



# A study to assess the effectiveness of foot reflexology on reduction of pain during first stage of labour among primigravida mothers

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## CHAPTER I

### INTRODUCTION:

**“THE MIRACLE OF LIFE NARTURED BY A WOMAN WHO GAVE US LOVE AND SACRIFICE.... IS MOTHER”**

Motherhood is the only act that manifests in human form the cosmic wonder of creation of life. The story begins with a birth and like all beginnings, a positive childbirth is not only spiritually more fulfilling, but can also strengthen the mother –child bond. The expectant mother should aim to have a beautiful, inspiring, creative and joyful pregnancy. Women who give birth to whatever the circumstances are faced with the reality of one’s own nature’s most powerful event.<sup>1</sup>

Pregnancy and childbirth are the wonderful and remarkable moments of life, the physiological transition from being a pregnant woman to becoming a mother means an enormous change for each woman, both physically and psychologically. Every system in the body is affected and the experience, although unfortunately not joyful for all, represents a major transition in woman’s life. <sup>2</sup>

“The greatest pleasure brings greatest pain” it is said which holds perfectly true for labour pains. The pain of labour has been with us since the Garden of Eden. Labour pain is an excruciating, intolerable pain which results in changes in blood pressure, pulse, respiration, skin colour and pallor. The mother with labour pain may have bouts of nausea and vomiting and she may have affective expressions which include anxiety, crying, groaning, gesturing, (hand clenching and wringing) and excessive muscular excitability throughout the body.<sup>3</sup>

Sometimes the pain is so intense that it creates a life and death situation for the woman. There are a number of ways where a woman can decide to deliver her baby. The age old custom of giving birth to a baby in the natural way with the help of a mid-wife to the modern way giving birth to the baby in the hospital surrounded by qualified doctors and nurses.<sup>4</sup>

There are mainly four stages of labour. The first stage of labour is considered to be first from the onset of regular uterine contractions to full dilatation of cervix. The second stage of labour from full dilation of cervix to birth of foetus. The third stage of labour lasts from birth of foetus, until the placental delivery. The fourth stage starts from expulsion of placenta to six weeks of post – natal period. Labour usually lasts within two weeks estimated date of delivery. On average, labour starts 12-18 hours in a woman's first pregnancy and tends to be shorter, averaging 6-8 hours in subsequent pregnancies.

The first stage of labour has been divided in to three main phases. The latent phase, active and transition phases. The first stage of labour begins with regular uterine contractions and ends with complete cervical dilatation at 10 cm. Friedman say that the latent phase begins with mild, irregular uterine contractions that soften the cervix. The contractions become progressively more rhythmic and stronger. This is followed by the active phase of labour, which usually begins at about 3-4 cm, of cervical dilatation and is characterized by rapid cervical dilatation and descent of

presenting foetal part. The first stage of labour completes with 10 cm. of cervical dilatation when each time she delivers a baby. It is a new life to mother.<sup>5</sup>

Although each labour is different, by far the greater part of labour is taken up by the first stage of labour. Labour pain represents the most common form of acute severe pain and lack of its treatment results in severe psychological effects lasting in late stage of life. Pregnant women are mostly worried about pain. It is said that the eradication of pain is purchased at a price. The price in the form of increased aesthetic morbidity or mortality. The treatment involves managing two people Mother and New born. In India, still there is lack of awareness and need for relief of labour pain in clients and Obstetricians. This is still taken as joyous occasion of a new birth by the family. Obstetricians also are still developing their attention to safe birth, instead of treating mothers pain, which is still taken as curse of God to Eve.<sup>6</sup>

Pain and its relief for women in labour has been the subject of interest since the dawn of mankind. Following the initial record transgression in the Garden of Eden God said to eve "I will greatly increase your pains in child bearing, with pain you will give birth to child."<sup>7</sup>

Pain in labour is nearly universal experience for the child bearing women. A women's experience of labour pain is influenced by many factors including her past experiences of pain, her coping abilities, the birth environment and psychological factors. Childbirth does not come easily as it hurts because of all the pain that a woman has to undergo along with the stress and strain when she goes into labour.<sup>8</sup>

Massage stimulates body to releases endorphins, the natural painkilling, mood lifting chemicals produced in the brain. <sup>9</sup>

In labour foot reflexology eases pain and reduces anxiety in the first stage of labour. It may help to cope with contractions by making them feel less intense and more manageable.

Reflexology is the natural art based on the principle that there are reflexes in the feet, hands and ears, which correspond to every part, glands and organ of the body. Through the application of pressure on these reflexes without the use of lotions or tools, can relieve tension, improves circulation and helps promote the natural function of the related area of the body. Reflexologist posits that the blockage of an energy field can prevent healing. Explanation is that the pressure received in the feet may send signals that balance the nervous system or release chemicals such as endorphins that relieve stress and pain. It is mostly in reducing pain during 1<sup>st</sup> stage labour. <sup>10</sup>

Foot reflexology improves blood circulation and activates lymph drainage, assists in eliminating toxins, strengthens immune system, enable deep state of relaxation and well being. There is no effect on delivery, and no maternal or foetal side effects. Reflexology is a non-invasive and non-pharmacological method of pain relief. <sup>11</sup>

Nurses have a vital role in reducing pain and helping woman take control of their childbirth experience. Reflexology can pave way effectively for labour pain... so nurses can plan reflexology for coping with labour pain. <sup>12</sup>

## NEED FOR THE STUDY:

***“Pregnancy is a kind of miracle. Especially so in that it proves that a man and woman can conspire to force God to create a new soul.”***

-Robert Anton Wilson

Pregnancy is a special time of life in a woman's life. Most women give birth without complications. The birth starts with the onset of labour, which is usually marked by the beginning of regular uterine contractions. Pregnancy, childbirth and motherhood are times where a woman undergoes a vast change in her body and it can be termed as an entirely new birth for the woman or as a time of rebirth. With changing times the process of birth has also modernized with less and less complication but then certain things don't change at all but then we become more capable of handling any complexities of childbirth. Pregnancy and childbirth are wonderful and remarkable moments. Childbirth is a special event in a woman's life and she cherishes these moments all through her life. From the time a woman conceives and all through the period of childbirth there are various physical as well as mental changes that take place.

Birth is the renewal of life. Birth is as ancient as itself and as natural as process of breathing. A baby is God's opinion that the world should go on and the birth pangs are just that old order giving way to the new. This is how nature creates a new mother.

Giving birth to a child can be one of the most joyful experiences of a woman's life, but it is undeniably one of the most painful. It's a heterogeneous feeling for a pregnant woman who, within a short span of time will give birth to a life. Labor is usually painful. Studies have shown that pain is registered the same by everyone. Research on labour pain resulted in the interpretation of worst

possible pain imaginable. A Patients perception of worst pain imaginable may change over the course of childbirth.

Childbirth is a natural biological process and therefore pain associated with it is also perceived as normal. The nature of pain experienced during labour depends on physical and emotional status of women.<sup>13</sup>

Labour and delivery cause pain in most patients. Nulliparous are more likely to experience severe pain than multi parous women (Melzack 1984) .Pain may be aggravated by anxiety, fear, maternal expectations and mothers state of preparation for delivery. It increases maternal oxygen consumption, cardiac output, circulating catecholamine levels (Schinderetal 1983). The rise in serum catecholamine can cause foetal tachycardia, bradycardia and contractions. The technique should therefore be taken in to consideration of maternal wishes and preferences, available expertise, support of staff and facilities. Practice in various countries vary culture to culture the technique used should be cheap, easy to administer, good and reliable relief from pa

Attempts to minimize the pain of labour is non pharmacologically first began in 20<sup>th</sup> century. Natural child birth was pioneered by Grantly Dick Read in 1932. He suggested that pain of child birth is brought about by fear and tension and recommended passive muscle relaxation to reduce the pain (Dick Read 1933, 1944).<sup>14</sup>

Foot reflexology during pregnancy is very helpful as it brings about a lot positive benefits. Foot massage helps to relax the muscles, relieve stress pain, cramping, swelling. It also improves immunity and circulation. Foot reflexology stimulates the body to release endorphins which are natural pain-killing and mood-lifting hormones. In labour, foot reflexology is important because it brings close to the person who is giving care. The touch of someone who loves and wants to help in very empowering when coping with contraction. The foot reflexology techniques used during the first stage of labour are specially designed to support the women with her breathing during

contraction. If the women are sitting down or in a bed for long periods of labour, foot reflexology is ideal. Feet become very cold in labour and a foot reflexology will help to warm up.<sup>15</sup>

Research studies in the U.S. and around the world indicate possible benefits of foot reflexology for various conditions, particularly as an intervention to reduce pain, enhance relaxation, and reduce psychological symptoms, such as anxiety and depression. However reviewers of the research have noted that the quality of reflexology studies is mixed and more high-quality research is needed.

It was found by the investigator during her experience that the mothers who are admitted in labour had severe pain and discomfort. This being the major problem among every mother, hence forth the investigator personally felt that there is a need for the above studies and statistics and was inspired in selection of this dissertation.<sup>16</sup>

Regina Xavier (2007), on facts on reflexology, reflexology is a field of therapy where practitioner applies pressure to certain parts of the feet to relive stress in other parts of the body. It attempts to create a balance in the body, which will help reduce stress and enhance natural healing. Nurses can practice this therapy in reducing the discomfort of patients.<sup>17</sup>

## STATEMENT OF THE PROBLEM:

“A Study To Assess The Effectiveness Of Foot Reflexology On Reduction Of Pain during First Stage Of Labour Among Primigravida Mothers In Koti Maternity Hospital”.

## OBJECTIVES OF THE STUDY:

1. To assess the level of pain during first stage of labour among primigravida mothers before foot reflexology in both experimental and control group.
2. To compare the effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in control group and experimental group.
3. To find out the association between effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in control and experimental group with selected demographic variables.

## OPERATIONAL DEFINITIONS:

### Assess:

To judge and determine the outcome of foot reflexology in terms of reduction of pain.

### Effectiveness:

It refers to the significant decrease in the pain of labour among primigravida mothers who are in labour which are measured from the response of post test after reflexology

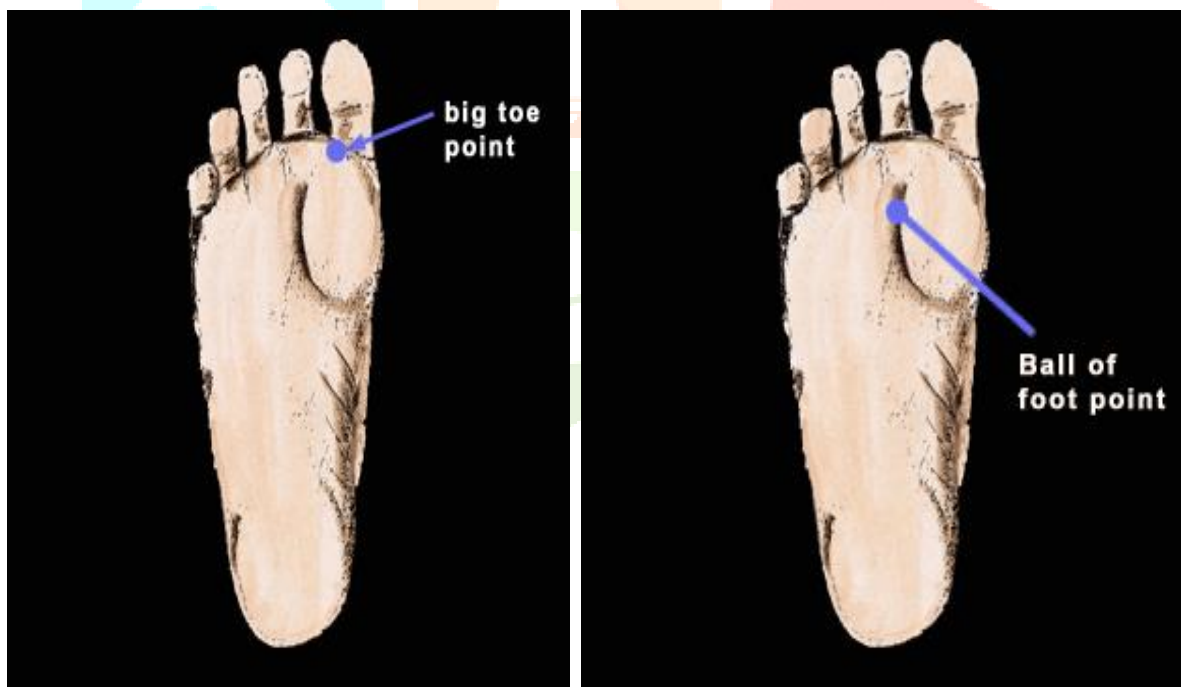


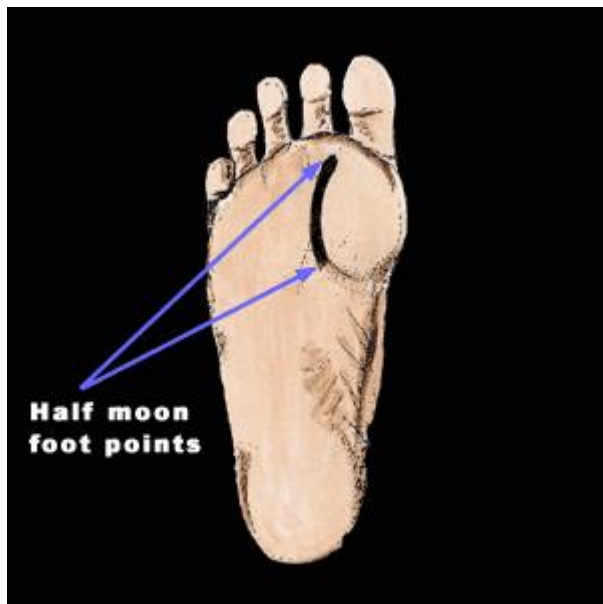
## Foot reflexology:

Foot Reflexology involves massage and the application of pressure to points on feet which corresponds to uterus in the body.

The points include

- ❖ A point that lies between the fleshy pads under the big toe and next toe.
- ❖ A point that lies just below the centre of the ball of the foot.
- ❖ A half-moon shaped points that lie from where the toes join the foot to the farthest end of the ball of the foot.





### First stage of labour

First stage of labour is from the time of onset of pain dilatation to full dilatation of cervix.

### Labour pain

It refers to the pain experienced by the mothers during the process of labour.

### Primigravida mother:

Mother who is pregnant for the first time.

## ASSUMPTIONS:

This study assumes that...

1. Foot reflexology promotes relaxation, thereby increasing the compliance of primigravida mothers during labor.
2. Foot reflexology helps to reduce level of labour pain among primigravida mothers

## 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

Independent variable is treatment or experimental activity that is manipulated or variable by the researcher to cause an effect on the dependent variable. In this study the independent variables is foot reflexology performed to the primigravida mothers in the first stage of labour in experimental group.

**Independent variable:** foot reflexology.

### 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 primigravida mothers in the first stage of labour.

**Dependant variable :** pain relief

## DELIMITATIONS:

The study is delimited to mothers...

- Who are not willing to participate in the study.
- Who are at high risk.
- Who are not in first stage of labour.

## HYPOTHESIS:

- **H<sub>A1</sub>** - There will be a significant reduction in the level of labour pain during first stage of labour with foot reflexology.
- **H<sub>A2</sub>** -There will be a significant association between the effectiveness of foot reflexology with selected demographic variables.
- **H<sub>A0</sub>** – There will not be significant association between the effectiveness of foot reflexology with selected demographic variables.

## CONCEPTUAL FRAMEWORK:

Conceptual framework is the conceptual underpinning of the study. It is a group of concepts and set of proportions that spells out the relationship between them.

A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought. It can act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potentially so close to empirical inquiry, they take different forms depending upon the research question or problem, Conceptual framework is a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for integration and interpretation of information.

“Conceptual framework represents less formal attempt at organizing phenomenon than theory and deals abstractions that are assembled by virtue of their relevance to common theme”.

- **Polit and Hungler, 2003**

“A conceptual framework can be defined as logically constructed concepts to provide general explanation of the relationship among the concepts of the research study<sup>20</sup>”.

- **Suresh .K. Sharma,2015**

The development of conceptual framework is a fundamental process required conducting actual research because it guides each stage.

The present study is aimed at gathering information about effectiveness of foot reflexology in relieving pain during first stage of labour among primigravida mothers admitted in labour room.”

The conceptual framework for the present study is based on modified Lydia E.Hall model (1963) which views on basis of nursing care.

According to Lydia E. Hall model an individual can be conceptualized in three domains: the body(care), the illness(cure), and the person(core). The mother has to know the therapeutic use of self during labour to cope with these discomforts she requires various types of comfortive measures like foot reflexology from nurse midwife. The condition of mother in latent phase during first stage of labour is determined by three domains. The domains are as follows:

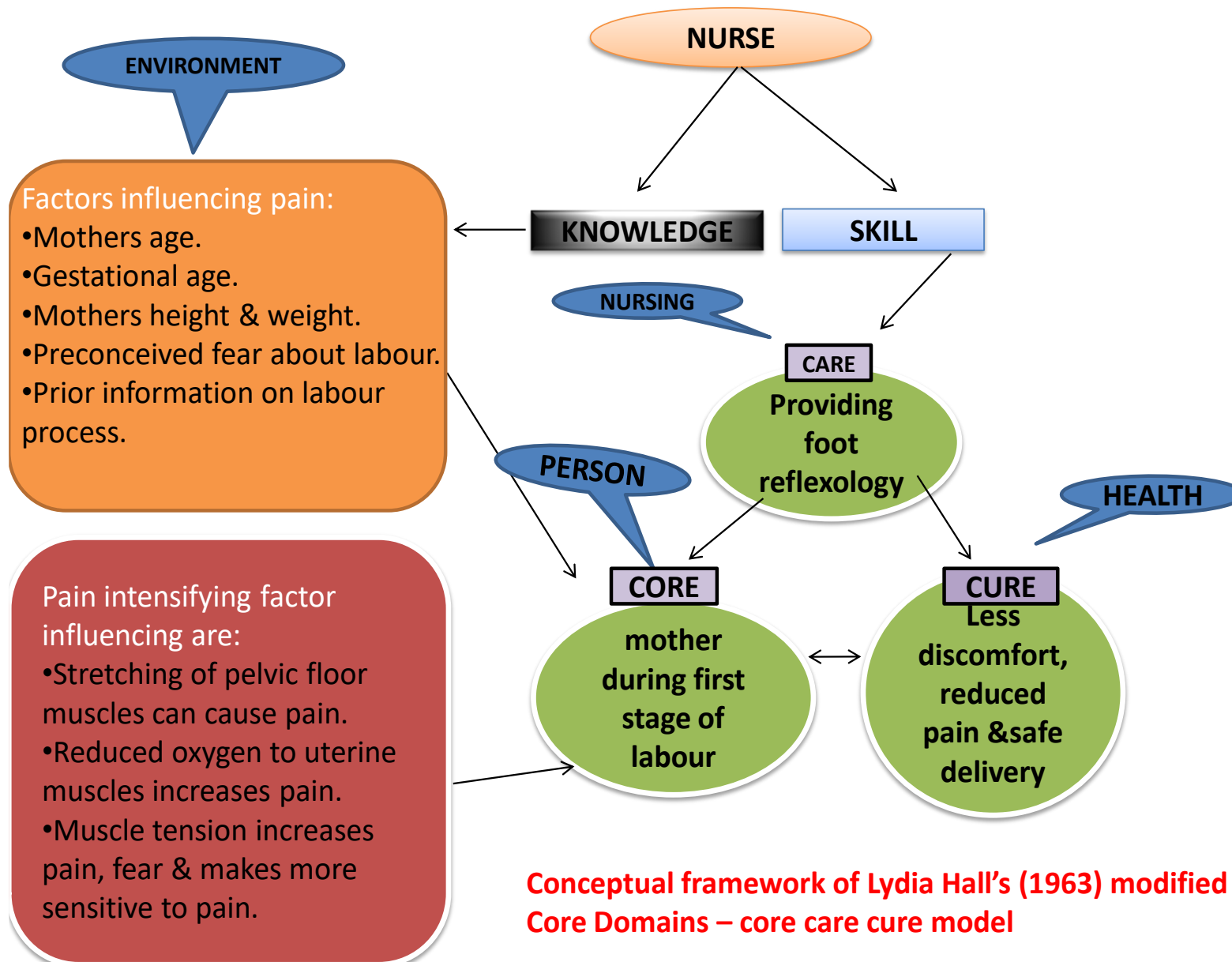
1. The core circle: This includes self identity, self perception and self healing during the mother first stage of labour. In this study, it refers to self interest, self motivated, like mother willing, consent and cooperation to accept the foot reflexology.

2. The care circle: it refers exclusive to nursing and it also involve intimate body care, and also interventions which improves the patient care. In the study, it refers to foot reflexology.
3. The cure circle: it refers to pathological process the nurse's function in the care circle and is limited to helping the mother deal with the measures instituted by the physician. It refers to the outcome of event which means safe, comfortable, fearless first stage of labour in terms of decrease level of pain.

The factor which influences pain are mothers age, gestational age, mothers height weight, duration of labour process, preconceived fear

Nurses play a major role in using her knowledge, and skills and she mainly renders her skill on providing foot reflexology. She also imparts her knowledge on factors which influences pain.

The core, cure and care are interlinked in such a way that nurse provides the foot reflexology on primigravida mothers during first stage of labour with mothers self perception, self willingness and cooperation for the safe and painless delivery.



## CHAPTER II

### REVIEW OF LITERATURE:

The term “review of literature” refers to the initial summary of research on a topic of interest often prepared to put a research problem in context or as the basis for implementation project. Review of literature is a key step in research process.

The review of literature can serve a number of important functions in research process. It suggests ways of going about in the business of conducting the study on a topic of interest. It develops a broad conceptual context into which a research problem will fit. It ascertains what is already known in relation to a problem of interest and avoids unintentional duplication of the study and focus on aspects of problems about which there is relatively low knowledge.

The investigator has done a comprehensible review on different aspects. The reviews of the study are grouped under following headings;

1. Literatures related to foot reflexology.
2. Literatures related to effectiveness of foot reflexology.
3. Literatures related to complementary and alternative therapies in reduction of labour pain.



### Literatures related to foot reflexology:

**Lee. Y.M, Sohng .K.Y, (2006)** A quasi experimental study was conducted on the pre and post test design in a non equivalent control group to determine the effects of foot reflexology in fatigue and insomnia in experimental group of twenty nine and the control group of thirty patients suffering from coal workers pneumoconiosis. Foot reflexology was performed for 60 minutes twice a week for five weeks to the experimental group but not in the control group. Fatigue was evaluated by fatigue symptoms inventory and insomnia with the visual analogue scale.(VAS).Data was analyzed by chi-square test, unpaired t-test and repeated measures ANOVA with the SAS program .Results shown that there was a significant decrease in scores of fatigue and insomnia in experimental group but not in control group.<sup>18</sup>

**TSAY, et.al., (2006)** A study was conducted to invest the efficacy of reflex therapy in relieving pain and anxiety among post operative patients with gastric cancer. A total of sixty one patients were randomly allocated to an intervention (n=30) or control (n=31) group. Experimental group received the usual pain management and 20 minutes of foot reflex therapy during postoperative days 2, 3, and 4 where the control group received usual pain management. Results shown less pain ( $P < .05$ ) and anxiety ( $P < .05$ ) by the intervention group compared with the control group. patients in the intervention group received significantly less opioid analgesics than the control group ( $P < .05$ ).<sup>19</sup>

**Quatrrin R, (2006)** A study was conducted to examine the effect of foot reflexology on anxiety among hospitalized cancer patients. A total of 30 patients were selected and allocated as experimental (15) and control group (15) at scientific research hospital Italy. Experimental group received therapeutic massage -and control group did not receive treatment .Patients self-reports of anxiety (measured by the Spielberger State-Trait Anxiety Inventory) were recorded before, after and 24hours after the intervention. Results shown that there was an average decrease of 7.9points on the state-anxiety scale in the intervention group and of 0.8points in the control group ( $p<0.0001$ ).<sup>20</sup>

**Nancy L.N et.al., (2000)** A quasi experimental study was conducted on pre-test and post test study to test the effects of foot reflexology on anxiety and pain in patients with breast and lung cancer. A total of 23 participants with breast or lung cancer were received foot reflexology to both feet for 30 minutes in experimental group and not in control group. The results shown that patients with Breast and lung cancer experienced a significant decrease in anxiety, one of three pain measures showed a significant decrease in pain for Breast cancer patients in intervention group compared to control group.<sup>21</sup>

### **Literatures related to effectiveness of foot reflexology.**


**Eguchi E, Funakubo N,(2016) mar,24** A experimental study was conducted with fifty-seven eligible participants (5 men and 52 women) aged 27 to 72 were randomly divided into 2 intervention groups (group A: n = 29; group B: n = 28) to participate in

foot reflexology 12 times during the 4-week intervention period. Systolic and diastolic blood pressure (SBP and DBP, respectively), heart rate, state anxiety, and health-related QOL were measured at the baseline, 4-week follow-up, and 8-week follow-up. The effects of the foot reflexology intervention on these factors and the proportion of participants with anxiety were analyzed using a linear mixed-effect model for a crossover design adjusted for participant and period effects. Furthermore, the relationship between the changes in SBP and state anxiety among participants with relieved anxiety was assessed using a linear regression model.

Foot reflexology significantly decreased the mean SBP ( $p = 0.02$ ), DBP ( $p = 0.006$ ), and state anxiety ( $p = 0.003$ ) as well as the proportion of participants with anxiety ( $p = 0.003$ ). Although it was not statistically significant ( $p = 0.088$ ), foot reflexology also increased the score of mental.<sup>22</sup>

**Deepa Shalini W. et al (2016)** A quasi experimental pre-test post test control group design was used in this study. Sixty samples in active phase of labour were selected by using non probability purposive sampling technique, the labour pain level was assessed for the subjects by observational method using San Diego Non-verbal pain scale during the active phase of first stage of labour, then the reflexology intervention was given to each sample in experimental group about 30 minutes. After that the post pain level was assessed for both the groups immediately, after one hour and after 2 hour intervals. The level of pain was measured by San Deigo Non Verbal Pain Scale Ranging from 0 - No pain, 1-3 - Mild Pain. 4-6 - Moderate Pain, 7-10 - Severe Pain. This findings revealed that in pre-test among 30 mothers 7 (23%) had moderate pain, 23 (77%) had severe pain and no one had mild pain. In post test, at 0

hour, 14 (47%) had mild pain, 16 (53%) had moderate pain and no one had severe pain, at 1 hour 29 (97%) had moderate pain, 1 (3%) had severe pain and no one had mild pain, and after 2 hours 27 (90%) had moderate pain, 3 (10%) had severe pain and no one had mild pain. It is inferred that reflexology is effective in reducing labour pain immediately. Table No.2 reveals that the mean value during pretest was 7.13 and the mean value during post test was 3.6, 4.8, and 5.9 respectively at 0, 1 and 2 hour. The obtained 't value during post test was significant.



**Moghimi-Hanjani S, Mehdizadeh-Tourzani Z, et.al (2015)**, This clinical trial study was conducted on 80 primigravida mothers who were divided randomly into an intervention group (Foot reflexology applied for 40 min, n=40) and control group (n=40). The pain intensity was scored immediately after the end of intervention and at 30,60 and 120 min after the intervention in both groups, based on McGill Questionnaire for Pain Rating Index (PRI). Spielberger State-Trait Anxiety Inventory (STAI) was completed before and after intervention in both groups. Application of reflexology technique decreased pain intensity (at 30, 60 and 120 min after intervention) and duration of labor as well as anxiety level significantly ( $P<0.001$ ). Furthermore, a significant difference was observed between two groups in terms of the frequency distribution of the type of labor and Apgar score ( $P<0.001$ ). Results of this study showed that reflexology reduces labor pain intensity, duration of labor, anxiety, frequency distribution of natural delivery and increases Apgar scores. Using this non-invasive technique, obstetricians can achieve, to some extent, to one of the

most important goals of midwifery as pain relief and reducing anxiety during labor and encourage the mothers to have a vaginal delivery.<sup>23</sup>

**Jones J, Thomson P, et.al ( 2013) Apr;1** A Study was conducted to investigate the association of antenatal reflexology with different outcomes in labour period. The study design was retrospective cohort study. The objective of this study was to investigate the association of antenatal reflexology with different outcomes in the intranatal period. The findings showed that the group who had four or more reflexology treatments had a reduced length of labour so it can be concluded that reflexology can be used as non pharmacological method for reducing labour duration.<sup>24</sup>

**F Quinn,GD Baxter(2008)** A randomized clinical trial study was conducted randomly to evaluate the effect of reflexology on pain intensity and duration of labour on primigravida, pain intensity at all the three stages of cervical dilatation was significantly lower in reflexology group. This indicates that reflexology could decrease duration of first, second, third stages of labour. Findings showed that reflexology can be used to decrease pain intensity of labour.<sup>25</sup>

**Heshmat R, Alavi Majd H, et.al (2010)**, "The effect of reflexology on pain intensity of labour "A 4 month pilot study was done to investigate effect of foot reflexology on pregnant women .Of 60 women who were given reflexology 58 were greatly relieved of pain. It was concluded that foot reflexology is useful in assisting delivery by reducing the use of drugs to stimulate uterine contractions, reducing frequency of analgesics and to release retained placenta.<sup>26</sup>

**Valiani M, Shiran E, et.al (2010)**, Dec 15 In this quasi-experimental study, 88 primiparous mothers referred to selected hospitals of Isfahan for vaginal delivery were selected using simple random sampling method and then randomized in two groups. Data collection tools were the demographic data questionnaire, profile and outcomes of the labor and the short-form of the McGill Questionnaire for Pain Rating Index (PRI) assessment. The intervention was general and specific reflexology in the active phase of labor. PRI was assessed before the intervention and four times after the intervention (3-5 cm, 6-8 cm and 9-10 cm dilatations and second stage of labor.

There was no significant difference between groups before intervention. In the reflexology group, there was a significant difference between the PRI before and after the 4 stages intervention ( $p < 0.001$ ). PRI was different significantly between studied groups after intervention ( $p < 0.001$ ). The length of active phase of labor was different significantly between the two groups; but this difference was not significant during the second ( $p = 0.29$ ), and the third ( $p = 0.27$ ) stages. The difference between the 1(st) minute and the 5(th) minute Apgar score ( $p < 0.001$ ) and rate of hemorrhage between the two groups were different significantly ( $p = 0.02$ ). Reflexology can lead to decrease in the labor pain. Therefore, regarding to the

safety of this technique, it can be replaced as an alternative for pharmacological methods.<sup>27</sup>

**Dolatian1 M, Hasanpour A, et.al (2008)**, a randomized clinical trial study was conducted randomly enrolling 120 parturient women with low risk pregnancy into three groups in Shahid Akbarabadi Hospital, Tehran, Iran. The first group received 40 minutes of reflexology at the beginning of active phase (4-5 cm cervical dilatation). Emotional support was offered for the second group in the same stage of pregnancy and with the same duration. The third group received only routine care during labor. Pain severity was evaluated with visual analogue scale (0 to 10 cm). In all groups, pregnant women were asked to evaluate the severity of pain experienced before and after intervention and also at cervical dilatations of 6-7 cm and 8-10 cm respectively. Data were collected through the numerical pain scale. Pain intensity at all the three stages of cervical dilatation was significantly lower in the reflexology group. During the 4-5 cm dilatation stage, women in the supported group reported less severe pain compared to those receiving routine care, but no significant differences at the later stages of labor. This indicates that reflexology could decrease the duration of first, second and third stages of labor.<sup>28</sup>

**F Quinn, GD Baxter, et.al ,(2008)**, “reflexology in the management of low back pain. A Pragmatic randomized controlled trial was conducted to evaluate the effectiveness of reflexology for the management of chronic low back pain. There was a main effect

of pain reduction in reflexology group. Thus it was concluded that reflexology would help to ease low back pain.<sup>29</sup>

**Mc Neil JA, Alderdice FA, et.al , (2006)**, “A retrospective cohort study exploring the relationship between antenatal reflexology and intranatal outcomes” A Retrospective cohort study was conducted. The objective of this study was to investigate the effect of foot reflexology exploring the relationship between antenatal reflexology and intranatal outcome. The group with reflexology had reduced length of labour. Thus it was concluded that reflexology can be used for reducing the labour pain.<sup>30</sup>

**Blunt E(2006)** Single blind trial addressing the differential effects of two reflexology techniques versus rest on ankle and foot edema in late pregnancy among pregnant women was conducted. The result showed significant decrease in the symptoms of stress, tension, anxiety, pain, tiredness, irritability and discomfort associated with pregnancy.<sup>31</sup>

**Park HS, et.al., (2004)** study was conducted to evaluate the effect of foot reflexology on blood pressure, serum lipids level and life satisfaction among hypertensive patients .A total of 34 patients were randomly selected and assigned to experimental (18) and control group (16). The study was conducted in department of nursing, Korea. Data collected through interview\observational schedule and intervention on foot reflexology was administered twice a week for 6 weeks and self foot reflexology



twice a week for 6 weeks. Results of the study shown that there was a significant decrease in systolic blood pressure and triglyceride but not the blood cholesterol and life satisfaction.<sup>32</sup>

**Mei-Yueh Chang. et al mar (2002)** Effects of foot massage on pain and anxiety during labour: a randomized controlled trial in Taiwan to investigate the effects of massage on pain reaction and anxiety during labour.

Labour pain is a challenging issue for nurses designing intervention protocols. Massage is an ancient technique that has been widely employed during labour, however, relatively little study has been undertaken examining the effects of massage on women in labour.

A randomized controlled study was conducted between September 1999 and January 2000. Sixty primiparous women expected to have a normal childbirth at a regional hospital in southern Taiwan were randomly assigned to either the experimental ( $n=30$ ) or the control ( $n=30$ ) group. The experimental group received massage intervention whereas the control group did not. The nurse-rated present behavioural intensity (PBI) was used as a measure of labour pain. Anxiety was measured with the visual analogue scale for anxiety (VASA). The intensity of pain and anxiety between the two groups was compared in the latent phase (cervix dilated 3–4 cm), active phase (5–7 cm) and transitional phase (8–10 cm).

In both groups, there was a relatively steady increase in pain intensity and anxiety level as labour progressed. A *t*-test demonstrated that the experimental group had significantly lower pain reactions in the latent, active and transitional phases. Anxiety levels were only significantly different between the two groups in the latent phase.

Twenty-six of the 30 (87%) experimental group subjects reported that massage was helpful, providing pain relief and psychological support during labour.

Findings suggest that massage is a cost-effective nursing intervention that can decrease pain and anxiety during labour, and partners' participation in massage can positively influence the quality of women's birth experiences.<sup>33</sup>

**Motha G, Mc Grath J (1993)** The study aimed at reviewing the effect of reflexology on the pain and outcomes of labour. In this quasi experimental study was used. There was no significant difference between the groups before intervention, In the reflexology group there was significant difference between PRI (pain rating index) before and after 4 stages of interventions. It was concluded that reflexology can lead to decrease in labour pain. Therefore regarding safety of this technique, it can be replaced as an alternative for pharmacological methods.<sup>34</sup>

**Liisberg B G (1989)**, the effect of reflexology on labour outcome. A Clinical trial study was carried out .The aim of this study was to investigate the effect of foot reflexology on the duration of labour and severity of first stage of labour pain The severity of pain in the intervention group was lower than the control group. Thus it was concluded that reflexology has an effect on decreasing labour pain.<sup>35</sup>

## Literatures related to complementary and alternative therapies in reduction of labour pain:

**Tournaire M, Theau-Yonnu A [2007]** conducted a study on the effect of complementary and alternative medicine on pain during labour at saint Vincent de Paul Hospital, Paris. The study reveals that sacral massage for 30 minutes during uterine contractions had significant reduced pain in the latent, active and transitional phases of labour. It also reveals that hot application in sacral area had reduced the intensity of pain in labour.<sup>36</sup>

**Snyder, Benner, Field, Wahlin et al (2006)** conducted a study on non pharmacologic approaches to relive labour pain at North America. The study focuses on effectiveness of 13 non – pharmacologic methods used to relive pain and reduce suffering in labour. In the description the study was conducted in 60 women among which 30 of whom received massage and 30 women were in a control group who received usual care. Massages lasted for 30 minutes in each phase (latent, active and transition). Pain intensity was rated by a nurse observing each women's manifestation of pain using present behavioral intensity scale. The study revealed that 87% of the women in massage group reported thaty massage was helpful in providing pain relief and psychological support.<sup>37</sup>

**Chang, Mei-yuch, Chen-hey huanga, kuo Feng (2006)** conducted a study on comparison of massage effect on labour pain among sixty primiparous women. Self reported short – from McGill pain Questionnaire (SF- MPQ) were used to assess the

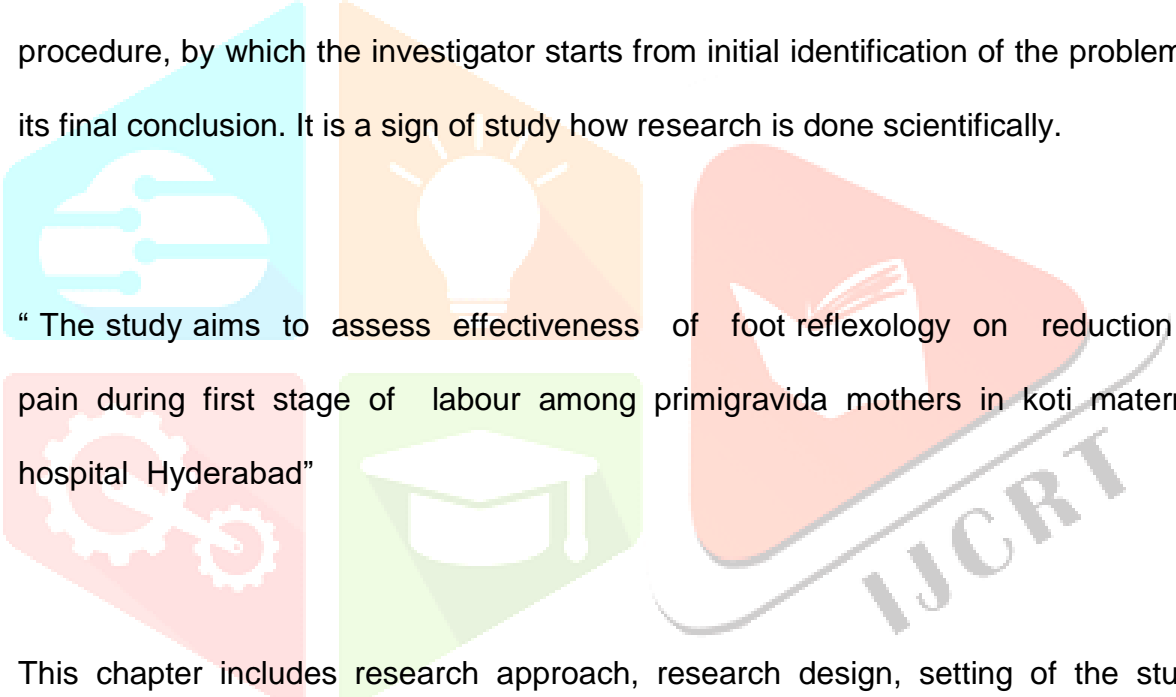
pain at 3 phases of cervical dilation. Phase 1 dilation (3 to 4cm), phase 2 dilation (5 to 7cm) and phase 3 dilation (8 to 10cm). Study Concluded that massage cannot change the characteristics of pain experienced by women in labour, it can effectively decrease labour pain intensity at phase 1 and phase 2 of cervical dilation during labour.<sup>38</sup>



## CHAPTER - III

### RESEARCH METHODOLOGY

Research methodology is a systematic way to solve the research problem. “Research Methodology defines the way pertinent information is gathered in order to answer question or analyze (Polit Hungler 1986)”. The research methodology enables the researcher to project a blue print of the research undertaken. It is considered as the backbone or structure of the study. It involves the systematic procedure, by which the investigator starts from initial identification of the problem to its final conclusion. It is a sign of study how research is done scientifically.



“ The study aims to assess effectiveness of foot reflexology on reduction of pain during first stage of labour among primigravida mothers in koti maternity hospital Hyderabad”

This chapter includes research approach, research design, setting of the study, variables, population sample size, sampling technique, inclusion and exclusion criteria for sampling, data collection procedure, plan for data analysis and ethical considerations, problems faced during data collection. This chapter also deals with description and various steps adopted to collect and organize data for the study.

## RESEARCH APPROACH

The research approach refers to a general set of orderly disciplined procedures used to require dependable and useful information (Polit Hungler 1986).<sup>39</sup>

The investigator selected quantitative approach on basis of problem and objectives to be accomplished. In this study the effectiveness of foot reflexology on reduction of pain during first stage of labour among primigravida mother in selected maternity hospital at Hyderabad is assessed.



### 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 ( **Polit 1999**).<sup>40</sup>

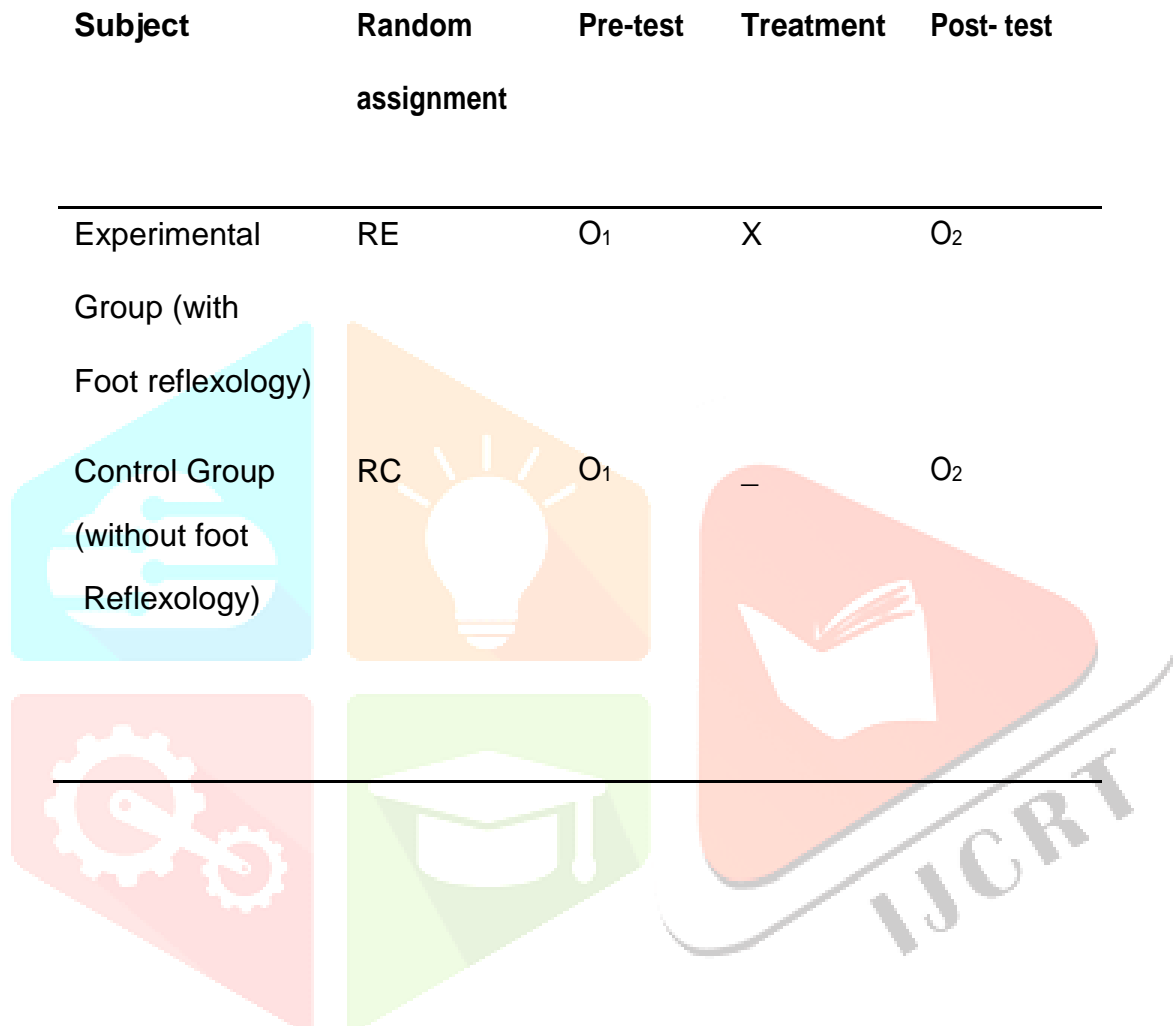
The research design is a blue print to conduct the study that maximizes control over factors that could interfere with the desired outcomes of the study (POLIT 1993).<sup>41</sup>

Research design helps the researcher in the selection of the subjects, identification of variables, their manipulation, control, observations to be made and types of statistical analysis to interpret the data.

Considering all the above factors and the availability of time for data collection, the researcher had selected True-experimental (pre-test- post test only) design. It is a clear design in which the effectiveness of foot reflexology on reduction of pain during first stage of labour among primigravida mothers in selected hospitals at Hyderabad is assessed.

**Research Design Notation:**

True-experimental research design (pre test-post test only design)



Key:

R: Random assignment

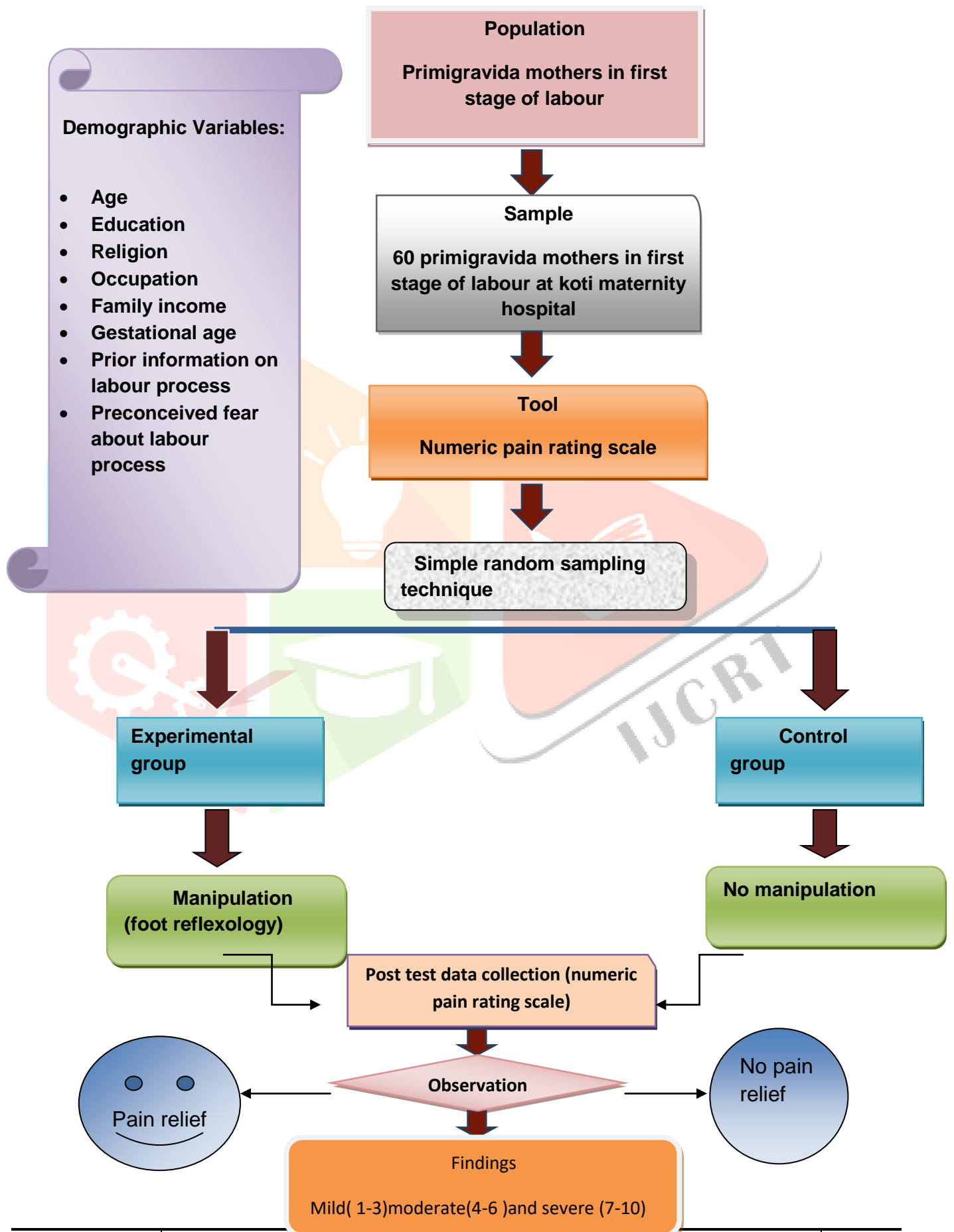
O<sub>1</sub>: Assessment of pre-test level of labour pain of primi gravid mothers (30)

O<sub>2</sub>: Assessment of post-test of labour pain of primi gravid mothers (30)

X: Intervention (foot reflexology)

RE: Random assignment in experimental Group

RC: Random assignment in control group







**Fig-II: schematic representation of the research design**

the study takes place (Polit & Hungler).<sup>39</sup>

Setting is the place where data collection will occur. The investigator had selected Koti maternity hospital Hyderabad where there are adequate mothers who will meet the requirements needed for the study. The hospital has a maternity ward with bed strength of 100 and a full-fledged labour room and operation theatre as well as a neonatal intensive care unit.

**POPULATION:**

The population is the entire aggregation of cases that meets a destination set of criteria designed for the study (Polit and Hungler).<sup>39</sup>

**Target Population:**

It refers to the elements, people, objects to which the investigator wants to generalize the research findings.<sup>39</sup>

In the present study the Target population is mothers who are in first stage of labour.

### **Accessible Population:**

Accessible population refers to the aggregate of cases which confirm to the designed criteria and which is accessible to the researcher as a pool of subjects or objects.<sup>39</sup>

In this research study the accessible population is mothers who are in first stage of labour and admitted in Koti Maternity hospital, Hyderabad.

### **SAMPLE AND SAMPLE SIZE:**

According to Polit and Hungler (1999)<sup>40</sup>, a sample is a set of population selected to participate in the research study. The sample consisted of primigravida mothers who are admitted with labour pain with first stage of labour in Koti maternity hospital at Hyderabad. The sample size for this study was arbitrarily decided to be 60 mothers who are in first stage of labour [30 experimental and 30 control]. Factors like nature of the study, availability of sample, time, money and material were considered while deciding the sample size.

### **SAMPLING TECHNIQUE:**

Sampling refers to the process of selecting a portion of the population to represent the entire population (Polit 2008).<sup>39</sup>

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.

### CRITERIA FOR SAMPLE SELECTION:

In sampling criteria, the researcher specifies the characteristics of the population under the study by detailing the inclusion and exclusion criteria. Inclusion criteria are the characteristics that each sample element must possess to be included in the sample. Exclusion criteria are characteristics that could confound or contaminate the results of the study therefore such participants are excluded from the study.

#### INCLUSION CRITERIA:

The study includes primigravida mothers...

- Who are willing to participate.
- Who Completed 36 to 40 weeks of gestation.
- Who are available at the time of data collection.
- Who are in first stage of labor.

#### EXCLUSION CRITERIA:

The study includes mothers

- Before 34 weeks of gestation.
- Who are not willing to participate.
- Who are not primigravida.
- With cervical incompetence.

## **DEVELOPMENT AND DESCRIPTION OF THE TOOL:**

Tool development is the complex and time consuming process. It consists of defining the construct to be measured, formulating the items, assessing the items for content validity, estimating the reliability and conducting pilot study.

The technique used for the research study was interview method in order to measure the pain level among primigravida mothers who were in first stage of labour. Tool used in this study is Numerical pain rating scale. The tool was prepared after extensive review of literature search, discussion with experts and guide and also basing on experience of the investigator. The other steps included in the final preparation of the tool were, development of criteria, content validation of the tool, presenting of the tool, reliability testing of the tool and preparation of the final draft.

## **DESCRIPTION OF THE TOOL:**

POLIT (1999) states data collection tool is the instrument that measures the variables of the study accurately and sensitivity.<sup>40</sup>

## **DATA COLLECTION INSTRUMENT:**

It consists of two sections:

**SECTION A:** Interview schedule for collection of demographic variables.

**SECTION B:** Numerical pain rating scale.

### **SECTION – A: DEMOGRAPHIC VARIABLES**

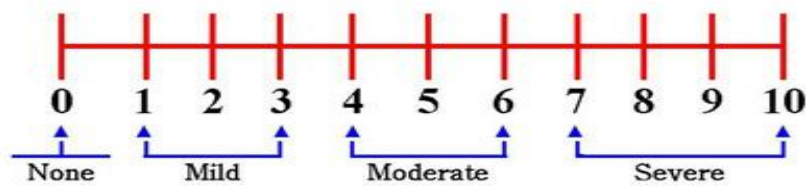
It consists of items seeking background information such as age, education, religion, occupation, income, gestation, gravida, prior information on labour process.

### **SECTION – B: NUMERICAL PAIN RATING SCALE:**

Numerical pain screening with a 0-10 pain intensity numeric rating scale (NRS) has been widely implemented in primary care medicine. Numerical pain scale has been used.

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 1-10 scale for patient self assessment. . As pain is a highly subjective and individualized, self-report is frequently cited as the gold standard of pain assessment and it should always be initially attempted, as it is the most reliable report of pain. The scale comprised of a 10 cm horizontal line with graduations marked 0 to 10 one centimetre.

The primigravida 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.



### CONTENT VALIDITY:

Validity refers to the degree to which an instrument measures what it is intended to measure

(Polit, 2001).

To obtain content validity of the tool, the prepared tool, with objectives and operational definitions, was submitted to nine experts including five experts in field of Obstetric and Gynecological Nursing and four Obstetricians and Gynaecologists. The experts were requested to check for the relevance, adequacy, and appropriateness in the tool, a few items were modified and thereby content validity was ascertained.

## **PILOT STUDY:**

A pilot study is a small scale version or trial run designed to test the methods to be used in a larger, more rigorous study, which is sometimes referred to as the parent study (Polit and Beck, 2008).<sup>39</sup>

The purpose of conducting the pilot study was to find out the feasibility and practicability of the study. The pilot study was conducted from 01/04/2017 to 08/04/2017 in the labour room at KIMS Hospital, Secunderabad. Six primigravida mothers who fulfilled the inclusion criteria and were chosen by probability random sampling method were selected and equally assigned to Group I (experimental) and Group II (control). The investigator had obtained written permission from the Nursing Superintendent of KIMS Hospital prior to the pilot study. 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 foot reflexology to the group. The group had regular care from the health professionals such as doctors and nurses. Data analysis was done using descriptive and inferential statistics.

The study was found to be feasible and practicable and the pilot study did not show any flaws in research design.

## **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 room at

Koti maternity Hospital, Hyderabad. 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 0.86, which indicated that the tool was highly reliable.

### **ETHICAL CONSIDERATIONS:**

Yes, Ethical clearance was obtained for the present study.

### **DATA COLLECTION PROCEDURE:**

Data collection is the gathering of the information needed to address research problem. The investigator collected the data at Koti Maternity hospital, Hyderabad from April 15 to May 15. Prior permission from authorities was obtained. 60 primi mothers who are in first stage of labour were selected as per the above mentioned criteria. Numerical pain scale was assessed before and after the administration of foot reflexology with a gap of one hour between the pre and post test. All the patients were very cooperative and investigator expressed her gratitude for their cooperation.

### **PLAN FOR DATA ANALYSIS:**

Data analysis is the systematic organization and synthesis of research data and testing research hypothesis by using obtained data. It was planned to analyze and



interpret data with the help of descriptive and inferential statistics. The data was edited, coded and entered in excel sheets.

The data analysis was organized under the following sections:

**SECTION I:** Frequency and percentage distribution of demographic variables among primigravida mothers in control and experimental group.

**SECTION-II:** Mean and standard deviation to identify the effectiveness of foot reflexology in relieving pain among primi mother who are in first stage of labour.

**SECTION-III:** 'T'-test is computed to find out the significant difference between pre and post experiment scores

**SECTION – IV:** Formulating chi-square values to find out the association of the post-test scores with selected demographic variables i.e. Age, Education, Religion, Occupation, Family income, Gestational age, Prior information on labour process, if yes...how?, Preconceived fear about labour process.

## **EPILOGUE:**

Research methodology gives a bird's eye view of the entire process of tackling a research problem in a scientific and systematic manner.

This chapter dealt with the research approach, research design, research variables, setting of the study, population, sample and sample size, sampling technique, criteria

for sample selection, development and description of the tool, scoring, content validity, reliability, pilot study, ethical issues, and procedure for data collection and plan for data analysis in detail.



## CHAPTER - IV

### ANALYSIS AND INTERPRETATION

The analysis and interpretation of data involve the objective material in the possession of the researcher and his subjective reactions desire to derive from the data the inherent meanings in that relation to the problem. To avoid making conclusions or interpretations from insufficient or invalid data, the final analysis must be anticipated in detail, when plans are being made for collecting information.

This chapter deals with the analysis and interpretation scores among discussion of the data collected for study thereby, to assess the effectiveness of foot reflexology on reduction of pain during first stage of labour among primigravida mothers and association of demographic variables with numeric pain rating scale.

The obtained data from the sample was categorized and analyzed according to the objectives of the study. The data were entered into excel sheets and analyzed with the standard statistical formulas. The results are presented in tables and figures appropriately.

## OBJECTIVES OF THE STUDY:

1. To assess the level of pain during first stage of labour among primigravida mothers before foot reflexology in both experimental and control group.
2. To compare the effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in control group and experimental group.
3. To find out the association between effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in control and experimental group with selected demographic variables.

## ORGANIZATION OF DATA

The analysis and interpretation of the data collected from the primigravida mothers is organized and presented in five sections

**SECTION I:** Frequency and percentage distribution of demographic variables among primigravida mothers in control and experimental group.

**SECTION-II:** Mean and standard deviation to find out the significant difference between pre and post test scores in the experimental group.

**SECTION-III:** 'T'-test will be computed to find the effectiveness of foot reflexology among primigravida mothers in the experimental group.

**SECTION – IV:** chi-square values will be computed to find out the association of the pre-test pain scores with selected demographic variables. i.e. Age, Education, Religion, Occupation, Family income, Gestational age, Prior information on labour process, if yes...how?, Preconceived fear about labour process.

The data collected from primigravida mothers were edited, tabulated, analyzed, interpreted and findings obtained were presented in the form of tables and diagrams under V sections which are as follows.

**SECTION I: DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THEIR DEMOGRAPHIC VARIABLES.**

The demographic variables of 60 primigravida mothers who are in first stage of labour at Koti Maternity Hospital, Hyderabad Are presented in the table 1 in terms of frequency and percentage. Demographic variables included in the study were: age, education, religion, occupation, income, gestation, gravida, prior information on labour process.

**TABLE I (a): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO AGE**

n = (30+30)

BACK GROUND VARIABLES	CONTROL		EXPERIMENTAL	
	FREQUENCY	PERCENTAGE %	FREQUENCY	PERCENTAGE %
<b>AGE OF THE MOTHER</b>				
a) 18-22	3	10.0	17	56.7
b) 23-27	18	60.0	9	30.0
c) 28-32	7	23.3	4	13.3
d) ABOVE 33	2	6.5	0	0.0
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

The above table shows that 18(60.%) of primigravida mothers belongs to age group of 23-27 years, 7(23.3%) belongs to 28-32 years, 3(10.0)of primigravida mothers belongs to 18-22 years ,and 2(6.7%) belongs to above 33 years 2 (6.7%) in control group, whereas 17(56.7) belongs to 18-22 years, 9(30.0%) belongs to 23-27 years,

4(13.3%) belongs to 28-32 years and none in 33 years and above in experimental group

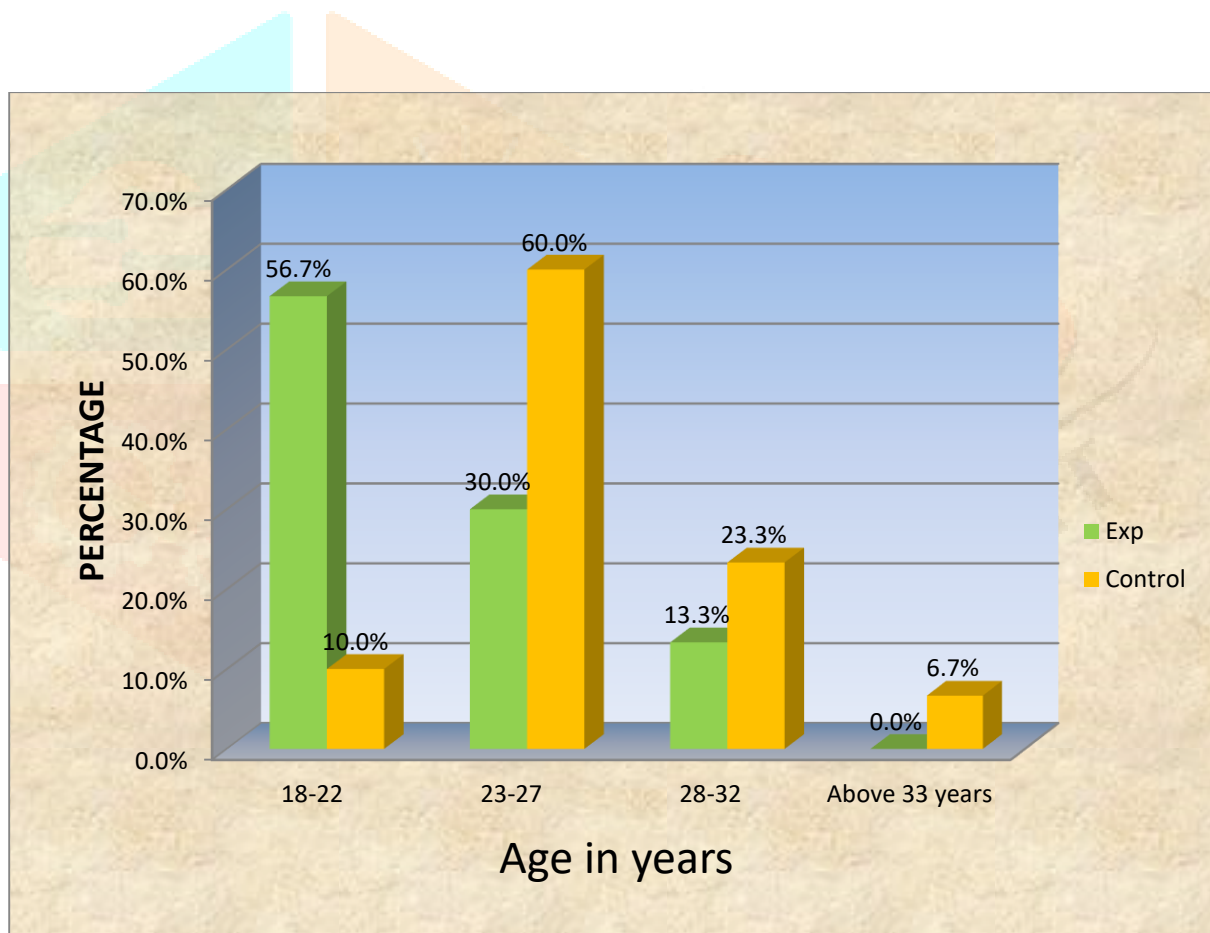


Figure III: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE AGE

The above figure shows that 18(60.%) of primigravida mothers belongs to age group of 23-27 years, 7(23.3%) belongs to 28-32 years, 3(10.0)of primigravida mothers

belongs to 18-22 years ,and 2(6.7%) belongs to above 33 years 2 (6.7%) in control group, whereas 17(56.7) belongs to 18-22 years, 9(30.0%) belongs to 23-27 years, 4(13.3%) belongs to 28-32 years and none in 33 years and above in experimental group.

**TABLE I (b): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO EDUCATION.** n = (30+30)

BACKGROUD VARIABLES	CONTROL		EXPERIMENTAL	
	frequency	Percentage%	frequency	Percentage%
<b>EDUCATION</b>				
a) ILLITRATE	0	0.0	0	0.0
b) PRIMARY EDUCATION	11	36.7	16	53.3
c) SECONDARY EDUCATION	14	46.7	11	36.7
d) INTERMEDIATE	5	16.7	3	10.0
e) DEGREE	0	0.0	0	0.0
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>



The above table shows 14(46.7%) of primi mothers belongs secondary education, 11(36.7%) belongs to primary education, 5(16.7%) belongs to intermediate and none are illiterate in control group, where as 16(53.3%) belongs to primary education, 11(36.7%) belongs to secondary education 3(10%) belongs to intermediate and none are illiterate in experimental group.

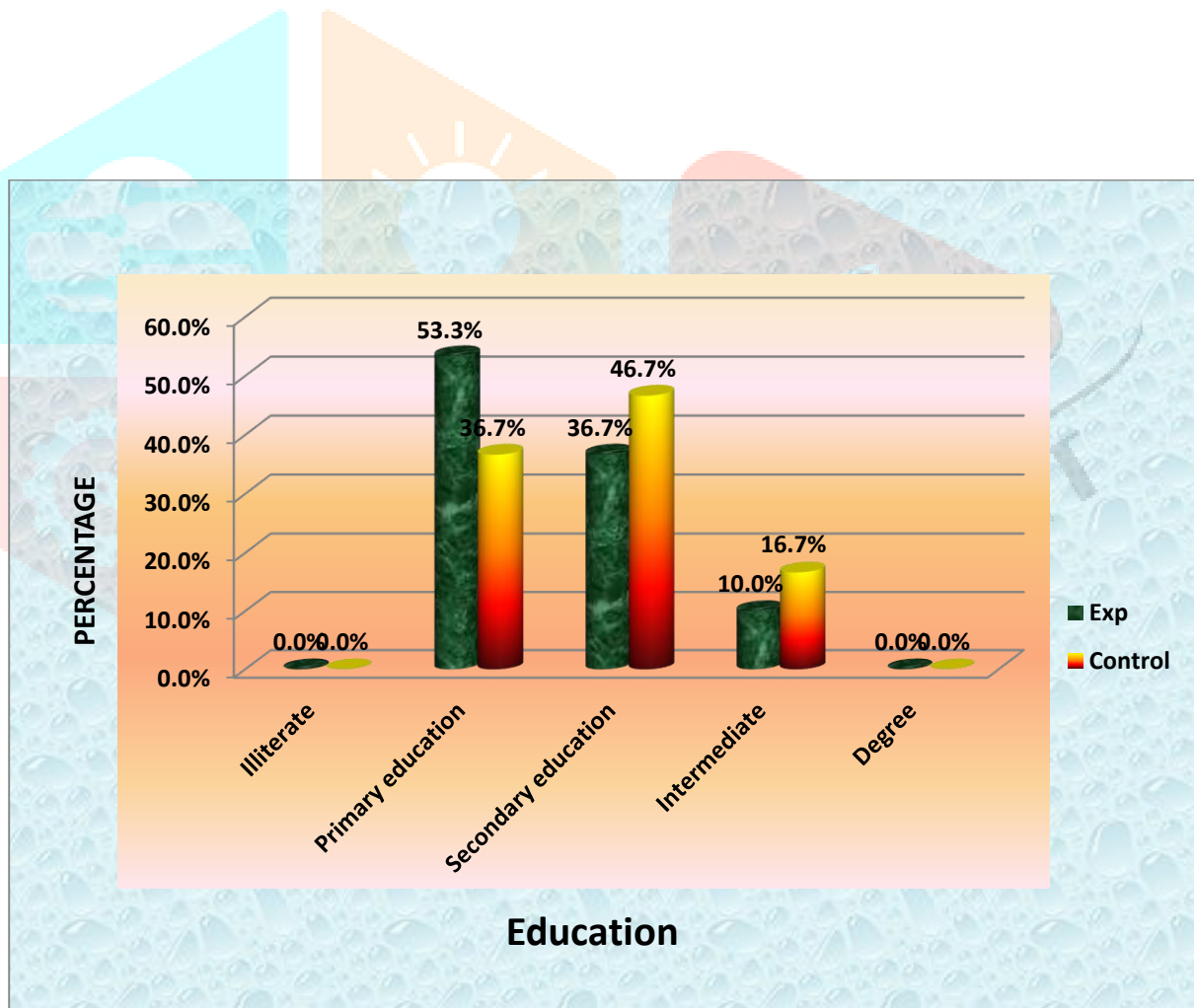
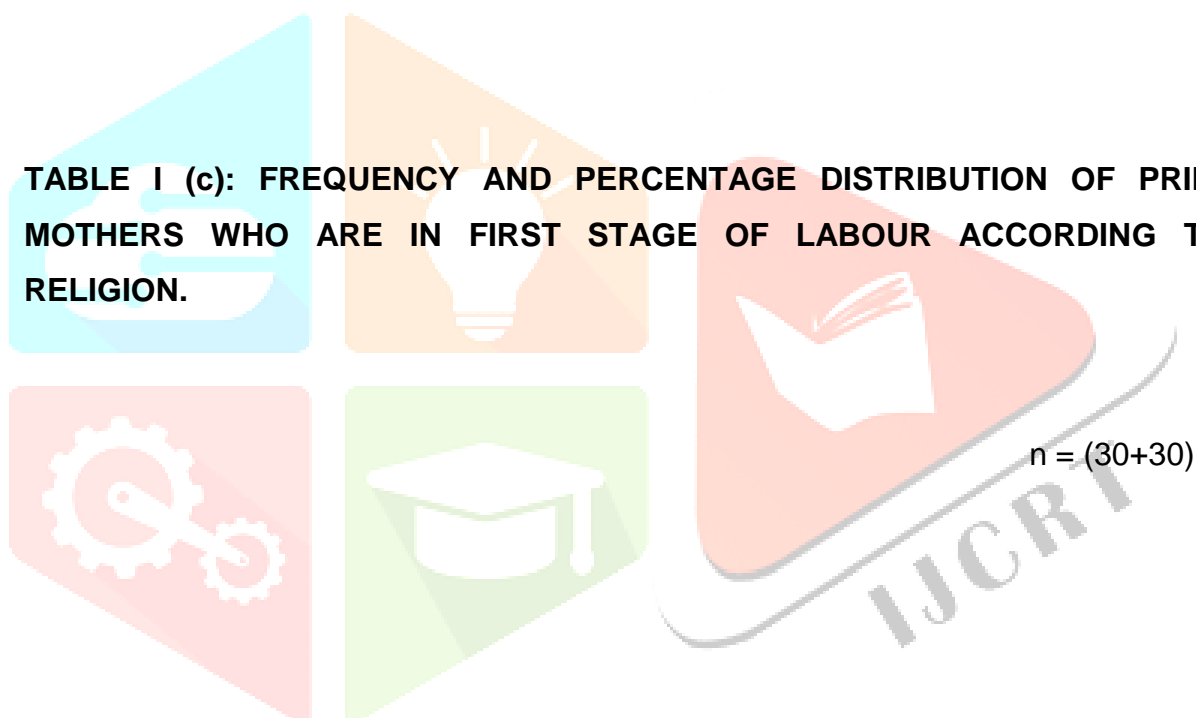


Figure IV: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE EDUCATION

The above figure shows 14(46.7%) of primi mothers belongs secondary education, 11(36.7%) belongs to primary education, 5(16.7%) belongs to intermediate and none are illiterate in control group, where as 16(53.3%) belongs to primary education, 11(36.7%) belongs to secondary education 3(10%) belongs to intermediate and none are illiterate in experimental group.

**TABLE I (c): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO RELIGION.**



BACKGROUND VARIABLES	CONTROL		EXPERIMENTAL	
	FREQUENCY	PERCENTAGE %	FREQUENCY	PERCENTAGE %
<b>3. RELIGION</b>				
a) HINDU	13	43.3	12	40.0
b) MUSLIM	14	46.7	13	43.3
c) CHRISTIAN	3	10.0	5	16.7
d) OTHER	0	0.0	0	0.0
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

The above table shows 14(46.7%) of primi mothers are Muslim, 13(43.3%) are Hindu, 3(10.0%) are Christian and others are none in control group, where as 12(46.7%) are Muslim, 13(43.3%) are Hindu 5(16.7%) are Christian and others are none in experimental group.

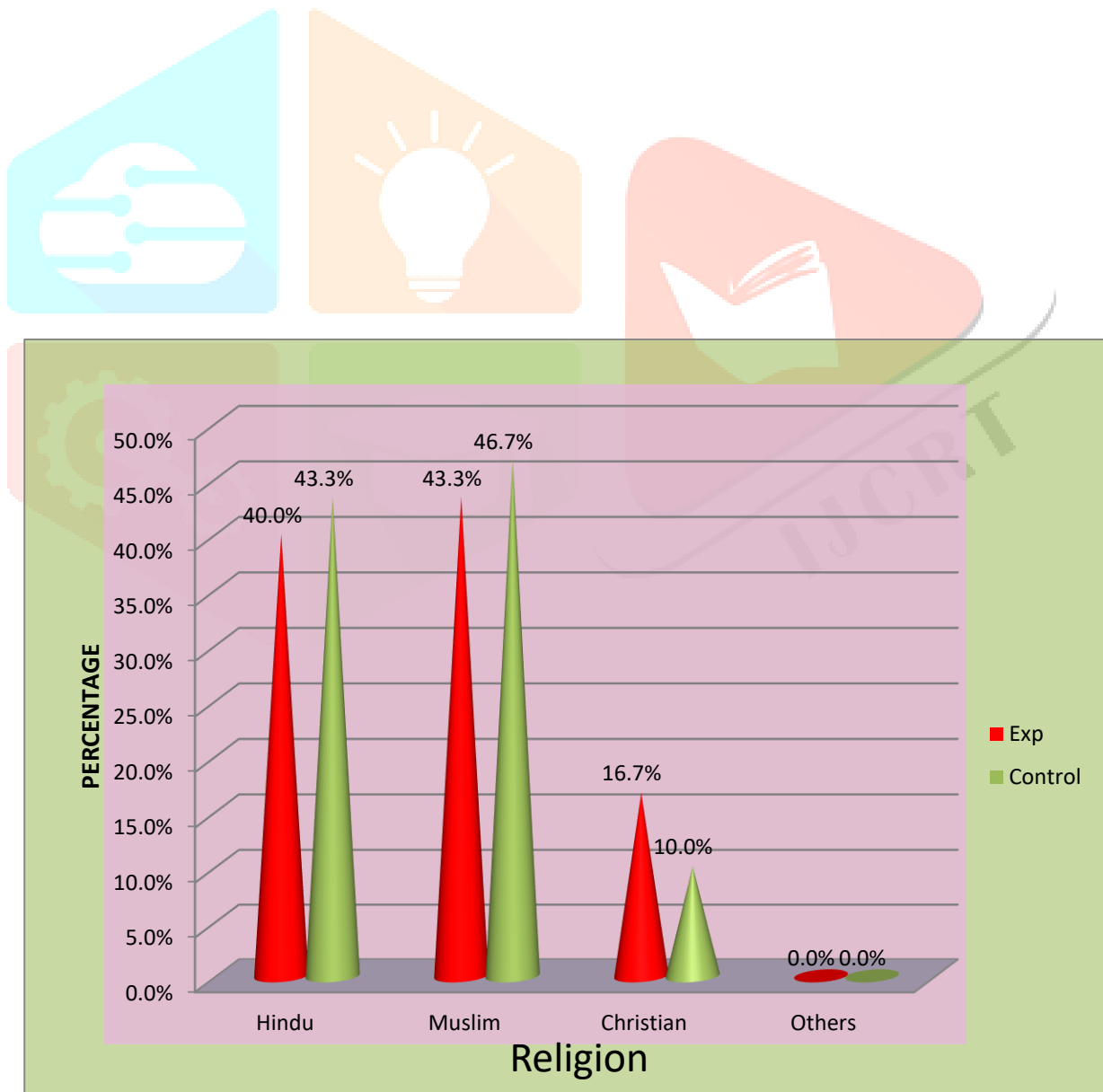


Figure V: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE RELIGION

The above figure shows 14(46.7%) of primi mothers are Muslim, 13(43.3%) are Hindu, 3(10.0%) are Christian and others are none in control group, where as 12(46.7%) are Muslim, 13(43.3%) are Hindu 5(16.7%) are Christian and others are none in experimental group.

**TABLE I (d): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO OCCUPATION.** n = (30+30)

BACKGROUD VARIABLE	CONTROL GROUP		EXPERIMENTAL GROUP	
	frequency	Percentage %	frequency	Percentage %
<b>4. OCCUPATION</b>				
a) SEDENTARY WORKER	0	0.0	0	0.0
b) MODERATE WORKER	0	0.0	13	43.3
c) HEAVY WORKER	5	16.7	0	0.0
d) DAILY WAGES	4	13.3	0	0.0
e) HOUSE WIFE	21	70.0	17	56.7
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

The above table shows 21(70.0%) of primi mothers are house wife , 5(16.7%) are heavy worker, 4(13.3%) are daily wages and none are sedentary worker and moderate worker in control group, where as 17(56.7%) are house wife, 17(43.3%) are moderate worker and none are sedentary worker, heavy worker and daily wages in experimental group.

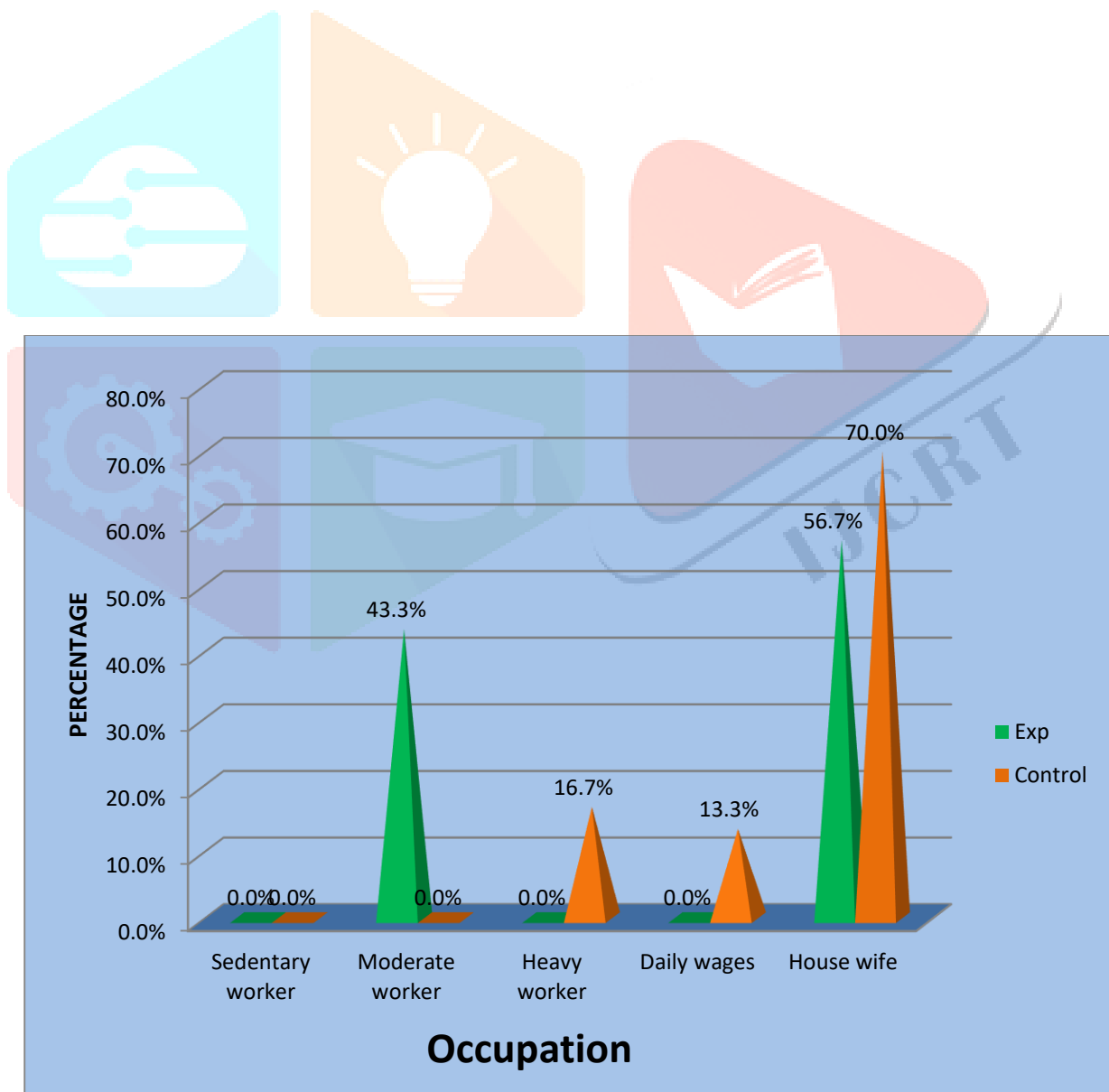
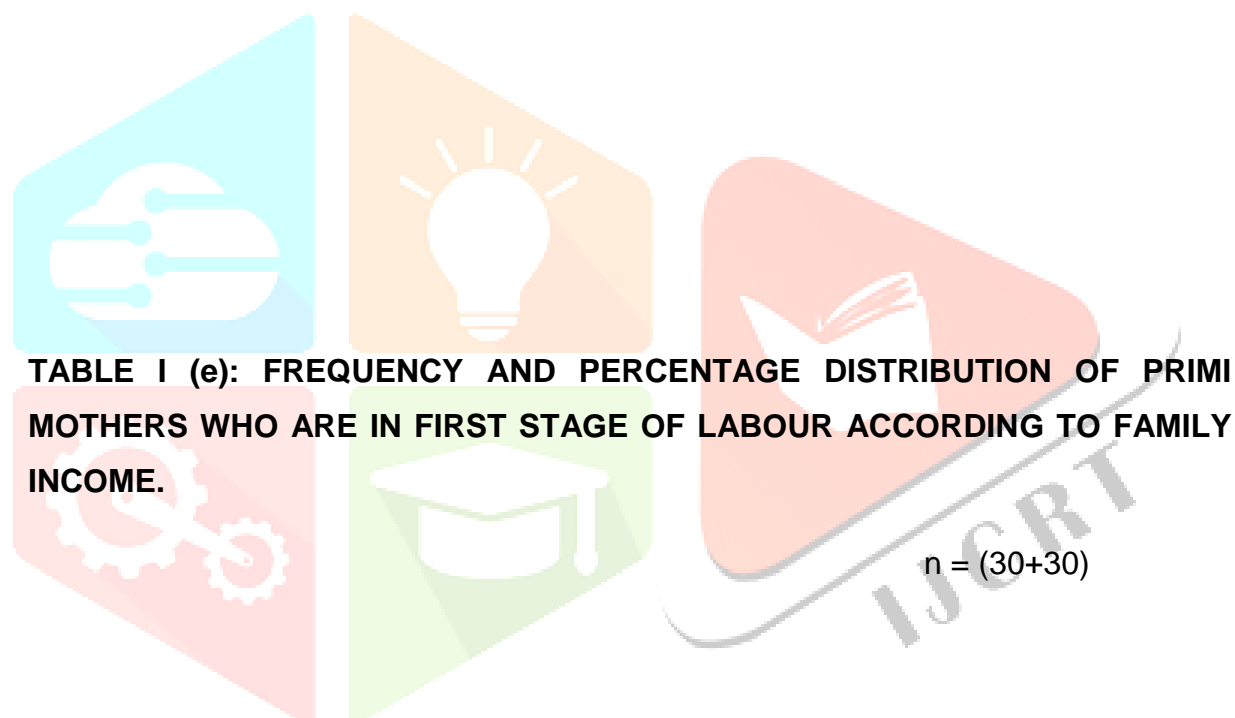


Figure VI: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE OCCUPATION

The above figure shows 21(70.0%) of primi mothers are house wife , 5(16.7%) are heavy worker, 4(13.3%) are daily wages and none are sedentary worker and moderate worker in control group, where as 17(56.7%) are house wife, 17(43.3%) are moderate worker and none are sedentary worker, heavy worker and daily wages in experimental group.



**TABLE I (e): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO FAMILY INCOME.**

n = (30+30)

Background variables	CONTROL GROUP		EXPERIMENTAL GROUP	
	Frequency	Percentage%	Frequency	Percentage %
<b>Family income/annum</b>				
<b>BELOW 15000/ANNUM</b>	20	66.7	21	70.0
<b>15001-50,000</b>	10	33.3	9	30.3
<b>50,000-100000</b>	0	0.0	5	16.7
<b>100001 AND ABOVE</b>	0	0.0	0	0.0
<b>TOTAL</b>	30	100	30	100

The above table shows 20(66.7%) of primi mothers family income is below 15000/annum, 10(33.3%) family income is 15,001-50,000 and none's family income is 50,001-100000 Or 100001 above in control group, where as 21(70.0%) of primi mothers family income is below 15000/annum, 9(30.0%) family income is 15,0001-50,000 and none's family income is 50,001- 100000 Or 100001 above in experimental group.



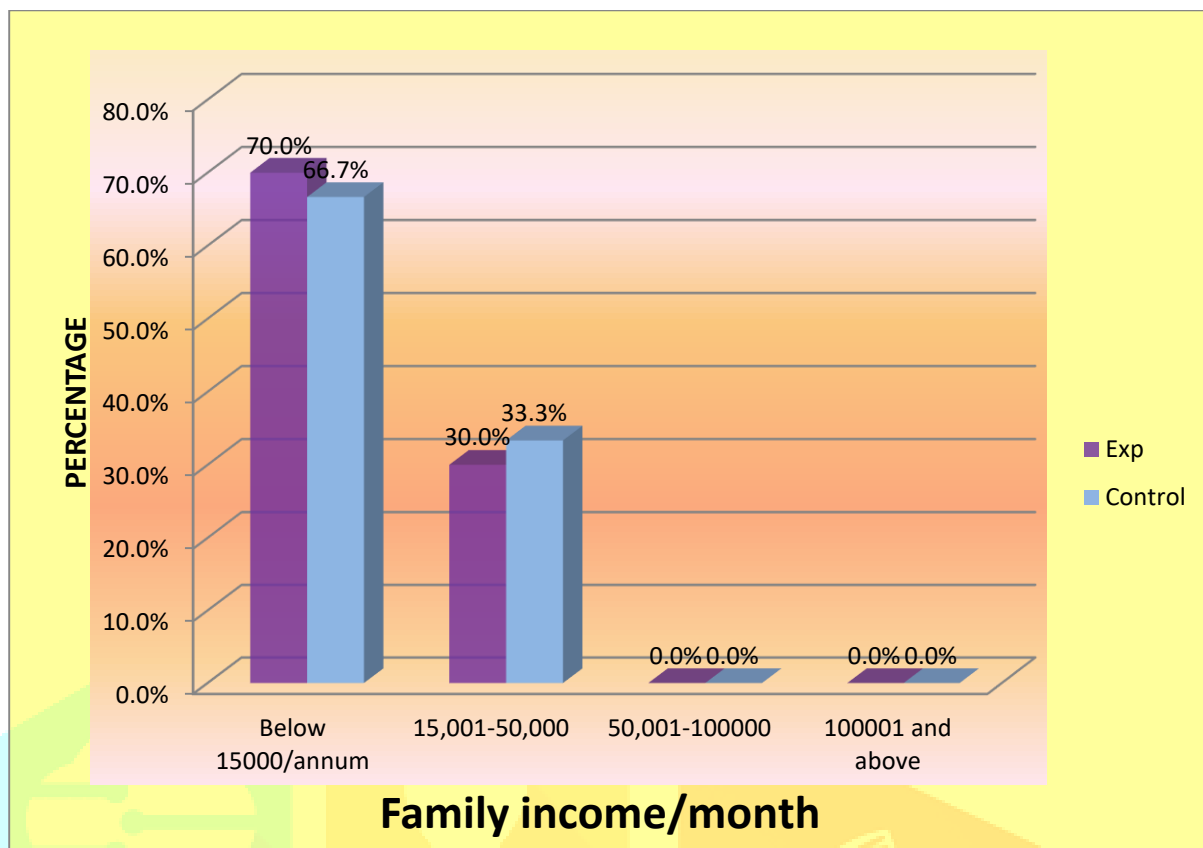


Figure VII: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE FAMILY INCOME/MONTH.

The above table shows 20(66.7%) of primi mothers family income is below 15000/annum, 10(33.3%) family income is 15,001-50,000 and none's family income is 50,001-100000 Or 100001 above in control group, where as 21(70.0%) of primi mothers family income is below 15000/annum, 9(30.0%) family income is 15,0001-50,000 and none's family income is 50,001- 100000 Or 100001 above in experimental group.

**TABLE I (f): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO GESTATIONAL AGE.**



n = (30+30)

BACKGROUD VARIABLE	CONTROL		EXPERIMENTAL	
	frequency	Percentage %	frequency	Percentage %
<b>GESTATIONAL AGE</b>				
<b>36-37</b>	8	26.7	5	16.7
<b>38-39</b>	20	66.7	25	83.3
<b>40-41</b>	2	6.7	0	0.0
<b>TOTAL</b>	30	100	30	100

The above table shows 20(66.7%) of primi mothers gestational age is 38-39, 8(26.7%) primi mothers gestational age is 36-37, 2(6.7%) primi mothers gestational age is 40-41 in control group, where as 25(83.3%) primi mothers gestational age is 38-39 , 5(16.7%) primi mothers gestational age is 36-37 and none's gestational age is 40-41 in experimental group.

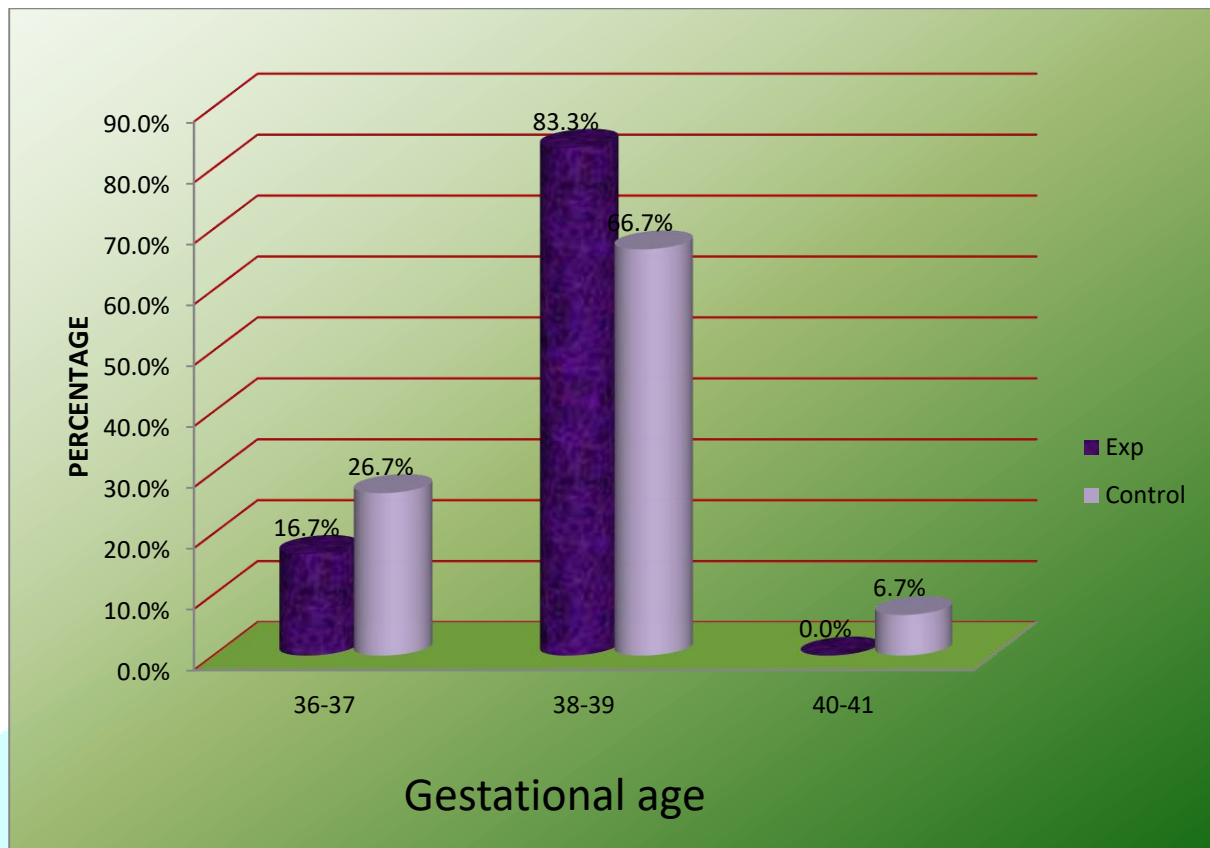


Figure VIII: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE GESTATIONAL AGE

The above figure shows 20(66.7%) of primi mothers gestational age is 38-39, 8(26.7%) primi mothers gestational age is 36-37, 2(6.7%) primi mothers gestational age is 40-41 in control group, where as 25(83.3%) primi mothers gestational age is 38-39 , 5(16.7%) primi mothers gestational age is 36-37 and none's gestational age is 40-41 in experimental group.

**TABLE I (g): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO PRIOR INFORMATION ON LABOUR PROCESS.**

n = (30+30)

BACKGROUD VARIABLE	CONTROL		EXPERIMENTAL	
	FREQUENCY	PERCENTAGE%	FREQUENCY	PERCENTAGE%
<b>PRIOR INFORMATION ON LABOUR PROCESS</b>				
<b>YES</b>	3	10.0	4	13.3
<b>NO</b>	27	90.0	26	86.7
<b>TOTAL</b>	30	100	30	100

The above table shows majority of primigravida mothers 3(10.0%) from control group having prior information on labour process while majority 4(13.3%)from experimental group having prior information on labour process.

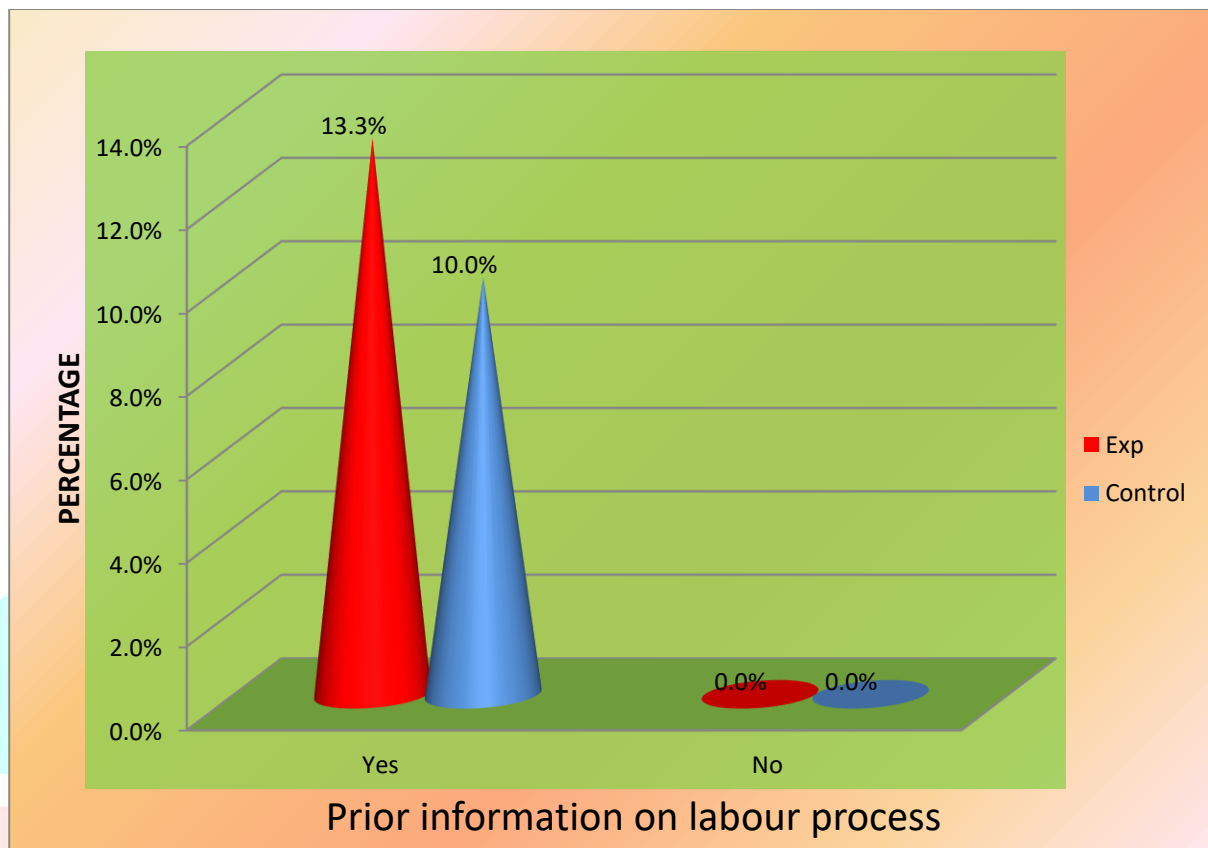


Figure IX: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE PRIOR INFORMATION ON LABOUR PROCESS

The above figure shows majority of primigravida mothers 3(10.0%) from control group having prior information on labour process while majority 4(13.3%)from experimental group having prior information on labour process.

**TABLE I (h): FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS WHO ARE IN FIRST STAGE OF LABOUR ACCORDING TO PRECONCEIVED FEAR ABOUT LABOUR PROCESS.**

n = (30+30)

BACKGROUND VARIABLE	CONTROL		EXPERIMENTAL	
	FEQUENCY	PERCENTAGE%	FREQUENCY	PERCENTAGE%
PRECONCEIVED FEAR ABOUT LABOUR				
YES	30	100.0	30	100.0
NO	0	0.0	0	0.0

The above table shows that (100.0%) primi mothers have preconceived fear about labor process in both control and experimental group.



Figure X: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE PRECONCIEVED FEAR ABOUT LABOR

The above figure shows that (100.0%) primi mothers have preconceived fear about labour process in both control and experimental group.

## SECTION II: ASSESS LEVEL OF PAIN AMONG PRIMI MOTHERS IN CONTROL AND EXPERIMENTAL GROUPS.

**TABLEII:** frequency and percentage distribution of primigravida mothers in control group and experimental group according to pre pain level

n = (30+30)

LEVEL OF PAIN	CONTROL		EXPERIMENTAL	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
MILD	0	0.0	0	0.0
MODERATE	23	76.7	26	86.7
SEVERE	7	23.3	4	13.3
TOTAL	30	100	30	100

**Frequency and percentage distribution of patients in control and experimental group according to pre test pain level.**

Above table shows that majority of primigravida mothers 23(76.7%) from control group having moderate pain while majority 26(86.7%) were from experimental group.

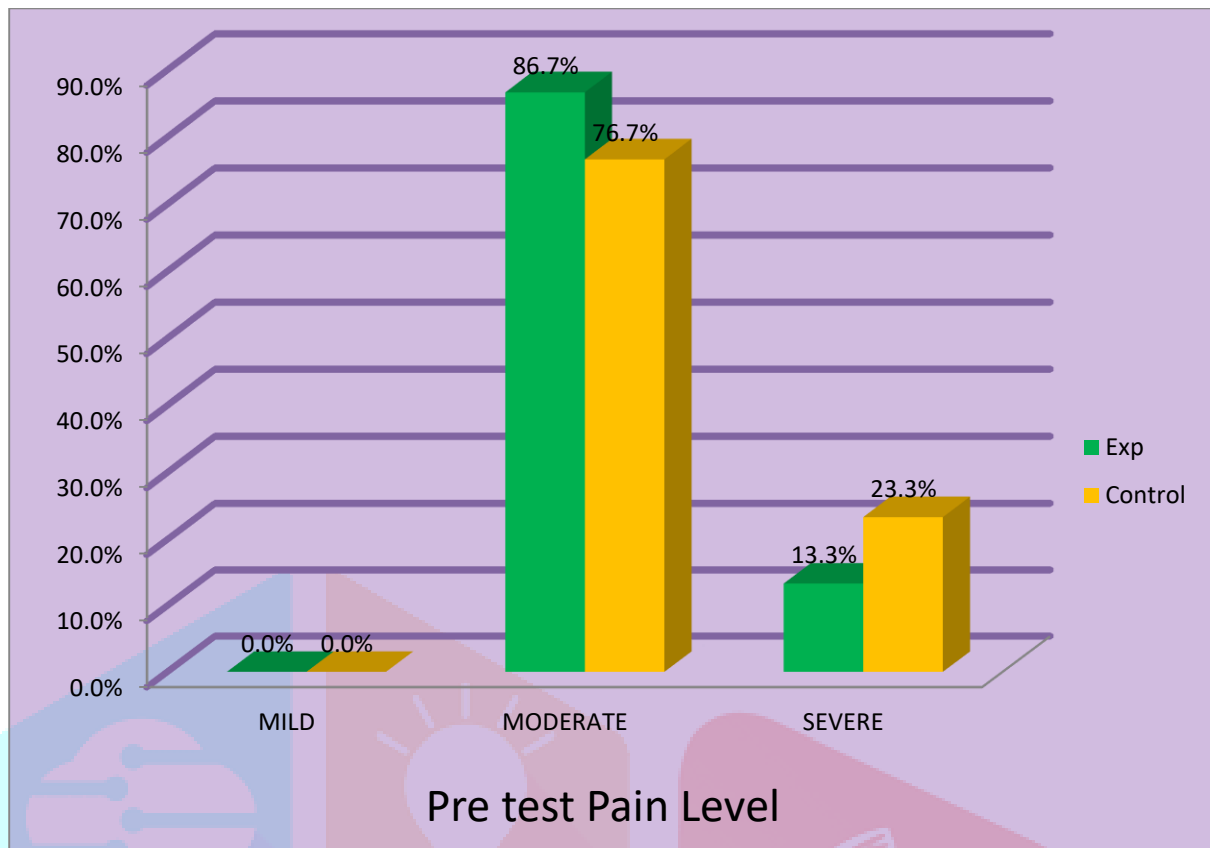


Figure XI: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE PRETEST PAIN LEVEL

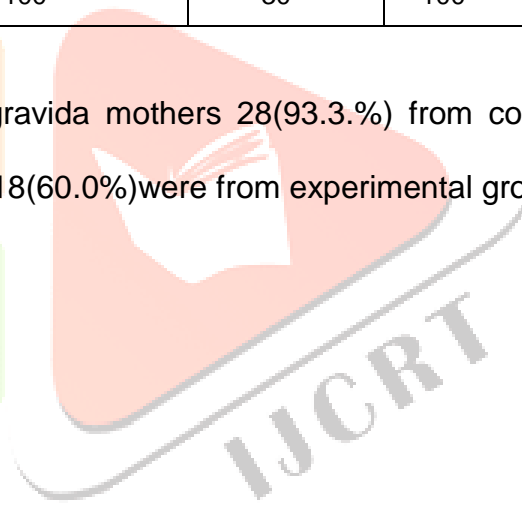
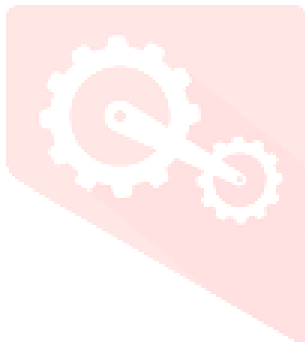


**Table III frequency and percentage distribution of primigravida mothers in control group and experimental group according to post test pain level**

n = (30+30)

LEVEL OF PAIN	CONTROL		EXPERIMENTAL	
	FREQUENCY	PERCENTAGE %	FREQUENCY	PERCENTAGE %
MILD	2	6.7	12	40.0
MODERATE	28	93.3	18	60.0
SEVERE	0	0.0	0	0.0
TOTAL	30	100	30	100

Above table shows that majority of primigravida mothers 28(93.3%) from control group having moderate pain while majority 18(60.0%)were from experimental group.



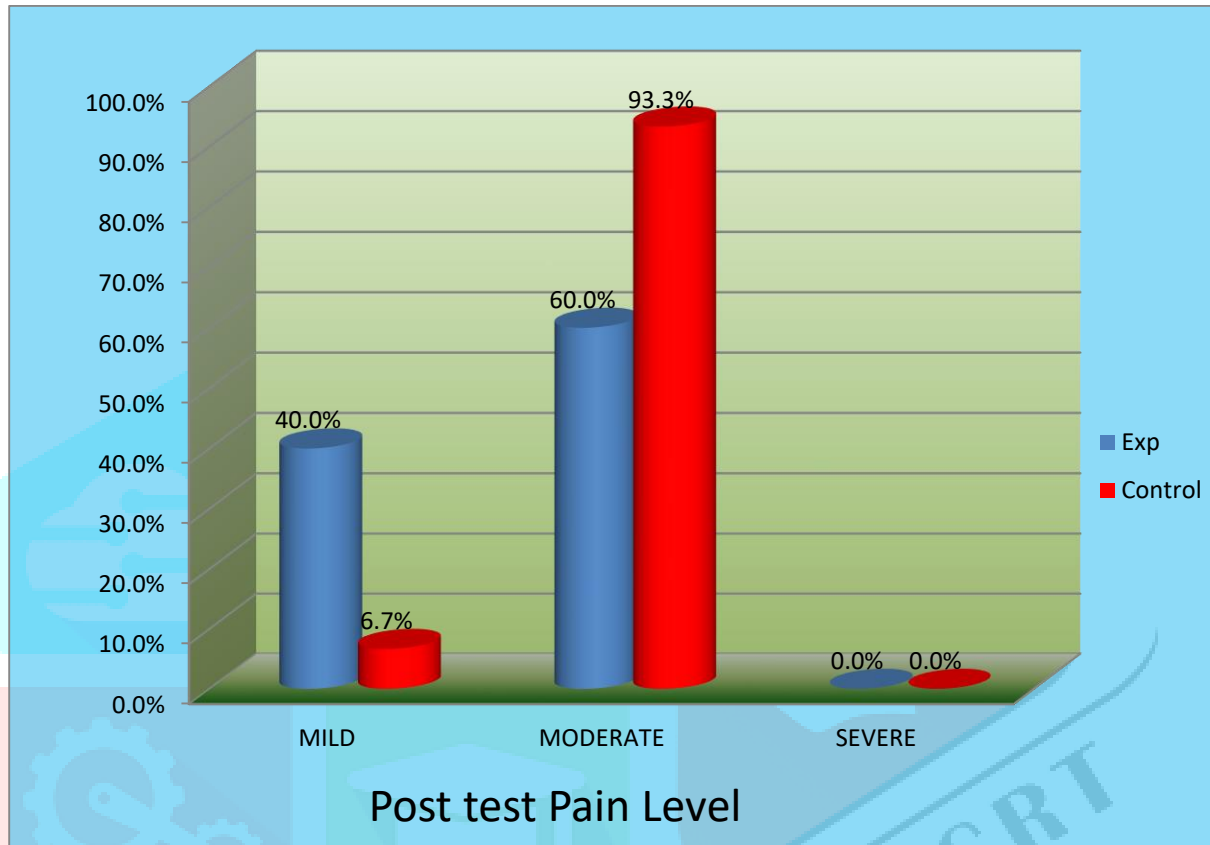


Figure XII: PERCENTAGE DISTRIBUTION OF PRIMI MOTHERS ACCORDING TO THE POST TEST PAIN LEVEL

**Section- III: Effectiveness of foot reflexology in reduction of labour pain among primigravida mothers in experimental group**

n = (30+30)

**Table IV**

PAIN LEVELS	EXPERIMENTAL			
	PRETEST		POSTTEST	
	Frequency	Percentage (%)	Frequency	Percentage (%)
a) Mild	0	0.0	12	40.0
b) Moderate	26	86.7	18	60.0
c) Severe	4	13.3	0	0.0
<b>TOTAL</b>	<b>30</b>	<b>100</b>	<b>30</b>	<b>100</b>

GROUP		t	df	P value
Exp	Pre test Pain - Post test Pain	11.059	29	2.045

The above table it shows that t-test calculated value 11.059 and  $p=0.00 < 0.05$ , at 29 degrees of freedom at 5% level of significance table value is 2.045, Here t-test calculated value is greater than table value hence pre pain and post pain scores in experimental group is significant.

## Paired T –test: Mean and SD of patients in experimental group according to pre test and post test pain score.

Table V:

test		Mean	N	Std. Deviation	Std. Error Mean
Exp	Pre score pain	5.45	30	.50315	.09186
	Post Pain score	3.83	30	.88353	.16131

GROUP		t	df	P value
Exp	Pre test Pain - Post test Pain	11.059	29	2.045

The above table it shows that t-test calculated value 11.059 and  $p=0.00 < 0.05$ , at 29 degrees of freedom at 5% level of significance table value is 2.045, Here t-test calculated value is greater than table value hence pre pain and post pain scores in experimental group is significant. Hence the null hypothesis ( $H_0$ ) is rejected and research hypothesis is accepted. Saying that the pain level is significantly less.

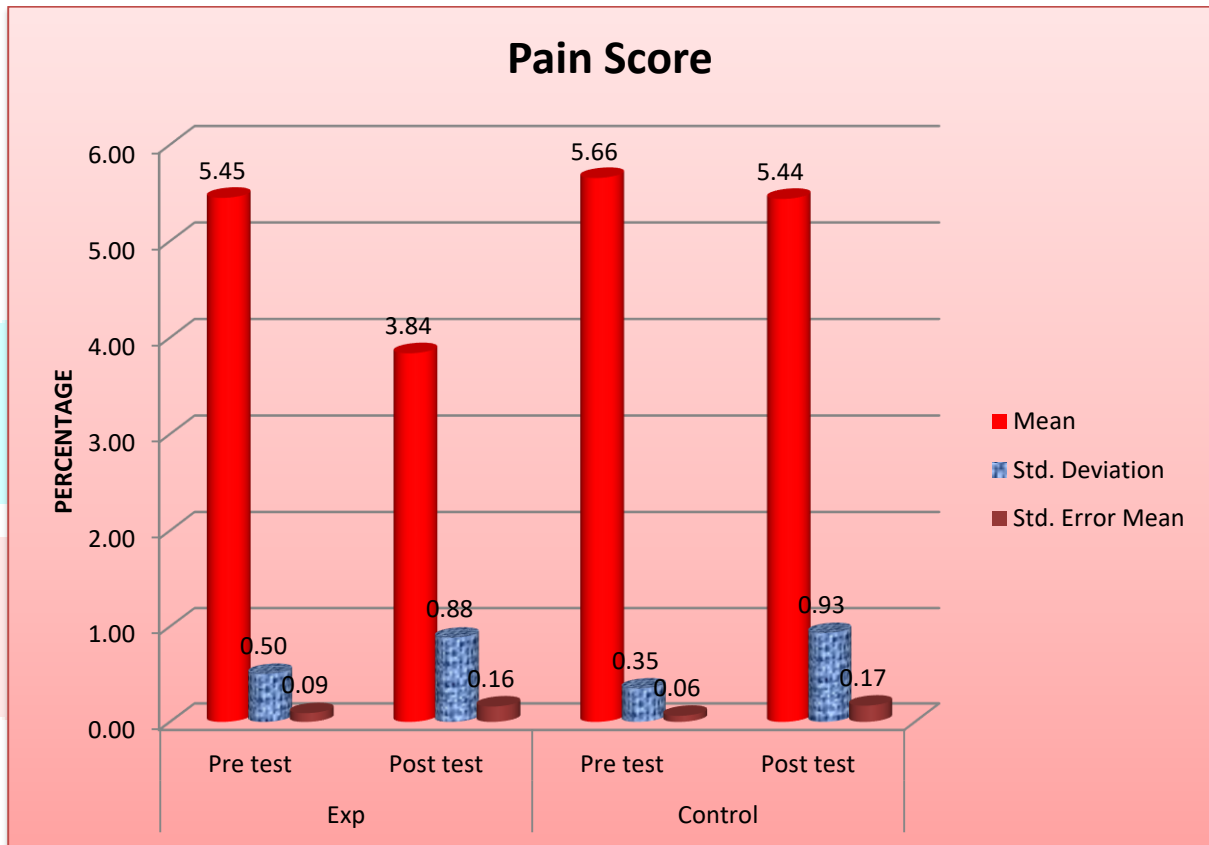


Fig XIII T –test: Mean and SD of patients in experimental group according to pre test and post test pain score.

**ASSOCIATION BETWEEN POST TEST PAIN LEVELS AND SELECTED DEMOGRAPHIC VARIABLES IN CONTROL AND EXPERIMENTAL GROUP AMONG PRIMI MOTHERS.**

TABLE

V

S.NO	CONTROL GROUP					EXPERIMENTAL GROUP			
	DEMOGRAPHIC VARIABLES	CHI SQUARE	DF	TABLE VALUE	LEVEL OF SIGNIFICANCE	CHI-SQUARE	DF	TABLE VALUE	LEVEL OF SIGNIFICANCE
1.	AGE	1.429	3	7.815	NS	.398	2	5.991	NS
2.	EDUCATION	2.532	2	5.991	NS	.234	2	5.991	NS
3.	RELIGION	2.802	2	5.991	NS	1.052	2	5.991	NS
4.	OCCUPATION	.918	2	5.991	NS	2.738	1	3.841	NS
5.	FAMILY INCOME/MONTH	.268	1	3.841	NS	.106	1	3.841	NS
6.	GESTATIONAL AGE	.670	2	5.991	NS	4.000	1	3.841	S
7.	PRIOR INFORMATION ON LABOUR PROCESS	.238	1	3.841	NS	.192	1	3.841	NS
8.	PRECONCEIVED FEAR ABOUT LABOUR PROCESS								

From the table it shows that t-test calculated value .398 and  $p=.820 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in experimental group in association with age is not significant.

From the table it shows that t-test calculated value 1.429 and  $p=0.699 > 0.05$ , at 3 degrees of freedom at 5% level of significance table value is 7.815, Here t-test calculated value is lesser than table value hence pain levels in control group in association with age is not significant.

From the table it shows that t-test calculated value .234 and  $p=.890 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in experimental group in association with education is not significant.

From the table it shows that t-test calculated value 2.532 and  $p=0.699 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in control group in association with education is not significant.

From the table it shows that t-test calculated value 1.052 and  $p=.591 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test

calculated value is lesser than table value hence pain levels in experimental group in association with religion is not significant.

From the table it shows that t-test calculated value 2.802 and  $p=.246 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in control group in association with religion is not significant.

From the table it shows that t-test calculated value 2.738 and  $p=.098 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in experimental group in association with occupation is not significant.

From the table it shows that t-test calculated value 2.802 and  $p=.246 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in control group in association with occupation is not significant

From the table it shows that t-test calculated value .106 and  $p=.745 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test calculated value is lesser than table value hence pain levels in experimental group in association with family income is not significant.

From the table it shows that t-test calculated value .268 and  $p=.605 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test



calculated value is lesser than table value hence pain levels in control group in association with family income is not significant

From the table it shows that t-test calculated value 4.000 and  $p = .046 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test calculated value is higher than table value hence pain levels in experimental group in association gestational age is significant.

From the table it shows that t-test calculated value .670 and  $p = .715 > 0.05$ , at 2 degrees of freedom at 5% level of significance table value is 5.991, Here t-test calculated value is lesser than table value hence pain levels in control group in association with gestational is not significant.

From the table it shows that t-test calculated value .192 and  $p = .661 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test calculated value is lesser than table value hence pain levels in experimental group in association with prior information about labour process is not significant.

From the table it shows that t-test calculated value .238 and  $p = .626 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test calculated value is lesser than table value hence pain levels in control group in association with prior information about labour process is not significant.

## Chapter – V

### SUMMARY AND CONCLUSION

This chapter deals with the summary of the study, its findings and conclusion. Implications of foot reflexology for assessing the pain among women during the first stage of labour. The limitations are put forward and recommendations suggested.

#### **SUMMARY OF THE STUDY**

Foot reflexology is effective method to relieve pain during first stage of labour.

In labour foot reflexology eases pain and reduces anxiety in the first stage of labour. It may help to cope with contractions by making them feel less intense and more manageable.

The primary aim of the study was to evaluate the effectiveness of foot reflexology in relieving pain during first stage of labour among primigravida mothers.

#### **OBJECTIVES OF THE STUDY:**

1. To assess the level of pain during first stage of labour among primigravida mothers before foot reflexology in both experimental and control group.
2. To compare the effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in experimental group.
3. To compare the effectiveness of foot reflexology among primigravida mothers during first stage of labour between experimental and control group.
4. To find out the association between effectiveness of foot reflexology on level of pain during first stage of labour among primigravida mothers in control and experimental group with selected demographic variables.

## ASSUMPTIONS

This study assumes that...

1. Foot reflexology promotes relaxation, thereby increasing the compliance of primigravida mothers during labor.
2. Foot reflexology helps to reduce level of labour pain among primigravida mothers.

## HYPOTHESIS:

- **H<sub>A1</sub>** - There is a significant reduction in the level of labour pain during first stage of labour with foot reflexology.
- **H<sub>A2</sub>** - There is a significant association between the effectiveness of foot reflexology with selected demographic variables.
- **H<sub>A0</sub>** - There is no significant association between the effectiveness of foot reflexology with selected demographic variables.

## CONCEPTUAL FRAMEWORK:

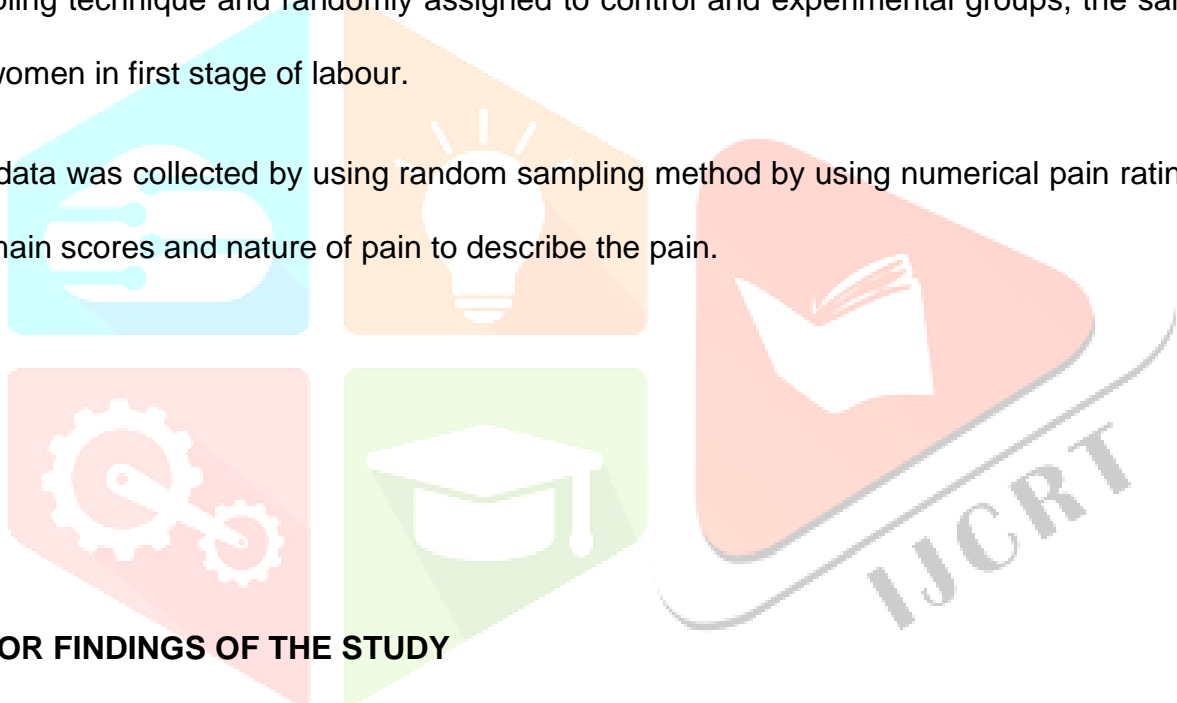
The conceptual frame work adopted for the study was based on Lydia E.Hall model [1963] which views on basis of nursing care. The present is aimed to assess the effectiveness of foot reflexology in relieving pain during first stage of labour. According to Lydia E.Hall model an individual can be conceptualized in three domains: the body (care), the illness (cure), and the person (core). The mother has to know the therapeutic use of self during labour.

A review of literature help the investigator to develop the conceptual framework, data collection tool to assess the effectiveness of foot reflexology among primigravida mothers in relieving pain during first stage of labour.

An experimental research approach was adopted by using a true experimental design where pre-test post-test only design was used.

The researcher was initially trained with foot reflexology, sample size 60 with 30 each in experimental group and control group of foot reflexology, sample was selected by simple random sampling technique and randomly assigned to control and experimental groups, the sample were the women in first stage of labour.

The data was collected by using random sampling method by using numerical pain rating scale to get main scores and nature of pain to describe the pain.



## MAJOR FINDINGS OF THE STUDY

As the t-test has shown significant difference in pain intensity among both groups in foot reflexology.

OBJECTIVE 1: To assess the intensity of pain during first stage of labour among primigravida mothers before foot reflexology in both experimental and control group.

Majority of primi mothers 23(76.7%) from control group having moderate pain while majority 26(86.7%) from experimental group having moderate pain.

OBJECTIVE 2: To compare the effectiveness of foot reflexology among control group and experimental group.

Majority of primigravida mothers 26(86.7%) from experimental group having moderate pain in pre-test where as majority of primigravida mothers 18(60.0%) from experimental group having moderate pain in post-test. Percentage is less in experimental group as compared to control group.

OBJECTIVE 3: To find out the association between the effectiveness of foot reflexology with selected demographic variables.

t-test calculated value 4.000 and  $p = .046 > 0.05$ , at 1 degrees of freedom at 5% level of significance table value is 3.841, Here t-test calculated value is higher than table value hence pain levels in experimental group in association with gestational age is significant.

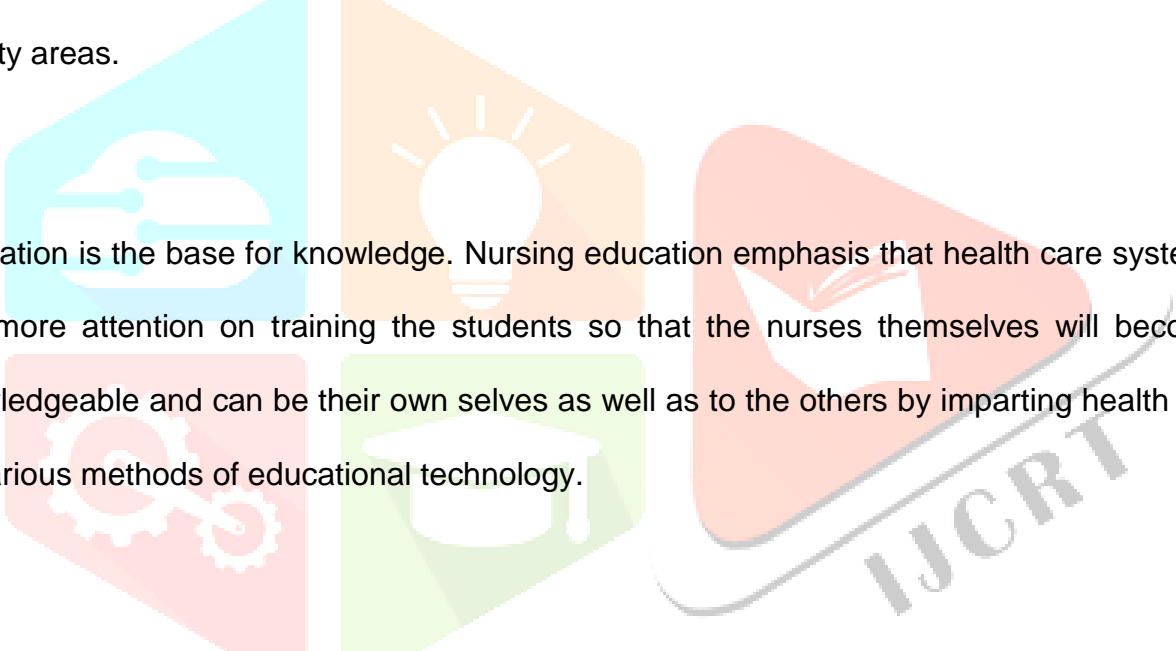
### **NURSING IMPLICATIONS:**

The study has implications in the area of

#### **Nursing practice**

To provide relief from the pain and making the patient comfortable is an important function of staff nurses who are working in labour room. Making this aspect of care more efficient nurses need

through knowledge regarding pain relief management [foot reflexology] and its application. The findings of the study make it evident that nurses should periodically update their knowledge. Regarding nursing practice several implications can be drawn from the present study, continuing education programme by using nursing person on foot reflexology techniques should be made ongoing process in the hospital area. There is a need for efforts by all nurses to increase the knowledge and awareness regarding indications, proper techniques, duration, action, and nurse's responsibility. Findings of the study can be used to prepare standardized protocol on foot reflexology to improve the cognitive, affective and psychomotor domains of the staff nurses working in hospital to impart the comprehensive nursing care. This can be done in collaboration with the nurse administrators by planning and conducting in-service education periodically and priority areas.



Education is the base for knowledge. Nursing education emphasis that health care system should pay more attention on training the students so that the nurses themselves will become more knowledgeable and can be their own selves as well as to the others by imparting health education by various methods of educational technology.

The curriculum may be responsible for imparting knowledge among nurses in administration of medication but nurse educators have the additional responsibility to update their knowledge. The existing nursing curriculum on pain relief management [foot reflexology] should be strengthened where as the students will be enhanced with the knowledge on pain relief management [foot reflexology] during first stage of labour.

### **Nursing administration**

Staff development programme in any organization is the prime responsibility of the nurse administrator. The availability of such staff development programme in nursing profession is

inadequate at present. Administration plays a major role in regulating and coordinating the laws. Institutions rendering services to the clients should review their policies and practices. Nursing administrator should co-ordinate and conduct various educational programmes in order to improve and update nurses knowledge on pain relief management [foot reflexology] during first stage of labour.

### **Nursing Research**

Nurses need to be vigilant when giving care to the patient. The scope of interventions for a wide variety of disease conditions and the research basis for practice are continuing to expand in phenomenal rate. Nurses need to be actively engaged in all phases of the research process, to address ongoing questions of interest to continually improve client care. There is a need for extensive and intensive research in this area so that strategies for educating nurses on the reduction of pain during first stage of labour with different interventions can be taken up. The nurse researcher should conduct the research on selected pain relieving methods which provides more scientific data and adds more scientific body of information in administration, indication, contraindication, side effect and nursing care

### **In community**

The health care delivery system in India is imbalanced only 30% of healths facilities were used by 70% of the people, sophisticated health interventions are not available in the communities because of its cost as well as complications too. On the contrary non invasive, non-pharmacological measures are used example foot reflexology for pain relief in labour can be practiced in the community settings as well. In order to alleviate suffering and have a good experience of giving birth to a child. Its action is very simple. Research study should put in to the practice of communities, to make use of the manpower and community resources.

## Limitations:

The study is limited to

- Mothers who are willing to participate in the study.
- Mothers who are not in high risk.
- Mothers who are in first stage of labour.
- Mothers admitted to maternity hospital koti.

## Recommendations:

On the basis of the study that has been conducted certain suggestions are given for further studies:

1. Similar study can be replicated on a large sample to generalize the findings
2. A descriptive study can be conducted to assess the knowledge among staff nurses on foot reflexology in relieving pain during first stage of labour.
3. An experimental study can be conducted to assess the effectiveness of other complementary and alternative therapies on pain management.
4. A similar study can be done by assessing knowledge and practice.
5. A study can be conducted to assess the effectiveness of a teaching protocol in terms of knowledge, practice and attitude of nursing personnel.

## CONCLUSION



The study was conducted to assess the effectiveness of foot reflexology during first stage of labour among primigravida mothers at koti maternity hospital Hyderabad. In the present study, 60 primi mothers were selected using simple random sampling technique.

Research approach adopted in the present study is true experimental approach[ pre-test post-test only design ]. The study was conducted with a view to measure the effectiveness of foot reflexology on both the group [experimental and control group] by numerical pain rating scale and nature of among primigravida mothers during first stage of labour.

## EPILOGUE

This chapter dealt with major findings of the study, conclusion, implications for nursing practice, nursing education, nursing administration, in community and nursing research based on the study, it clarifies the limitations of the study and recommendations for future research.

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