

**EFFECTIVENESS OF SHIATSU MASSAGE UPON LABOUR PAIN AND
COPING AMONG PARTURIENT MOTHERS**

By

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

APRIL 2014

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DECLARATION

I hereby declare that the present dissertation entitled “**Effectiveness of Shiatsu Massage upon labour pain and coping among parturient mothers**” is the outcome of the original research work undertaken and carried out by me under the guidance of **Dr. Latha Venkatesan.**, M.Sc (N)., M.Phil(N)., Ph.D(N), Principal, Apollo College of Nursing and **Mrs.Lizy Sonia.A.**, M.Sc (N).,Ph.D (N).,Vice principal and professor, Head of the department in Medical Surgical Nursing, Apollo College of Nursing, Chennai.

I also declare that the material of this has not formed in anyway, the basis for the award of any degree or diploma in this University or any other Universities.

M.Sc (N) II Year

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“Feeling gratitude and not expressing it, is like wrapping a present
and not giving it”

- William Arthur

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SYNOPSIS

An Experimental Study to Assess the Effectiveness of Shiatsu Massage on Labour Pain and Coping among Parturient Mothers in First Stage of Labour Admitted at Selected Hospital, Chennai.

Objectives of the Study

The objectives of the study are

1. To assess the level of Labour pain, coping and feto maternal parameters before and after shiatsu massage among Control and Experimental group of parturient mothers in active phase of first stage of Labour.
2. To compare the level of Labour pain, coping and feto maternal parameters among Control and Experimental group of parturient mothers after Shiatsu Massage.
3. To determine the level of satisfaction upon Shiatsu Massage among Experimental group of parturient mothers.
4. To find out the association between the selected demographic variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.
5. To find out the association between the selected Obstetric variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.

The conceptual framework setup for the study was Swanson's Caring theory. The variables of the study were Shiatsu Massage, Labour pain and Coping. Null hypotheses were formulated. An extensive review of literature was made based on the opinions of the experts. An experimental study of pre-test and post-test design was used. The study included 60 parturient mothers who were selected by Simple random sampling. The study was conducted at Andhra Mahila Sabha Hospitals, Chennai.

Demographic variable Proforma, Obstetric variable proforma, Visual Pain Analogue scale, Pain Coping Scale, Rating Scale on Satisfaction of Shiatsu Massage and Modified WHO Partograph were the various tools used by the researcher. The validity was obtained from various experts and reliability was established. The main study was conducted after the pilot study.

The level of Labour pain, Coping and Feto-maternal parameters were assessed for the Control and Experimental group of parturient mothers. The Shiatsu Massage was provided on UB30 of the Sacro – meridian region for ten minutes for every two hours in the Experimental group. Then the level of labour pain, coping and feto-maternal parameters were assessed 3 times with 2 hours of interval for both the groups. The level of satisfaction on Shiatsu Massage was assessed among the experimental group of parturient mothers after the labour. The data obtained were analyzed using Descriptive and Inferential statistics. Descriptive Statistics such as Mean, Median and Standard deviation. Inferential statistics such as Chi-Square and Independent “t” test.

Major Findings of the Study

- Majority of the parturient mothers in both the control and experimental group were in the age group of 21 -25 years (53.33%, 60%), resided in sub urban areas (53.33%, 53.33%), they belong to nuclear family (73.3%, 86.66%) and none of them received information regarding Shiatsu massage previously.
- Majority of the mothers were between 39 – 40 weeks of gestation (43.33%, 63.33%) during delivery. All of them attended more than four antenatal visits and APGAR score of newborn at birth were between 7-10.
- Majority of the women were able to do 3 R's (Rhythm, Ritual and Relaxation) (90%, 86.7%) before therapy and significant percentage of them were able to do 3 R's (6.66%, 40%) after therapy in control and experimental group respectively.
- The mean pain level was high after therapy (M=5.8, SD=0.88) compared to before therapy (M=4, S.D=1.17) in control group whereas the mean pain level was low (M=3.8, SD=0.60) after therapy compared to before therapy (M=3.8, SD=0.60) in experimental group. Hence null hypothesis H_0 1 was rejected.
- The mean coping level was low after therapy (M=2.00, SD=0.87) in comparison with before therapy (M=4.2, SD=0.94) in control group and the mean coping level was high after therapy (M=4.3, SD=0.69) in comparison with before therapy (M=3.3, SD=0.60) in experimental group. Hence null hypothesis H_0 1 was rejected.
- The cervical dilatation and uterine contraction were increased after therapy in comparison with before therapy were (M=4, SD=0; M=6, SD=0), (M=2.5,SD=0.50; M=3.9, SD=0.11) and (M=4,SD=0; M=6, SD=0), (M=3,

SD=0; M=4, SD=0) in Experimental and Control and group of parturient mothers which shows that Shiatsu massage was not having any adverse effects over uterine contractions and cervical dilatation.

- The majority of the participants in Experimental group were highly satisfied (86.66%) with the Shiatsu Massage and none of them reported dissatisfaction towards the intervention. In both the Control and Experimental group of parturient mothers, no significant association was found between Demographic variables and the level of labour pain perception which proves that Demographic variables has no influence over the pain perception. Hence some type of pain relief methods are essential for the women to reduce the pain.
- Similarly no association was found between Demographic variables and the level of coping in both the Control and Experimental group of parturient mothers which means that Demographic variables may not influence the coping level of the women and hence it is the responsibility of the nurse midwife to help the mother in coping with the labour pain.
- There was no significant association between Obstetric variables such as gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second, third stage of labour and APGAR score of newborn at birth with the level of labour pain after Shiatsu Massage in the control and experimental group. Hence null hypothesis Ho3 was retained.
- There was no significant association between Obstetric variables such as gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second ,third stage of labour and APGAR score of

newborn at birth with the level of coping after Shiatsu Massage in the control and experimental group. Hence null hypothesis H_03 was retained

The above study findings revealed that Shiatsu Massage used by the researcher to reduce the level of pain perception in parturient mothers was found to be effective.

Recommendations

- The same study can be conducted with large number of samples.
- A comparison can be made between primi and multigravid women.
- A comparison can be made with different stages of labour.
- The same study can be conducted at different setting.
- A comparison can be made between different types of alternative and complementary therapies.

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CHAPTER I

INTRODUCTION

“Being pregnant and giving birth are like crossing a narrow bridge. People can accompany you to the bridge. They can greet you on the other side.

But only you can walk that bridge alone.”

– African Proverb

Background of the study

Pregnancy is the privilege of experiencing God’s miracle work on earth. A child is the greatest gift that our lives can bestow. It brings the most exquisite joy that we will ever know. Childbirth is an experience in a woman’s life that holds the power to transform her forever. A mother's joy begins when new life is stirring inside, when a tiny heartbeat is heard for the very first time, and a playful kick reminds her that she is never alone.

Concerns about the discomfort and pain that accompany Labour and birth can dominate a pregnant woman’s or couple’s thoughts about childbirth during pregnancy and particularly as the baby’s due date approaches. Providing information during prenatal visits about the numerous methods of comfort promotion and pain Control measures available to women can help allay some of these fears.

Labour pain is an unavoidable and unpleasant experience a mother has to undergo during the time of delivery. Pain management during the time of Labour

is very necessary to make the Labour process easier and a pleasant experience for the mother.

There are many pharmacological and non pharmacological methods for pain management in Labour used in current practices, some of the pharmacological method are epidural analgesia, anaesthetic sprays, Entonox and non pharmacological methods such as music therapy, aroma therapy, acupressure, foot reflexology, yoga therapy, hydro therapy. One of the methods of pain management is Shiatsu Massage therapy for reduction of Labour pain. Anything that enables women to have more confidence in their bodies is vital in these days of hi-tech living and hi-tech birth. There is now an increasing acceptance of complementary therapies in midwifery.

Shiatsu is in essence very simple. It is a particular way of touching a body. It is similar in some ways to massage, aromatherapy and reflexology, yet it is also profoundly different, as it draws on the Eastern traditions of yin/yang, meridians, elements and Zen. It includes work with muscles, ligaments and skin, releasing physical tension and promoting relaxation. It also works with the energetic pathways (meridians) and encompasses work on the emotions, the psyche and the spirit. It is a form of communication-reaching beyond the physical and tangible form to touch the essence of life itself, which is invisible. It is based on similar principles to acupuncture, but rather than needles, the practitioner uses thumbs and palm pressure to balance the flow of energy in the meridians, in order to promote well being, support good health and prevent illness. Shiatsu also includes gentle stretches and rotations of the limbs and joints.

Shiatsu similar to acupressure, uses finger pressure, manipulations and stretches, along Traditional Chinese Medicine meridians. Shiatsu is popular in Europe. Shiatsu is a form of complementary and alternative medicine (CAM) which primarily developed in Japan. Both Shiatsu and acupressure have roots in Chinese medicine and embrace the philosophy of Yin and Yang, the energy meridians, the five elements and the concept of Ki, or energy. This concept of affecting the balance of energy through acupoints on the meridians is similar to acupuncture where needles or heat is applied to acupoints. 'Shiatsu' literally means "finger pressure", but uses gentle manipulations, stretches and pressure using fingers, thumbs, elbows, knees and feet. Shiatsu incorporates acupressure, which is similar but applies pressure for longer on specific pressure points on meridians, following Traditional Chinese Medicine (TCM) theory. Shiatsu tends to cover the whole body. Shiatsu can be used during pregnancy which will help to alleviate all the sore muscles and Labour pain that come along with pregnancy.

Need for the study

Labour pain which is unavoidable and pain tolerance is different from one mother to another. Use of Shiatsu Massage therapy for Labour pain is a form of alternative and complementary therapy aimed to increase the energy level of the body by giving finger pressure over the meridian points. Shiatsu is a traditional form of Japanese massages therapy that has become well known the world over.

Shiatsu is a massage therapy that was usually done within the families, although there was and are professionals that are quite advanced in the therapy and can help alleviate more than just sore or tense muscles. Shiatsu employs the

use of gentle but firm pressure using the palms, fingers, and thumbs along meridians or pressure points all over the body. Thankfully, Shiatsu can be used during pregnancy to help alleviate all the sore muscles that come along with pregnancy.

According to Cheryl (1998) a pilot study was conducted with acupressure massage on women in Labour when given by their birth partners. The study revealed that it was effective and most of them had normal vaginal delivery and only a few had caesarean section.

Shiatsu can help to make the pregnant women become much more comfortable than they would have been otherwise. Shiatsu therapy can help to reduce back pain, leg pain, constipation, heartburn, water retention, and painful swelling in the extremities during pregnancy. A weekly Shiatsu Massage can mean the difference between being an uncomfortable pregnant person and being quite comfortable and really enjoy their pregnancy. Many Shiatsu therapists also have a lot of luck in reducing the nausea often associated with the first months of pregnancy, which can be a lifesaver for those who suffer.

Promoting the comfort of the mother during Labour process is one of the important works of a midwife. Shiatsu Massage helps the mother to cope with the pain during Labour without any invasive procedures. Midwives can provide Shiatsu Massage to the parturient mother with proper training and supervision. Hence the researcher felt the importance to assess the effectiveness of Shiatsu Massage upon Labour pain in parturient mothers in first stage of Labour.

Statement of the Problem

An Experimental Study to Assess the Effectiveness of Shiatsu Massage on Labour Pain and Coping Among Parturient Mothers in First Stage of Labour Admitted at Selected Hospital, Chennai.

Objectives of the Study

The objectives of the study were

1. To assess the level of Labour pain, coping and feto maternal parameters before and after Shiatsu Massage among Control and Experimental group of parturient mothers in active phase of first stage of Labour.
2. To compare the level of Labour pain, coping and feto maternal parameters among Control and Experimental group of parturient mothers after Shiatsu Massage.
3. To determine the level of satisfaction upon Shiatsu Massage among Experimental group of parturient mothers
4. To find out the association between the selected Demographic variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.
5. To find out the association between the selected Obstetric variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.

Operational Definitions

Effectiveness

In this study effectiveness refers to the outcome of Shiatsu Massage as measured in terms of level of pain, coping and feto maternal parameters of parturient mothers in first stage of Labour.

Shiatsu Massage

In this study it means application of finger pressure on the UB30 sacral meridian region over a period of 10 minutes for every two hours to reduce the Labour pain.

Labour pain

According to this study it is the pain experienced by the parturient mothers during the first stage of Labour as measured by numeric pain intensity scale.

Coping

According to this study it is the level of coping adopted by the parturient mothers during the first stage of Labour as measured by coping scale.

Feto – maternal parameters

The mothers pulse rate, blood pressure, cervical dilatation, frequency and duration of uterine contractions, duration of Labour and the fetal heart rate were the feto maternal parameters assessed in Control and Experimental group before and after Shiatsu Massage.

Parturient mothers

In this study parturient mother refers to the pregnant mothers admitted during the active phase of first stage of Labour without any foeto – maternal complications.

First stage of Labour

According to this study first stage of Labour means the parturient mothers who were admitted with uterine contractions and 4 – 10 cm of cervical dilatation.

Satisfaction

In this study, satisfaction refers to the feeling of gratification attained or achieved by parturient mothers with Shiatsu Massage as measured by self rating scale for satisfaction.

Assumptions

The study assumes that,

- Pain in Labour is universal and progressive in nature
- Majority of women need some sort of pain relief during child birth
- Shiatsu Massage stimulates the energy flow thus reducing the pain perception
- Meeting the comfort needs of the mothers during Labour is an important function of the Midwife

Null Hypotheses

- Ho1** There will be no significant relationship between the level of Labour pain, coping and Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.
- Ho2** There will be no significant association between selected Demographic variables and level of Labour pain, coping before and after Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.
- Ho3** There will be no significant association between selected Obstetric variables and level of Labour pain and coping before and after Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.

Delimitations

The study is limited to parturient mothers who were

- willing to participate.
- in first stage of Labour having contractions with 4 – 10cm of cervical dilatation.
- able to understand and speak Tamil or English.
- admitted for Labour process during data collection period.
- not having any complication during pregnancy.

Conceptual Framework

Conceptual framework is an interrelated concepts or abstractions that are assembled together in some rational schemes by virtue of their relevance to a common theme (Polit, 2010).

Swanson's caring theory was used as conceptual framework for this study to describe the relationship and focus of the study which includes knowing, being with, doing for, enabling and maintaining belief through which interaction can be improved and maintained between the Nurse researcher and the parturient mothers.

Swanson's theory was used in this study as it explains about knowing of the parturient mothers by the nurse researcher, to be with the women during Labour, to do interventions for the mother as needed, to enable the mother to maintain her health and to maintain belief of the parturient mothers. The components of this theory are as follows.

Knowing

This is a striving to understand an event as it has meaning in the life of the other. Here the need of the parturient mothers which is difficulty in coping with pain is understood by the researcher.

Being with

Being with means being emotionally present with the other. Thus the nurse researcher was emotionally present with the mother and provided psychological support.

Doing For

This refers to doing for the others as she would do for the self if it were all possible. Here the intervention of Shiatsu Massage is provided for the mother in order to help her in having decreased pain perception and increased coping with the Labour pain which she was unable to do on her own.

Enabling:

Enabling is facilitating the others to pass through life transitions and unfamiliar events. Here the researcher facilitates the parturient mother to cope with the pain and to pass through the active phase of Labour.

Maintaining Belief

This is sustaining faith in others capacity. Here the belief of achieving pain coping with Shiatsu Massage was maintained among the parturient mothers.

Feedback

The outcome may either be satisfactory or non – satisfactory in reducing pain perception. If the pain perception is reduced it means that the therapy was effective and if not reduced, it needs rearrangement of the therapy.

Researcher used this theory as it was found appropriate to assess the effectiveness of Shiatsu Massage during the active phase of first stage of Labour among the parturient mothers.

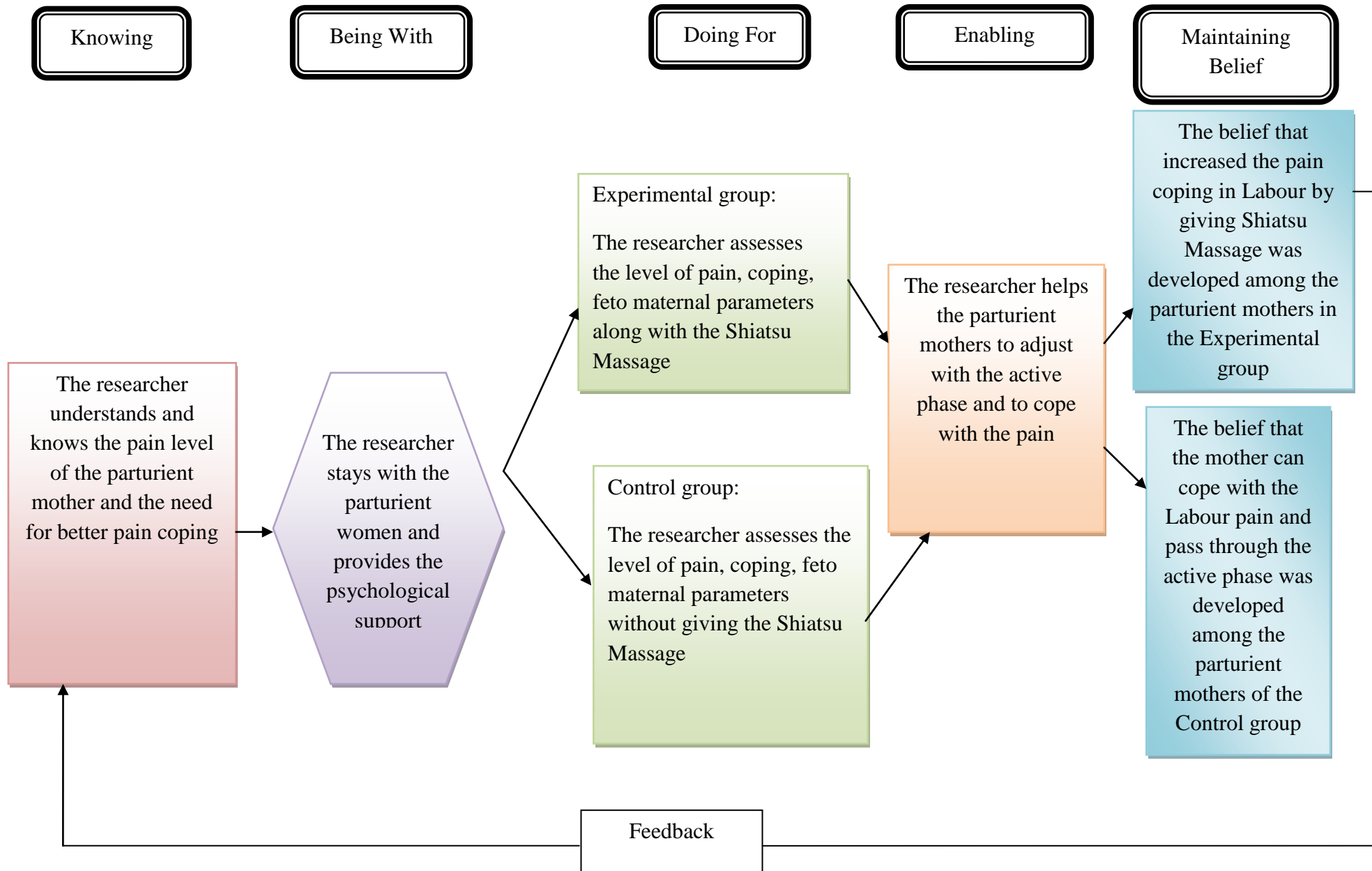


Fig 1. Conceptual Framework based on Swanson's Caring Theory

Projected Outcome

The study projects that Shiatsu Massage will be useful to reduce the level of Labour pain and increases coping among the parturient mothers.

Summary

This chapter has dealt with background of the study, need for the study, statement of the problem, objectives of the study, operational definitions, assumptions, null hypotheses, delimitations and conceptual framework.

Organization of the Report

Further aspects of the study are presented in the following chapters.

- Chapter – II :** Review of literature.
- Chapter –III :** Research methodology which includes research approach, research design, research setting, population, sampling, sampling criteria and development of analysis and research instrument.
- Chapter – IV :** Analysis and interpretation of data is presented in terms of Descriptive and Inferential statistics.
- Chapter – V :** Discussion.
- Chapter –VI :** Summary, Conclusion, Implications, Recommendations & Limitations are presented.

CHAPTER II

REVIEW OF LITERATURE

A literature involves the systematic identification, location, scrutiny and summary of written materials that contain information on the research problem (Polit and Hungler 2007).

Review of Literature

Conducting a literature review is a little bit doing a full-fledged study. According to nursing research by Polit (2008), 'Review of literature is a written summary of the state of evidence on a research problem.'

The review of literature in this chapter has been presented under the following headings.

- Literature related to non pharmacological methods of pain relief during Labour
- Literature related to pharmacological methods of pain relief in first stage of Labour
- Literature related to Shiatsu Massage on Labour pain. and coping

Literature related to Non Pharmacological Methods of Pain Relief during Labour

Hosseini et.al (2013) conducted a study to investigate the effects of music-therapy on Labour pain and progress in parturient primipara. The subjects of this research were 30 women, selected voluntarily and they were put in to Experimental and Control group. This research has been conducted in the form of

pre-test and post-test design. The Experimental group listened to a relaxing music for 30 minutes in each hour for a two-hour period and the Control group was not exposed to music during this period. The pain scales (verbal, numeric and visual) was used to measure pain. The independent variable in this research was relaxing music and the dependent variables were the pain level and delivery progress. Results show that Music-therapy during Labour increases tolerance to pain and decreases anxiety, it also increases parturition and uterus activity and there by shortens the Labour duration.

Hamidzadeh, et al (2012) conducted a randomized Controlled trial of 100 parturient women to evaluate the effects of LI4 acupressure on Labour pain in the first stage of Labour, on Labour duration, and on patient satisfaction. There were significant differences between the groups in subjective labor pain scores immediately and 20, 60, and 120 minutes after intervention. Active phase duration (3-4 cm dilatation to full dilatation) and second stage duration (full dilatation to birth) were shorter in the acupressure group. The women in the acupressure group reported greater satisfaction. LI4 acupressure was effective at decreasing pain and duration of Labour. The participants were satisfied, and no adverse effects were noted.

In 2009, Da Silva, et.al. Conducted a randomized Controlled trial evaluating the effect of immersion bath on Labour pain. 108 birthing women, with 54 women randomly assigned to each group. when the birthing women presented at 6-7 cm of cervical dilation, they were placed in an immersion bath for 60 minutes. Pain scores, using a behavioural pain scale and a numeric scale, were

recorded at two evaluation time points: at 6-7 cm of cervical dilation and 1 hour after the first pain score evaluation. The findings suggest that use of an immersion bath is a suitable alternative form of pain relief for women during Labour.

In 2007, Walker conducted a comparative study on the relationship between method of pain management during Labour and birth outcomes. She had provided narcotic analgesics along with antenatal education, breathing and relaxation techniques, and hydrotherapy have been found to promote relaxation, increase comfort, and provide pain relief in Labour. Narcotics analgesics have been found to decrease pain although the short and long-term effects of respiratory depression may increase the risk to the newborn.

In 2007 Burns et.al conducted a Randomized Controlled study on aromatherapy for pain management in Labour. Two hundred and fifty-one women randomized to aromatherapy and 262 Controls in a district general maternity unit in Italy. There was no significant difference for the following outcomes first stage augmentation and second stage augmentation. Significantly more babies born to Control participants were transferred to NICU. However pain perception was reduced in aromatherapy group for nulliparae.

Skiland et. al.(2002) conducted a Controlled single blind study with 210 healthy parturient in spontaneous, active Labour at term were randomly assigned to receive either real acupuncture or false acupuncture. Visual analog scale assessments were used to evaluate subjective effect on pain. The objective parameter of outcome was the need for analgesic medication in each group. The

results indicate that acupuncture reduces the experience of pain in Labour. Acupuncture may be useful for parturients who wish a non pharmacological analgesia without side-effects.

Cheryl et al. (2002) conducted a pilot study of acupressure massage on women in Labour when given by their birth partners which revealed that women whose partners had completed an acupressure massage workshop had a higher rate of spontaneous vaginal delivery and lower rate of caesarean section, and they averaged a much shorter length of Labour. The project also found that women largely felt that acupressure delayed their need for other analgesia and that it was positively helpful in Labour, and both women and birth partners felt much higher levels of birth satisfaction.

Literature Related to Pharmacological Methods of Pain Relief during Labour

Tveit To et.al in 2013 conducted a study by collecting the updated information about pharmacological Labour analgesia in Norway, especially systemic opioids and epidural. Evaluation of efficacy and safety with remifentanil intravenous patient-Controlled analgesia (IVPCA) for pain relief during Labour. To compare remifentanil IVPCA with epidural analgesia (EDA) regarding efficacy and safety during Labour. The studies on remifentanil IVPCA revealed adequate pain relief, high maternal satisfaction, and no serious neonatal side effects. There were no differences in analgesic efficacy, maternal satisfaction, and neonatal outcome when comparing remifentanil IVPCA with EDA. However, remifentanil caused maternal sedation and oxygen desaturation. We recommend the use of IVPCA remifentanil as Labour analgesia instead of traditional opioids

as pethidine and morphine when EDA is not an option. The presence of skilled personnel and close monitoring is mandatory.

Gambling, et.al. (2013) conducted a randomized Controlled comparison of epidural analgesia and combined spinal and epidural analgesia. Data from 398 epidural and 402 Combined spinal and epidural subjects were analyzed. The study concluded that Compared with traditional epidural Labour analgesia, Combined spinal and epidural analgesia provided better first-stage analgesia despite fewer epidural top-up injections by an anesthesiologist.

In 2012, Werner et.al. conducted a randomized Controlled trial to estimate the use of epidural analgesia and experienced pain during childbirth after a short antenatal training course in self-hypnosis to ease childbirth. A total of 1222 healthy nulliparous women. In this large randomised Controlled trial of a brief course in self-hypnosis to ease childbirth, no differences in use of epidural analgesia or pain experience were found across study groups.

In 2012 Klomp et.al conducted a study to examine the effects of all modalities of inhaled analgesia on the mother and the newborn for mothers who planned to have a vaginal delivery. They searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 January 2012), ClinicalTrials.gov, and Current Controlled Trials (2 June 2012), hand searched conference proceedings from the American Society of Clinical Anesthesia (from 1990 to 2011), contacted content experts and trialists and searched reference lists of retrieved studies. Inhaled analgesia appears to be effective in reducing pain intensity and in

giving pain relief in Labour. However, substantial heterogeneity was detected for pain intensity. Furthermore, nitrous oxide appears to result in more side effects compared with flurane derivatives. Flurane derivatives result in more drowsiness when compared with nitrous oxide. When inhaled analgesia is compared with no treatment or placebo, nitrous oxide appears to result in even more side effects such as nausea, vomiting, dizziness and drowsiness. There is no evidence for differences for any of the outcomes comparing one strength versus a different strength of inhaled analgesia, comparing different delivery systems or comparing inhaled analgesia with TENS.

Literature Related to Shiatsu Massage on Labour Pain and Coping

In 2009 Jenifer et.al conducted a research to evaluate the effects of Shiatsu techniques, on the progress of post-term Labour and deliveries. Results revealed that Post-term women who used Shiatsu were significantly more likely to Labour spontaneously than those who did not. post term mothers who had used Shiatsu, 17% more went into spontaneous Labour compared to those who were not taught Shiatsu. There were only limited studies related to Shiatsu Massage to support the study.

Chun (2003) conducted a study to determine the effect of LI4 and BL67 acupressure on Labour pain and uterine contractions during the first stage of Labour. An Experimental study with a pretest and posttest Control group design was utilized. A total of 127 parturient women were randomly assigned to three groups. Each group received only one of the following treatments, LI4 and BL67 acupressure, light skin stroking, or no treatment/conversation only. Results of the

study confirmed the effect of LI4 and BL67 acupressure in lessening Labour pain during the active phase of the first stage of Labour.

Acupuncture is being increasingly used in Western medical practice. The authors review the various applications of acupuncture during labor in this paper. This ancient therapeutic technique can be employed with a significant percentage of positive results to induce labor in post-term pregnancies, to strengthen uterine contractility and to favor cervical maturation. According to Alai (2003), the electrostimulating acupoints LI 4 Hegu and SP 6 Sanyinjiao is the most frequently used treatment in labor induction and in increasing the frequency and duration of uterine contractions. Moreover, the authors' experience indicates that the BL 67 Zhiyin can be helpful in accelerating the dilation of the cervix: the treatment is effective in about 75% of patients. The studies on the use of acupuncture to achieve pain relief and analgesia during labor are more controversial, mainly due to the great heterogeneity of applied treatments and some methodological biases. Nevertheless, the general evidence seems to be positive also for this application

Lee, et.al. conducted a study in 1999 on effects of SP6 acupressure (Shiatsu incorporates acupressure) on Labour pain and length of delivery time among women during Labour. 75 mothers in Labour were randomly assigned and studied. These findings showed that SP6 acupressure was effective for decreasing Labour pain and shortening the length of delivery time. SP6 acupressure can be an effective nursing management for women in Labour.

In 2004, Chang, et.al. conducted a randomized Controlled trial on to explain differences of cesarean section rates according to San-Yin-Jiao(SP6) acupressure for women in Labour.209 women were selected and assigned to different groups. Cesarean section rates were significantly different between the SP6 acupressure and non-SP6 acupressure group. This finding shows that 30 minutes of SP6 acupressure was effective in decreasing the cesarean section rate. Therefore, SP6 acupressure during Labour could be applied as an effective nursing intervention.

Summary

This chapter deals with the review of literature related to the problem stated. The literatures were taken from the 17 primary sources. It helped the researcher to develop tools, collect, organize and analyze the data.

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with the methodology used by the researcher in this study which includes research approach, research design, setting of the study, population, sample, sampling technique, sampling criteria, selection and development of the tools, psychometric properties of the tools, pilot study, data collection procedure and plan for data analysis.

Research Approach

Research approach is the most significant part of any research. The appropriate choice of the research approach depends on the purpose of the research study which is undertaken.

To accomplish the objectives of the study, an Experimental research approach is considered as most appropriate since the researcher wanted to assess effectiveness of Shiatsu Massage on pain relief and coping during Labour.

Research Design

Research design is the overall plan for addressing a research question, including specifications for enhancing the study's integrity (Polit, 2008).

Experimental (time series) research design was used in this study. The researcher assessed the pain level with the visual pain analogue scale, coping level with the pain coping scale, fetomaternal parameters with modified WHO partograph before intervention for both the Control and Experimental group of

parturient mothers. The researcher then provided Shiatsu Massage for 10 minutes for the Experimental group of parturient mothers with the cervical dilatation of 4-10cm and the researcher reassessed the pain level, coping level and fetomaternal parameters for both the group after each intervention. Intervention was repeated every 2 hours for 10 minutes in Experimental group and pain, coping and fetomaternal parameters were reassessed after each intervention. Then the level of satisfaction on Shiatsu Massage was assessed from the Experimental group of parturient mothers using satisfaction scale on Shiatsu Massage.

Pre test – post test design

R O1- O2, O3 – O4, O5 – O6

R O1 X O2, O3 X O4, O5 X O6

O1, O3, O5 - Assessment before Shiatsu Massage

O2, O4, O6 - Assessment after Shiatsu Massage

X - Administration of Shiatsu Massage

R - Randomization

Variables

Variable is an attribute that varies. And it takes on different values (Polit, 2010).

Independent variable

The variable that is believed to cause or influence the dependent variable is called independent variable. In this study Shiatsu Massage is the independent variable. Shiatsu Massage is provided for 10 minutes to assess the change in the pain level and coping level.

Dependent variable

The variable hypothesized to depend on or be caused by independent variable is the dependent variable. Labour pain is the dependent variable in this study. The level of Labour pain is assessed during the cervical dilatations of 4-5cm, 6-7 cm, 8-10 cm after Shiatsu Massage.

Extraneous variables

A variable that confounds the relationship between the independent and dependent variables and that needs to be Controlled either in the research design or through statistical procedures is the extraneous variables. Demographic variables and Obstetric variables were extraneous variables in this study.

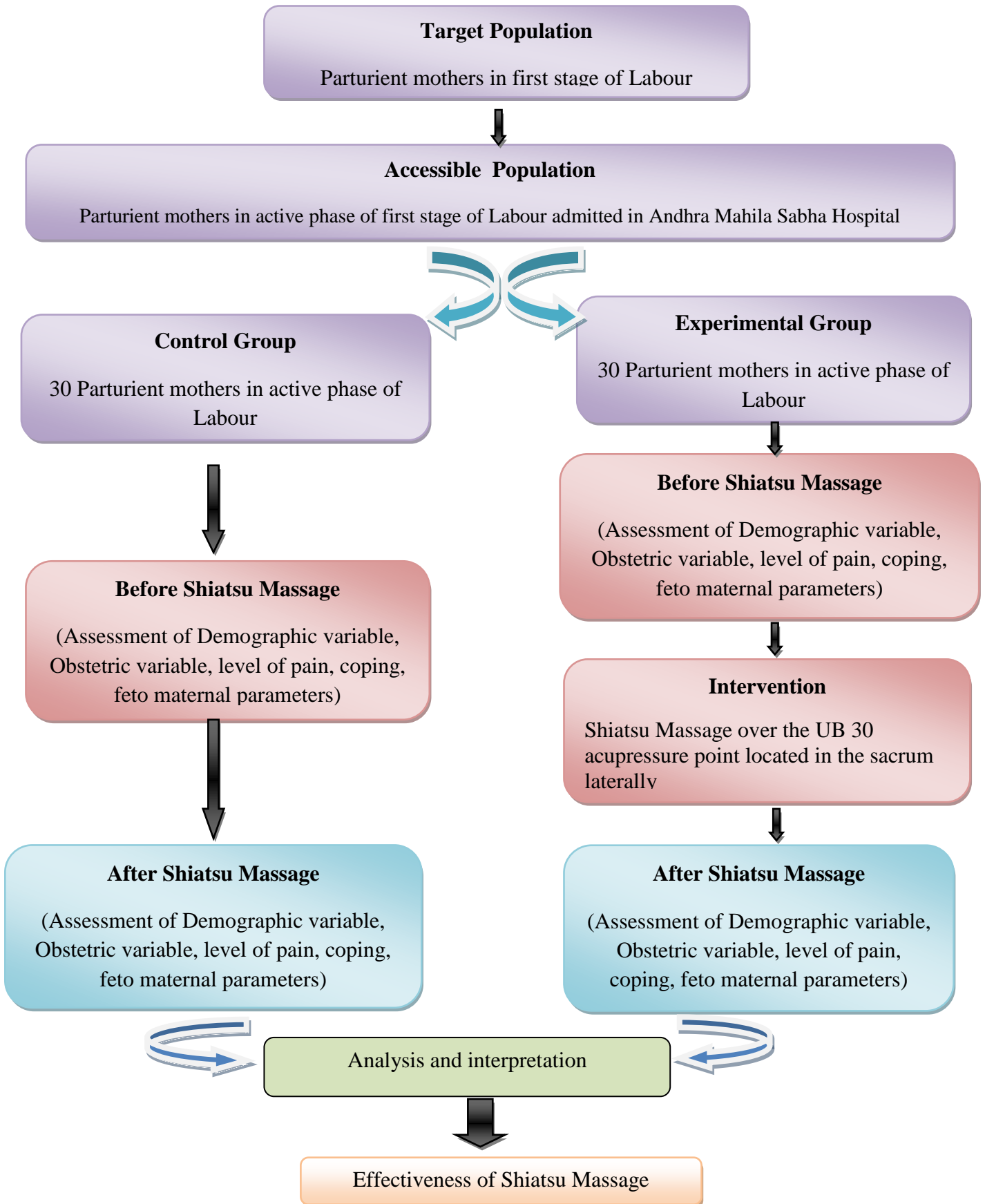


Fig. 2 Schematic Representation of Research Design

Research Setting

The study was conducted at Andhra Mahila Sabha hospital located at Adayar which is a semi-urban area of Chennai. The hospital is 200 bedded which has Labour room with four Labour table and equipments like Cardiotocography machine, warmer and life saving drugs and equipments for Obstetric and Medical Emergencies. On an average 100 – 200 parturient mothers undergo normal vaginal delivery every month. The hospital also has postnatal ward, post operative ward, NICU, operation theatre, laboratory and other diagnostic facilities like scanning. They also provide Immunization and conduct teaching programmes for the staff and the patients and do referral to government agencies in need.

Population

Population is the entire set of individuals or objects having some common characteristics (Polit and Beck, 2010). The target population is the entire population in which a researcher is interested and to which he or she would like to generalize the study results. In this study the target population was all the parturient women in the active phase of first stage of Labour with the cervical dilatation of 4 – 10cm. The accessible population is the aggregate of cases that confirm to designated criteria and that are accessible as subjects for a study. In this study the accessible population was all the parturient mother who were in the first stage of Labour admitted at Andhra Mahila Sabha Hospital, Chennai.

Sample

According to Polit and Beck (2010) sample is a subset of population elements. A sample of 60 parturient mothers in the active phase of first stage of

Labour was selected among which 30 parturient women were randomly assigned to the Control group and 30 parturient mothers were assigned to the Experimental group.

Sampling Technique

Sampling is the process of selecting a portion of the population to represent the entire population so that inferences about the population can be made (Polit and Beck 2010). Simple random sampling was used in this study to select the mothers who satisfy the inclusion criteria, where the odd number parturient mothers were assigned to Control group and the even number parturient mothers were assigned to the Experimental group.

Sampling Criteria

Inclusion criteria

The study included

- Parturient mothers who were hospitalized in Andhra Mahila Sabha Hospital, Chennai.
- Parturient mothers who were willing to participate in the study.
- Parturient mothers who were in active phase of first stage of Labour with 4 – 10 cm of cervical dilatation.
- Parturient mothers who can understand and speak Tamil or English.
- Parturient mothers who were admitted for Labour process during data collection period.

Exclusion criteria

The study excluded

- High risk mothers.
- Mothers who were not in active phase of first stage of Labour.
- Mothers who were not willing to participate in the study.
- Mothers who can't understand and speak Tamil or English.
- Mothers who were in latent phase of first stage of Labour.
- Mothers who had bad Obstetrical history.

Selection and Development of Study Instruments

The instruments for this study were developed to evaluate the effectiveness of Shiatsu Massage upon Labour pain and coping through extensive review of literature. The instruments used in this study were Demographic variable proforma, Obstetric variable proforma, visual pain analogue scale, pain coping scale, modified WHO partograph and rating scale on satisfaction of Shiatsu Massage upon Labour pain.

Demographic variable Proforma

The Demographic variable proforma consists of age, educational status, occupation, and monthly income, religion, type of family and area of residence.

Obstetric variable Proforma

The Obstetric variable proforma consists of gravida, parity, gestational age in weeks, number of antenatal visits attended till date, maternal complication

during Labour and fetal complication during Labour, duration of first, second and third stage of Labour, APGAR score of the baby.

Visual pain analogue scale

Visual pain analogue scale was used to assess the level of Labour pain during the active phase of first stage of Labour in parturient mother before and after Shiatsu Massage.

Pain coping scale

Pain coping scale was used to assess the pain coping level of the parturient mother before and after Shiatsu Massage during first stage of Labour.

Modified WHO Partograph

This graph consists of fetal heart rate, maternal blood pressure, cervical dilatation, frequency and duration of uterine contraction.

Rating scale on satisfaction of Shiatsu Massage upon Labour pain

This scale was designed by the researcher to assess the satisfaction level of the participants regarding Shiatsu Massage provided during first stage of Labour.

The satisfaction score was classified as follows:

Score	Percentage (%)	Interpretation
< 12	< 40%	Low level of satisfaction
12 – 20	40 - 69%	Moderate level of satisfaction
21 – 30	70 – 100%	High level of satisfaction

Psychometric Assessment of the Instruments

Validity of the instruments

Validity is the degree to which an instrument measures what it is intended to measure (Polit, 2010).

Content validity of the tool, was obtained from seven experts in the field of Obstetrics and Gynaecology. Seven of them were nursing personnel. The suggestions given by the validators regarding instruments was made in the final preparation of the tool.

Reliability of the tool

Reliability is the degree of consistence or dependability with which an instrument measures an attribute (Polit 2007). The reliability was found using Pearsons correlation formula.

1. Visual pain analogue scale – 0.9(inter rater method)
2. Pain coping scale for parturient mother– 0.9 (inter rater technique).
3. Rating scale on satisfaction on Shiatsu Massage upon Labour pain – 0.9 (test – retest method).

Pilot study

Pilot study is a small scale version or trial run done in preparation for a major study (Polit, 2004). The purpose of the pilot study was to find out the feasibility and practicability of study design.

The pilot study was conducted at Andhra Mahila Sabha, Chennai by selecting 10 parturient mothers with five parturient mother in the Control group and five in the Experimental group using simple random sampling in order to assess the methodology and tool. The level of Labour pain, coping and fetomaternal parameters were assessed using visual pain analogue scale, pain coping scale and modified WHO partograph respectively for both the Control and Experimental group before therapy.

Shiatsu Massage was provided for 10 minutes for every 2 hours. Again the pain level, coping level and feto maternal parameters were assessed for both the groups. The level of satisfaction on Shiatsu Massage was assessed from the Experimental group after delivery. After the pilot study, it was found to be feasible and effective and the study instruments were found to be appropriate.

Protection of Human Rights

The study was conducted

- after the approval of ethical committee of Apollo Hospitals
- after obtaining written consent from the participants
- by maintaining confidentiality throughout the study.

Data Collection Procedure

Data collection is gathering information about something which the researcher has chosen to explore or investigate (Crookes and Davies, 1998).

The researcher was trained for one week on Shiatsu Massage therapy and certified before data collection. Protection of human rights was maintained and the data was collected day and night from May to June.

The participants were selected using simple random sampling method. 60 parturient mothers were selected among which 30 women were assigned to the Control group and 30 women to the Experimental group and the data was collected from the participants through interview and through medical records. The Labour pain level was assessed by the visual pain analogue scale, coping level with pain coping scale and fetomaternal parameters using modified WHO partograph before intervention for both Control and Experimental group of parturient mother.

Shiatsu Massage was provided at the cervical dilatation of 4 -10cm for 10 minutes at UB30 point for Experimental group of parturient mother. The pain level, coping level and fetomaternal parameters were assessed after each intervention and with the cervical dilatation of 4-5 cm, 6-7 cm, 8-10 cm for both groups with the same tools. The level of satisfaction on Shiatsu Massage was assessed in the Experimental group of parturient mothers using rating scale after delivery.

Problem Faced During Data Collection

- Few parturient mothers felt that they were disturbed every time to fill the scale.

Plan for Data Analysis

Data analysis is the systematic organization, synthesis of research data and testing of hypothesis using those data (Polit and Beck, 2010).

Analysis were carried out using descriptive statistics like frequency distribution, percentage, mean, standard deviation and inferential statistics like independent 't' test. The association between the Demographic variables, Obstetric variables and dependent variables were analyzed with the help of chi-square test.

Summary

This chapter dealt with the research approach, research design, setting, population, sample, sampling technique, sampling criteria, development of study instruments, reliability and validity of the instruments, pilot study, data collection procedure and plan for data analysis.

CHAPTER IV

ANALYSIS AND INTERPRETATION

Statistics are aggregates of facts, affected to a marked extent by multiplicity of causes, numerically expressed, enumerated or estimated according to reasonable standards of accuracy, collected by systematic manner for a predetermined purpose and placed in relation to each other (Agarwal, 2010).

The data was collected from 60 parturient mothers among which 30 were in the Control group and 30 were in the Experimental group. The data was analyzed using descriptive and inferential statistics based on the objectives and hypothesis. The data analysis was completed after transferring all the data to the master coding sheet.

Organization of findings

- Frequency and percentage distribution of Demographic variables, Obstetric variables, level of Labour pain, level of coping before and after Shiatsu Massage in the Control and Experimental group of parturient mothers.
- Frequency and percentage distribution of level of satisfaction before and after Shiatsu Massage in the Control and Experimental group of parturient mothers.
- Comparison of mean and standard deviation of level of Labour pain, level of coping, feto maternal parameters before and after Shiatsu Massage in the Control and Experimental group of parturient mothers.

- Association between selected Demographic variables and the level of Labour pain and coping, selected Obstetric variables and the level of Labour pain and coping before and after Shiatsu Massage in the Control and Experimental group of parturient mothers.

Table. 1

Frequency and Percentage Distribution of Demographic Variable in Control and Experimental Group of Parturient Mothers.

Demographic variables	Control group (n= 30)		Experimental group (n = 30)	
	n	P	n	P
Age in years				
Below 20 years	-	-	-	-
20 – 25 years	16	53.33	18	60
26 – 30 years	14	46.66	12	40
Educational status				
Primary education	-	-	-	-
Secondary	3	10	2	6.66
Higher secondary	12	40	15	50
Graduate and above	15	50	13	43.33
Monthly income in rupees				
Below 5000	2	6.66	5	16.66
5000 -10000	13	43.33	13	43.33
10001 – 15000	6	20	9	30.00
15001 – 20000	6	20	2	6.66
Above 20000	3	10	1	3.33
Type of family				
Nuclear family	22	73.33	26	86.66
Joint family	8	26.66	4	13.33
Extended family	-	-	-	-

Area of residence				
Urban	14	46.66	14	46.66
Rural	-	-	-	-
Suburban	16	53.33	16	53.33
Have you received information regarding Labour pain relief and Shiatsu Massage?				
Yes	-	-	-	-
No	30	100	30	100

From Table 1 infers that majority of the parturient mothers were between the age group of 21 - 25 years (53.33% , 60%) most of them were unemployed (60%, 86.66%) and significant percentage of them had monthly income of 5000 - 10,000 rupees (43.33%, 43.33%) and majority of them lived in nuclear family (73.33%, 86.66%), resided in sub urban area (53.33%, 53.33%) and none of them were aware of Shiatsu Massage (100%, 100%) in the Control and Experimental group respectively.

Figure 3 shows that majority of the parturient mothers were Hindus (80%, 86.66%) in Control and Experimental group respectively.

Figure 4 reveals that most of the mothers(60%,86.66%) were unemployed in control and Experimental group respectively.

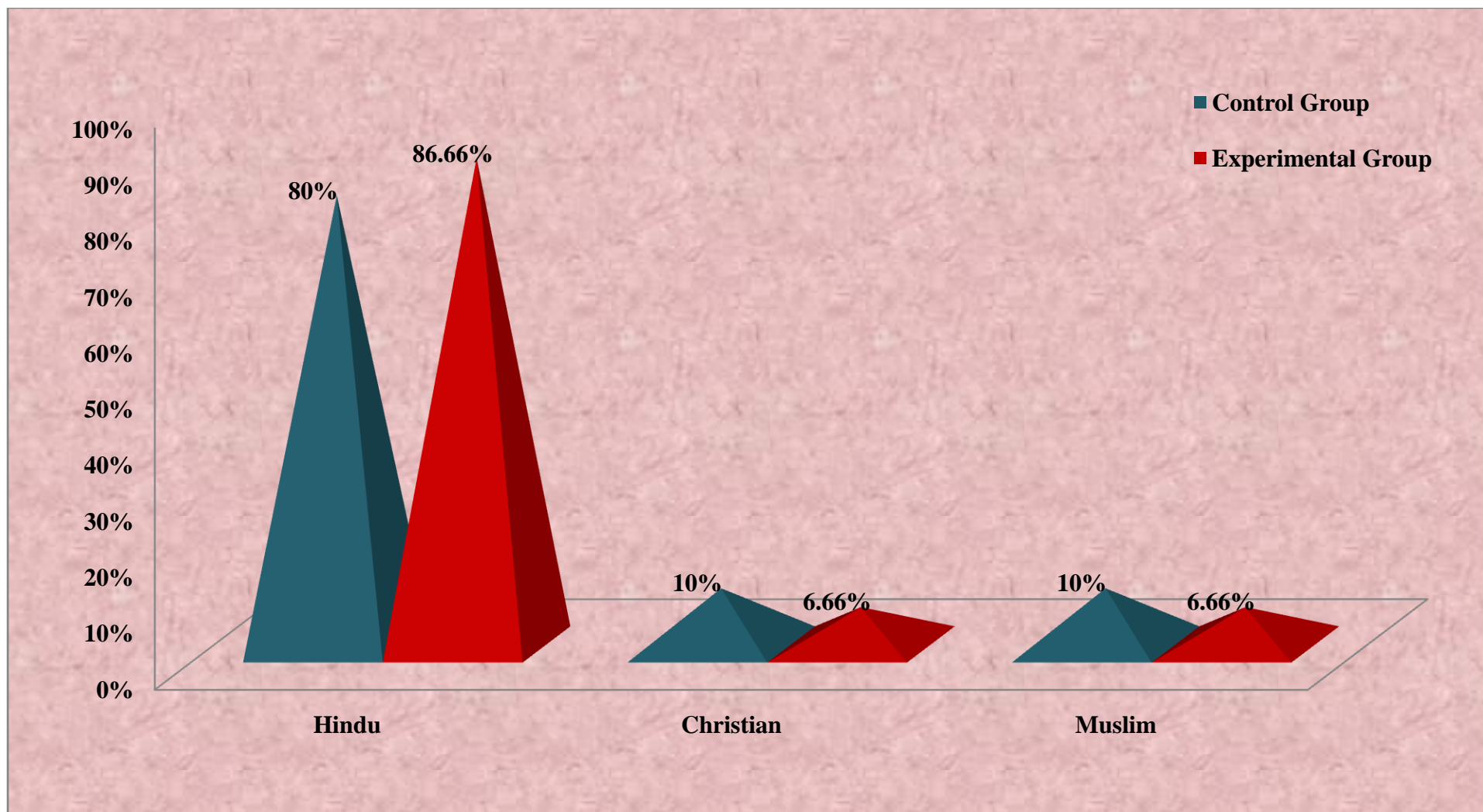


Fig.3 Percentage Distribution of religion in Control and Experimental group of Parturient Mothers

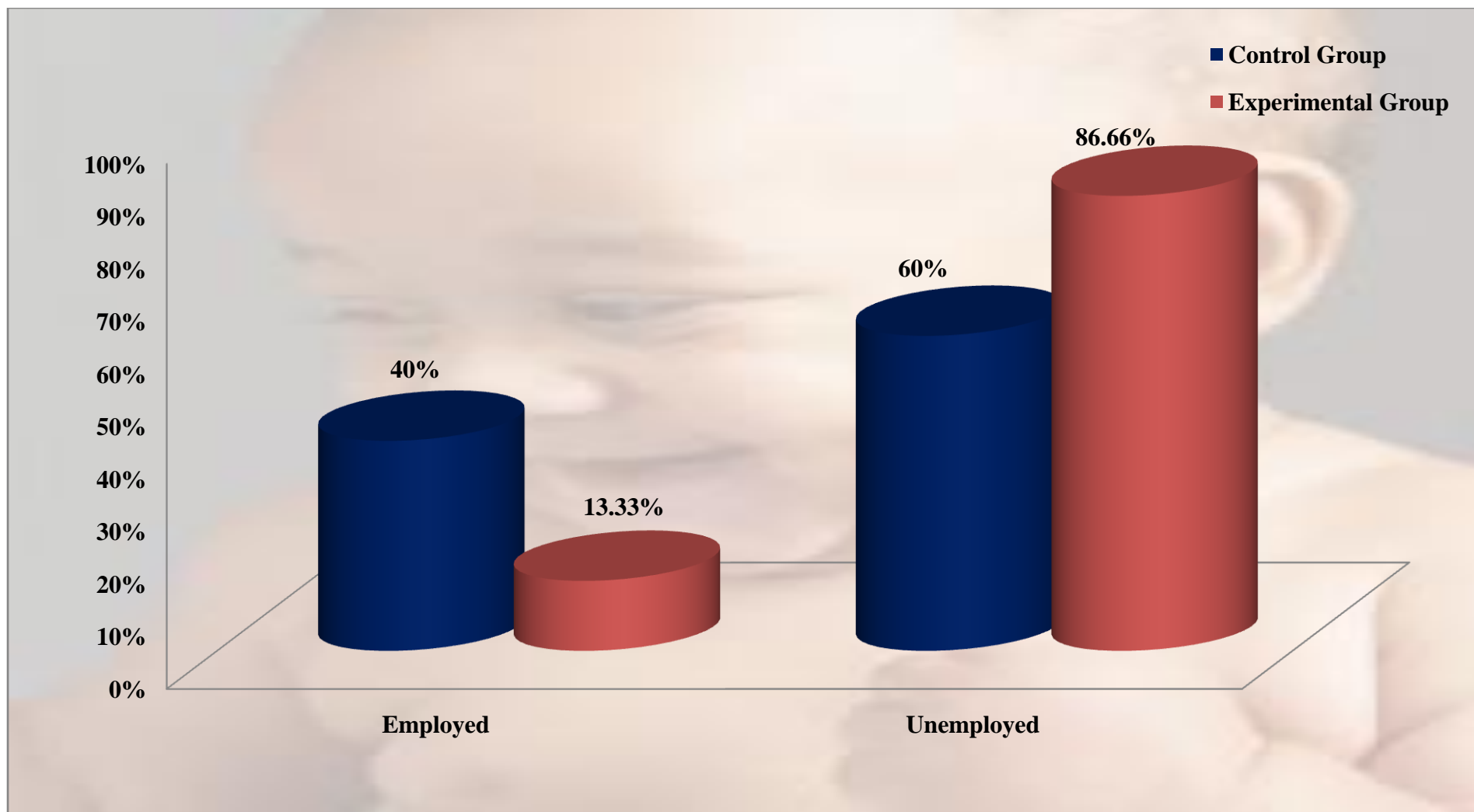


Fig.4 Percentage Distribution of occupation in Control and Experimental group of Parturient Mothers

Table. 2

**Frequency and Percentage Distribution of Obstetric Variables in
Control and Experimental Group of Parturient Mothers**

Obstetric Variables	Control group (n= 30)		Experimental group (n = 30)	
	n	p	n	p
Gravida				
Primi gravid	19	63.33	20	66.66
Multi gravid	11	36.66	10	33.33
Parity				
One	18	60	20	66.66
Two	12	40	10	33.33
Gestational age in weeks				
37 – 38	17	56.66	11	36.66
39 – 40	13	43.33	19	63.33
41 – 42	-	-	-	-
No. of. antenatal visit				
No visit	-	-	-	-
≤ 4	-	-	-	-
> 4	30	100	30	100
Duration of first stage of Labour				
< 10 hours	17	56.66	13	43.33
10 – 14 hours	13	43.33	17	56.66
>14 hours	-	-	-	-
Duration of second stage of Labour				
< 1 hour	18	60	23	76.66
1 – 2 hours	12	40	7	23.33
> 2 hours	-	-	-	-

Duration of third stage of Labour				
< 10 minutes	23	76.66	19	63.33
10 – 20 minutes	7	23.33	11	36.66
> 20 minutes	-	-	-	-
APGAR score of newborn at birth				
< 3	-	-	-	-
4 -6	-	-	-	-
7 – 10	30	100	30	100

The data presented in Table 2 depicts that most of them were primi gravid women (63.33%, 66.66%) all of them had more than 4 antenatal visit (100%, 100%) majority of them the duration of second stage of Labour was less than 1hour, all of them had less than 10 minutes of - third stage of Labour and the APGAR score of all newborn at birth was between 7- 10 in Control and Experimental group respectively.

Figure 5 reveals that majority of the parturient mothers (73.33%, 70%) were with the cervical dilatation of 3 – 5 cm in Control and Experimental group respectively.

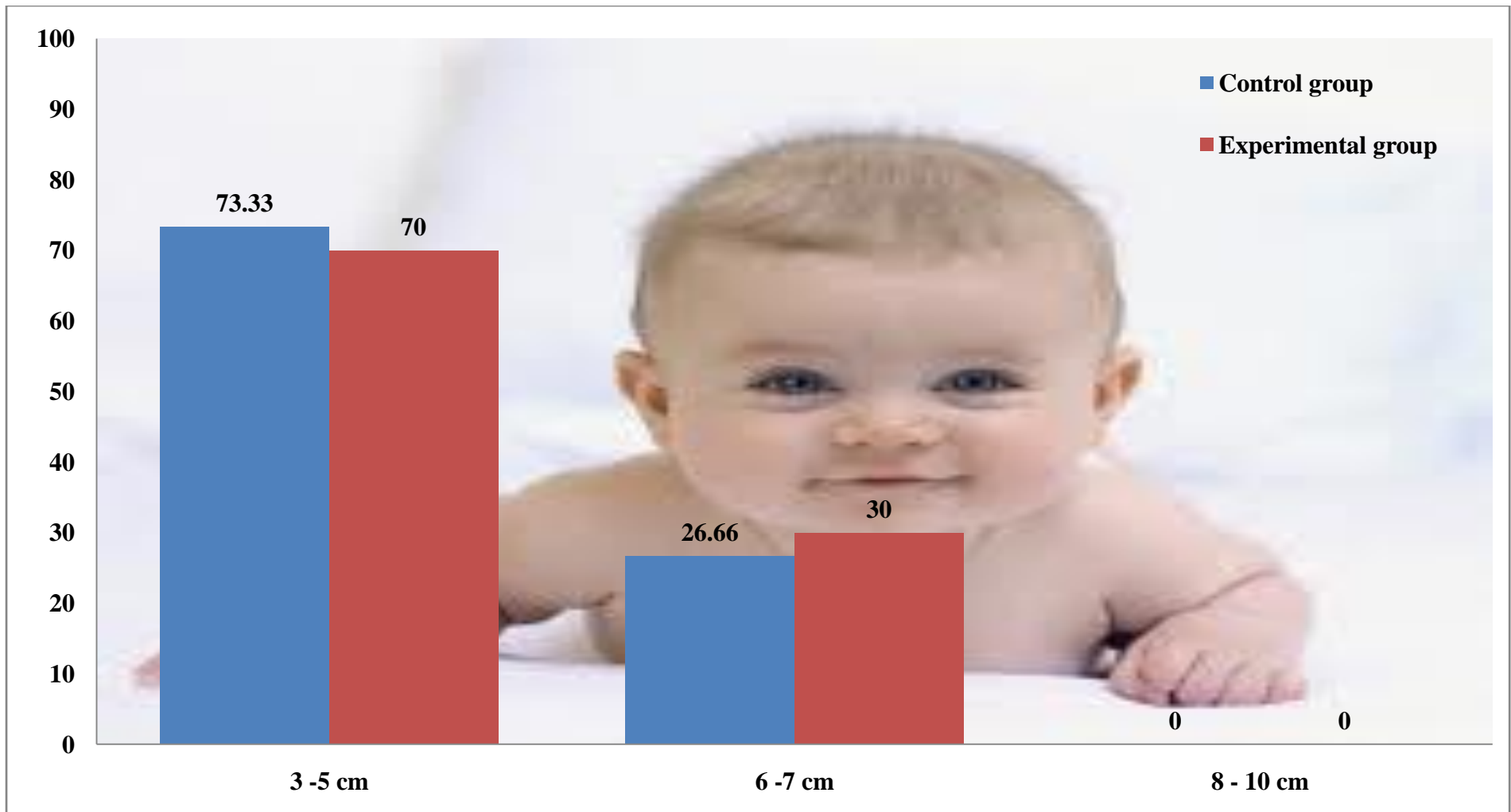


Fig 5 Percentage distribution of cervical dilatation in Control and Experimental group of Parturient Mothers.

Table. 3

**Frequency and Percentage Distribution of Level of Labour Pain
Before and After Shiatsu Massage in Control and Experimental Group of
Parturient Mothers.**

Level of Labour pain	Before therapy (n = 30)		After therapy (n = 30)	
	n	p	n	P
Control group				
No pain	-	-	-	-
Mild pain	5	16.66	-	-
Moderate pain	25	83.33	26	86.66
Severe pain	-	-	4	13.33
Worst possible pain	-	-	-	-
Experimental group				
No pain	-	-	-	-
Mild pain	6	20	6	20
Moderate pain	24	80	24	80
Severe pain	-	-	-	-
Worst possible pain	-	-	-	-

Table 3 reveals that majority of parturient mothers had moderate pain (83.33%, 80%) and significant number of them had moderate pain (80%, 80%) before and after Shiatsu Massage in Control and Experimental group respectively.

Table. 4

Frequency and Percentage Distribution of Level of Coping Before and After Shiatsu Massage in Control and Experimental Group of Parturient Mothers.

Level of pain coping	Before therapy (n=30)		After therapy (n=30)	
	n	P	n	p
Control group				
No need to cope	-	-	-	-
Easy	-	-	-	-
Able to do 3R's	26	86.66	2	6.66
Needs lot of help	4	13.33	28	93.33
Can't do it	-	-	-	-
Experimental group				
No need to cope	-	-	-	-
Easy	-	-	-	-
Able to do 3R's	27	90	12	40
Needs lot of help	3	10	18	60
Can't do it	-	-	-	-

Table 4 shows that majority of the parturient mothers were able to do 3R's (Rhythm, Ritual and Relaxation) (86.66%, 90%) before therapy and significant percentage of them were able to do 3 R's (6.66%, 40%) after therapy in Control and Experimental group respectively.

Table. 5

Comparison of Mean and Standard Deviation of Level of Labour Pain Before and After Shiatsu Massage in Control and Experimental Group of Parturient Mothers.

Group	Before therapy			After Therapy		
	Mean	SD	't'	Mean	SD	't'
Control Group	4	1.17	13.33***	5.8	0.88	42.85***
Experimental Group	4.6	0.81		3.6	0.81	

*****p< 0.001**

Table 5 depicts that the mean pain level was high after therapy (M=5.8, SD=0.88) compared to before therapy (M=4, S.D=1.17) among Control group and the mean pain level was low (M=3.6, SD=0.81) after therapy compared to before therapy (M=4.6, SD=0.81) Experimental group. Hence null hypothesis Ho1 was rejected.

Table. 6

Comparison of Mean and Standard Deviation of Level of Coping Before and After Shiatsu Massage in Control and Experimental Group of Parturient mothers.

Groups	Before therapy			After therapy		
	Mean	SD	't'	Mean	SD	't'
Control Group	4.03	0.85	11.84***	1.83	0.83	59.56***
Experimental Group	3.3	0.65		4.3	0.69	

*****p< 0.001**

Table 6 infers that the mean coping level was low after therapy (M=1.83, SD=0.83) in comparison with before therapy (M=4.03, SD=0.85), in the Control groups and the mean coping level was high after therapy (M=4.3, SD=0.69) in comparison with before therapy (M=3.3, SD=0.65) Experimental group. Hence null hypothesis H_0 1 was rejected.

Table. 7

Comparison of Mean and Standard Deviation of Feto-Maternal Parameters Before and After Shiatsu Massage in Control and Experimental Group of Parturient Mothers.

Groups	Before therapy			After therapy		
	Mean	SD	't'	Mean	SD	't'
Control Group						
Fetal heart rate	149.36	3.58	0.87	148.66	3.21	2.53
Cervical dilatation	4	0	0	6	0	0
Uterine contraction	2.56	0.50	5.0	4	0	0
Systolic blood pressure	115.53	19.74	0.3	111.9	19.8	1.6
Diastolic blood pressure	77.93	6.18	0.21	78.53	4.54	4.75**
Experimental group						
Fetal heart rate	150	2.82	4.3**	149.2	2.96	2.53
Cervical dilatation	4	0	0	6	0	0
Uterine contraction	3	0	6.25	4	0	0
Systolic blood pressure	113	20.02	3.70**	114	5.63	1.85
Diastolic blood pressure	76.73	5.47	1.3	73.6	4.62	4.93**

****p< 0.01**

Table 7 depicts that the uterine dilatation and uterine contraction were increased in after therapy in comparison with before therapy were (M=4, SD=0; M=6, SD=0), (M=4, SD=0; M=6, SD=0) and (M=2.56, SD=0.50; M=4, SD=0), (M=3, SD=0; M=4, SD=0) in Experimental and Control group of parturient mothers. It shows that Shiatsu Massage has not produced adverse effects on uterine contraction and cervical dilatation in both the groups.

Table. 8

Frequency and Percentage Distribution of Level of Satisfaction on Shiatsu Massage in Experimental Group of Parturient mothers.

Level of Satisfaction	Experimental Group	
	(n = 30)	
	n	P
Highly satisfied	26	86.66
Moderately satisfied	4	13.33
Just satisfied	-	-
Unsatisfied	-	-

The data from the Table 8 shows that majority of the participants in Experimental group were highly satisfied (86.66%) with the Shiatsu Massage during the first stage of Labour and none of them reported dissatisfaction towards the intervention

Table. 9

Association Between the Selected Demographic Variables and Level of Labour Pain After Shiatsu Massage in Control Group of Parturient Mothers.

Demographic Variables	Mild Pain	Moderate pain	df	χ^2
Age in years				
Upto 25	2	14	1	0.2
Above 25	3	11	1	
Educational status				
Upto higher secondary	1	13	1	1.69
Above higher secondary	4	12	1	
Occupation				
Employed	3	10	1	0.66
Unemployed	2	15	1	
Religion				
Hindu	4	20	3	1.2
Christian	0	3	3	
Muslim	1	2	3	
Monthly income				
Upto 10000	3	12	1	0.24
Above 10000	2	13	1	

Type of family				
Nuclear family	4	18	1	0.47
Joint family	2	6	1	
Area of residence				
Urban	1	11	1	0.96
Suburban	4	14	1	
Previous information regarding pain relief and Labour pain				
Yes	0	0	1	0
No	5	25	1	

From the data presented in Table 9 revealed that there is no significant association between age, religion, educational status, occupation, monthly income, type of family, area of residence, and previous information regarding pain relief and level of Labour pain after Shiatsu Massage in the Control group of parturient mothers. Hence null hypothesis Ho2 was retained.

Table. 10

Association Between the Selected Demographic Variables and Level of Labour Pain After Shiatsu Massage in Experimental Group of Parturient Mothers.

Demographic variables	Mild pain	Moderate pain	df	χ^2
Age in years				
Upto 25	1	16	1	0.87
Above 25	5	8	1	
Educational status				
Upto higher secondary	4	12	1	0.52
Above higher secondary	2	12	1	
Occupation				
Employed	0	4	1	1.15
Unemployed	6	20	1	
Religion				
Hindu	5	21	3	0.11
Christian	0	2	3	
Muslim	1	1	3	
Monthly income				
Upto 10000	2	15	1	0.65
Above 10000	3	10	1	
Type of family				
Nuclear family	4	22	1	0.25
Joint family	2	2	1	

Area of residence				
Urban	1	13	1	0.69
Suburban	5	11	1	
Previous information regarding pain relief and Labour pain				
Yes	0	0	1	0
No	6	24	1	

Table 10 shows that there is no significant association between age, religion, educational status, occupation, monthly income, type of family, area of residence and previous information regarding pain relief and level of Labour pain after Shiatsu Massage among the Experimental group of parturient mothers. Hence the null hypothesis Ho2 was retained.

Table. 11

Association Between the Selected Demographic Variables and Level of Coping After Shiatsu Massage in Control Group of Parturient Mothers.

Demographic variables	Level of coping		df	χ^2
	Needs lot of help	Able to do 3R's		
Age in years				
Upto 25	5	14	1	0.38
Above 25	6	5	1	
Educational status				
Upto higher secondary	5	14	1	1.38
Above higher secondary	6	5	1	
Occupation				
Employed	4	8	1	0.08
Unemployed	7	11	1	
Religion				
Hindu	8	16	3	0.09
Christian	2	1	3	
Muslim	1	2	3	
Monthly income				
Upto 10000	5	9	1	1.06
Above 10000	6	10	1	
Type of family				
Nuclear family	8	14	1	0.02
Joint family	3	5	1	

Area of residence				
Urban	9	8	1	
Suburban	2	11	1	1.28
Previous information regarding pain relief and Labour pain				
Yes	0	0	1	
No	11	19	1	0

It can be interpreted from the Table 11 that there is no significant association between age, religion, educational status, occupation, monthly income, type of family, area of residence and previous information regarding pain relief and level of coping after Shiatsu Massage in the Control group. Hence the null hypothesis Ho2 was retained.

Table. 12

Association Between the Selected Demographic Variables and Level of Coping After Shiatsu Massage in Experimental Group of Parturient mothers

Demographic variables	Level of coping		df	χ^2
	Needs lot of help	Able to do 3 R's		
Age in years				
Upto 25	12	6	1	0.83
Above 25	6	6	1	
Educational status				
Upto higher secondary	11	5	1	1.08
Above higher secondary	7	7	1	
Occupation				
Employed	3	1	1	0.2
Unemployed	16	10	1	
Religion				
Hindu	15	11	3	0.25
Christian	2	0	3	
Muslim	1	1	3	
Monthly income				
Upto 10000	13	5	1	1.78
Above 10000	5	7	1	

Type of family				
Nuclear family	16	10	1	0.18
Joint family	2	2	1	
Area of residence				
Urban	8	6	1	0.08
Suburban	10	6	1	
Previous information regarding pain relief and Labour pain				
Yes	0	0	1	0
No	18	12	1	

The data from the above Table 12 reveals that there is no significant association between age, religion, educational status, occupation, monthly income, Type of family and previous information regarding pain relief and coping among Shiatsu Massage in the Experimental group after Shiatsu Massage. The frequency of the parturient mothers who were able to do 3R's was zero before Shiatsu Massage. Thus the null hypothesis Ho2 was retained.

Table. 13

Association Between the Selected Obstetric Variables and Level of Labour Pain After Therapy in Control Group of Parturient Mothers.

Obstetric Variables	Mild pain	Moderate Pain	df	χ^2
Gravida				
Primi gravid	3	16	1	0.019
Multi gravid	2	9	1	
Parity				
≤ 1	3	15	1	0
> 1	2	10	1	
Gestational age in weeks				
≤ 38 weeks	1	16	1	1.27
> 38 weeks	4	9	1	
Number of antenatal visits				
≤ 4	0	0	1	0
> 4	5	25	1	
Cervical dilatation				
≤ 5cm	2	20	1	0.4
> 5 cm	3	5	1	
Duration of first stage of Labour				
≤ 10 hours	3	14	1	0.021
> 10 hours	2	11	1	

Duration of second stage of Labour				
≤ 1 hour	4	14	1	
> 1 hour	1	11	1	0.96
Duration of third stage of Labour				
≤ 10 min	4	19	1	
>10 min	1	6	1	0.026
APGAR score of newborn at birth				
≤ 5	0	0	1	
> 5	5	25	1	0

The above table 13 interprets that there is no significant association between gravid, parity, gestational age in weeks, number of antenatal visit, cervical dilatation, duration of first, second and third stage of Labour, APGAR score of newborn at birth with the level of Labour pain after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained.

Table. 14

Association Between the Selected Obstetric Variables and Level of Labour Pain After Shiatsu Massage in Experimental Group of Parturient mothers.

Obstetric Variables	Mild pain	Moderate Pain	df	χ^2
Gravida				
Primi gravid	5	14	1	1.27
Multi gravid	1	10	1	
Parity				
≤ 1	2	18	1	1.30
> 1	4	6	1	
Gestational age in weeks				
≤ 38 weeks	3	8	1	0.56
> 38 weeks	3	16	1	
Number of antenatal visits				
≤ 4	0	0	1	0
> 4	6	24	1	
Cervical dilatation				
≤ 5cm	5	16	1	0.61
> 5 cm	1	8	1	

Duration of first stage of Labour				
≤ 10 hours	3	9	1	
>10 hours	3	15	1	0.3
Duration of second stage of Labour				
≤ 1 hour	6	17	1	
> 1 hour	0	7	1	0.27
Duration of third stage of Labour				
≤ 10 min	5	14	1	
> 10 min	1	10	1	0.16
APGAR score of newborn at birth				
≤ 5	0	0	1	
> 5	6	24	1	0

Table 14 reveals that there is no significant association with gravida, parity, gestational age in weeks, number of antenatal visit, cervical dilatation, duration of first, second and third stage of Labour, APGAR score of newborn at birth with the level of Labour pain after Shiatsu Massage in the Experimental group. Hence null hypothesis Ho3 was retained.

Table. 15

Association Between the Selected Obstetric Variables and Level of Coping After in Control Group of Parturient mothers.

Obstetric Variables	Level of coping		df	χ^2
	Needs lot of help	Able to do 3R's		
Gravida				
Primi gravid	5	14	1	1.35
Multi gravid	6	5	1	
Parity				
≤ 1	5	13	1	1.51
> 1	6	6	1	
Gestational age in weeks				
≤ 38 weeks	6	11	1	0.028
>38 weeks	5	8	1	
Number of antenatal visits				
≤ 4	0	0	1	0
> 4	11	19	1	
Cervical dilatation				
≤ 5cm	5	17	1	0.01
>5 cm	2	2	1	

Duration of first stage of Labour				
≤ 10 hours	5	12	1	
> 10 hours	6	7	1	0.88
Duration of second stage of Labour				
≤ 1 hour	9	9	1	
> 1 hour	2	10	1	1.42
Duration of third stage of Labour				
≤ 10 min	9	14	1	
> 10 min	2	5	1	0.24
APGAR score of newborn at birth				
≤ 5	0	0	1	
> 5	11	19	1	0

It can be inferred from the Table 15 that there is no significant association with gravida, parity, gestational age in weeks, number of antenatal visit, cervical dilatation, duration of first, second and third stage of Labour, APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained.

Table. 16

Association Between the Selected Obstetric Variables and Level of Coping After Shiatsu Massage in Experimental Group of Parturient Mothers.

Obstetric Variables	Level of coping		df	χ^2
	Needs lot of help	Able to do 3R's		
Gravida				
Primi gravid	15	6	1	1.79
Multi gravid	3	6	1	
Parity				
≤ 1	15	5	1	1.62
> 1	3	7	1	
Gestational age in weeks				
≤ 38 weeks	4	7	1	1.02
> 38 weeks	14	5	1	
Number of antenatal visits				
≤ 4	0	0	1	0
> 4	18	12	1	
Cervical dilatation				
≤ 5cm	12	9	1	0.22
> 5 cm	6	3	1	

Duration of first stage of Labour				
≤ 10 hours	6	7	1	
> 10 hours	12	5	1	1.81
Duration of second stage of Labour				
≤ 1 hour	14	9	1	
> 1 hour	4	3	1	0.02
Duration of third stage of Labour				
≤ 10 min	11	8	1	
> 10 min	7	4	1	0.09
APGAR score of newborn at birth				
≤ 5	0	0	1	
>5	18	12	1	0

The presented data from Table 16 reveals that there is no significant association between with gravida, parity, gestational age in weeks, number of antenatal visit, cervical dilatation, duration of first, second and third stage of Labour, APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Experimental group. Hence the null hypothesis Ho3 was retained.

Summary

This chapter dealt with the analysis and the interpretation of the data collected by the researcher. From the analysis it can be inferred that the level of Labour pain was low and level of coping was high after therapy in the Experimental group than the Control group. Thus it shows that the Shiatsu Massage was effective in reducing Labour pain perception during the first stage of Labour among the parturient mothers.

CHAPTER V

DISCUSSION

Statement of the Problem

An Experimental Study to Assess the Effectiveness of Shiatsu Massage on Labour Pain among Parturient Mothers in First Stage of Labour Admitted at Selected Hospital, Chennai.

Objectives of the Study

The objectives of the study are

1. To assess the level of Labour pain, coping and feto maternal parameters before and after Shiatsu Massage among Control and Experimental group of parturient mothers in active phase of first stage of Labour.
2. To compare the level of Labour pain, coping and feto maternal parameters among Control and Experimental group of parturient mothers after Shiatsu Massage.
3. To determine the level of satisfaction upon Shiatsu Massage among Experimental group of parturient mothers.
4. To find out the association between the selected Demographic variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.
5. To find out the association between the selected Obstetric variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.

This study was carried out for the parturient mothers with the cervical dilatation of 4-10cm and got admitted in Andhra Mahila Sabha Hospitals, Chennai. The level of Labour pain, coping level and feto maternal parameters were assessed for the Control and Experimental group of parturient mothers and Shiatsu Massage was provided to the Experimental group of parturient mothers with the cervical dilatation of 4-10cm for 10 minutes over two hour period and pain level, coping level and feto maternal parameters were assessed again for both the groups. The level of satisfaction upon Shiatsu Massage was assessed among the Experimental group of mothers after the Labour.

The discussion is presented under the following headings:

- Demographic variables and Obstetric variables of Control and Experimental group of parturient mothers.
- Mean and standard deviation of level of Labour pain, coping level and feto maternal parameters before and after Shiatsu Massage.
- Assessment of level of satisfaction upon Shiatsu Massage among the Experimental group of parturient mothers.
- Association between selected Demographic variables and level of Labour pain and coping after Shiatsu Massage.
- Association between selected Obstetric variables and level of Labour pain and coping after Shiatsu Massage.

Demographic variables of parturient mothers

Majority of the parturient mothers in both the Control and Experimental group were in the age group of 21 - 25 years (53.33%, 60%) which shows that

most of them are aware about the right age of reproduction and there is less chance to have complications during pregnancy and delivery.

The educational qualification of the women shows that most of them in the Control and Experimental group had only higher secondary education (40%, 50%) and significant number of the women (50%,43.33%) in the Experimental group was graduates. As women with inadequate education may have inadequate information regarding health care practices, the researcher felt that doing higher education helps mother in better understanding about Labour process and better coping and thus all the women should be encouraged to do their higher education in addition to schooling.

Majority of them in both the Control and Experimental group were from sub urban area (53.33%, 53.33%) respectively and even though the women were distributed in different areas of residence they seek good medical advice and are aware about the advantages of taking adequate antenatal care and thus reducing the incidence of complications during delivery.

Among the women of both the Control and Experimental group, majority of them belong to nuclear family (73.3%, 86.66%) respectively. The researcher feels that as the responsibility to care other family members were less in the nuclear families, it promotes the mother to seek antenatal care with the support of their spouse. A study conducted by Allendorf in 2010 says that among nuclear families, women with better marital relationships are more likely to use antenatal care services delivered in a health-care facility than others.

None of the women in the Control and Experimental group receive previous information about Shiatsu Massage (100%, 100%) which shows that they were not familiar with the various alternative pain relief measures. Hence it is the duty of the nurse midwives to explain to the mother about various methods available for pain relief during Labour.

Obstetric variables of the parturient mothers

Majority of the women in the Control and Experimental group were between 39 – 40 weeks of gestation (43.33%, 63.33%) during delivery. This proves that risk of preterm Labour, post term Labour, maternal and fetal complications was reduced with regular antenatal checkups, and advanced screening methods. The health care workers were playing a vital role in delivering the baby at the right time without leading to post term Labour complications. This view was supported by Aaron et.al. (2008) in their study conducted at the Department of Obstetrics and Gynecology it proves that maternal complications were high beyond 40 weeks of gestation.

Majority of the women (100%, 100%) in both the Control and Experimental group attended more than four antenatal visit emphasizes that most of the women were aware about the importance of regular antenatal checkup in reducing the complications. It is felt by the researcher that recent advances in the health care services improved the outcome of Labour through increased antenatal visits.

Majority of them (100%, 100%) APGAR score of newborn at birth in both the Control and Experimental group were between 7 – 10 which emphasized that there was no fetal complication because of Shiatsu Massage.

Mean and Standard Deviation of pain level before and after Shiatsu Massage in the Control and Experimental group of parturient mothers

Majority of women in the Control group had moderate pain (83.3%) before Shiatsu Massage and had severe pain (13.33%) after Shiatsu Massage. The mean pain level in the Control group was high after therapy (M=5.8, SD=0.88) compared to before therapy (M=4, S.D=1.17) whereas the mean pain level was slightly high (M=4.6, SD=0.81) after therapy in the Experimental group when compared with before therapy (M=3.6, SD=0.81).

This shows that the Shiatsu Massage was effective in reducing the level of Labour pain perception. Many women need some type of pain relieving measures to deal with pain during childbirth. The management of Labour pain is a primary responsibility of the nurse. Interventions to reduce pain perception are one of the essential aspects of nursing care that must be considered during a Labour.

Mean and Standard deviation of coping level before and after Shiatsu Massage in the Control and Experimental group of parturient mothers

Majority of the women needed lot of help after Shiatsu Massage (93.33%) in Control group when compared with Experimental group(60%). Most of the women were able to do 3R's (40%) in Experimental group when compared with Control group (6.66%). The mean coping level was low after therapy (M=2.00,

SD=0.87) in comparison with before therapy (M=4.2, SD=0.94), and the mean coping level was high after therapy (M=4.3, SD=0.69) in comparison with before therapy (M=3.3, SD=0.60) in Control and Experimental group respectively.

A study conducted by Abushaikha in 2007 among Jordanian women describes that they used different coping methods which included physiological, psychological, spiritual and cognitive methods to cope during Labour. Thus it is the responsibility of every nurse midwife to understand the importance of using various coping methods during Labour.

Feto maternal parameters of the parturient mothers

Among the feto maternal parameters of the parturient mothers there is no significant difference was found in the uterine contraction and cervical dilatation. The uterine dilatation and uterine contraction were increased in after therapy in comparison with before therapy in Control (M=4, SD=0; M=6, SD=0), (M=2.5, SD=0.50; M=4, SD=0) and Experimental (M=4, SD=0; M=6, SD=0), (M=3, SD=0; M=4, SD=0) group of parturient mothers which shows that Shiatsu Massage did not have adverse effects over the mother and fetus.

Level of satisfaction on Shiatsu Massage among parturient mothers

Majority of the women were highly satisfied (86.66%) with Shiatsu Massage and none of them had unsatisfaction towards the therapy. This interprets that Shiatsu Massage was highly effective in reducing the Labour pain perception and improving the coping of the women. There are many techniques to reduce the Labour pain perception, most of it is invasive or has adverse effects on the mother

or the baby or both. But Shiatsu Massage is a type of non-invasive procedure that has good effect on reducing the Labour pain perception without affecting the mother or the baby. Thus the midwives should understand the importance of using pain relief methods which are harmless and they should be encouraged in practicing such therapies.

Association between selected Demographic variables and level of Labour pain and coping after Shiatsu Massage in the Control and Experimental group of parturient mothers

In both the Control and Experimental group of parturient mothers, no significant association was found between Demographic variables and the level of Labour pain which proves that Demographic variables has no influence over the pain perception. Hence some type of pain relief methods has to be provided for all the women to reduce the pain irrespective of their Demographic background.

Similarly no association was found between Demographic variables and the level of coping in both the Control and Experimental group of parturient mothers that Demographic variables may not alter the coping level of the women and hence it is the responsibility of the nurse midwife to help the mother in coping with the Labour pain. so it is the responsibility of a midwife to help the mother to cope with Labour process irrespective of Demographic background.

Association between selected Obstetric variables and level of Labour pain and coping after Shiatsu Massage in the Control and Experimental group of parturient mothers

There was no significant association between Obstetric variable, gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of Labour pain after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained. There was no significant association between gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of Labour pain after Shiatsu Massage in the Experimental group. Hence null hypothesis Ho3 was retained.

There was no significant association between Obstetrical variable such as gravida, parity, gestational age in weeks, number. of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained. There was no significant association between gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Experimental group. Hence null hypothesis Ho3 was retained. Which emphasizes that Obstetric variables has no influence over the pain perception and coping level of the women and necessitates provision of external agent in reducing the Labour pain perception and improving the coping level. As everybody in the

Control and Experimental group experienced moderate pain before Shiatsu Massage no statistics could be applied to find the association between selected Obstetric variables and the level of Labour pain and coping.

Summary

This chapter has dealt with the discussion of various aspects of the study findings. This emphasized the Demographic variables and Obstetric variables of the parturient mothers and Shiatsu Massage. It has also dealt with the mean and standard deviation of level of Labour pain, coping and feto maternal parameters before and after Shiatsu Massage in Control and Experimental group, association between selected Demographic and Obstetrical variables with level of Labour pain and coping after Shiatsu Massage.

CHAPTER VI
SUMMARY, CONCLUSION, IMPLICATIONS AND
RECOMMENDATIONS AND LIMITATIONS

Summary

This study was conducted by the researcher to find the effectiveness of Shiatsu Massage upon Labour pain and coping during first stage of Labour in parturient mothers.

Objectives of the Study

The objectives of the study are

1. To assess the level of Labour pain, coping and feto maternal parameters before and after Shiatsu Massage among Control and Experimental group of parturient mothers in active phase of first stage of Labour.
2. To compare the level of Labour pain, coping and feto maternal parameters among Control and Experimental group of parturient mothers after Shiatsu Massage.
3. To determine the level of satisfaction upon Shiatsu Massage among Experimental group of parturient mothers
4. To find out the association between the selected Demographic variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.
5. To find out the association between the selected Obstetric variables and the level of Labour pain, coping and feto maternal parameters of parturient mothers before and after Shiatsu Massage in Control and Experimental group.

Null Hypotheses

- Ho1** There will be no significant relationship between the level of Labour pain, coping and Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.
- Ho2** There will be no significant association between selected Demographic variables and of Labour pain and coping before and after Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.
- Ho3** There will be no significant association between selected Obstetric variables and level of Labour pain and coping before and after Shiatsu Massage in Control and Experimental group of parturient mothers during the first stage of Labour.

Major Findings of the Study

Demographic variables of parturient mothers

Majority of the parturient mothers in both the Control and Experimental group were up to the age group of 25 years (53.33%, 60%) which shows that most of them are aware about the right age of reproduction and there is less chance to have complications during pregnancy and delivery.

The educational qualification of the women shows that most of them in the Control and Experimental group had only higher secondary education (40%, 50%) and significant number of the women (50%, 43.33%) in the Experimental group was graduates. As women with inadequate education may have inadequate information regarding health care practices, the researcher felt that doing higher

education helps mother in better understanding about Labour process and better coping and thus all the women should be encouraged to do their higher education in addition to schooling.

Majority of them in both the Control and Experimental group were from sub urban area (53.33%, 53.33%) respectively and even though the women were distributed in different areas of residence they seek good medical advice and are aware about the advantages of taking adequate antenatal care and thus reducing the incidence of complications during delivery.

Among the women of both the Control and Experimental group, majority of them belong to nuclear family (73.3%, 86.66%) respectively. The researcher feels that as the responsibility to care other family members were less in the nuclear families, it promotes the mother to seek antenatal care with the support of their spouse. A study conducted by Allendorf in 2010 says that among nuclear families, women with better marital relationships are more likely to use antenatal care services delivered in a health-care facility than others.

None of the women in the Control and Experimental group receive previous information about Shiatsu Massage (100%, 100%) which shows that they were not familiar with the various alternative pain relief measures. Hence it is the duty of the nurse midwives to explain to the mother about various methods available for pain relief during Labour.

Obstetric variables of the parturient mothers

Majority of the women in the Control and Experimental group were between 39 – 40 weeks of gestation (43.33%, 63.33%) during delivery. This proves that risk of preterm Labour, post term Labour, maternal and fetal complications was reduced with regular antenatal checkups, and advanced screening methods. The health care workers were playing a vital role in delivering the baby at the right time without leading to post term Labour complications. This view was supported by Aaron et.al. (2008) in their study conducted at the Department of Obstetrics and Gynecology it proves that maternal complications were high beyond 40 weeks of gestation.

Majority of the women (100%, 100%) in both the Control and Experimental group attended more than four antenatal visit emphasizes that most of the women were aware about the importance of regular antenatal checkup in reducing the complications. It is felt by the researcher that recent advances in the health care services improved the outcome of Labour through increased antenatal visits.

Majority of them (100%, 100%) APGAR score of newborn at birth in both the Control and Experimental group were between 7 – 10 which emphasized that there was no fetal complication because of Shiatsu Massage.

Mean and Standard Deviation of pain level before and after Shiatsu Massage in the Control and Experimental group of parturient mothers

Majority of women in the Control group had moderate pain (83.3%) before Shiatsu Massage and had severe pain (13.33%) after Shiatsu Massage. The mean pain level in the Control group was high after therapy (M=5.8, SD=0.88) compared to before therapy (M=4, S.D=1.17) whereas the mean pain level was slightly high (M=4.6, SD=0.81) after therapy in the Experimental group when compared with before therapy (M=3.6, SD=0.81).

This shows that the Shiatsu Massage was effective in reducing the level of Labour pain perception. Many women need some type of pain relieving measures to deal with pain during childbirth. The management of Labour pain is a primary responsibility of the nurse. Interventions to reduce pain perception are one of the essential aspects of nursing care that must be considered during a Labour.

Mean and Standard deviation of coping level before and after Shiatsu Massage in the Control and Experimental group of parturient mothers

Majority of the women needed lot of help after Shiatsu Massage (93.33%) in Control group when compared with Experimental group (60%). Most of the women were able to do 3R's (40%) in Experimental group when compared with Control group (6.66%). The mean coping level was low after therapy (M=2.00, SD=0.87) in comparison with before therapy (M=4.2, SD=0.94), and the mean coping level was high after therapy (M=4.3, SD=0.69) in comparison with before therapy (M=3.3, SD=0.60) in Control and Experimental group respectively.

A study conducted by Abushaikha in 2007 among Jordanian women describes that they used different coping methods which included physiological, psychological, spiritual and cognitive methods to cope during Labour. Thus it is the responsibility of every nurse midwife to understand the importance of using various coping methods during Labour.

Feto maternal parameters of the parturient mothers

Among the feto maternal parameters of the parturient mothers there is no significant difference was found in the uterine contraction and cervical dilatation. The uterine dilatation and uterine contraction were increased in after therapy in comparison with before therapy in Control (M=4, SD=0; M=6, SD=0), (M=2.5, SD=0.50; M=4, SD=0) and Experimental (M=4, SD=0; M=6, SD=0), (M=3, SD=0; M=4, SD=0) group of parturient mothers which shows that Shiatsu Massage was not producing any adverse effects on the uterine contraction and cervical dilatation.

Level of satisfaction on Shiatsu Massage among parturient mothers

Majority of the women were highly satisfied (86.66%) with Shiatsu Massage and none of them had unsatisfaction towards the therapy. This interprets that Shiatsu Massage was highly effective in reducing the Labour pain perception and improving the coping of the women. There are many techniques to reduce the Labour pain perception, most of it is invasive or has adverse effects on the mother or the baby. But Shiatsu Massage is a type of non-invasive procedure that has good effect on reducing the Labour pain perception without affecting the mother or the baby. Thus the midwives should understand the importance of using pain

relief methods which are harmless and they should be encouraged in practicing such therapies.

Association between selected Demographic variables and level of Labour pain and coping after Shiatsu Massage in the Control and Experimental group of parturient mothers

In both the Control and Experimental group of parturient mothers, no significant association was found between Demographic variables and the level of Labour pain which proves that Demographic variables has no influence over the pain perception. Hence some type of pain relief methods has to be provided for all the women to reduce the pain irrespective of their Demographic background.

Similarly no association was found between Demographic variables and the level of coping in both the Control and Experimental group of parturient mothers that Demographic variables may not alter the coping level of the women and hence it is the responsibility of the nurse midwife to help the mother in coping with the Labour pain. so it is the responsibility of a midwife to help the mother to cope with Labour process irrespective of Demographic background.

Association between selected Obstetric variables and level of Labour pain and coping after Shiatsu Massage in the Control and Experimental group of parturient mothers

There was no significant association between Obstetric variable, gravida, parity, gestational age in weeks, number. of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at

birth with the level of Labour pain after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained. There was no significant association between gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of Labour pain after Shiatsu Massage in the Experimental group. Hence null hypothesis Ho3 was retained.

There was no significant association between Obstetrical variable such as gravida, parity, gestational age in weeks, number. of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Control group. Hence null hypothesis Ho3 was retained. There was no significant association between gravida, parity, gestational age in weeks, number.of antenatal visits, cervical dilatation, duration of first, second ,third stage of Labour and APGAR score of newborn at birth with the level of coping after Shiatsu Massage in the Experimental group. Hence null hypothesis Ho3 was retained. Which emphasizes that Obstetric variables has no influence over the pain perception and coping level of the women and necessitates provision of external agent in reducing the Labour pain perception and improving the coping level. As everybody in the Control and Experimental group experienced moderate pain before Shiatsu Massage no statistics could be applied to find the association between selected Obstetric variables and the level of Labour pain and coping.

Conclusion

This study shows that Shiatsu Massage was effective in reducing the Labour pain perception and improving the coping level of parturient mothers. The Experimental group of parturient mothers who received Shiatsu Massage had decreased pain perception, increased level of coping and was highly satisfied with the therapy. Shiatsu Massage is a non – invasive procedure and has no adverse effects on the mother and the fetus and hence the midwives could be encouraged to use this as a pain relief method during Labour.

Implications

Nursing Practice

The parturient mothers of the Experimental group felt less pain perception and improved coping with the use of Shiatsu Massage during the first stage of Labour than the Control group. It proves that the Shiatsu Massage was more effective to use. The intensity of Labour pain, the length of Labour lasts and women's response to the pain varies widely. The environment in which the women give birth and the support they receive from their care givers and companions will also affect their reaction to pain and their ability to cope. Many women opt to use some form of pain relieving method to help them cope during Labour. Hence it becomes a necessity for the midwives to have adequate knowledge and skill about various non-pharmacological methods. Though there is availability of various non-pharmacological methods, Shiatsu Massage technique is noninvasive, safe and effective and even the spouse and the family members can be taught to do Shiatsu Massage. Thus nurses should perform Shiatsu Massage to promote comfort for the mother in Labour.

Nursing Education

The nursing profession providing compassionate care towards the patients is a noble profession in itself. A national conference conducted by National Institutes of Health of Alternative Medicine and the Uniformed Services University of Health Sciences concluded that nursing and medical education should include information about complementary and alternative therapies. Today the government of India has included alternative medicine and therapies in primary health care setup which shows government's support towards alternative medicine. Nurse educators should consider the inclusion of complementary and alternative therapies in nursing curricula with increasing frequency and motivation by major part of the public for the use of these therapies.

Nursing Administration

With the advent of various technologies in the field of nursing, nurses are expected to be skilful in various aspects of providing care for which student nurses has to be trained in it through their education. Thus it is the responsibility of the nurse administrators to include the concept of alternative and complementary therapies in the nursing curricula. The nursing staffs and the nursing students should be encouraged by the nurse administrators to learn various nursing modalities in caring patients and could conduct certifying courses which would help them to practice alternative and complementary therapies.

Nursing Research

The competence of a registered nurse to perform the skills of complementary and alternative therapies begins with nursing education and ends

with nursing practice which requires an evidence to give assurance that the knowledge and practice gained by the nurse are safe and provide comfort for the patients. Thus major research has to be promoted and conducted by the nurse researchers to prove the effectiveness of alternative and complementary therapies in nursing profession.

Recommendations

- The same study can be conducted with large number of samples.
- A comparison can be made with different stages of Labour.
- The same study can be conducted at different setting.
- A comparison can be made between different types of alternative and complementary therapies.

Limitations

- The study findings cannot be generalized due to small sample size.
- Quasi experimental research could not be possible due to practical difficulties

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APPENDIX I

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY



(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

CO/0216/13

02.05.2013

To

The Medical Director,
Andhra Mahila Sabha,
11 & 12 Durgabai Deshmukh Road,
Chennai.

Respected Sir / Madam,

Sub: To request permission for research study – Reg.

Greetings! As part of the curriculum requirement our 2nd year M.Sc. (N) student Ms. Bensita Lincy.B has selected the following title for her research study.

“An experimental study to assess the effectiveness of shiatsu massage on labour pain among parturient mothers in first stage of labour admitted at selected hospital Chennai”.

So I kindly request your goodselves to permit her to conduct study in your esteemed institution.

Thanking You,


Dr. LATHA VENKATESAN
PRINCIPAL

Regd. Office : 21, Greams Lane Off, Greams Road, Chennai - 600 006. Ph.: +91-44-2829 3333, 2829 0200 Website : www.apollohospitalseducation.com
Unit Office : Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095. Phone : 044 - 2653 4387 Fax : 044 - 2653 4923 / 2653 4386

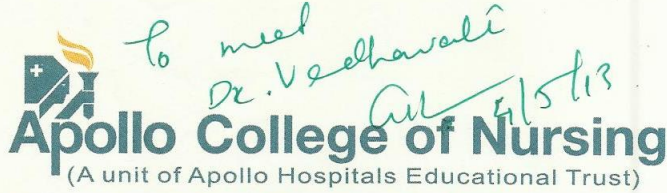


Emergency Service
Dial **1066**



APPENDIX II

LETTER PERMITTING TO CONDUCT THE STUDY



(Recognised by the Indian Nursing Council and Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)

Permitted
GU 7/5/13

CO/0216/13

02.05.2013

To

The Medical Director,
Andhra Mahila Sabha,
11 & 12 Durgabai Deshmukh Road,
Chennai.

Respected Sir / Madam,

Sub: To request permission for research study – Reg.

Greetings! As part of the curriculum requirement our 2nd year M.Sc. (N) student Ms. Bensita Lincy.B has selected the following title for her research study.

“An experimental study to assess the effectiveness of shiatsu massage on labour pain among parturient mothers in first stage of labour admitted at selected hospital Chennai”.

So I kindly request your goodselves to permit her to conduct study in your esteemed institution.

Thanking You,

Latha
Dr. LATHA VENKATESAN
PRINCIPAL

Inhouse Steady
R. Seshavali
4.5.13

Regd. Office : 21, Grems Lane Off, Grems Road, Chennai - 600 006. Ph. : +91-44-2829 3333, 2829 0200 Website : www.apollohospitalseducation.com
Unit Office : Vanagaram to Ambattur Main Road, Ayanambakkam, Chennai - 600 095. Phone : 044 - 2653 4387 Fax : 044 - 2653 4923 / 2653 4386



Emergency Service
Dial **1066**



APPENDIX III

ETHICAL COMMITTEE PERMISSION TO CONDUCT THE STUDY

Ethics Committee



15 May 2013

To,
Ms. Bensitta Lincy
2nd Year M.SC (Nursing),
Department of Obstetrics & Gynecology Nursing,
Apollo College of Nursing, Chennai.

Ref: An experimental study to assess the effectiveness of shiatsu massage on labour pain and coping among parturient mothers in first stage of labour admitted at selected hospital, Chennai.

Sub: Approval of the above referenced project and its related documents.

Dear Ms. Bensitta Lincy

Ethics Committee-Apollo Hospitals has received the following document submitted by you related to the conduct of the above-referenced study.

- Project proposal.
- Informed consent form.

The Ethics Committee-Apollo Hospitals reviewed and discussed the Project proposal documents submitted by you related to the conduct of the above referenced Project at its meeting held on 14 May 2013.

The following Ethics Committee Members were present at the meeting held on 14 May 2013.

Name	Profession	Position in the committee
Dr. Rema Menon	Clinician	Member Secretary
Dr. P. Nalini Rao	Social Worker	Chairperson
Dr. Renuka Singh	Consultant Clinical Pharmacologist	Basic Medical Scientist
Dr. Krishna Kumar	Clinician-Medical Superintendent	EC -Member
Miss. N. Suseela	Retired English Teacher	Layperson
Ms. Maimoona Badsha	Lawyer	Lawyer
Dr. Vijayakumar	Clinician	EC-Member

Apollo Hospitals Enterprise Limited

21, Greams Lane, Off Greams Road, Chennai - 600 006

Tel : 91 - 44 - 2829 1618, 2829 3333, 91 - 44 - 2829 5465 Extn : 5045 / 6641

Fax : 91 - 44 - 2829 1618 / 4449 E - Mail : ecapollochennai@gmail.com

ETHICAL COMMITTEE PERMISSION TO CONDUCT THE STUDY



Ethics Committee

After due ethical and scientific consideration, the Ethics Committee has approved the above presentation submitted by you.

The EC review and approval of the report is only to meet the academic requirement and will not amount to any approval of the conclusions / recommendations as conclusive, deserving adoption and implementation, in any form, in any healthcare institution.

The Ethics Committee is constituted and works as per ICH-GCP, ICMR and revised Schedule Y guidelines.

With Regards,

Date:

15/5/13

Dr. Rema Menon,
Ethics Committee-Member Secretary,
Apollo Hospitals, Chennai,
Tamil Nadu, India.

Dr. REMA MENON
MEMBER SECRETARY
ETHICS COMMITTEE, APOLLO HOSPITALS
APOLLO HOSPITALS ENTERPRISE LIMITED
CHENNAI-600 006, TAMILNADU

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APPENDIX IV

LETTER REQUESTING OPINIONS AND SUGGESTIONS OF EXPERTS FOR ESTABLISHING CONTENT VALIDITY OF RESEARCH

From

Ms.Bensitta Lincy.B.

M.Sc., (Nursing) II Year,

Apollo College of Nursing,

Chennai-95.

To

Forwarded Through:

Dr. Latha Venkatesan,

Principal,

Apollo College of Nursing.

Sub: Request for opinions and suggestions of experts for content validity of Research tool.

Respected Sir/ Madam

Greetings! As a part of the Curriculum Requirement the following research title is selected for the study. on “ **An experimental study to assess the effectiveness of Shiatsu Massage upon labour pain among parturient mothers during first stage of labour in selected hospital Chennai.**” I will be highly privileged to have your valuable suggestions with regard to the establishment of Content Validity of Research tool. So, I request you to validate my Research tool and give suggestions about the tool.

Yours Sincerely,

(Ms. Bensitta Lincy.B)

APPENDIX V

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr. Latha Venkatesan., M.Sc (N)., M.Phil (N), Ph.D (N),**
Principal,
Apollo College of Nursing,
Chennai – 95.
2. **Prof. Mrs. Lizy Sonia. A., M.Sc(N)., Ph.D(N),**
Vice Principal,
Apollo College of Nursing,
Chennai – 95.
3. **Prof. Vijaya lakshmi. K., M.Sc (N)., Ph.D (N)**
HOD of Mental health nursing
Apollo College of Nursing,
Chennai – 95.
4. **Prof. Nesa Sathya Satchi., M.Sc (N)., Ph.D (N)**
Lecturer, Child Health Nursing,
Apollo College of Nursing,
Chennai – 95.
5. **Ms. Thamizharasi., M.Sc (N).,**
Lacturer, Obstetrics and Gynaecological Nursing ,
Apollo College of Nursing,
Chennai – 95.

6. Ms. Saraswathy., M.Sc.(N).,

Lecturer, Obstetrics and Gynaecological Nursing ,

Apollo College of Nursing,

Chennai – 95.

7. Ms. Kavitha., M.Sc.(N).,

Lecturer, Obstetrics and Gynaecological Nursing ,

Apollo College of Nursing,

Chennai – 95.

APPENDIX VI
CONTENT VALIDITY CERTIFICATE

This is to certify that tools and content for the research study developed by Ms.Bensitta Lincy. B, II year M.Sc (Nursing) student of Apollo College of Nursing for her dissertation “**An Experimental Study to Assess the Effectiveness of Shiatsu Massage on Labour Pain and Coping Among Parturient Mothers in First Stage of Labour Admitted at Selected Hospital, Chennai**” was validated.

Signature of the Expert

APPENDIX VII
RESEARCH PARTICIPANT CONSENT FORM

Dear Participant,

I am Bensitta Lincy. B., M.Sc. Nursing student of Apollo College of Nursing, Chennai. As a part of my study, I have selected a Research Project on “**An experimental study to assess the effectiveness of Shiatsu Massage upon labour pain among parturient mothers during first stage of labour in selected hospital Chennai.**”

I hereby seek your consent and co-operation to participate in the study. Please be frank and honest in your response. The information collected will be kept confidential and anonymity will be maintained.

Signature of the Researcher

I,, hereby give my consent to participate in the study.

Signature of the Participant

Place:

Date:

ஆராய்ச்சியில் பங்கு பெறுபவருக்கான ஒப்புதல் படிவம்

அன்பார்ந்த தாய்மாரே!

என் பெயர் பென்சிட்டா லின்சி .பெ, நான் அப்போலோ செவிலியர் கல்லூரியில் முதுகலை செவிலியர் பயிற்சி பெறும் மாணவி, என்னுடைய பயிற்ச்சியின் ஒரு பகுதியாக, சியாட்சு மசாஜ் செய்யும் ஆய்வை செய்கிறேன்.

இதனால் இந்த ஆராய்ச்சியில் நீங்கள் பங்கு பெற உங்களுடைய ஒப்புதல் மற்றும் ஒத்துழைப்பை வேண்டுகிறேன். தயவு செய்து உங்களுடைய பதில்கள் அனைத்தும் வெளிப்படையாகவும் மற்றும் உண்மையானதாகவும் இருக்க வேண்டும் உங்களுடைய பெயர் எங்கும் வெளியிடப்படமாட்டாது.

ஆராய்ச்சியாளரின் கையொப்பம்

_____ என்ற நான் இந்த ஆராய்ச்சியில் பங்கு பெற ஒப்புதல் அளிக்கிறேன்.

பங்கு பெறுவோரின் கையொப்பம்

APPENDIX VIII

CERTIFICATE FOR SHIATSU MASSAGE

Govt.Regd No: 188

RS CURE ACUPUNCTURE CLINIC

Dr.R.Sundari
MD(Acu),Dip(PT),TPSVSM Siddha
INO, IBAM , RMP(AA)

Timing Hours
Mor- 10am – 1 pm
Eve - 6 pm - 9 pm

Date: 27.05.2013

Whomsoever may be concern

This to certify that Ms.Bensitta Lincy.B of M.Sc.Nursing from Apollo College Of Nursing, Chennai-95, has done her training in **Shiatsu Massage on Labour pain** for one week in our Institute. The project work entitled “**An experimental study to assess the effectiveness of shiatsu massage on labour pain among parturient mothers in first stage of labour admitted at selected hospital Chennai**”. During that period, she had been trained in this topic, she acquitted herself. She was prompt in her duty and her conduct was good.

Yours Faithfully

R. Sundari


Dr.R.Sundari

NO: BE – 8, Nethajie Bose Road , Bharathi Nagar (opp – New PF office), phase -3 sathuvachari vellore -9

APPENDIX IX
CERTIFICATE FOR ENGLISH EDITING

TO WHOM EVER IT MAY CONCERN

This is to certify that the dissertation “An experimental study to assess the effectiveness of Shiatsu massage upon labour pain and coping among parturient mothers in first stage of labour” by Ms. Bensitta Lincy B, II year M.Sc (N) Student, Apollo College of Nursing was edited for English language appropriateness.


Signature
J. Vasanthi, M.A., M.Ed., M.Phil.,
Post Graduate Asst in English
Govt. Hr. Sec. School
Sathuvachari, Vellore-9.

APPENDIX X
CERTIFICATE FOR TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the tool for demographic variable performa, Obstetric variable proforma, Visual pain analogue scale, Pain coping scale and Rating scale on satisfaction of Shiatsu Massage upon labour pain translated by Ms.Bensitta Lincy.B. II year M.Sc (N) Student, Apollo College of Nursing for her dissertation **“An Experimental Study to Assess the Effectiveness of Shiatsu Massage on Labour Pain and Coping among Parturient Mothers in Active Phase of First Stage of Labour Admitted at Selected Hospital, Chennai”** was edited for Tamil language appropriateness.


Signature
K. RAVICHANDRAN, M.A., M.Phil.,
Assistant Professor in Tamil
Ramakrishna Mission Vivekananda College
Evening College (Autonomous)
Chennai - 600 004.

APPENDIX XI
DEMOGRAPHIC VARIABLE PROFORMA

Purpose

This proforma is used to measure the demographic variables such as age, religion, educational status, occupation, area of residence, family monthly income, type of family and sources of information.

Instructions

The investigator will be using the record of the mother, interviewing and fill the details.

Sample no:

1. Age in years

- 1.1 Below 20 years
- 1.2 20 – 25 years
- 1.3 26 - 30 years

2. Educational status

- 2.1 Primary school
- 2.2 Secondary education
- 2.3 Higher secondary
- 2.4 Graduate
- 2.5 Postgraduate

3. Occupation

- 3.1 Employed
- 3.2 Unemployed

4. Religion

4.1 Hindu

4.2 Christian

4.3 Muslim

4.4 others

5. Monthly income in rupees

5.1 Below 5000

5.2 5000 – 10,000

5.3 10,001 – 15,000

5.4 15,001 – 20,000

5.5 above 20,000

6. Type of family

6.1 Nuclear family

6.2 Joint family

6.3 Extended family

7. Area of residence

7.1 urban

7.2 rural

7.3 sub urban

**8. Have you received information regarding labour pain relief and shiatsu
massage?**

8.1 Yes

8.2 No

9. If yes, source of information

9.1 Health care workers

9.2 Television and Radio

9.3 Newspaper

9.4 Internet

சமூகம் மற்றும் குடும்ப விபரங்களை அறிய உதவும் மாதிரிப் படிவம்

நோக்கம்

இந்தப்படிவம் கருவுற்றிருக்கும் பெண்ணின் வயது, படிப்பு, மாத வருமானம், மதம், குடும்ப வகை மற்றும் வசிப்பிடம் பற்றிய விபரங்களை அறிய உதவுகிறது.

குறிப்பு:

கீழே கொடுக்கப்பட்டுள்ள தகவல்கள் கருவுற்றிருக்கும் பெண்ணிடம் கேட்டறிந்து ஆராய்ச்சியாளரால் நிரப்பும்.

மாதிரி எண்

1. வயது (வருடங்களில்)

1.1 < 20

1.2 20-25

1.3 26-30

2. படிப்பு

2.1 ஆரம்பநிலைக் கல்வி

2.2 உயர்நிலைக் கல்வி

2.3 மேல்நிலைக் கல்வி

2.4 பட்டப்படிப்பு அதற்கு மேல்

3. தொழில்

3.1 வேலை செய்பவர்

3.2 வேலையில்லாதவர்

4. மதம்

4.1 இந்து

4.2 கிறித்துவம்

4.3 இஸ்லாமியம்

4.4 மற்ற மதத்தினர்

5. மாத வருமானம் ரூபாயில்

5.1 < 5000

5.2 5000-10000

5.3 10001-20000

5.4 15001-20000

5.5 20000 ரூபாய்க்கு மேல்

6. குடும்ப வகை

6.1 தனிக்குடும்பம்

6.2 கூட்டுக் குடும்பம்

6.3 விரிவுபடுத்தப்பட்ட குடும்பம்

7. வசிக்குமிடம்

7.1 நகர்புறம்

7.2 கிராமப்புறம்

7.3 புறநகர்ப் பகுதி

8. சியாட்சு மசாஜ் சிகிச்சை பற்றிய தகவல்களை முன்னரே அறிந்துள்ளீர்களா?

8.1 ஆம்

8.2 இல்லை

9. ஆம் எனில் குறிப்பிடவும்

9.1 மருத்துவ ஊழியர்களிடமிருந்து

9.2 தொலைக்காட்சி, வானொலி

9.3 செய்தித்தாள்

9.4 இணையத்தளம்

APPENDIX XII

OBSTETRIC VARIABLE PROFORMA

Purpose:

This proforma is used to measure the Obstetric variable such as gravida, parity, gestational age in weeks, number of antenatal visits, cervical dilatation, duration of first, second and third stage of labour and APGAR score of newborn at birth.

Instruction:

The researcher will be collecting the information by interviewing the mothers and from medical records to fill the details.

1. Gravida

1.1 Primi gravid

1.2 Multi gravid

2. Parity

2.1 One

2.2 Two

2.3 More than two

3. Gestational age in weeks

3.1 37 – 38

3.2 39 – 40

3.3 41 – 42

4. Number of Antenatal visits

4.1 No visit

4.2 ≤ 4

4.3 > 4

5. Cervical dilatation

5.1 4 – 5 cm

5.2 6 – 7 cm

5.3 8 – 10 cm

6. Duration of first stage of labour

6.1 9 – 10 hrs

6.2 11 – 12 hrs

6.3 12 – 13hrs

7. Duration of second stage of labour

7.1 < 1 hr

7.2 1 hour – 2 hours

7.3 > 2 hours

8. Duration of third stage of labour

8.1 < 10 minutes

8.2 10 – 20 minutes

8.3 > 20 minutes

9. APGAR Score of newborn at birth

9.1 <3

9.2 4 -6

9.3 7 -10

கர்ப்பகால விவரங்களின் மாதிரி படிவம்

நோக்கம்

இந்த படிவம் கர்ப்பம் தரித்த எண்ணிக்கை, கருவுற்றிருக்கும் வாரங்கள், கருவுற்றிருக்கும் போது மருத்துவரை அணுகிய எண்ணிக்கை, கர்ப்பப்பை வாய் விரிவடைதல், கர்ப்பத்தின் முதல் நிலைக்காலம், இரண்டாம் நிலைக்காலம், மூன்றாம் நிலைக்காலம் அப்கார் மதிப்பீடு பற்றிய விவரங்களை அறிய உதவுகிறது.

குறிப்புகள்

கீழே கொடுக்கப்பட்டுள்ள தகவல்கள் கருவுற்றிருக்கும் பெண்ணிடம் கேட்டறிந்து ஆராய்ச்சியாளரால் நிரப்பப்படும்

1. தாய்மை நிலை

1.1 முதல் தாய்மை நிலை

1.2 ஒன்றுக்கு மேற்பட்ட தாய்மை நிலை

2. கர்ப்பம் தரித்த எண்ணிக்கை

2.1 ஒன்று

2.2 இரண்டு

2.3 இரண்டிற்கு மேல்

3. கருவுற்றிருக்கும் வாரங்கள்

3.1 37-38

3.2 39-40

3.3 41-42

4. கருவுற்றிருக்கும் போது மருத்துவரை அணுகிய எண்ணிக்கை

4.1 அணுகவில்லை

4.2 ≤ 4

4.3 ≥ 4

5. கர்ப்பப்பை வாய் விரிவடைதல்

5.1 3-5 செ.மீ

5.2 6-7 செ.மீ

5.3 8-10 செ.மீ

6. கர்ப்பத்தின் முதல் நிலைக் காலம்

6.1 9-10 மணிநேரம்

6.2 11-12 மணிநேரம்

6.3 12-13 மணிநேரம்

7. கர்ப்பத்தின் இரண்டாம் நிலைக் காலம்

7.1 < 1 மணிநேரம்

7.2 1-2 மணிநேரம்

7.3 > 2 மணிநேரம்

8. கர்ப்பத்தின் மூன்றாம் நிலைக்காலம்

8.1 < 10 நிமிடங்கள்

8.2 10-20 நிமிடங்கள்

8.3 > 20 நிமிடங்கள்

9. அப்கார் மதிப்பீடு – குழந்தை பிறந்தவுடன்

9.1 < 3

9.2 4-6

9.3 7-10

APPENDIX XIII

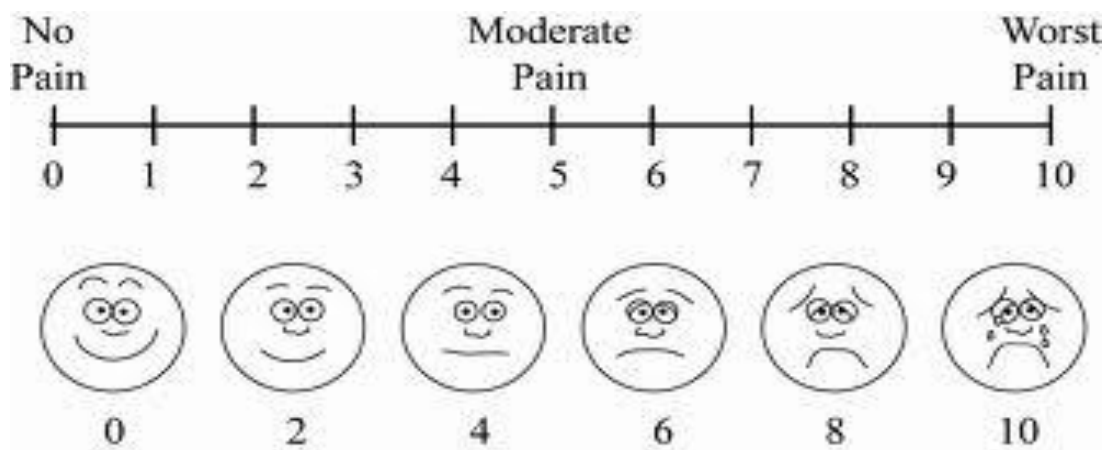
VISUAL PAIN ANALOGUE SCALE

Purpose:

The modified pain intensity scale will be used to measure the intensity of pain among parturient mothers before and after the use of shiatsu massage during the first stage of labour

Instructions:

The researcher used to monitor the pain intensity level before and after the therapy



scores level of pain
 0 no pain
 1- 3 mild pain
 4 – 6 moderate pain
 7- 9 severe pain
 10 worst possible pain

Level of pain	1	2	3
Before therapy			
After therapy			

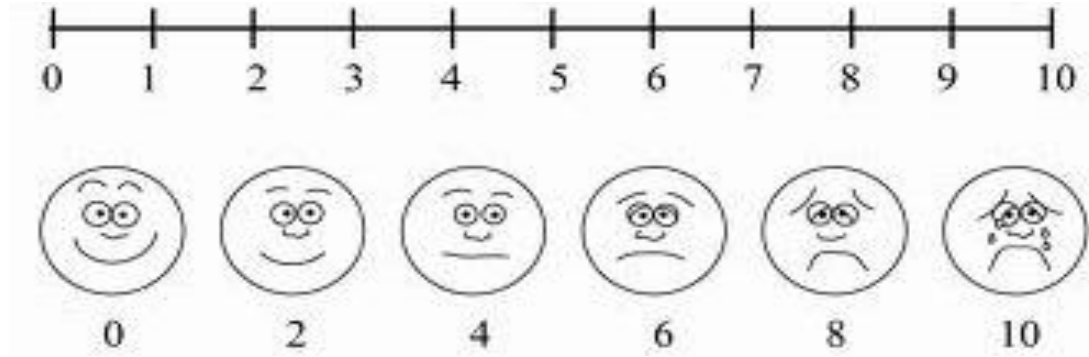
வலியின் அளவை நிர்ணயிக்கும் அளவுகோல்

நோக்கம்

இந்த அளவுகோல் பிரசவத்தின் போது தாய்க்கு ஏற்படும் வலியின் அளவை நிர்ணயிக்க உதவுகிறது.

குறிப்புகள்

ஆராய்ச்சியாளர் கீழே கொடுக்கப்பட்டுள்ள முகங்களில் அது பிரசவிக்கும் பெண்ணின் வலியின் அளவை ஒப்பிடுவதை போலுள்ளது என்பதை காண்பித்து கூறுவதன் மூலம் வலியின் அளவை கண்டறிய உதவுகிறது. வலது புறம் கடைசியில் உள்ள முகம் மிகவும் மோசமான வலியை குறிக்கிறது.



வலியை நிர்ணயிக்கும் அளவுகோல்

வலியின்	1	2	3
அளவு			
சிகிச்சைக்கு			
முன்			
சிகிச்சைக்கு			
பின்			

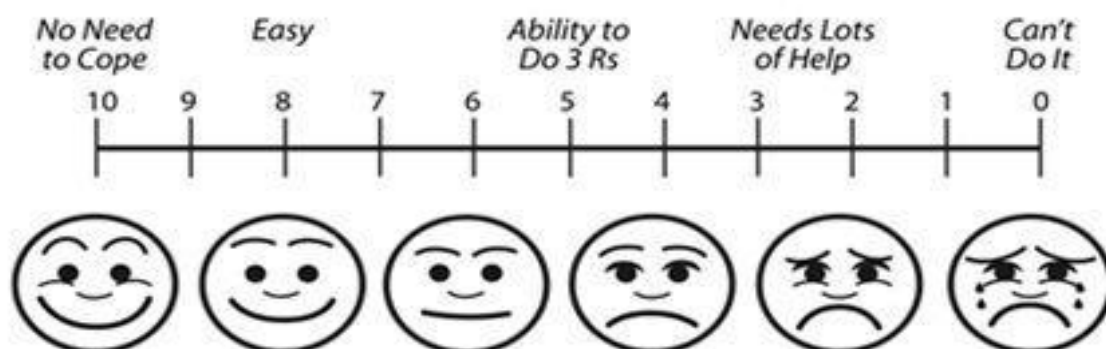
APPENDIX XIV
PAIN COPING SCALE

Purpose:

The scale will be used to measure the pain coping of parturient mothers before and after Shiatsu Massage as scored by the researcher.

Instruction:

Please indicate your level of coping ability during uterine contraction. This response will be kept confidential.



Scores	Level of Pain
0	Can't do it
1-3	Needs of lot
4-6	Able to do 3 R's
7-9	Easy
10	No need to cope

3R's- Relaxation, Ritual, Rhythm

Assessment of pain coping	Cervical dilatation		
	4-5	6-7	8-10
Before therapy			
After therapy			

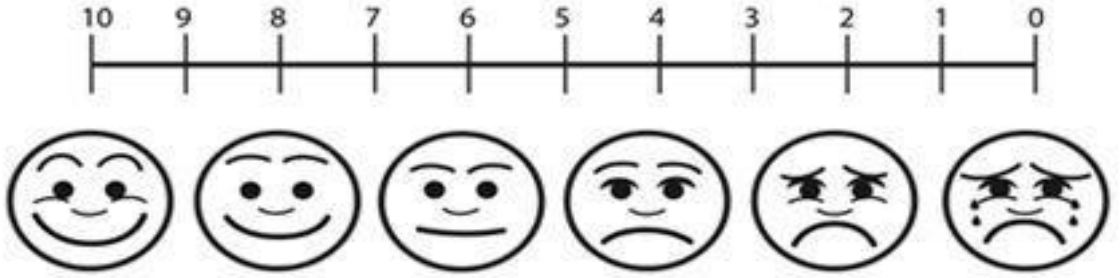
வலியின் திறனை கணக்கிடும் அளவுகோல்

நோக்கம்

இந்த அளவுகோல் கருவுற்றிருக்கும் பெண்ணின் வலியை தாங்கிக் கொள்ளும் திறனை, சியாட்சு மசாஜ் சிகிச்சைக்கு முன்னும், பின்னும் எவ்வாறு கண்டறிய உதவுகிறது.

குறிப்புகள்

தயவுசுர்ந்து உங்கள் கர்ப்பை சுருங்கும்போது உண்டாகும் வலியை எந்த அளவிற்கு தாங்கிக் கொள்கிறீர்கள் என்பதை குறிப்பிடவும் உங்கள் பதில்கள் இரகசியமாக வைக்கப்படும்.



மதிப்பெண்

வலியின் அளவு

0

-

செயலின்மை

1-3

-

உதவியுடன் செய்ய முடியும்

4-6

-

3 விதத்தில் செய்ய முடியும்

7-9

-

எளிதாக செய்ய முடியும்

10

-

வலிதாங்கும் அவசியம் இல்லை

வலியின் திறன்	கர்ப்பப்பை வாய் நீட்டிப்பு		
	4-5	6-7	8-10
வலியின் அளவு சிகிச்சைக்கு முன்			
வலியின் அளவு சிகிச்சைக்கு பின்			

*3 விதம் - தாளம், சடங்கு, இளைப்பாறுதல்

APPENDIX XV
MODIFIED WHO PARTOGRAPH

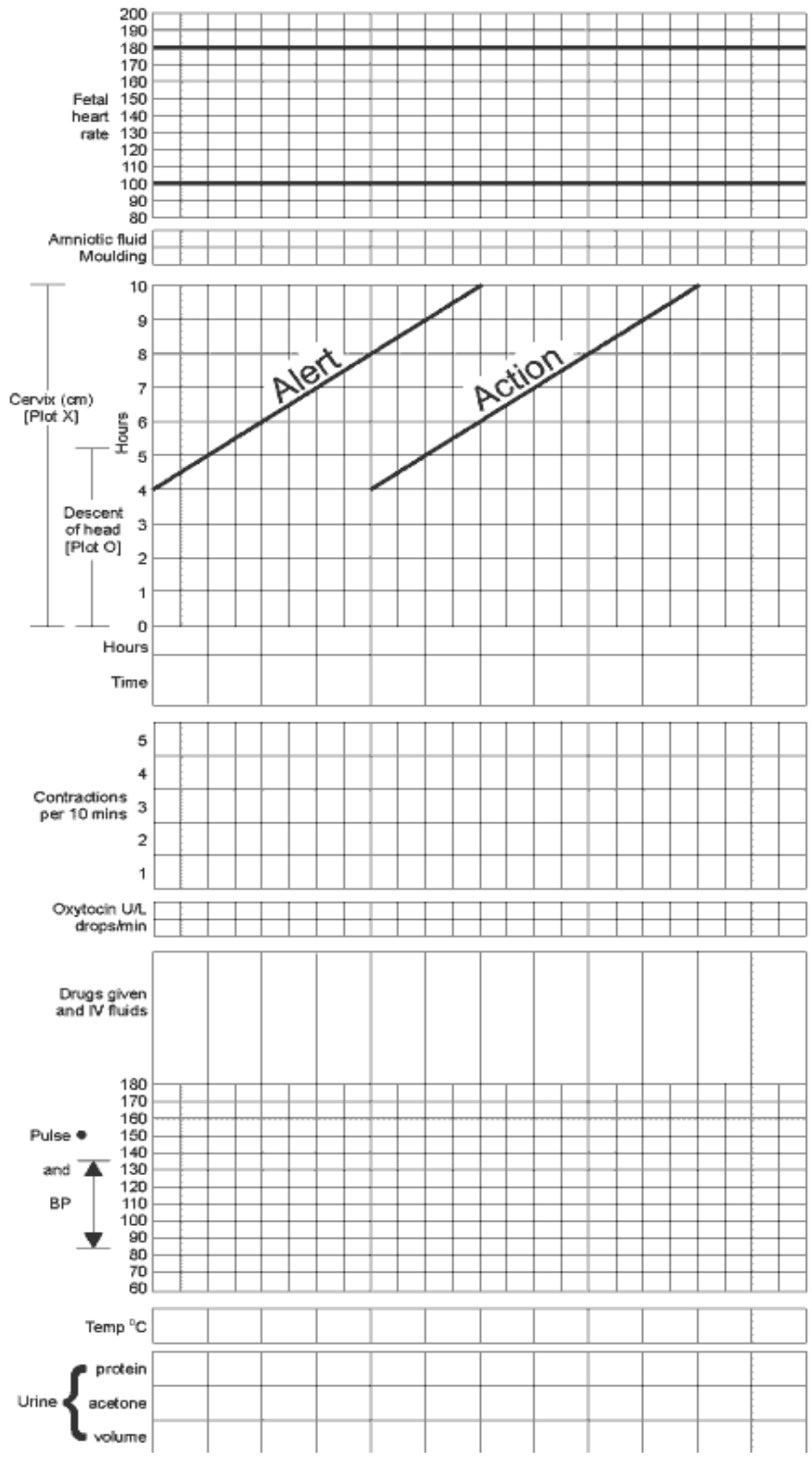
Purpose

This partogram is used to record the information such as fetal heart rate, cervical dilatation, cervical effacement, contraction per 10 minutes, maternal pulse rate, blood pressure and maternal temperature before and after the therapy.

Instruction

The researcher used to monitor the mother and fetal condition and record in this partogram.

Name _____ Gravida _____ Para _____ Hospital number _____
 Date of admission _____ Time of admission _____ Ruptured membranes _____ hours



BLUE PRINT

RATING SCALE ON THE SATISFACTION OF SHIATSU MASSAGE ON LABOUR PAIN

Sl.no	CONTENT	ITEMS	TOTAL ITEMS	PERCENTAGE
1.	Approach of the investigator	1,2,8	3	30%
2.	Method of application	3,4,5,6	4	40%
3.	Effectiveness of the therapy	7,9,10	3	30%
TOTAL			10	100%

APPENDIX XVI

RATING SCALE ON THE SATISFACTION OF SHIATSU MASSAGE UPON LABOUR PAIN IN FIRST STAGE OF LABOUR

Purpose

The rating scale is designed to assess the level of satisfaction of the parturient mothers regarding the shiatsu massage and the effectiveness of the therapy

Instruction:

The rating scale consists of 10 items. Kindly read and give your response freely and frankly and the responses will be kept confidential

Sl.no	Items	Highly satisfied 3	Moderately satisfied 2	Just satisfied 1	Not satisfied 0
1.	Are you satisfied with the prior information about the therapy given by the researcher?				
2.	Are you satisfied with the presence of investigator in need?				
3.	Are you satisfied with the method of applying massage?				
4.	Are you satisfied with the frequency of applying massage?				
5.	Are you satisfied with the duration of giving massage?				

6.	Are you satisfied with the timing of massage?				
7.	Are you satisfied with the negligible discomforts of the massage?				
8.	Are you satisfied with the method of evaluation by the researcher?				
9.	Are you satisfied with the effectiveness of therapy in terms of pain reduction				
10.	Are you satisfied as shiatsu promotes relaxation?				

key:

SCORE	PERCENTAGE	INTERPRETATION
< 12	< 40%	Low level of satisfaction
12 – 20	40 - 69%	Moderate level of satisfaction
21 – 30	70 – 100%	High level of satisfaction

பிரசவ வலியின் போது சியாட்சு மசாஜ் செய்வதால் ஏற்படும் திருப்தியின் மதிப்பு
அளவீடு

நோக்கம்:

மதிப்பீட்டு அளவு சியாட்சு மசாஜ் தொடர்பாக குழந்தைப் பெறும் தாய்மார்களின் திருப்தி நிலை மற்றும் சிகிச்சை திறன் மதிப்பீடு வடிவமைக்கப்பட்டுள்ளது.

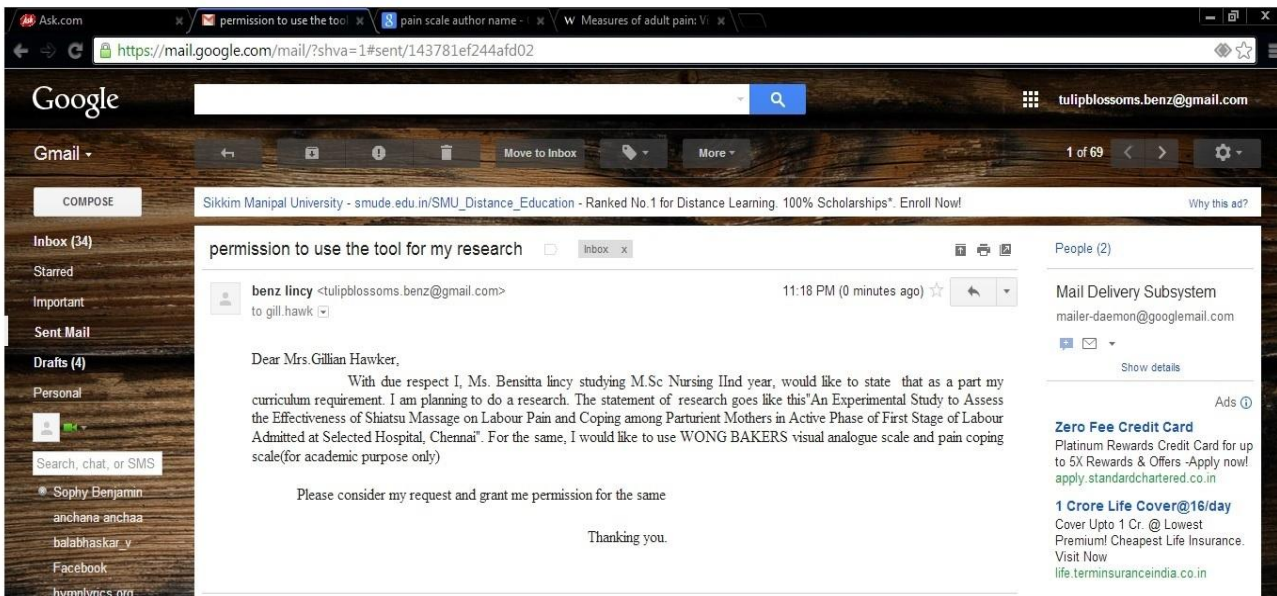
குறிப்பு

மதிப்பீடு அளவு பத்து பொருட்களைக் கொண்டுள்ளது. தயவு செய்து படித்து உங்களுடைய வெளிப்படையான பதில்களை கொடுக்கவும். இது இரகசியமாக வைக்கப்படும்.

வரிசை எண்	கூற்று	முழு மன நிறைவு 3	மிதமான அளவு மன நிறைவு 2	மன நிறைவு 1	மனநிறைவு இல்லாமை 0
1.	நீங்கள் ஆராய்ச்சியாளர் கொடுத்த சிகிச்சை பற்றிய முன்னர் தகவல் திருப்தியானதா?				
2.	நீங்கள் ஆராய்ச்சியாளர் உடனிருப்பதில் திருப்தியா?				
3.	நீங்கள் மசாஜ் செய்யும் முறையில் திருப்தி அடைந்தீர்களா?				
4.	நீங்கள் சியாட்சு மசாஜ் கொடுக்கப்படும் இடைவேளையில் திருப்தி அடைந்தீர்களா?				
5.	மசாஜ் கொடுக்கப்படும் காலநிலையில் திருப்தி அடைந்தீர்களா?				
6.	மசாஜ் செய்யும் நேரத்தில் திருப்தி அடைந்தீர்களா?				
7.	புறக்கணிக்கப்பட்ட உபாதைகள் உங்களுக்கு இடையூறாக இருந்ததா?				
8.	நீங்கள் ஆராய்ச்சியாளர் பயன்படுத்திய மதிப்பீடு முறையில் திருப்தி அடைந்தீர்களா?				
9.	நீங்கள் வலியைக் குறைக்கும் வகையில் சிகிச்சைத் திறனில் திருப்தி அடைந்தீர்களா?				
10.	சியாட்சு மசாஜ் மூலம் புத்துணர்ச்சி ஊக்குவிக்கப் படுகிறதா?				

APPENDIX XVII

PERMISSION FOR USING VISUAL PAIN ANALOGUE SCALE AND PAIN COPING SCALE



APPENDIX XVIII
MANUAL OF SHIATSU MASSAGE

Definition:

Shiatsu massage is a Japanese technique where the energies of the body are regulated by manipulating points on the body. The pressure is applied over the points by using fingers, palms or elbows.

Benefits of Shiatsu Massage:

The general benefits include

- Release of muscular tension
- Promotes the circulation of blood
- Helps in relieving aches and spasm
- Aids in healing
- Relieves pain and improves general health

The benefits in Labour includes

- Reduces labour pain
- Induces labour
- Improves coping
- Promotes good contraction
- Promotes cervical dilation
- Aids in progress of labour with reducing the duration of labour

Methods of applying Shiatsu massage:

- Strong pressure with finger or thumb
- provide pressure over the UB 30 in Sacromeridian region between S4 and S5

Chinese Name for UB 30 point: Baihuanshu (English translation: White Ring Shu)

Location: In the region of the sacrum, 1.5 cun lateral to the middle sacral crest, at the level of the 4th posterior sacral foramen

Methods of applying Shiatsu massage:

- Strong pressure with finger or thumb
- provide pressure over the UB 30 Sacro meridian region between S4 and S5

Contraindication:

The Shiatsu massage should not be used in the following conditions:

- Burns and infections
- Scars and injuries
- Cuts, wounds, scars, bruises and directly on veins

Mechanism of actions:

Stimulates the energy points and enables in the flow of energy channels thus leading to the release of natural endorphins in the body resulting in decreased pain perception. By decreasing the blocks in the energy points, the impulse from the brain reaches the cervix leading to progress in the cervical dilatation.

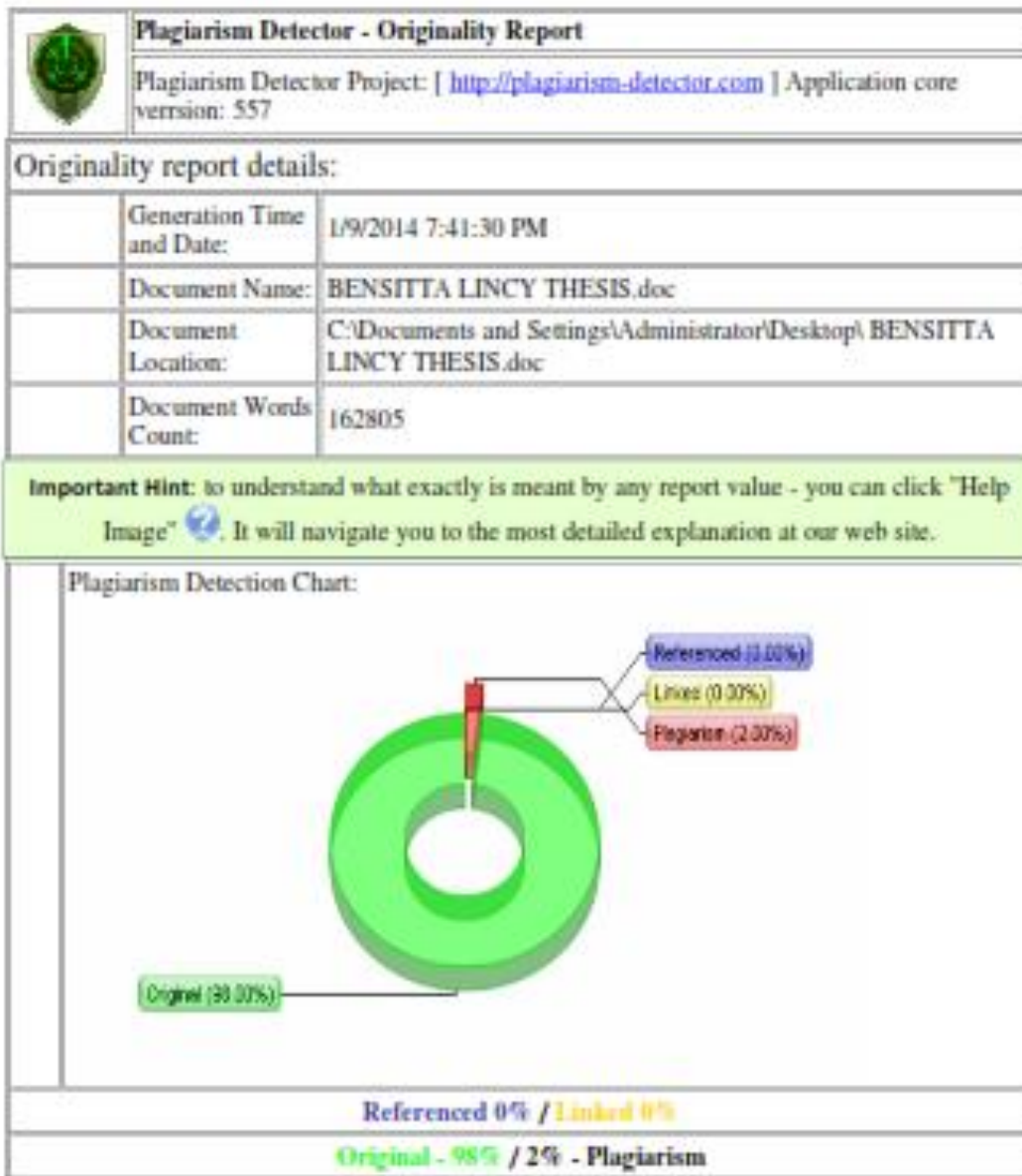


MEASUREMENT



POSITION OF HANDS FOR SHIATSU MASSAGE

APPENDIX XIX
PLAGIARISM ORIGINALITY REPORT



APPENDIX XX
DATA CODE SHEET

CG: Control group

EG: Experimental group

AGE: Age in years

1.1 Below 20 years

1.2 20 – 25 years

1.3 26 - 30 years

EDU: Educational Status

2.1 Primary school

2.2 Secondary education

2.3 Higher secondary

2.4 Graduate

2.5 postgraduate

OCCU: Occupation

3.1 Employed

3.2 Unemployed

REL: Religion

4.1 Hindu

4.2 Christian

4.3 Muslim

4.4 others

MI: Monthly income
Week

5.1 below 5000

5.2 5000 – 10000

5.3 10001 – 15000

5.4 15001 – 20000

5.5 above 20000

TOF: Type of family

6.1 Nuclear family

6.2 Joint Family

6.3 Extended family

AOR: Area of residence

7.1 Urban

7.2 Rural

7.3 Suburban

PI: Previous Information

8.1 yes

8.2 No

GRA: Gravida

1.1 Primi

1.2 Multi

PAR: Parity

2.1 One

2.2 Two

2.3 More than two

GWK: Gestational Age in

3.1 37 – 38

3.2 39 - 40

3.3 41 - 42

AV: Antenatal Visit

4.1 No visit

4.2 ≤ 4

4.3 > 4

CD: Cervical Dilatation

5.1 3 – 5 cm

5.2 6 – 7 cm

5.3 8 – 10 cm

DFSL: Duration of first stage of labour

6.1 9 – 10 hrs

6.2 11 – 12 hrs

6.3 12 – 13hrs

DSSL: Duration of second stage of labour

7.1 < 1 hr

7.2 1 hour – 2 hours

7.3 > 2 hours

DTSL: Duration of third stage of labour

8.1 < 10 minutes

8.2 10 – 20 minutes

8.3 > 20 minutes

APG: APGAR Score

9.1 < 3

9.2 4 -6

9.3 7 -10

LOS – Level of Satisfaction

BT – Before Therapy

AT – After Therapy

APPENDIX XXI
MASTER CODE SHEET

DEMOGRAPHIC VARIABLES									OBSTETRIC VARIABLES									PAIN		COPING				FETO MATERNAL PARAMETERS								
CG	AGE	EDU	OCCU	REL	MI	TOF	AOR	PI	GRA	PAR	GWD	AV	CD	DFSL	DSSL	DTSL	APG	BT	AT	BT	AT	CD		UC		SBP		DBP		FHR		
																							BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	1.2	2.2	3.2	4.1	5.2	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.1	6.1	7.2	8.1	9.3	4	6	6	4	4	6	2	4	120	120	80	76	148	146	
2	1.3	2.3	3.2	4.1	5.2	6.2	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.2	8.1	9.3	6	6	6	4	4	6	3	4	120	110	84	76	152	151	
3	1.3	2.4	3.1	4.1	5.4	6.1	7.1	8.2	1.2	2.1	3.2	4.3	5.1	6.1	7.1	8.1	9.3	4	6	3	2	4	6	2	4	120	120	84	80	150	148	
4	1.2	2.4	3.1	4.1	5.3	6.1	7.3	8.2	1.1	2.1	3.1	4.3	5.1	6.2	7.2	8.2	9.3	4	6	2	2	4	6	3	4	114	120	86	80	156	154	
5	1.3	2.4	3.1	4.1	5.2	6.2	7.3	8.2	1.1	2.1	3.1	4.3	5.1	6.2	7.2	8.1	9.3	6	7	4	2	4	6	2	4	120	110	84	76	140	142	
6	1.2	2.3	3.2	4.3	5.2	6.2	7.3	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	2	4	4	1	4	6	3	4	120	110	80	76	148	146	
7	1.2	2.3	3.2	4.1	5.1	6.1	7.3	8.2	1.1	2.1	3.1	4.3	5.2	6.2	7.2	8.2	9.3	4	6	4	3	4	6	3	4	120	120	80	80	142	146	
8	1.2	2.4	3.2	4.1	5.2	6.1	7.1	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	6	4	1	4	6	2	4	120	110	80	80	146	144	
9	1.3	2.3	3.2	4.1	5.1	6.1	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	6	4	1	4	6	3	4	120	110	70	76	150	152	
10	1.2	2.3	3.2	4.1	5.2	6.2	7.1	8.2	1.2	2.2	3.1	4.3	5.1	6.2	7.1	8.1	9.3	6	7	4	1	4	6	2	4	110	120	80	80	152	152	
11	1.3	2.4	3.1	4.1	5.4	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.2	6.1	7.2	8.1	9.3	2	4	4	2	4	6	3	4	120	110	80	84	154	152	
12	1.3	2.2	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.2	8.2	9.3	4	6	4	2	4	6	2	4	120	10	84	86	150	152	
13	1.3	2.3	3.2	4.3	5.3	6.2	7.1	8.2	1.2	2.2	3.1	4.3	5.2	6.2	7.1	8.1	9.3	4	6	2	2	4	6	3	4	110	110	86	86	151	152	
14	1.2	2.3	3.2	4.1	5.3	6.1	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.2	7.1	8.1	9.3	4	6	4	1	4	6	2	4	120	120	80	80	154	150	
15	1.3	2.4	3.1	4.2	5.4	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.1	6.2	7.1	8.1	9.3	4	6	4	1	4	6	3	4	120	116	70	80	148	146	
16	1.2	2.4	3.1	4.2	5.4	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.1	8.1	9.3	4	6	4	2	4	6	2	4	120	110	70	80	146	148	
17	1.3	2.4	3.1	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.1	8.1	9.3	2	4	4	3	4	6	3	4	120	110	70	76	150	150	
18	1.2	2.4	3.2	4.1	5.4	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.2	6.1	7.1	8.2	9.3	6	7	5	2	4	6	2	4	120	120	72	76	146	144	
19	1.2	2.3	3.2	4.1	5.3	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.1	6.2	7.2	8.1	9.3	4	6	5	2	4	6	3	4	120	110	70	70	156	154	
20	1.2	2.3	3.1	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	6	5	2	4	6	2	4	120	120	84	80	148	150	
21	1.2	2.4	3.2	4.2	5.5	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.2	8.2	9.3	4	6	4	1	4	6	3	4	120	116	82	84	148	147	
22	1.3	2.4	3.2	4.1	5.4	6.1	7.1	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	6	4	2	4	6	2	4	120	118	70	76	148	146	
23	1.2	2.4	3.2	4.1	5.2	6.2	7.3	8.2	1.2	2.2	3.1	4.3	5.2	6.2	7.1	8.2	9.3	2	4	4	2	4	6	3	4	120	110	72	76	152	151	
24	1.2	2.3	3.2	4.3	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.2	8.1	9.3	4	6	4	2	4	6	2	4	120	120	70	70	150	150	
25	1.3	2.3	3.2	4.1	5.3	6.2	7.3	8.2	1.2	2.2	3.1	4.3	5.2	6.2	7.1	8.1	9.3	4	6	3	1	4	6	3	4	120	110	84	86	150	148	
26	1.3	2.4	3.1	4.1	5.2	6.2	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.2	7.2	8.1	9.3	4	6	4	2	4	6	3	4	120	118	80	84	148	146	
27	1.2	2.4	3.1	4.1	5.5	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.2	8.2	9.3	6	7	4	1	4	6	2	4	120	120	86	80	146	144	
28	1.2	2.2	3.2	4.1	5.5	6.1	7.1	8.2	1.1	2.2	3.2	4.3	5.2	6.2	7.1	8.1	9.3	4	6	4	2	4	6	3	4	120	120	80	80	152	151	
29	1.3	2.4	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	4	6	4	1	4	6	3	4	120	120	70	72	148	147	
30	1.3	2.4	3.1	4.1	5.3	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.2	6.1	7.1	8.1	9.3	2	4	4	1	4	6	3	4	120	120	70	70	152	151	

DEMOGRAPHIC VARIABLES									OBSTETRIC VARIABLES								PAIN		COPING		FETO MATERNAL PARAMETERS														LOS
EG	AGE	EDU	OCCU	REL	MI	TOF	AOR	PI	GRA	PAR	GWD	AV	CD	DFSL	DSSL	DTSL	APG	BT	AT	BT	AT	CD		UC		SBP		DBP		FHR					
																						BT	AT	BT	AT	BT	AT	BT	AT	BT	AT				
1	1.3	2.4	3.1	4.1	5.3	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.2	6.2	7.2	8.1	9.3	4	5	5	4	4	6	3	4	120	120	80	80	150	152	21			
2	1.2	2.3	3.2	4.2	5.2	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.2	6.1	7.2	8.1	9.3	4	5	4	3	4	6	3	4	110	100	70	70	148	146	22			
3	1.3	2.4	3.2	4.1	5.4	6.1	7.1	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	2	3	5	4	4	6	3	4	120	110	80	76	148	150	22			
4	1.2	2.3	3.2	4.1	5.1	6.2	7.3	8.2	1.1	2.1	3.1	4.3	5.1	6.2	7.2	8.2	9.3	4	5	4	3	4	6	3	4	120	110	76	70	154	150	23			
5	1.2	2.4	3.1	4.2	5.2	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.1	7.1	8.1	9.3	4	5	3	2	4	6	3	4	120	120	70	70	146	140	22			
6	1.3	2.3	3.2	4.1	5.3	6.1	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	5	5	4	4	6	3	4	110	120	80	80	148	150	21			
7	1.3	2.4	3.2	4.1	5.2	6.1	7.3	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	2	3	5	4	4	6	3	4	110	110	84	80	152	150	22			
8	1.2	2.4	3.2	4.1	5.5	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	5	5	4	4	6	3	4	120	110	86	80	154	150	23			
9	1.2	2.3	3.2	4.3	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.2	9.3	4	5	4	3	4	6	3	4	120	120	74	70	148	150	22			
10	1.2	2.3	3.2	4.1	5.2	6.2	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	5	5	4	4	6	3	4	110	110	70	70	150	148	23			
11	1.2	2.3	3.2	4.3	5.2	6.2	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	2	3	5	4	4	6	3	4	110	120	76	70	152	150	22			
12	1.3	2.3	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.2	6.2	7.1	8.2	9.3	4	5	4	3	4	6	3	4	10	120	84	80	152	150	24			
13	1.3	2.4	3.2	4.1	5.3	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.2	6.2	7.2	8.2	9.3	4	5	3	2	4	6	3	4	120	110	74	70	152	151	23			
14	1.2	2.4	3.1	4.1	5.3	6.1	7.3	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	4	5	4	3	4	6	3	4	110	110	76	70	148	146	23			
15	1.3	2.3	3.2	4.1	5.3	6.1	7.1	8.2	1.1	2.1	3.1	4.3	5.2	6.2	7.1	8.2	9.3	4	5	5	4	4	6	3	4	120	120	72	70	150	152	23			
16	1.2	2.3	3.2	4.1	5.1	6.1	7.3	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.2	9.3	2	3	5	4	4	6	3	4	120	110	84	80	154	150	23			
17	1.3	2.3	3.2	4.1	5.3	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	4	5	4	3	4	6	3	4	120	120	82	80	152	150	23			
18	1.2	2.3	3.2	4.1	5.1	6.2	7.3	8.2	1.1	2.1	3.2	4.3	5.2	6.1	7.1	8.1	9.3	2	3	4	3	4	6	3	4	120	120	70	70	154	152	22			
19	1.2	2.3	3.2	4.1	5.1	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.2	9.3	4	5	3	2	4	6	3	4	110	110	80	80	150	150	22			
20	1.2	2.3	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.2	6.2	7.1	8.2	9.3	4	5	4	3	4	6	3	4	120	110	80	70	148	148	22			
21	1.3	2.3	3.2	4.1	5.2	6.1	7.3	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	2	3	5	4	4	6	3	4	120	120	70	76	148	146	24			
22	1.3	2.4	3.2	4.1	5.3	6.1	7.1	8.2	1.2	2.2	3.1	4.3	5.1	6.1	7.1	8.1	9.3	4	5	4	3	4	6	3	4	120	120	80	70	146	146	23			
23	1.2	2.4	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.1	4.3	5.2	6.2	7.1	8.1	9.3	4	5	4	3	4	6	3	4	110	110	70	70	142	142	21			
24	1.2	2.3	3.2	4.1	5.2	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	4	5	4	3	4	6	3	4	120	120	80	70	150	152	22			
25	1.3	2.4	3.2	4.1	5.2	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	4	5	4	3	4	6	3	4	110	110	70	70	154	152	24			
26	1.2	2.4	3.1	4.1	5.3	6.1	7.3	8.2	1.2	2.2	3.2	4.3	5.1	6.1	7.1	8.1	9.3	4	5	4	3	4	6	3	4	120	110	80	70	150	154	22			
27	1.3	2.2	3.2	4.1	5.1	6.1	7.1	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.1	8.1	9.3	4	5	4	3	4	6	3	4	120	110	80	76	148	150	21			
28	1.2	2.4	3.2	4.1	5.3	6.1	7.1	8.2	1.2	2.2	3.2	4.3	5.2	6.2	7.2	8.2	9.3	4	5	5	4	4	6	3	4	120	110	70	70	150	150	21			
29	1.2	2.4	3.2	4.1	5.4	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.2	8.2	9.3	4	5	5	4	4	6	3	4	110	110	84	80	152	150	21			
30	1.2	2.2	3.2	4.1	5.2	6.1	7.3	8.2	1.1	2.1	3.2	4.3	5.1	6.2	7.2	8.2	9.3	4	5	4	3	4	6	3	4	120	120	70	70	150	150	21			

APPENDIX XXII
PHOTOGRAPHS DURING THE SHIATSU MASSAGE



