaires filled. One hundred and ninety (74.5%) were undelivered while 65(25.5%) were in the immediate postpartum period. One hundred women were interviewed at the University Of Maiduguri Teaching Hospital (UMTH) while 155 were interviewed at the Federal medical Centre Gombe. The interviews centered on their perception of pain and duration of labour. The mean age and parity were 27.6 ± 5.7 and ±2.1 respectively. About 80% of those interviewed rated labour pain as severe to agonizing, 82% had no knowledge of pain relief in labour while 81.6 and 78.8% would like pain relief and recommended same, respectively. Only 11% of those interviewed were given pain relief in labour. The majority of women, 64.7% considered their labour as not prolonged. Parity (P = 0.0002), ethnicity (P = 0.020) and duration of labour (P = 0.00017) significantly influenced pain perception in labour while education (P = 0.25) and age (P = 0.4) had no significant influence on pain perception in labour. Although (**Ohel I2007**) many of the women were not aware of pain relief in labour, the zozverwhelming majority would want and have recommended pain relief in labour.

Leila Pirdel(2009) conducted a descriptive-comparative study in Tabriz Alzahra Hospital at Iraq during 2005-2006. In this study, 300 primiparous and 300

multiparous women who were candidates for vaginal delivery, were randomly selected and interviewed. The data were collected by a questionnaire and the intensity of pain was determined by Visual Analogue Scale (VAS). The result shows Significant positive correlations were found between ain and tension from environmental factors in primiparous (r=0.16, p<0.01) and also in multiparous (r=0.22, p<0.05) women. Furthermore, primiparous women believed that a crowded delivery room (70%) and restriction of movement and mobility (67%) contributed to their environmental stresses. Multiparas women believed that noise in the delivery ward (84%) and restrict of fluid intake (78%) increased their stresses. The study concluded that Performance of routine diagnostic tests in hospitalized primi and multiparous woman, provision of invasive medical care during labor process and a noisy and crowded environment all influence the mother's experience and perception of pain. Therefore, the medical staffs seem to play a great role in alleviating labor pain by reducing stressors, especially the objective ones that are more stressful.

Vialles N(2004) conducted an observational study to assess circadian variations in labour pain perception, 222 consecutive nulliparous women with uncomplicated pregnancy, spontaneous labour, cervical dilatation (3–5 cm), ruptured membranes and normal fetal heart rate tracings were studied. Visual analogue pain scores (VAPS) were analysed and divided into four periods: night (1:01 a.m. to 7:00 a.m.), morning (7:01 a.m. to 1:00 p.m.), afternoon (1:01 p.m. to 7:00 p.m.) and evening (7:01 p.m. to 1:00 a.m.). VAPS were also compared between daytime (morning+afternoon) and nocturnal (evening+night) periods. The results shows that at daytime mean VAPS were lower than nocturnal scores [75.6 (15.1) vs 85.7 (14.1), P<0.0001]. VAPS were lower in the morning than in the afternoon, evening and night periods (ANOVA, P<0.0001). This study concluded that labour pain perception appears to be chronobiological, and this might be taken into account when enrolling parturients in studies designed to assess or treat labour pain.

Chang Y.C et al(2002) conducted a study to investigate the association between demographic-obstetric factors and perceived labour pain in primiparas. The participants in this study were 90 primiparas having normal childbirths at the Department of Obstetrics, Chi-Mei Medical Center in southern Taiwan between September 1999 and June 2000. The perceived intensity of labour pain was measured using the visual analogue scale for pain and behavioral intensity score in the latent phase (Cervix dilated 3-4cm), active phase (Cervix dilated 5-7cm), and transitional phase (Cervix dilated 8-10cm). The

subject's mean age was 27.82 +/- 3.64 years (range, 20-39year), and the mean newborn birth weight was 3.162+/-387g (range, 2,340-4,120g). The primiparas perceived labour pain at each of the three phases of labour was positively related to expected labour pain, but had no significant association with newborn birth weight, maternal age, body mass index, confidence in labour or duration of labour. The expected  labour pain of the primiparas  had a negative correlation with body mass index (BMI). The birth weight of the newborn was positively related to the duration of labour. These findings suggest that primiparas perceived labour pain is correlated with psychogenic rather than physical factors.

## Pharmacological measures of pain relief and its effect on the mother and baby.

Gunilla L(2001) conducted an evaluative study  to assess the effects of different types of analgesia during labour on the development of spontaneous breast feeding movements, crying behaviour and skin temperature during the first hours of life in healthy term newborns. A sample of 28 mothers participated in this study. Group I mother (n=10) received no analgesia, Group II (n=6) received mepivacaine via pudendal block and Group III (n=12) received pethidine or bupivaine or more than one type of analgesia during labour. Video recording showed a significantly lower proportion of the infants in Group II and III touched nipple with their hands before sucking, made poor licking movements and sucked the breast (p<0.01). Nearly 50% of the infants in Group II and III did not breastfeed within the 4 hours of life; they had a higher temperature and they cried more than the Group I infants. The study revealed that the analgesic during labour disturbs a newborn's behaviour.

Arch(2000) conducted an experimental study on comparison between the effectiveness of epidural analgesia and parenteral pethidine during labor. The study was aimed to define parturients' opinion on either epidural analgesia or intravenous pethidine, and to determine the effect of both analgesics after delivery. The investigator interviewed and examined 401 consecutive parturients who requested analgesia during the beginning of their active stage of labor. Of those, 131 women requested and underwent epidural analgesia and 270 received parenteral pethidine. The pain experienced before administration of any analgesia, was significantly higher in the epidural group than in the parental group (mean visual analog scale (VAS) score 8.9 and   8.4,   respectively;

P=0.004). However, after analgesics, women from the epidural analgesia experienced significantly less pain during labor as compared to those receiving pethidine (mean VAS scores 5.05 vs. 9.14, respectively; p<0.001). This study concluded that epidural analgesia is more effective than parenteral analgesia in pain and discomfort relief.

## Non pharmacological pain relief intervention

Hamid T(2010) conducted a study to compare the effects of massage and music therapies on the severity of labour pain in the Ilam province of western Iran. Overall, 101 primigravida mothers who were hospitalized for vaginal delivery were recruited and randomly stratified into two groups of either massage (n = 51) or music (n = 50) therapies. Pain was measured using the visual analog scale and the two groups were compared in terms of pain severity before and after the interventions. Mothers in the massage therapy group had a lower level of pain compared with those in the music therapy group (p = 0.009). A significant difference was observed between the two groups in terms of pain severity after intervention (p = 0.01). Agonizing, or most severe, labour pain was significantly relieved after massage therapy (p = 0.001). Massage therapy was an effective method for reducing and relieving labour pain compared with music therapy and can be clinically recommended as an alternative, safe and affordable method of pain relief where using either pharmacological or nonpharmacological methods are optional.

Borup L(2009) conducted a study to compare the effect of acupuncture with transcutaneous electric nerve stimulation (TENS) and traditional analgesics for pain relief and relaxation during delivery with respect to pain intensity, birth experience, and obstetric outcome. Use of pharmacological and invasive methods was significantly lower in the acupuncture group (acupuncture vs. traditional, p < 0.001; acupuncture vs. TENS, p = 0.031). Acupuncture did not influence the duration of labor or the use of oxytocin. Mean Apgar score at 5 minutes and umbilical cord pH value were significantly higher among infants in the acupuncture group compared with infants in the other groups. Acupuncture reduced the need for pharmacological and invasive methods during delivery and is a good supplement to existing pain relief methods.

Burns, Blarney(2006) conducted a study to determine the feasibility of conducting a randomized controlled trial (RCT) on the use of aromatherapy during labour

as a care option that could improve maternal and neonatal outcomes. Two hundred and fifty-one women randomized to aromatherapy and 262 controls groups. Participants randomly assigned to administration of selected essential oils during labour by midwives specifically trained in their use and modes of application.There were no significant differences for the following outcomes: caesarean section (relative risk [RR] 0.99, 95% CI: 0.70-1.41), ventouse (RR 1.5, 95% CI: 0.31-7.62), Kristeller manoeuvre (RR 0.97, 95% CI: 0.64-1.48), spontaneous vaginal delivery (RR 0.99, 95% CI: 0.75-1.3), first-stage augmentation (RR 1.01, 95% CI: 0.83-1.4) and second-stage augmentation (RR 1.18, 95% CI: 0.82-1.7). Significantly more babies born to control participants were transferred to NICU, 0 versus 6 (2%), P = 0.017. Pain perception was reduced in aromatherapy group for nullipara. The study, however, was underpowered. The study demonstrated that it is possible to undertake an RCT using aromatherapy as an intervention to examine a range of intrapartum outcomes, and it provides useful information for future sample size calculations.

Bagharoosh M(2006) conducted a study to determine the effect of relaxation techniques on painrelief during labor. This study was carried out on 62 pregnant women referred to Fatemieh hospital during their labor. They were selected using convenience sampling and were dividedrandomly in two groups. The first group (control) received routine way of ward during their labor and the second group (experimental group) went through the relaxation technique after training. The intensity of pain wasdetermined using a standard pain number rating scale and the behavioral reactions were recorded usingan observational checklist. The statistical analysis of data showed significant difference in intensity ofpain between the two groups (P = 0.0001). Also there was a significant difference in behavioral reactions between the two groups (P < 0.0001). Since the relaxation technique is easy to perform and without any risk and also has low expenses it is recommended for pain relief during labor.

Penny S,Bolding A(2004) conducted a study on Non-pharmacological treatments such as breathing techniques, continuous labour support, hydrotherapy, intradermal water blocks, movement and positioning, touch and massage, acupuncture, hypnosis, TENS (transcutaneous electrical nerve stimulation), aromatherapy, heat and cold, childbirth education, self-help techniques, music and audio analgesia which helps the women to perceive successfully with the pain and stress of labor and state that they were "able to transcend their pain and experience a sense of strength and profound psychologic and spiritual comfort during labor".

## Breathing exercise and labour pain:

Thomas E(2011) conducted a study to determine effectiveness of patterned breathing technique in reduction of pain during first stage of labour among primigravidas.A Non Equivalent Pre-test Post-test control group design was adopted for the study. Non- Probability purposive sampling technique was followed to select 60 primigravida women in the first stage of labour in selected hospitals of Pune city. Then the subjects were assigned to the experimental group 30 and control group 30. Data collection was done using Interview Schedule for collecting Demographic and base line data, numeric Pain Intensity Scale (NPIS) for assessment of pain and an Observation Checklist for assessment of progress of labour. The results shows that the mean post test scores of pain level at 1st, 2nd, 3rd, 4th and 5th hour after practicing Patterned breathing technique among primigravida women during first stage of labour, in experimental and control group has p-value of 0.000,which is less than 0.05 level of significance. It was concluded from the statistical tests that practicing selected Patterned breathing technique was effective in reduction of pain among primigravida women during first stage of labour. Analysis of data showed that there was significant difference between pre test and post test pain scores of pain level in experimental group after practicing Patterned breathing technique and without practicing Patterned breathing technique control group**.**

Jaya Bharathi B(2010) conducted a study to identify the effective nursing interventions on pain during labour among primi mothers. The study population comprised of all primigravida mothers admitted to the labour room of selected hospitals. The sample size for the study was 60 primi mothers, 30 in the experimental group and 30 in control groups.  Studies have revealed that that there are a number of non-pharmacological methods which can help a woman to relax during contractions. The breathing techniques, massage, and positioning are also widely used ways of handling the discomfort. Simple random sampling technique was followed to allot the samples to experimental and control groups. Visual analog scale (0-10), Combined Numerical Categorical pain Assessment scale were used. The pre-assessment level of labour pain showed a mean value of 5.66 with standard deviation (SD) value of 2.23 in experimental group and mean value of 5.75 with standard deviation value of 2.43 in control group. The comparison of pre-assessment level of pain perception between experimental and control groups revealed that unpaired 't' test value was 0.158 which did not show any statistical significance. The post-assessment level of labour pain perception of primi mothers showed a mean value of 3.33 with SD of 1.86 in experimental group and  mean value of

5.69 with SD of 2.59 in control group. 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. It was found that selected nursing interventions (massage, breathing exercise and positions) to the primi mothers were effective in reducing their labour pain perception.

Yildirim G(2004) conducted a study on the effect of breathing and skin stimulation techniques on labour pain perception. Among pregnant women (75% primiparous) the patients were in the 38th to 42nd week of pregnancy, not at high risk and expected to have normal vaginal delivery. They were selected from volunteers by non random samplings. The total samples were 40 cases, with 20 in the experimental group and 20 in the control group. Data were obtained through visual analog scale, inspection form, observation form and postnatal interview form. The study investigator provided information about labour, breathing techniques to the pregnant women assign to the experimental group at the beginning of labour (latent phase). The women received massage and were encouraged to breathe. Study results demonstrated that nursing support and patient-directed education concerning labour and non-pharmacological pain control method including breathing and cutaneous stimulation technique were effective in reducing the perception of pain.

Geden E(2002) conducted a study to assess the psychophysiological effects of Lamaze preparation on labour pain. Eighty nulliparous college female undergraduates were cast randomly into a series of eight treatment conditions representing all possible combinations of the three major components of the Lamaze method of childbirth preparation (relaxation training, informative lectures, and breathing exercises). Assessments of the efficacy of these pain coping strategies were subsequently made in the context of a 1-hour session involving twenty 80-second exposures to a laboratory pain stimulus, patterned so as to resemble labor contractions. Dependent variables included self-reported pain, systolic and diastolic blood pressure, frontalis EMG, and heart rate. Results of the study indicated that relaxation training comprises the most therapeutically active component of the Lamaze treatment regimen, with significant effects (treatments X trials) on self-reported pain, frontalis EMG, and heart rate.

CNM Data Group(1998) conducted a study on midwifery management of pain during labour by using both pharmacological and non pharmacological methods. Paced breathing was used by 50% of the woman during labour. They found that, women's those

who practiced paced breathing technique were perceived less pain, did not request of another pain relief measures and also identified number of unwanted complications like prolonged labour, fetal distress, operative delivery, abnormal APGAR score **.**

Pugh LC(1998) conducted a study on first stage labour management, and examination of patterned breathing and fatigue. The sample comprised 50 primi women in labour whose fatigue was measured every 2 hours for 6 hours after admission. At each data point the investigator evaluated the method of breathing that participants used. The results show that during the latent phase of labour, women using patterned breathing exhibited significantly more fatigue. This study concludes that It is appropriate for nurses, midwives, physicians, and doulas to encourage the use of patterned breathing as an intervention in active labor; however, patterned breathing may increase the mother's fatigue level if begun too early**.**

Robertson E, Johansson conducted a study to examine the relationship between the use of patterned breathing, a traditional intervention, and the level of fatigue during the first stage of labour. A secondary analysis was conducted on a subset (n = 56) of a prospective longitudinal study of fatigue during the intrapartum period. The sample comprised primiparous women in labor whose fatigue was measured every two hours for six hours after admission. During the latent phase of labor, women using patterned breathing exhibited significantly more fatigue. It is appropriate for nurses, midwives, physicians, and doulas to encourage the use of patterned breathing as an intervention in active labour, however patterned breathing may increase the mother's fatigue level if begun too early**.**

## Conceptual framework

Conceptual framework is a theoretical approach to the study of problems that are scientifically based and emphasises the selection, arrangement and classification of its concepts. Conceptualisation is a process of forming ideas, design and plans.

The conceptual framework used in the present study is based on Callista Roy's Adaptation Model (1984), which views the individual as an adaptive system, who functions as a whole, through the interdependence of subjects. An individual's behaviour is based on the input, control process, output and feedback. The mother is exposed to a variety of stimuli during labour. To cope with these stimuli, she requires

various types of comfortive and supportive measures like breathing exercises, back massage etc . The adaptation level of parturient women is determined by three stimuli, i.e., focal stimuli, contextual stimuli and residual stimuli. The control process includes biological and psychological coping mechanism. Output is the decreased intensity of pain perception and anxiety level or increased pain and anxiety level and adaptive or maladaptive responses.

The stimuli are like:

1.  **Focal stimuli:** Are those which most immediately confrnt the person. In this study it refers to pain due to uterine contractions.

2.  **Contextual stimuli:** Are all other internal and external world stimuli of the person that can be identified as having a positive or negative influence on the situation. Anxiety, fear, unknown surroundings, poor social support and disturbance created by other women in labour are the contextual stimuli for parturient women.

3.  **Residual stimuli:** Are those internal factors whose current effects are unclear.

    The beliefs, attitudes and traits of an individual developed from the past but affecting the current responses .The residual stimuli in this study are past experience of hospitalization, contact with health professionals, socio- cultural orientation of women and pain threshold.

    Individuals have the abilities to cope with the changing environment. Roy has described these abilities as regulator and cognator coping mechanisms which are considered to be the control subsystems of the person as an adaptive system.

a.  **The regulator subsystem:** This responds automatically through neural-chemical endocrine process. During labour, thoracic, lumbar and sacral nerves transmit the painful stimuli. The impulses travel to the dorsal root ganglia and into the posterior horn of the spinal cord and then to the thalamus and sensory cortex.

b.    **The cognator subsystem:** Responds through higher complex process of perception, information processing and emotion. The mother in labour uses the cognator subsystem by perceiving the information given by the care provider, that is, the investigator. She cooperates and performs the breathing exercises taught by the investigator.

Roy has identified four adaptive modes or categories for assessment of behaviour in terms of pain perception and anxiety level resulting from regulator and cognator subsystem responses namely physiological, self concept, role function and interdependence modes.

**Physiological mode** involves the body's basic needs and ways of dealing with adaptation. Maintenance of fluid electrolyte balance, resting, comfortable position and relaxing in between the contractions are adaptive responses, where as dehydration, excessive fatigue, discomfort, anxiety etc are ineffective or maladaptive response of this mode.

**Self-concept mode** refers to the basic need for psychic integrity constituting the beliefs and feelings that one holds about oneself at a given time and focuses on psychological and spiritual aspects. In this study it refers to spiritual self-calmness, confidence which are effective or adaptive responses and ineffective responses are anxiety, fear, and lack of self confidence and self control over pain.

**Role function mode** identifies patterns of duty performances, based on given position in society. Acceptances of motherhood, bearing the labour pain patiently are the adaptive response. Restless and non-cooperation are the ineffective or maladaptive behavioural patterns.

**Interdependence mode** identifies patterns of human values, affection and love. These processes occur through interpersonal relationships at individual and group levels. In this study maintenance of a good interpersonal relationship with the nurse or midwife or care giver is an adaptive response of a mother in labour, whereas non-cooperation is the ineffective response.

Roy states that the nurse may carry out in all the modes her interventions fulfilling nursing role, by reducing ineffective response and promoting adaptive

responses as output.

**Delimitations**

- Study is delimited to the primi mothers

- Delimited to selected hospital Coimbatore

**Input**

**Throughput**

**Output**

**STIMULI**

**Focal stimuli**

✓ Pain due to uterine contractions

**Contextual stimuli**

- Fear

− Unknown surroundings & disturbance created by other women in labour

− Family support

**Residual stimuli**

− Past experience

− Self-

**Key**

✓ Under study
► Interventio

Relationship with the nurse& support person

- Fluid and electrolyte balance

✓ Resting in between contractions

Acceptance of motherhood

− Acceptance of baby
✓ Bearing the

**Cognator**

− Information
− Support from healthcare team
► breathing exercise

**Regulator**

− Neural pathway
− Chemical change

Interdependence mode

Physiological mode

Self-concept mode

Role function mode

**Ineffective response**

✓ No reduction in the intensity of pain
✓ Restlessness, irritable, afraid, weak and tired

**Effective Response**

✓ Pain reduction
✓ Relaxes, cooperates, follows instructions

**Adaptive behaviour**

Figure :1 Conceptual Framework On Effectiveness Of Breathing Exercises On Pain Reduction Based On Roy's Adaptation Model(1984)

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# CHAPTER-III

# CHAPTER-III

# METHODOLOGY

Methodology is the systematic way of doing a research to solve a problem. It is concerned with the steps, procedures and strategies for gathering and analysing the data in research investigation. It includes the collection, assembling and examining of available data, testing the assumptions and developing practical application from the laws or principles that have been derived from the verification of the assumption.

This chapter deals with methodology selected by the investigator to study the effectiveness of breathing exercises on labour pain among primi mothers in selected hospital at Coimbatore.

## Research approach

Research approach indicates the basic procedure for conducting research. The choice of appropriate approach depends on the purpose of the study. In this study, an evaluative research approach was used and the subjects were selected by simple random sampling method (lottery method); allotment of the groups was done by random assignment.

## Research design

A researcher's overall plan for obtaining answers to the research questions or for testing the research hypothesis is referred to as research design.

The research design adopted for the study is pre-test-posttest experimental design.

Pre-test- posttest experimental design was adopted for the study. The pre-test was carried out to assess the level of labour pain among primigravid mothers prior to breathing exercise.

| Subject | Random assignment | Pre-test | Treatment | Post- test |
|---|---|---|---|---|
| Experimental Group (with Breathing exercise) | R | $O_1$ | X | $O_2$ |
| Control Group (without Breathing exercise) | R | $O_1$ | _ | $O_2$ |

R: Random assignment

$O_1$: Assessment of pre-test level of labour pain of primigravid mothers X: Administration of breathing exercise

$O_2$: Assessment of post-test level of labour pain of primigravid mothers

## Setting of the study

Settings are the more specific place where data collection will occur. The investigator selected Aravindan Hospital, Coimbatore as setting of the study. This hospital is well-known for its nursing and medical care. The hospital has a maternity and gynecology ward with a bed strength of 250 and a full-fledged labour theater and operation theatre as well as a neonatal intensive care unit. It is located at Kovilpalayam, Coimbatore, which is 8 km away from PPG College of Nursing.

## Variables of the study

A variable is anything that can change or anything that is liable to vary. Two

types of variables were identified in this study. They are independent and dependent.

## Independent variable

An independent variable is the variable that stands alone and is not dependent on any other. In this study the independant variable is the breathing exercises taught to the primigravid mothers in the first stage of labour in Group I

Dependent variable

Dependent variable is the effect of the action of the independent variable and cannot exist by itself. In this study, the dependent variables are the level of labour pain among primigravid mothers in the first stage of labour.

Extraneous variable

A variable that confounds the relationship between the independent and dependent variables that needs to be controlled either in the research design or through statistical procedure. In this study the extraneous variables are age, education, occupation, family income, type of family and gestational age of the primigravid mothers in the first stage of labour.

## Population

Population is the entire aggregation of cases that meet a designated set of criteria. The population in this study comprised of primigravid mothers in the first stage of labour admitted to the labour theatre in the selected hospital during the data collection period.

Sample Size

Sample consists of a subset of the units that compose the population. The sample for this study consisted of 40 primigravid mothers with cervical dilatation 3-10 cm as per vaginal finding.

## Sampling Technique

Sampling is the process of selecting a portion of the population to obtain data regarding a problem. In this study the investigator had used simple random sampling technique.

Simple random sampling technique is the most pure and basic probability sampling design, every member of the population has an equal chance of being selected as subjects. Random assignment was adopted while assigning the sample to Group I and Group II. All primigravid mothers in the labour room of the selected hospital who met the inclusion criteria were selected for the study. A total of 40 subjects – 20 in Group I and 20 in Group II – were selected.

## Criteria for sample selection

### Inclusion criteria

- The mothers who are admitted with 1-3 cm cervical dilatation.

- Mothers between 20-35 years of age.

- Mothers who know English or Tamil.

- Those who are willing to participate in the study.

### Exclusion criteria

- High risk mothers.

- Receiving pharmacological pain relieving measures

## Description of Tool

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. The tools used in this study for collecting data are:

Tool I: Baseline proforma

It was used to collect the baseline information of the client like, age, education, occupation, family income, type of family and gestational age.

Tool II: Visual Analogue Scale

Pain is highly subjective. It can be assessed by various methods for its various characteristics. Intensity of pain can be measured by numerical, verbal description and Visual analogue scale (VAS).

VAS consists of a straight line of 10 cm length, representing a continuum of intensity and has verbal description at each end, i.e., "No pain" and "worst pain" possible, allowing the client total freedom in identifying the severity of pain by notifying any point on the continuum.

In this study the investigator measures the pain of primigravid mothers in the first stage of labour using the standardized visual analogue scale.

The tools selected for this study were

1.     Baseline profoma
2.     Visual analogue scale

The following steps were adopted in the development of the tool:

a.     Review of literature
b.     Opinion of experts from obstetricians and nursing departments
c.     Construction of a baseline profoma
d.     Content validity

e.      Pre-testing of the tool

f.      Reliability

## Testing of the Tool

**Content validity**

Content validity refers to the degree to which an instrument measures what it is supposed to measure.  To establish the content validity, baseline profoma and visual analogue pain scale was given to 5 experts: four from the Department of Obstetrics and Gynaecology Nursing, and one from obstetricians. There was 100% agreement on all items with suggestions to correct the construction of a few items for easy understanding for mothers.

Pre-testing of the tools

Pre-testing is the trial administration of a newly developed instrument to identify flaws or assess time requirements.  Pre-testing was done by administering the tools to six primimothers in the labour theater of the selected Hospital, Coimbatore. The items were found appropriate and easy to administer. Hence the instrument remained as it was without any modification.

Reliability

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring. The reliability of the instrument was established by administering the tool to primi mothers admitted to the labour theater of selected VG Maternity Hospital, Coimbatore. Inter-rater reliability was used to find out the reliability of the pain scale score; correlation was computed using Spearman's Rank Correlation Coefficient with a reading of 0.92, which indicated that the tool was highly  reliable.

**Description of the final tools**

The data collection instruments are divided into Tool I and Tool II.

Tool I: Baseline profoma

The baseline profoma had items on age, education, occupation, family income, type of family and gestational age.

Tool II: Visual Analogue Scale

The Visual Analogue Scale was used to assess the intensity of pain perceived by primigravid mothers. The Visual Analogue Scale comprised of a 10 cm horizontal line with graduations marked 0 to 10 one centimetre apart and end-points marked as "no pain" and "worst pain possible."

The primigravid mothers were asked to place a cross mark on the line at the graduation that best described the amount of pain. The number at the cross mark was taken as the pain score.

## Pilot study

Polit DF(1999) A pilot study is a small preliminary investigation which has the same general character as the main study. The purpose of conducting the pilot study was to find out the feasibility and practicability of the study. The pilot study was conducted in the labour theatre at selected Aravindan Hospital, Coimbatore after getting permission from the Medical Director for 5 Days. Twelve primigravid mothers were selected and equally assigned to Group I and Group II. The purpose of the study was explained to each subject and informed consent was obtained prior to the pilot study. Confidentiality was assured to all the subjects.

The investigator administered breathing exercise to experimental group. Both the groups had regular care from the health professionals such as doctors and nurses. Data analysis was done using descriptive and inferential statistics.

The tools were found to be feasible, practical and acceptable. No change of the tool was done after the pilot study.

## Data collection Procedure

The final data collection was done from 2nd February to 2nd March 2019. Formal administrative permission to conduct the study was obtained from the administrator

The investigator explained the purpose of the study individually. Confidentiality was assured to all the subjects and obtained informed consent. Sample was selected as per the sampling criteria and divided into Group I and Group II by simple random assignment. Pain level of primi mothers were assessed by using visual analogue pain scale in Group I & Group II. Mothers in Group I received breathing exercise for 1min(6-8 breaths) those who are having cervical dilatation from 3-7 cm & for 8-10cm , 30-40 breaths in 1 min and while Group II did not received breathing exercise. Every 30 min interval the investigator assessed the degree of pain levels by visual analogue pain scale. Data collection was terminated after thanking each of the subjects.

## Plan for data analysis

The data analysis was planned to include:
- Descriptive Statistics
- Inferential Statistics

Wood GB(1994) Data analysis is the systematic organisation and synthesis of research data and the testing of research hypotheses using those data.

The obtained data was planned to be analysed by both descriptive and inferential statistics on the basis of objectives and hypotheses of the study. To compute the data, a master data sheet was prepared by the investigator. The baseline data containing sample characteristics was to be analysed using frequency and percentage.

The degree of pain perception of the primigravid mothers in Group I and Group II will be analysed using frequency and percentage. The difference in the perception of pain level of primigravid mothers in Group I and Group II will be analysed using mean percentage and mean difference.

Comparison of pain score of the primigravid mothers in Group I and Group II will be analysed by unpaired 't' test.

Association of pain score with selected demographic variables will be analysed using Chi-square test.

# CHAPTER-IV

# CHAPTER-IV

# DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data obtained from 40 Primigravid mothers those who are admitted in a selected Aravindan hospital at Coimbatore.

Analysis of data can be defined as the systematic organisation and synthesis of research and the testing of the research hypothesis using those data.

In order to summarise and organise the collected data in an intelligible form, the data was analysed based on the objectives of the study by using descriptive and inferential statistics.

## Organisation of Findings

The data was analysed and presented under the following sections.

**Section I:** Sample characteristics.

**Section II:** Level of labour pain among mothers.

**Section III:** Effectiveness of breathing exercise on reduction of labour pain among primigravid mothers.

Paired 't' test showing significance difference between mean pre- and post-test level of pain among Group I mothers after breathing exercise.

Independent 't' test showing significance difference between mean pre- and post-test level of pain among Group I and Group II mothers.

**Section IV:** Association of pre-test pain score among primigravid mothers those who are admitted in labour theatre with selected demographic variables.

**Sample Characteristics**

To find out the effectiveness of breathing exercise on reduction of pain among primigravid mothers who are admitted in labour theatre. Samples were selected with the use of simple random sampling. 20 were allotted to the experimental group and 20 were allotted to the control group.

Group I       Twenty mothers with treatment (experimental group)

Group II      Twenty mothers without treatment (control group)

The data obtained on sample characteristic was analysed using descriptive statistics and is presented in table I

Table 1: Frequency and percentage distribution of Subjects according to Age,

**Education, Occupation, family income, type of family and gestational age**

**n=20+20**

| Sl.No | Sample Characteristics | Group I | | Group II | |
|---|---|---|---|---|---|
| | | **f** | **%** | **f** | **%** |
| **1.** | Age in years | | | | |
| **1.1.** | ≤20 | 2 | 10 | 2 | 10 |
| **1.2.** | 21-25 | 11 | 55 | 12 | 60 |
| **1.3.** | 26-30 | 7 | 35 | 5 | 25 |
| **1.4.** | 31-35 | 0 | 0 | 1 | 5 |
| **2.** | Education | | | | |
| **2.1.** | Illiterate | 0 | 0 | 0 | 0 |
| **2.2.** | Primary | 8 | 40 | 8 | 40 |
| **2.3.** | Secondary | 10 | 50 | 9 | 45 |
| **2.4.** | Graduate | 2 | 10 | 3 | 15 |
| **2.5.** | Postgraduate | 0 | 0 | 0 | 0 |

| Sl.No | Sample Characteristics | Group I | | Group II | |
|---|---|---|---|---|---|
| | | f | % | f | % |
| 3. | Occupation | | | | |
| 3.1. | Skilled | 0 | 0 | 0 | 0 |
| 3.2. | Unskilled | 2 | 10 | 3 | 15 |
| 3.3. | Housewife | 18 | 90 | 17 | 85 |
| 4. | Family income in rupees/month | | | | |
| 4.1. | ≤ 2,000 | 0 | 0 | 0 | 0 |
| 4.2. | 2001-3000 | 0 | 0 | 0 | 0 |
| 4.3. | 3001-4000 | 15 | 75 | 13 | 65 |
| 4.4. | >4,001 | 5 | 25 | 7 | 35 |
| 5. | Type of family | | | | |
| 5.1 | Nuclear family | 16 | 80 | 14 | 70 |
| 5.2 | Joint family | 4 | 20 | 6 | 30 |
| 5.3 | Extended family | 0 | 0 | 0 | 0 |
| 5.4 | Any other | 0 | 0 | 0 | 0 |
| 6 | Gestational age | | | | |
| 6.1 | <32 weeks | 0 | 0 | 0 | 0 |
| 6.2 | 32-36 weeks | 1 | 5 | 2 | 10 |
| 6.3 | 37-39 weeks | 15 | 75 | 15 | 75 |
| 6.4 | 40 weeks | 4 | 20 | 3 | 15 |

Data presented in table 1 shows the following findings

Age
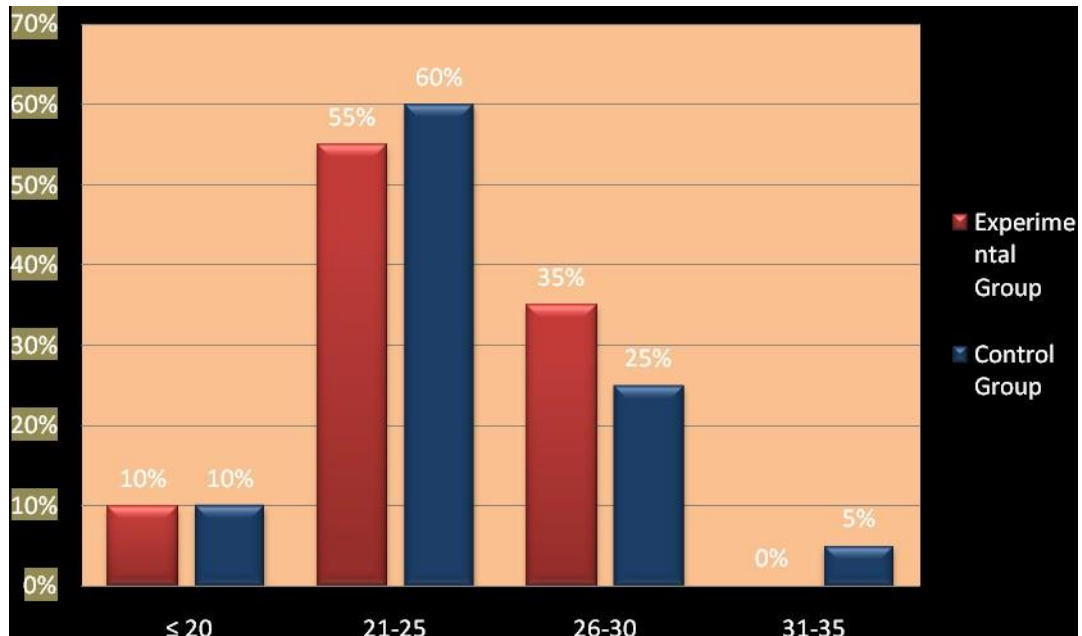


**Figure 3: Bar Diagram Showing Distribution of subjects according to the age**

Most of the primigravid mothers in Group I (55%) and in Group II (60%) belonged to the age group of 21-25 years. In Group I those aged between 31-35 years comprised the least percentage (0%) but in Group II (5%) respectively.

Education

Majority of mothers have secondary education in both Group 1 (50%) and Group II (45%). The mothers with primary education are equal in Group I (40%) and Group II (40%) and the graduates were 10% and 15% in Group I and Group II respectively.

Occupation

Most of the mothers in Group I (90%) and Group II (85%) were housewives. The percentage of unskilled mothers in Group I and Group II was 10% and 15% respectively.

Family Income

In Group I (75%) and Group II( 65%) majority of the mother belongs to the income group of Rs. 3001-4000, whereas the income group of >Rs. 4001 in Group I and Group II are 25% and 35% respectively.

Type of Family

In Group I (80%) and Group II( 70%) majority of the mother belongs to nuclear family, whereas in joint family the mothers in Group I and Group II are 20% and 30% respectively.

Gestational Age
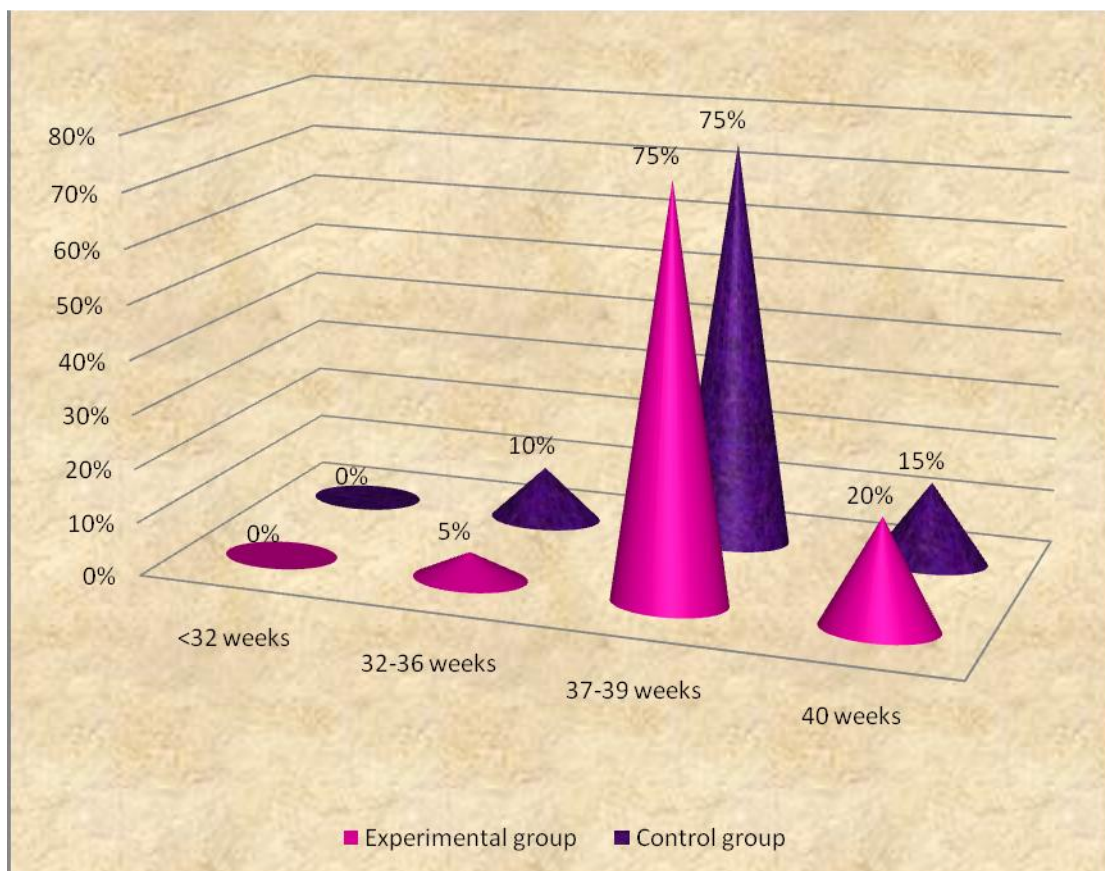


**Figure 4: Cone Diagram Showing Distribution of subjects according to their gestational age**

Equal number of the mothers in Group I (75%) and Group II (75%) were in 37-39 weeks of gestational period. The mothers at 40 weeks of gestation comprised a percentage of 20% and 15% in Group I and Group II respectively. Those at 32-36 weeks comprised the least percentage in both Group I (5%) and Group II(10%).

## SECTION-II

## Level of labour pain among primigravid mothers

This section deals with analysis and interpretation of data on level of pain of 40 primigravid mother's who are admitted in labour theatre.

Table: 2 Frequency and Percentage Distribution of Pre-test Pain Score of Group I  and Group II

**n=20+20**

| Pain Score | Group I | | Group II | |
|---|---|---|---|---|
| | f | % | f | % |
| 1-3 | 17 | 85 | 16 | 80 |
| 4-6 | 3 | 15 | 4 | 20 |

Data presented in table 2 indicates that majority of the mothers (85%) had pain score between 1-3 level of pain in Group I and (15%) of the mothers had a pain score of 4-6 level of pain in Group I whereas in Group II majority of the mothers (80%) had a pain score between 1-3 level of pain and (20%) had a level of pain between 4-6 in Group II.

Table: 3 Comparison of pretest level of pain score between Group I and Group II

**n= 20+20**

| Group | Mean | SD | 't' value | df | Mean Difference | Table value |
|---|---|---|---|---|---|---|
| Group I | 2.55 | 0.759 | 0.755 | 38 | 0.20 | 1.69 |
| Group II | 2.75 | 0.910 | | | | |

Data presented in table:3 indicates that the mean pre-test pain score of Group I is 2.55 and mean pre-test pain score of Group II is 2.75 and standard deviation of Group I is 0.759 and Group II is 0.910. The computed t-value is 0.755 and the table value is 1.69. This indicates that both the groups are similar in nature and both groups are homogenous.

Table 4: Frequency and Percentage Distribution of Post-test pain Score of Mothers in Group I and Group II

**n=20+20**

| Pain scores | Level of Pain | Group I | | Group II | |
|---|---|---|---|---|---|
| | | F | % | f | % |
| 4-6 | moderate | 9 | 45 | - | - |
| 7-9 | severe | 11 | 55 | 16 | 80 |
| 10 | worst | - | - | 4 | 20 |

The data presented in table 4 shows that majority of the mothers ( 55%) post- test pain score of Group I has severe pain and 45% mothers had moderate pain in Group I, where as in Group II 80% mothers had moderate pain and 20% had worst pain.

Table: 5 Distribution of mothers according to the Level of labour pain in Pre- test and Post-test in Group I

n=20

| Level of pain | Score | Pre-test Score | | Post-test score | |
|---|---|---|---|---|---|
| | | Frequency | Percentage | Frequency | Percentage |
| Mild | 1-3 | 17 | 85 | 0 | 0 |
| Moderate | 4-6 | 3 | 15 | 9 | 45 |
| Severe | 7-9 | 0 | 0 | 11 | 55 |
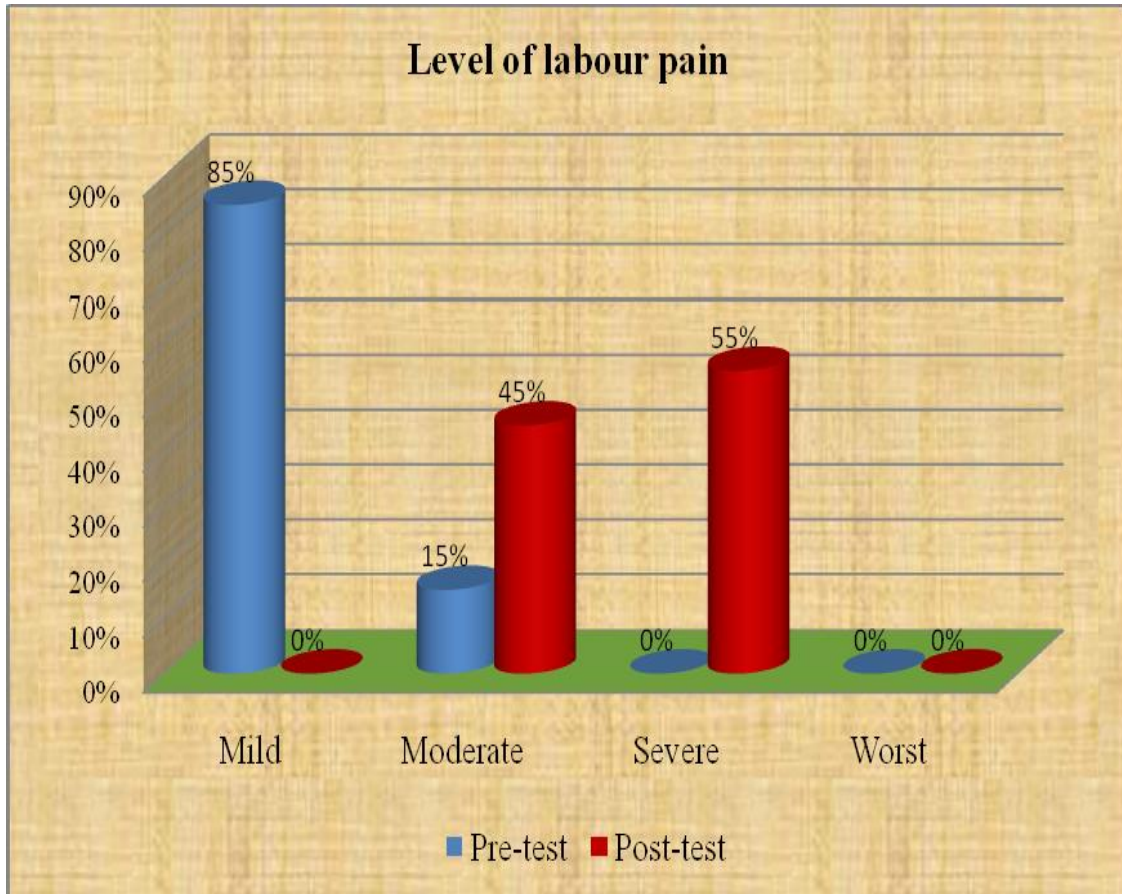
**Figure 5: Cylindrical diagram showing level of labour pain of mothers in GroupI**

The data in table 5 and figure 5 show that 17 mothers (85%) had mild pain , 3 mothers (15%) had moderate pain during the pre-test, whereas in the post-test nine Mothers (45%) had moderate pain and 11 mothers (55%) had severe pain.

Table: 6. Distribution of mothers according to the level of labour pain in pre-test and post-test in Group II

**n=20+20**

| Level of Pain | Score | Pre-test Score | | Post-test score | |
|---|---|---|---|---|---|
| | | f | % | f | % |
| Mild | 1-3 | 16 | 80 | 0 | 0 |
| Moderate | 4-6 | 4 | 20 | 0 | 0 |
| Severe | 7-9 | 0 | 0 | 16 | 80 |
| Worst | 10 | 0 | 0 | 4 | 20 |
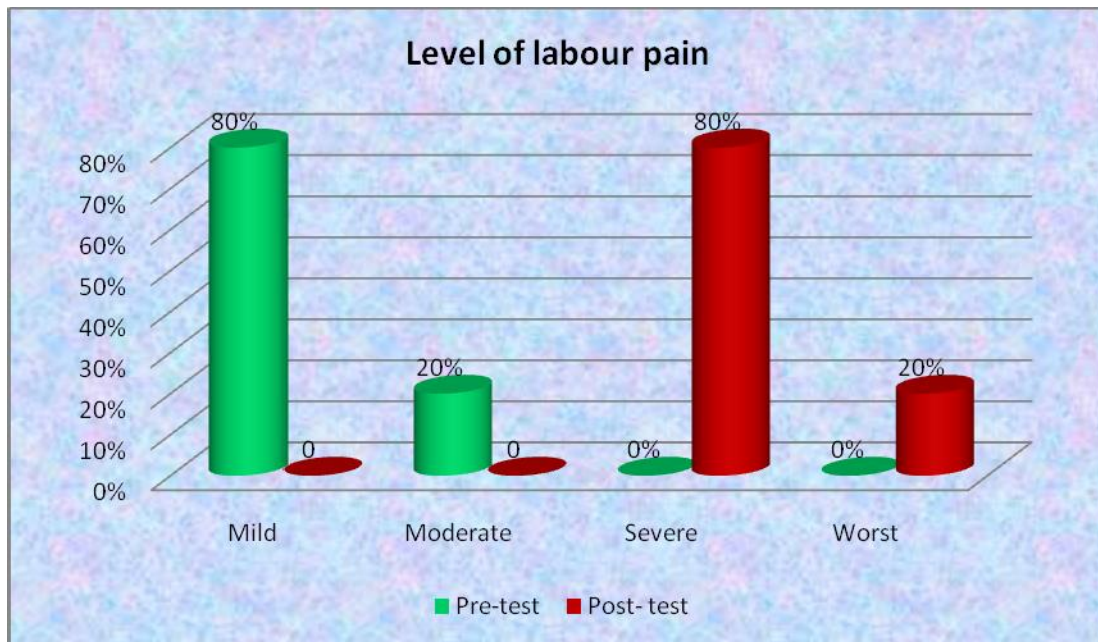
**Figure :6 Cylinderical diagram showing level of labour pain of mothers in Group II**

The data in table 6 and figure 6 show that 16 mothers (80%) had mild pain , 4 mothers (20%) had moderate pain during the pre-test, whereas in the post-test 16 mothers (80%) had severe pain and 4 mothers (20%) had worst pain.

Table : 7 Frequency and percentage of pre-test & post-test level of pain score between Group I & Group II.

n=20+20

| GROUP | Level of Pain | Pre-test | | Post-test | |
|---|---|---|---|---|---|
| | | f | % | f | % |
| Experimental | Mild | 17 | 85 | 0 | 0 |
| | Moderate | 3 | 15 | 9 | 45 |
| | Severe | 0 | 0 | 11 | 55 |
| | Worst | 0 | 0 | 0 | 0 |
| Control | Mild | 16 | 80 | 0 | 0 |
| | Moderate | 4 | 20 | 0 | 0 |
| | Severe | 0 | 0 | 16 | 80 |
| | Worst | 0 | 0 | 4 | 20 |

54
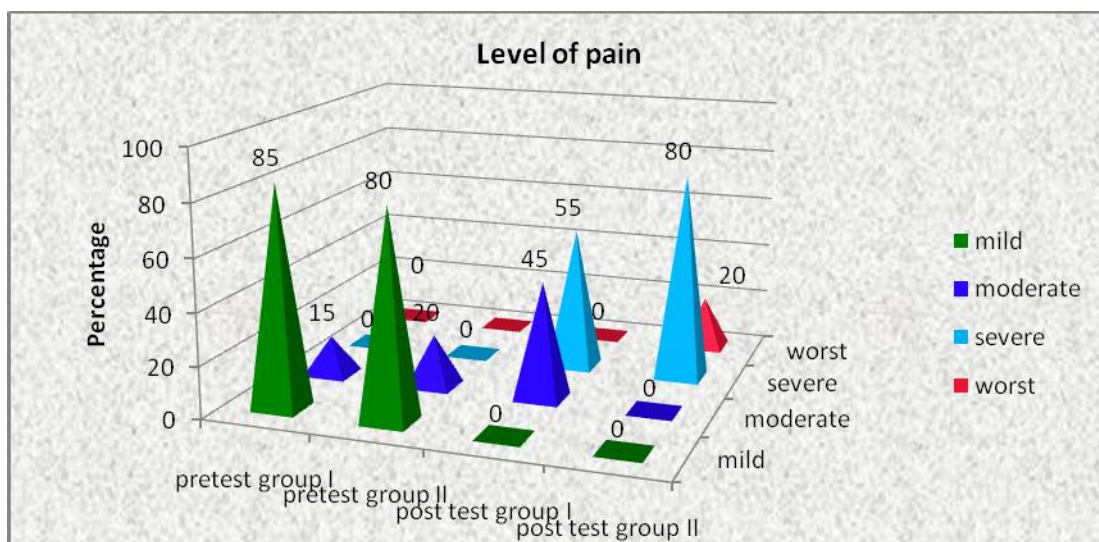
Figure: 7 Pyramidal diagram showing level of pain between Group I &Group II

The data in table :7 & figure:7 shows that 17 mothers (85%) had mild pain , 3 mothers (15%) had moderate pain during the pre-test, whereas in the post-test nine mothers (45%) had moderate pain and 11 mothers (55%) had severe pain among experimental groups. 16 mothers (80%) had mild pain, 4 mothers (20%) had moderate pain during the pre-test among control group, whereas in the post-test 16 mothers (80%) had severe pain and 4 mothers (20%) had worst pain among control groups.

Table 8: Range, Mean, Median and Standard Deviation of Pre and Post-test pain score of mothers in both Group I and Group II.

n=20+20

| Group | Test | Mean | Median | Standard Deviation |
|-------|------|------|--------|--------------------|
| Group I | Pre-test | 2.55 | 2 | 0.759 |
| | Post-test | 6.30 | 7 | 1.081 |
| Group II | Pre-test | 2.75 | 2.50 | 0.910 |
| | Post-test | 8.70 | 9 | 0.979 |

The data in the table 8 shows that the mothers belonging to Group I had pre-test scores mean 2.55, median 2 and standard deviation 0.759 whereas in the post-test scores mean 6.30, median 7 and standard deviation 1.081. Mothers belonging to Group II had pre-test mean 2.75, median 2.50 and standard deviation 0.910 and the post-test score mean 8.70, median 9 and standard deviation 0.979. Pre- test mean score was similar to 2.55 in Group I and 2.75 in Group II whereas post-test mean score was 6.30 in Group I and 8.70 in Group II. This showed that pain is less in Group I rather than Group II.

## SECTION III

Effectiveness of breathing exercise on reduction of labour pain among primigravid mothers.

To determine the effectiveness of breathing exercises, independent 't' test was computed between each Group (I & II) and are presented in table 9. To test the statistical difference of the post-test between Group I & II the following null hypothesis ($H_{02}$) is stated.

$H_{02}$: The mean post-test pain score of mothers in Group I will not be significantly lower than the mean post-test pain score of Group II at 0.05 levels.

Table 9: Mean Post-test Pain Score of Group I & Group II

**n=20+20**

| Group | Sample | Mean | Mean difference | SD Difference | 't' value | df | p-value |
|---|---|---|---|---|---|---|---|
| Group I | 20 | 6.30 | 3.750 | 1.164 | | | |
| | | | | | 5.174 | 38 | 0.00 |
| Group II | 20 | 8.70 | 5.950 | 1.504 | | | |

t(19)=1.69

The data presented in the table 9 using independent 't' test shows that there is a significant difference between mean post-test pain score of Group I & II. Computed 't' value (t =5.174) of the mean post-test pain score is greater than the table value (t $_{(19)}$ = 1.69). Hence the null hypothesis (Ho$_2$) is rejected and research hypothesis is accepted.

## SECTION IV

Association of the pre-test pain score of mothers with selected demographic variables like age, education, occupation, family income, type of family and gestational age.

This section deals with the association of pre-test pain score of the mothers with selected demographic variables like age, education, occupation, family income, type of family and gestational age.

The median of the pre-test pain score was calculated.

The number of respondents who were above and below the median were identified and grouped according to their demographic characteristics like age, education, occupation, family income, type of family and gestational age.

To find the association of the pain score with demographic variables, the following null hypothesis was formulated:

H$_{03}$:     There will be a no significant association between pre-test pain scores with selected demographic variables like age, education, occupation, family income, type of family and gestational age.

Chi-square was computed to test the null hypothesis. The datas were presented in Table 10.

Table 10: Chi-Square value of pre-test pain scores and selected demographic variables of Group I

and Group II

**n=20+20**

| Sl.No | Variables | Pain score | | df | $\chi^2$ | Level of significance |
|---|---|---|---|---|---|---|
| | | ≤Median | >Median | | | |
| 1 | Age | | | | | |
| | 25 and below | 15 | 12 | 1 | 0.010 | Not significant |
| | Above 25 | 7 | 6 | | | |
| 2 | Educational status | | | | | |
| | Primary | 9 | 7 | 1 | 0.017 | Not significant |
| | Secondary & above | 13 | 11 | | | |
| 3 | Occupation | | | | | |
| | Unskilled | 4 | 1 | 1 | 1.443 | Not significant |
| | House wives | 18 | 17 | | | |
| 4 | Family income(Rs.) | | | | | |
| | 3001-4000 | 17 | 11 | 1 | 1.231 | Not significant |
| | >4001 | 5 | 7 | | | |
| 5 | Type of family | | | | | |
| | Nuclear family | 18 | 12 | 1 | 1.212 | Not significant |
| | Joint family | 4 | 6 | | | |
| 6 | Gestational age | | | | | |
| | 40 weeks | 5 | 2 | 1 | 0.92 | Not significant |
| | Below 40 weeks | 17 | 16 | | | |

$\chi^2$=4.833                                             p≤0.05

The data presented in table 10 show the association of pain score of mothers with selected demographic variables. The chi-square value of selected demographic variables like age ($\chi^2$=0.010) education ($\chi^2$=0.017), occupation ($\chi^2$=1.443), family income ($\chi^2$=1.231), type of family ($\chi^2$=1.212) and gestational age ($\chi^2$=0.92) are not found significant at 0.05 level of significance. Therefore there is no association between the pre-test pain scores in group I and group II with the selected demographic variable. So the Research hypothesis is rejected and Null hypothesis is accepted.

Summary

This chapter dealt with the analysis and interpretation of data collected from 40 primigravid mothers admitted in selected Hospital in Coimbatore. Descriptive and inferential statistics were used for analysis. It was found that in pre-test to post test change, the mean difference in Group I is 3.750 and Group II is 5.950. The mean difference in pre-test to post test change in Group I is less than the mean difference in Group II. The computed 't' value (t=5.174, p<0.05) had a significant difference suggesting that the breathing exercise is effective in reducing the labour pain among primigravid mothers.

# CHAPTER-V

# CHAPTER-V

# RESULTS AND DISCUSSION

"We can be anything we want to do if we stick to it long enough"

– Helen Keller

The present study intended to find out the Effectiveness of breathing exercises on labour pain among primigravid mothers at selected hospital in Coimbatore. The findings of the present study are discussed with reference to the objectives, hypothesis stated and with the findings of other similar studies.

Objectives of the study

The present study was experimental in nature and was undertaken with the following objectives:

- To assess the pre-test, post test level of labour pain in experimental group.

- To assess the pre-test, post test level of labour pain in control group.

- To determine the effectiveness of breathing exercise on labour pain among primi mothers.

- To find out the association between the level of pain and selected demographic variables.

Hypotheses

$H_1$: There will be a significant difference in pain between primi mothers who receive breathing exercise and who do not receive breathing exercise.

$H_2$: There will be a significant association between the level of pain and selected demographic variables of primi mothers.

Findings of the study Sample characteristics

- The age status showed that majority of primigravid mothers were in the age group of both Group I (55%) and Group II (60%).

- The education status showed that majority of primigravid mothers had secondary education in both Group I (55%) and Group II (60%).

- Majority of primigravid mothers in Group I (90%) and Group II (85%) were in the category of house wives.

- Majority of primigravid mothers 75% & 65% belonged to the family income of 3001-4000 from Group I and Group II.

- Majority of primigravid mothers in Group I (80%) and Group II (70%) were nuclear family.

- Majority of primigravid mothers in Group I (75%) and Group II (75%) were at 37-39 weeks of gestation.

- The effect of breathing exercise of primigravid mothers, the computed t-value was 5.174 and the table value was 1.69. The computed 't' value (t=5.174, p<0.05) had statistically significant ,suggested that the breathing exercise were effective in reducing the labour pain perception among primigravid mothers.

Labour pain score among primigravid mothers in Group I and Group II

The assessment of labour pain perception of primi mothers showed a mean difference of 3.750 with SD of 1.164 in Group I and mean difference of 5.950 with SD of 1.504 in Group II. The mean difference in Group I is comparitively lower than the mean difference of Group II. This indicates that breathing exercise helped in reduction of pain score level in the Group I & the mother perceived less pain while comparing to the Group II.

A similar study was conducted by Starlin Thangarathi.A to assess the effectiveness of relative nursing interventions (such as breathing exercise, massage and

positions) on pain during labour among primigravid mothers. In this study the post-assessment level of labour pain perception of primi mothers showed a mean value of 6.30 with SD of 1.164 in experimental group and mean value of 8.70with SD of 1.504 in control group. The mean value (6.30) of experimental group was comparitively lower than the mean value (8.70) of control group. Therefore the study concluded that selected nursing interventions (such as breathing exercise, massage and positions) to the primi mothers were effective in reducing their labour pain perception in experimental group.

Effectiveness of breathing exercise on reduction of labour pain among primigravid mothers

The mean difference of pain score (3.750) of Group I was less than the mean difference of pain score (5.950) of Group II. This shows that there is significant difference between the two mean pain scores, based on these values calculated 't' value = 5.174 $p<0.05$ is greater than the tabled value( t $_{(19)}$ = 1.69 at 0.05 level). This shows that the breathing exercise was effective among primigravid mothers during the labour.

An experimental study was conducted at the selected Hospital on the effectiveness of breathing and skin stimulation techniques on pain perception of women in labour. Sample was selected by non-random sampling. The subjects were assigned to two groups, 20 in the experimental and 20 in the control group. Data was obtained through the visual analogue scale, inspection form, observation form and postnatal interview form. Women in the experimental group received nurse administered massage and were encouraged to breathe. The results indicated that the non- pharmacological pain control methods like massage and breathing exercises were effective in reducing the perception of pain by women($t_{38}=7.213$, $p<0.001$), leading to a more satisfactory birth experience.

A similar study was conducted by StarlinThangarathi.A to assess the effectiveness of relative nursing interventions (such as breathing exercise, massage and positions) on pain during labour among primigravid mothers. The post-assessment level of labour pain perception of primi mothers showed a mean value of 6.30 with SD of 1.164 in experimental group and mean value of 8.70 with SD of 1.504 in control group. The comparison of post assessment level of pain perception of primi mothers showed that unpaired't' test value was 5.174 which was statistically highly significant at p< 0.001 level. The study concluded that selected nursing interventions (such as breathing exercise, massage and positions) to the primi mothers were effective in reducing their labour pain

perception in experimental group.

**Association between the pain scores with the selected demographic variables**

The findings of the study showed that pain score had no association with the selected demographic variables such as age, education, occupation, family income, type of family and gestational age.

A similar study was conducted by StarlinThangarathi.A to assess the effectiveness of relative nursing interventions( such as breathing exercise, massage and positions )on pain during labour among primigravid mothers. This study shows that no statistical significant association was found in post-assessment level of labour pain perception of experimental and control groups with selected demographic variables such as age, religion, type of family, education, work pattern and area of residence and also with obstetrical information such as gestational age and cervical dilatation

Summary

The present study has been supported by a series of other studies, which confirms that breathing exercise was effective in reducing labour pain among primigravid mothers. It also provided comfort &relaxation for the mothers during the labour process.

# CHAPTER-VI

# CHAPTER-VI

# SUMMARY, CONCLUSION, NURSING IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

## Summary

The investigator felt satisfaction and fulfillment for having undertaken the study. On the whole the study was enriching and provided new learning experience to the investigator in the field of research. The experimental group who received breathing exercises was very much satisfied and happy with the care received. The result of the present study shows that there is a great need for the health personnel to implement these methods in their clinical field and make them available to the women in labour.

## The following objectives were set for the study

1. To assess the pre-test, post test level of labour pain in experimental group.

2. To assess the pre-test, post test level of labour pain in control group.

3. To determine the effectiveness of breathing exercise on labour pain among primi mothers.

4. To find out the association between the level of pain and selected demographic variables.

Hypotheses

$H_1$:     There will be a significant difference in pain between primi mothers who receive breathing exercise and who do not receive breathing exercise.

$H_2$:     There will be a significant association between the level of pain and selected     demographic variables of primi mothers.

Findings of the study

Most of the primigravid mothers in Group I (55%) and Group II (60%)

belonged to the age group of 21-25 years. Majority of mothers have secondary education in both group 1 (50%) and group II (45%).Most of the primigravid mothers were housewives in both Group I and Group II. Majority of the mothers belonged to nuclear family. Majority number of primigravid mothers in Group I (75%) and Group II (65%) belonged to the income group of Rs. 3,001-4,000/month. Equal number of primigravid mothers in Group I (75%) and Group II (75%) were at 37-39 weeks of gestational period. Most of the primigravid mothers in Group I (85%) and Group II (75%) does not have any medical diseases.

The finding of the study shows that the mean difference in Group I is 3.750 and Group II is 5.950 mean differance in the Group I mean score was less than that of Group II. The computed 't' value (t=5.174, p<0.05) had statistically significant, suggested that the breathing exercise were effective in reducing the labour pain perception among primigravid mothers.

The chi-square value of selected demographic variables like age ($\chi^2$=0.010) education ($\chi^2$=0.017), occupation ($\chi^2$=1.443), family income ($\chi^2$=1.231) type of family ($\chi^2$=1.212) and gestational age ($\chi^2$=0.92) were not found significant at 0.05 level of significance. Therefore there is no association between the pre-test pain scores in Group I and Group II with the selected demographic variables.

The overall experience of conducting this study was a satisfying one. The constant encouragement and guidance of the guide, cooperation of the doctors and staffs of selected hospital and subjects contributed to the fruitful completion of the study.

**Conclusion**

The aim of the study was to find the effectiveness of breathing exercises on the reduction labour pain among primigravid mothers in a selected hospital at Coimbatore.

The following conclusions were drawn on the basis of the findings of the study:

- Majority of the primigravid mothers in Group I and Group II belonged to the age group of 21-25 years.

- Labour pain increased as the labour progressed and in each phase the primigravid mothers in Group I experienced less pain than that of Group II.

- Provision of breathing exercises was effective in the reduction of labour pain. The mean difference in the degree of pain perception of primigravid mothers in the first stage of labour in Group I and Group II was 3.750 and 5.950 respectively. The computed 't' value 5.174 and the table 't' value 1.69 showed a statistical significance in reduction of pain scores showed that breathing exercises were effective during first stage of labour.

- No statistical significant association was found in post-assessment level of labour pain perception of experimental and control groups with selected demographic variables such as age, education, occupation, family income, type of family & gestational age.

**Nursing implications**

The results of the present study have brought out certain facts that have far reaching implications for nursing in the areas of practice, education, administration and research.

Nursing practice

The results of the present study have brought out certain facts that have far reaching implications for nursing in the areas of practice, education, administration and research.

Giving birth is a profoundly beautiful experience for every woman. It permanently shapes the woman, her child, her partner and their family life. This is also a very fragile process. Labour for most women is accompanied by much physical pain and emotions requiring special care in the form of some relaxation techniques like breathing exercise, gentle touch, back massage etc. If these non-pharmacologic measure like breathing exercise to relieve labour pain and anxiety become a part of intra-natal care, it is expected that more mothers will have a natural, safe and

satisfying childbirth experience.

The midwives have a vital role in providing safe and effective nursing care to enhance reduction of labour pain perception. This can be done by motivating the nurse midwives to: (a) have an in-depth knowledge on physiological changes during labour (b) understand the importance of research findings on labour pain management. Midwives can teach the breathing exercises for the mother during the antenatal class. Midwives can teach and encourage the mother to perform the breathing exercise from the begining of latent phase during the labour process.

Nursing Education

Nurses with higher education and up-to-date knowledge will provide a cost-effective and quality client care. One of the important aspects of nursing is alleviation of pain, provision of comfort and quality client care. Nurse education needs to include non-pharmacological pain relief measures like breathing exercises, back massage etc in the curriculum of basic nursing education as a part of intra-natal care along with the physiology of labour and labour supportive techniques. Educate the students about various complementary and alternative therapies for pain management in labour. Practical sessions also provided to give comprehensive care for the intranatal mothers. Encourage the students for effective utilisation of research-based practice.

Nursing Administration

Nursing administration should take an initiative in creating policies or plans in providing education to women during pregnancy and help them in safe delivery. Managers & administrators need to facilitate the utilisation of research-based nursing care aspects in day-to-day practices to formulate policies and make necessary changes in healthcare delivery system in the hospitals. They must make sure that the nurse-patient ratio is adequate in the labour room to teach breathing exercises. Necessary administrative support should be provided for the success of such activities. Nurse Managers can plan for antenatal classes as well as video assisted programme on OPD basis inorder to prepare the mothers to perform during intranatal period.

Periodic surveys should be conducted to evaluate the effectiveness of the

programme and necessary changes should be made from time to time. Collaborate with governing bodies to formulate standard policies and protocols to emphasise nursing care during labour. Arrange and conduct workshops, conferences, seminars on non- pharmacological methods to reduce labour pain perception. Provide opportunities for nurse midwives to attend training programmes on complementary and alternative therapies for pain management in labour.

Nursing Research

A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continual development of a relevant body of knowledge. Nursing research represents a critically important tool for the nursing profession to acquire such knowledge.

Nursing research needs to focus on supportive care techniques such as breathing exercises, back massage etc for its provision, and outcome of labour. Evidenced based practice need to be incorporated in the labour room. The findings of the research need to be disseminated through publications so the utilisation of such research findings must be encouraged.

Limitations

1. Since the sample size was small and limited to one hospital, generalisation of the findings are limited.

2. The study was limited only to primigravid mothers.

**Recommendation**

On the basis of the findings of the study the following recommendations are offered for future research:

1. A similar study could be conducted on a larger sample which would yield more reliable results.

2. A similar study could be conducted on multiparous women to know the effectiveness.

3. A comparative study could be conducted with other non-pharmacological measures of pain relief.

4. An experimental study could be undertaken in different settings like private hospitals.

5. A similar study could be conducted to assess the effectiveness of other nursing measures such as music therapy, warm water bath, and labour support for effective pain management during labour.

Suggestions

a. Adequate nurse-client ratio should be maintained in the labour room for the provision of such type of care.

b. Prenatal classes can be conducted for couples on supportive techniques such as provision of breathing exercises.

c. Topic on non-pharmacological aspects of care during childbirth can be given more emphasis in the nursing curriculum.

d. There should be a hospital policy to provide prenatal education classes for couples.

e. Nursing students can conduct projects on various non-pharmacological interventions during labour.

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# ABSTRACT

## Background of the study

Labour pain is the result of many complex interactions, physiological and psychological, excitatory as well as inhibitory. Women experience a wide range of pain in labour and exhibit an equally wide range of responses to it. An individual's reaction to labour pain may be influenced by the circumstances of her labour, as well as the environment and support provided to her during this period. The woman is educated to take an active role in decision-making and using self-comforting techniques and non-pharmacologic methods to relieve pain and enhance labor progress. Breathing exercise is a form of pain relief that can allay anxiety, encourage relaxation, provide a focus of distraction from pain and tension and encourage a positive attitude.

The aim of the present study was to assess the effectiveness of breathing exercise among primigravid mothers.

## Objectives

1. To assess the pre-test, post test level of labour pain in experimental group.

2. To determine the effectiveness of breathing exercise on labour pain among primi mothers.

3. To compare the level of labour pain between experimental and control group.

4. To find out the association between the level of pain with selected demographic variables.

## Methods

A true experimental research design (pre-test -posttest experimental design) was adopted for this study. The study was carried out in a selected hospital at Coimbatore. The sample comprised of 40 primigravid mothers, 20 in experimental and 20 in control group. Sample was selected using simple random sampling

technique (lottery method) and assigned to Group I and Group II.

Data collection was done from 5th December to 22nd December 2018. Data was collected using Visual Analogue Scale. Data was analyzed using descriptive (mean, median and standard deviation) and inferential statistics (paired 't' test and independent 't' test, and Chi- square Test).

## Results

The finding of the study shows that the mean difference in Group I is 3.750 and Group II is 5.0950. Mean difference in Group I score was less than that of Group II. The computed 't' value (t=5.174, $p<0.05$) had statistically significant, suggested that the breathing exercises were effective in reducing the labour pain among primigravid mothers .

The chi-square value of selected demographic variables like age ($\chi^2$=0.010) education ($\chi^2$=0.017), occupation ($\chi^2$=1.443), family income ($\chi^2$=1.231) type of family ($\chi^2$=1.212) and gestational age ($\chi^2$=0.92) are not found significant at 0.05 level of significance. Therefore there is no association between the pre-test pain scores in Group I and Group II with the selected demographic variables.

## Interpretation and Conclusion

The result shows that breathing exercise is proven to be an effective non-pharmacological method of treatment to reduce labour pain among primigravid mothers. It was concluded from the statistical tests that practicing breathing exercise was effective in reduction of pain among primigravid mothers. Analysis of data showed that there was a significant difference between the intervention and non-intervention group. Breathing exercise is the effective, simple & non-invasive methods having no side effects on labour.

## Keywords

Breathing exercise; labour pain; primigravid mothers.

# PPG COLLEGE OF NURSING

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9/1, Keeranatham Road, Saravanampatty, Coimbatore - 641 035.Tamilnadu, India

✆ : 0422 - 2669000 Fax : 0422 - 2669333    E-mail : ppgcollege@gmail.com  **Website : www.ppg.edu.in**

**To**

**Through**

The Principal

PPG College of Nursing

Coimbatore-35

**Respected  Sir/ Madam,**

Sub: Seeking permission for conducting research study.

I am a student of M.Sc Nursing in PPG College of Nursing. Our college is affiliated to the Tamilnadu DR. M.G.R University, Chennai. I have taken the specialization in OBG in Nursing.

**TOPIC:  EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITAL IN COIMBATORE DISTRICT.**

I request you to kindly permit me to conduct my study in hospital. Hope you will consider my requisition and do the needful.

Thanking you

Yours sincerely,

Date :

Place: Coimbatore

Letter requesting and granting permission to conducting pilot study

To

**Through**

The Principal

PPG College of Nursing

Coimbatore-35

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I am a student of M.Sc Nursing in PPG College of Nursing .Our college is affiliated to the Tamilnadu DR. M.G.R University, Chennai. I have taken the specialization in OBG in Nursing.

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I request you to kindly permit me to conduct my study in hospital. Hope you will consider my requisition and do the needful.

Thanking you

Yours sincerely,

Date :

Place: Coimbatore

<center>**Requisition Letter for Content Validity**</center>

From

Starlin Thangarathi A.
M.Sc (N) II Year,
PPG College of Nursing,
Coimbatore – 35.

**To**




**Through: Principal, PPG College of Nursing**

Respected Sir/ Madam,

**Sub: Requisition for expert opinion and suggestion for content validity of tool**

I am a student of M.Sc (N) II Year, PPG College of Nursing affiliated to the Tamilnadu Dr. M.G.R. Medical University, Chennai. As a partial fulfillment of the M.Sc (N) program. I am conducting


**EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITAL IN COIMBATORE DISTRICT.**

Herewith I have enclosed the developed tool for content validity and for the expert opinion and possible solution. It would be very kind of you to return the same as early as possible.

<div align="center">Thanking you,</div>

<div align="right">Yours Faithfully,</div>

# PPG College of Nursing

## Format for the Content Validity

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|       |                     |                |       |     |                |                   |         |

Remarks                                          Signature of the Expert with Date.

# LIST OF EXPERTS

1. Mrs. M.Mumtaz,M.Sc(N), Ph.D
   Principal,
   Annai Meenakshi College of Nursing,
   Coimbatore

2. Prof.Mrs. M. Janaki M.Sc(N),
   Vice Principal,
   DMIPSR College of Nursing,
   Erode.

3. Dr.Esther John,
   Principal,
   Ganga college of Nursing,
   Coimbatore.

4. Prof. K.Saranya,
   Vice Principal,
   Vellalar College of Nursing
   Erode.

**MEDICAL EXPERT**

Dr.Saratha, MD.,DGO,
Ashwin Hospital,
Coimbatore.-14

**Content validity certificate**

**CONTENT VALIDITY CERTIFICATE**

**Name**        **:** -------------------------------------------------

**Designation** : -------------------------------------------------

**Date**        : -------------------------------------------------

       I hereby certify that I have validated the tool prepared by A.Starlin Thanga Rathi, II Year M. Sc Nursing student of PPG College of Nursing, Coimbatore, **"EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITAL IN COIMBATORE DISTRICT"** to be used in her study titled to be submitted to Dr. M.G.R Medical University, Chennai**.**

                                              Signature of the Expert

# Part –A

## Demographic Data

**Instructions:** The investigator places a ✓ tick mark in the corresponding space according to the response of the subjects.

| 1. | Age in years | Tick Mark[✓] | |
|---|---|---|---|
| 1.1. | <20 | | |
| 1.2. | 21-25 | | |
| 1.3. | 26-30 | | |
| 1.4. | 31-35 | | |
| 2. | Education | | |
| 2.1. | Illiterate | | |
| 2.2. | Primary | | |
| 2.3. | Secondary | | |
| 2.4. | Graduate | | |
| 2.5. | Postgraduate | | |
| 3. | Occupation | | |
| 3.1. | Skilled | | |
| 3.2. | Unskilled | | |
| 3.3. | Housewife | | |
| 4. | Family income in rupees/month | | |
| 4.1. | < 2,000 | | |

| | | | |
|---|---|---|---|
| 4.2. | 2001-3000 | | |
| 4.3. | 3001-4000 | | |
| 4.4. | >4,001 | | |
| 5. | Type of family | | |
| 5.1 | Nuclear family | | |
| 5.2 | Joint family | | |
| 5.3 | Extended family | | |
| 5.4 | Any other | | |
| 6 | Gestational age | | |
| 6.1 | <32 weeks | | |
| 6.2 | 32-36 weeks | | |
| 6.3 | 37-39 weeks | | |
| 6.4 | 40 weeks | | |

# PART-B

## INSTRUCTION OF BREATHING EXERCISES DURING LABOUR

| 1. | Place the patient in comfortable position |
|----|----|
| 2. | Check for 3cm dilatation. |
| 3. | Assess the pain level in response to visual analogue scale. |
| 4. | At the time of every uterine contractions advice the mother to focus on a point or close her eyes and to take exaggerated breath and gently inhale through the nose. |
| 5. | Instruct the mother to fill her lungs comfortably and slowly exhales through her mouth. This takes an average out to 6-8 breaths per 1 min. This is cleansing breath. |
| 6. | check for 8cm dilation |
| 7. | Instruct the mother to take breathe through her mouth in light shallow breaths at a rate of 30- 40 breaths in 1min, throughout the contraction . it is pant –blow exercise |
| 8. | Instruct the mother that after every second, third, fourth, or fifth breath, blow out a longer breath and to verbalize this longer exhale with a "who or "puh". |
| 9. | When the contraction ends take one or two cleansing breaths with a sigh. |
| 10. | Every 30 minute interval assess the pain score by visual analogue scale. |

# Part –C

## Visual analogue scale for pain assessment

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

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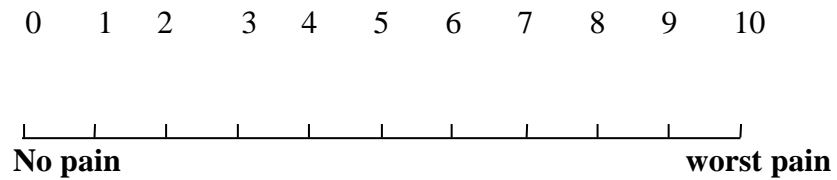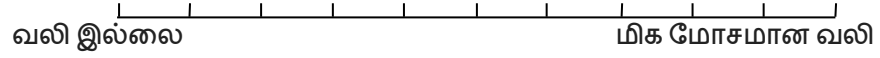
**No pain**                                              **worst pain**

**Grading of pain score**

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

## பகுதி-II: வலி மதிப்பீட்டிற்கான காட்சி அனலாக் அளவு

அறிவுறுத்தல்: 0 ஐ 'வலி இல்லை' என்றும் 10 ஐ 'மிக மோசமான வலி' என்றும் கருதி நீங்கள் அனுபவிக்கும் வலியின் அளவைக் குறிக்க ஒரு ✓ குறி வைக்கவும்.

```
0    1    2    3    4    5    6    7    8    9    10
```

வலி இல்லை                                    மிக மோசமான வலி

## வலி மதிப்பெண் தரம்

| மதிப்பெண் | வலியின் சதவீதம் |
|---------|----------------|
| 0 | வலி இல்லை |
| 1-3 | லேசான வலி |
| 4-6 | மிதமான வலி |
| 7-9 | கடுமையான வலி |
| 10 | மோசமான வலி |

CHAPTER-1 INTRODUCTION —Whenever a woman is in labour, she has pain, because her hour has come; but when she gives birth to the child, she no longer remembers the anguish because of the joy that a child has been born into the world. I John 16:21 Introduction Childbirth is one of the most marvelous and memorable segment in a woman?s life.

It does not really matter if the child is the first, second or the third one. Each experience is unique and calls for a celebration. The fear and anxiety about child birth often prevents most women from enjoying this experience. Series of events that take place in the genital organs in an effort to expel the viable products of conception (fetus, placenta, and the membranes) out of the womb through the vagina into the outer world is called labour. (D.C.Dutta- 2015) Events of labor are divided into three stages.

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

The first stage of labor averages about 13-14 hours for a nullipara and about 6-7 hours for a multipara. Latent phase (early) involves dilatation from 0-3cm in which contractions are usually every 5-30 minutes, lasting for 10-30 seconds and of mild intensity. Active phase involves dilatation from 4-7cm, contractions are usually every 3-5 minutes; lasting 40-60 seconds and of mild to moderate intensity.

# Master date sheet

**Demographic proforma**

**Experimental Group**

|  | D1 | D2 | D3 | D4 | D5 | D6 |
|---|---|---|---|---|---|---|
| 1. | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 2. | 1.3 | 2.2 | 3.3 | 4.3 | 5.1 | 6.3 |
| 3. | 1.1 | 2.3 | 3.3 | 4.3 | 5.2 | 6.3 |
| 4. | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 5. | 1.2 | 2.3 | 3.3 | 4.4 | 5.1 | 6.2 |
| 6. | 1.3 | 2.2 | 3.3 | 4.3 | 5.2 | 6.4 |
| 7. | 1.2 | 2.2 | 3.3 | 4.3 | 5.1 | 6.3 |
| 8. | 1.3 | 2.4 | 3.3 | 4.4 | 5.1 | 6.3 |
| 9. | 1.2 | 2.2 | 3.3 | 4.4 | 5.1 | 6.3 |
| 10. | 1.2 | 2.3 | 3.3 | 4.4 | 5.1 | 6.4 |
| 11. | 1.2 | 2.2 | 3.3 | 4.3 | 5.2 | 6.3 |
| 12. | 1.2 | 2.2 | 3.3 | 4.3 | 5.1 | 6.4 |
| 13. | 1.3 | 2.2 | 3.3 | 4.3 | 5.1 | 6.4 |
| 14. | 1.3 | 2.2 | 3.3 | 4.3 | 5.2 | 6.3 |
| 15. | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 16. | 1.3 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 17. | 1.1 | 2.4 | 3.2 | 4.3 | 5.1 | 6.3 |
| 18. | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 19. | 1.3 | 2.3 | 3.3 | 4.4 | 5.1 | 6.3 |
| 20. | 1.2 | 2.3 | 3.2 | 4.3 | 5.1 | 6.3 |

## CONTROL GROUP

|     | D1  | D2  | D3  | D4  | D5  | D6  |
| --- | --- | --- | --- | --- | --- | --- |
| 1.  | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 2.  | 1.2 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 3.  | 1.2 | 2.2 | 3.3 | 4.3 | 5.1 | 6.3 |
| 4.  | 1.3 | 2.4 | 3.2 | 4.3 | 5.2 | 6.4 |
| 5.  | 1.1 | 2.2 | 3.3 | 4.4 | 5.2 | 6.4 |
| 6.  | 1.2 | 2.2 | 3.3 | 4.4 | 5.1 | 6.2 |
| 7.  | 1.2 | 2.2 | 3.3 | 4.3 | 5.1 | 6.3 |
| 8.  | 1.2 | 2.2 | 3.3 | 4.3 | 5.1 | 6.3 |
| 9.  | 1.4 | 2.3 | 3.2 | 4.3 | 5.1 | 6.3 |
| 10. | 1.1 | 2.3 | 3.3 | 4.4 | 5.1 | 6.4 |
| 11. | 1.2 | 2.2 | 3.3 | 4.3 | 5.2 | 6.3 |
| 12. | 1.2 | 2.3 | 3.3 | 4.3 | 5.2 | 6.3 |
| 13. | 1.3 | 2.3 | 3.3 | 4.4 | 5.1 | 6.3 |
| 14. | 1.2 | 2.4 | 3.3 | 4.4 | 5.1 | 6.3 |
| 15. | 1.3 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 16. | 1.3 | 2.3 | 3.3 | 4.3 | 5.1 | 6.3 |
| 17. | 1.3 | 2.2 | 3.3 | 4.4 | 5.2 | 6.3 |
| 18. | 1.2 | 2.3 | 3.2 | 4.3 | 5.2 | 6.3 |
| 19. | 1.2 | 2.4 | 3.3 | 4.3 | 5.1 | 6.3 |
| 20. | 1.2 | 2.2 | 3.3 | 4.4 | 5.1 | 6.2 |

# Visual Analogue Pain Scale

## EXPERIMENTAL GROUP

| SL NO | PRETEST | POST TEST |
|-------|---------|-----------|
| 1 | 2 | 7 |
| 2 | 3 | 5 |
| 3 | 4 | 7 |
| 4 | 2 | 7 |
| 5 | 3 | 8 |
| 6 | 2 | 7 |
| 7 | 2 | 7 |
| 8 | 4 | 7 |
| 9 | 2 | 5 |
| 10 | 2 | 5 |
| 11 | 3 | 5 |
| 12 | 2 | 7 |
| 13 | 3 | 7 |
| 14 | 2 | 8 |
| 15 | 2 | 5 |
| 16 | 4 | 7 |
| 17 | 2 | 6 |
| 18 | 3 | 6 |
| 19 | 2 | 5 |
| 20 | 2 | 5 |

# CONTROL GROUP

| SL NO | PRETEST | POST TEST |
|:-----:|:-------:|:---------:|
| 1 | 3 | 7 |
| 2 | 2 | 9 |
| 3 | 2 | 9 |
| 4 | 2 | 9 |
| 5 | 4 | 7 |
| 6 | 3 | 9 |
| 7 | 2 | 9 |
| 8 | 3 | 10 |
| 9 | 2 | 9 |
| 10 | 2 | 7 |
| 11 | 2 | 10 |
| 12 | 4 | 9 |
| 13 | 3 | 8 |
| 14 | 5 | 8 |
| 15 | 2 | 8 |
| 16 | 2 | 10 |
| 17 | 4 | 9 |
| 18 | 3 | 8 |
| 19 | 3 | 10 |
| 20 | 2 | 9 |

# EFFECTIVENESS OF BREATHING EXERCISES ON LABOUR PAIN AMONG PRIMI MOTHERS AT SELECTED HOSPITALS IN COIMBATORE