DISSERTATION ON
EFFECTIVENESS OF HAND AND FOOT MASSAGE AS PAIN CONTROL MEASURES FOR MOTHERS FOLLOWING CAESAREAN SECTION AT INSTITUTE OF OBSTETRICS & GYNAECOLOGY, EGMORE –CHENNAI

M.Sc., (NURSING) DEGREE EXAMINATION
BRANCH –III OBSTETRICS AND GYNAECOLOGICAL NURSING

COLLEGE OF NURSING
MADRAS MEDICAL COLLEGE, CHENNAI – 03.

A dissertation submitted to

THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI – 600 032.

in partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2012

CERTIFICATE

This is to certify that this dissertation titled **EFFECTIVENESS OF HAND AND FOOT MASSAGE AS PAIN CONTROL MEASURES FOR MOTHERS FOLLOWING CAESAREAN SECTION AT INSTITUTE OF OBSTETRICS & GYNAECOLOGY EGMORE –CHENNAI** is a bonafide work done by **Ms .P.LOUIS HEPSIBA,** College Of Nursing, Madras Medical College, Chennai – 600003 submitted to the TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI in Partial fulfillment of the requirements for the award of Degree of **Master of Science in Nursing, Branch III, OBSTETRICS AND GYNAECOLOGICAL NURSING,** under our guidance and supervision during the academic period from 2010 – 2012.

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APRIL 2012

ACKNOWLEDGEMENT

My help cometh from the Lord who made the heaven and earth.

I am grateful to almighty god for his grace, strength and his presence throughout this endeavor which helped me to complete this study successfully.

I express my sincere thanks to **Dr.Kanagasabai,** Dean, Madras Medical college, Chennai -3 for providing necessary facilities and extending support to conduct this study.

It's a great privilege to thank **Dr.M. Mohanambal, MBBS, DGO** Director, Institute of Obstetrics and Gynaecology, Hospital for women and children, Egmore for granting permission and also for her valuable suggestions and guidance to complete this study.

I immensely owe my gratitude to **Dr.R.Lakshmi MScN, Ph.D., Principal,** College of Nursing, Madras Medical College. Chennai -3 for her support, constant encouragement and valuable suggestions to complete this study.

It gives great pleasure to thank with deep sense of gratitude to **Dr.Mrs.K.Menaka, M.Sc.(N),Ph.D.,** Reader in Nursing, College of Nursing for her inspiring guidance, suggestions, timely help, constant encouragement and cooperation for completion of this study.

I render my sincere thanks to **Dr.Mrs.Mangala Gowri M.Sc(N), Ph.D.,** former principal College of Nursing, Madras medical College for her constant support and guidance.

I express my gratitude to **Mrs.Alphonsa Maschrenas MSc (N)** Lecturer in Nursing, Department of Obstetrics and Gynaecological Nursing, for her support, constant encouragement and valuable suggestions which helped in the fruitful outcome of the study.

I thank **Mrs.R.Saroja, M.Sc (N).,** Lecturer in Nursing, College of Nursing, Department of Obstetrics and Gynaecological Nursing for her support and guidance.

I express my heartfelt gratitude to **Dr.V.Kumari MSc (N) Ph.D**., Lecturer in Nursing, College of Nursing, Department of Obstetrics and Gynaecological Nursing for her untiring guidance, sustained patience, constant encouragement and valuable suggestions.

It is my pleasure and privilege to express my deep sense of gratitude to **Mrs.Safreena M.Sc(N).,** A.J.Mohamed Shatak college of Nursing, Chennai and**, Dr.Gayathri Priya M.Sc (N)., Ph.D., Reader**, Sri Ramachanra University, College of Nursing, Chennai-116 for validating this tool.

I extend my thanks to **Dr.Prithivraj, B.P.T., MIAP.,** Consultant Physiotherapist for training the researcher to perform hand and foot massage.

I acknowledgement my gratitude to **Mr.Venkatesan M.Sc., PGDCA .,** Professor of Statistics for his valuable help is statistical analysis of the study.

I extend my thanks to **Mr.Ravi, B.A, B.L.I.Sc.**, Librarian, College Of Nursing, Madras Medical College, Chennai-3 for his co-operation and assistance which built the sound knowledge for this study.

Above all I would like to express my deepest gratitude to all the **staff members** who worked in the caesarean ward and especially the **post caesarean mothers** who had, enthusiastically participated in this study, without whom it was not possible for me to complete this study.

I render my deep sense of gratitude to all my **family members and friends** for their immense love, support, prayer and encouragement which inspired me to reach this point in my life.

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ABSTRACT

A caesarean section is usually performed when a vaginal delivery would put the baby's or mother's life or health at risk, although in recent times it has been also performed upon request for childbirths that could otherwise have been natural. Postoperative pain can complicate and delay a patient's recovery, lengthen hospital stays and costs, and interfere with a patient's return to activities of daily living. Despite the technological advances in health care, routine analgesic procedures in post operative pain control remain inadequate and thus require complementary therapies and interventions. The main objective of the study is to reduce post caesarean pain by giving hand and foot massage. The research design was true experimental study design using Simple random sampling. Pretest was done to both experimental and control groups with Behavioral Observation Checklist .In experimental group 20 minutes of hand and foot massage (petrissage, friction & kneading) were provided once a day with the routine care every 4 hours after analgesic. The post test was done 1 hour after massage and the same procedure was repeated on second day. The control group received only the routine care and the post test was done on the same way. The conceptual framework used for this study was Roy's Adaptation model.

The post-assessment level of pain showed a mean value of 2.57 in experimental group and mean value of 3.73 in control group. The comparison of pre-assessment level of pain between experimental and control groups revealed that student's independent 't' test value was t=4.10 P=0.01 DF= 58 significant which is statistical significance. Pain in post caesarean mothers which can complicate and delay patient recovery and lengthen hospital stay. It was found that hand and foot massage are more effective in reduction of post caesarean pain and also improve circulation , promote comfort, physical activity and sense of wellbeing.

CHAPTER –I
INTRODUCTION

"May the work of your hands be a sign of gratitude and reverence to the human condition".

- **Mahatma Gandhi**

Pain is the suffering of the soul .It is the feeling of the senses have its source in the heart **(Aristotle)**. Pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. **(International Association Committee of Taxonomy).** Pain is a subjective experience, and no objective tests exist to measure it. **(American Pain Society, 2009)**.

Whenever possible, the existence and intensity of pain are measured by the patient's self-report. Clinical definition of pain that states, "Pain is whatever the experiencing person says it is, existing whenever he/she says it does" ***(McCaffery)***.Unfortunately, some patients cannot provide a self-report of pain verbally, in writing, or by other means, such as finger span ***(Merkel, 2002)*** or blinking their eyes to answer yes or no questions ***(Pasero & McCaffery, 2011).***

World Health Organization, which reviewed 110,000 births from nine countries in Asia during 2007-2008 found to be 27% of caesarean births . In Latin America 35% of pregnant women were delivered by caesarean section. In India, caesarean delivery have risen from 5% to almost 65% in some private hospitals of India .

In Italy the incidence of caesarean sections is particularly high, although it varies from region to region. In Campania, 60% of 2008 births

reported and in Rome region, the mean incidence is around 44%, but can reach as high as 85% in some private clinics.

In the United States the caesarean rate has risen 48% since 1996, reaching a level of 31.8% in 2007. A 2008 report found that one-third of babies born in Massachusetts in 2006 were delivered by caesarean section. Among developing countries, Brazil has one of the highest rates of caesarean sections in the world. Studies have shown that continuity of care with a known care may significantly decrease the rate of Caesarean delivery. More emergency caesareans - about 66% - are performed during the day rather than during the night. Regional anesthesia is used in 95% of deliveries, with spinal and combined spinal and epidural anesthesia being the most commonly used regional technique in scheduled caesarean section.

There has been a gradual increase in caesarean births over the past 30 years. In November of 2005, the Centers for Disease Control and Prevention reported that the national caesarean birth rate was the highest ever at 29.1%, which is over a quarter of all deliveries. This means that over 1 in 4 women will experience a caesarean birth.

A caesarean section is usually performed when a vaginal delivery would put the baby's or mother's life or health at risk, although in recent times it has been also performed upon request for childbirths that could otherwise have been natural.

A caesarean birth, also known as C-section, happens through an incision in the abdominal wall and uterus rather than through the vagina. Some caesarean sections are planned due to pregnancy complications or because she had a previous caesarean section. Knowing what to expect during the procedure and recovery can help the mother mentally to prepare them to adapt to the situation.

Table-1: National caesarean rates

State	Percentage
Andrapradesh	30.80%
Assam	21.30%
Bihar	9.67%
Delhi	35.44%
Goa	54.55%
Gujarat	37.29%
Haryana	24.81%
Himachal Pradesh	10.65%
Karnataka	30.20%
Kerala	58.52%
Madhya Pradesh	11.21%
Orissa	10.32%
Punjab	38.76%
Rajastan	9.80%
Tamilnadu	39.64%
Uttar Pradesh	6.41%
West Bengal	22.22%

(National family health survey India & health policy plan 2002)

Table :2 Indication of lower segment caesarean section

Indication	Percentage
Previous lower segment caesarean section	27%
Fetal Distress	22%
Mal presentation	13%
Cephalo pelvic disproportion	15%
Non progress of Labour	13%
Ante partum Hemorrhage	6%
Macrosomia	4%

(Journal of Obstetrics and Gynaecology)

Despite the many advances in our understanding of the mechanisms underlying pain processing, pain continues to be a major healthcare problem in the United States. One step toward improving pain management is through increased knowledge of pain physiology. Within the nervous system, there are several pathways that transmit information about pain from the periphery to the brain. There is also a network of pathways that carry modulatory signals from the brain and brainstem that alter the incoming flow of pain information. ***(Renn, Cynthia L. et al.)***

Pain after surgery is common, which is very often severe and largely unnecessary. Effective relief of post-operative pain is vital, and not just for humanitarian reasons. Such pain probably prolongs hospital stay, as it can affect all organ systems. There is now evidence that post-operative pain relief has significant physiological benefit ***(Charlton 1997).*** Not only can it result in earlier discharge from hospital, but it may also reduce the onset of chronic pain syndromes. Nevertheless, post-operative pain remains grossly under treated, with up to 70% of patients reporting moderate to severe pain following surgery ***(Pyati 2007)***.

(Sharon Wood 2008) Nurses have a poor understanding of pain and its management, which can result in failure to treat pain effectively. An insight into the anatomy and physiology of pain is essential to increase nurses' understanding of what it is and how interventions can help to manage it. Acute pain is a physiological response that warns us of danger. The process of nociception describes the normal processing of pain and the responses to noxious stimuli that are damaging or potentially damaging to normal tissue. There are four basic processes which are involved in nociception (Mc Caffery and Pasero). These are, transduction, transmission, perception and modulation.

Black M.J et al (2006) states that pain is an expected outcome postoperatively. yet one of the most frequent post operative problem is inadequate administration .All patients who have just had surgery will experience pain.

The Joint commission on the accreditation of hospital organization has recognized that post operative is often inadequately treated ; as a result , they declared that pain is the “fifth vital sign” that must be assessed and recorded in the patients.

The benefits of adequate pain control, such as earlier ambulation, improved interaction between mother and newborn, fewer thrombo embolic complications and better sleep are well documented.

Postoperative pain can complicate and delay a patient’s recovery, lengthen hospital stays and costs, and interfere with a patient’s return to activities of daily living. Some pain medications can have unpleasant side effects. Research indicates that massage can decrease postoperative pain, postoperative pain intensity, postoperative pain unpleasantness/distress, decrease sympathetic responses to postoperative pain and doses of analgesics and increase levels of calmness/feelings of well-being. ***(American Massage Therapy Association).***

Nurses have used complementary therapies for many years to relieve anxiety, promote comfort, and reduce or alleviate pain. Complementary therapies provide an avenue for nurses to be autonomous in furthering the relief of chronic pain, as many of these therapies fall within the domain of nursing. Incorporating selected therapies into the plan of care provides multiple opportunities for nurses to demonstrate caring, a premier characteristic of nursing.

Massage has many scientifically proven health benefits during Caesarean section it improves joint flexibility and helps to improve lymph and blood circulation and reduce swelling. "Soft tissue massage is gentle, but firm" explains Dr Cronfalk, who carried out the research with colleagues from the Karolinska Institute. This activates touch receptors which then releases. It is well known that massage can relieve tension in our muscles, and it is frequently utilized as a way to reduce stress and promote relaxation.

In ***1962, Ron Melzack and Patrick Wall*** proposed the gate control theory of pain in order to explain how pain works. In essence, they suggested that when you rub an area that is hurting, you are simply preventing the pain message to be sent to the brain. The pain is "gated," so to speak, by a more pleasant experience of massage. Massage acts like an analgesic and inhibits those pain signals from being transmitted to the brain. It is also thought that massage helps the body to release naturally produced chemicals or painkillers such as opioids or endorphins oxytocin, a hormone known for its positive effects on well-being and relaxation.

1.1. NEED FOR THE STUDY

Despite the technological advances in health care, routine analgesic procedures in post operative pain control remain inadequate and thus require complementary therapies and interventions ***(Power, 2005).*** In recent years, many complementary therapies such as massage, soothing muscles, relaxation, mind – body techniques, reflexology, herbal medicine, hypnosis and therapeutic touch are tried to manage pain.

Smith, Collins et al (2003 & 2006) suggested that sound evidences that are needed to show their efficiency so as to enhance the applicability of these therapies in wide range of studies .In current literature, there is some evidence about the benefits of foot and hand massage in relieving labor pain as a complementary therapy ***(Wang &Keck ,2004)***.

The purpose of massaging is to assist the treatment procedures by affecting the locomotor system and the nervous system as well as cardio vascular system. Massaging results in variety of comforts such as relaxation in the body, deep breath, resting, and sleep ***(Kimber, Mc et al (2008).*** The relatively unspecialized nerve cell endings that initiate the sensation of pain are called nociceptors; these are sensory receptors that send signals of pain and are generally located at the surface of the internal tissues and beneath the skin, densely in the hands and feet (Henderson 2008).Therefore , applying foot and hand massage is considered to be significantly appropriate method in pain reduction.

Patti Hermich (2005) identified that after 15 minutes of skin contact massage, the body begins to release endorphin. An analysis of the effect of massaging on post operative pain requires evaluating pain levels and assessment of patients behaviors.

Table-3: Statistics of caesarean section performed at Institute of Obstetrics and Gynaecology

Year	Statistics
2007	8164
2008	8594
2009	7080
2010	7481
2011	7648

When researcher worked in caesarean wards, she cared for many of post caesarean mothers and their major problem was post caesarean pain even after administration of analgesics. They were not able to turn or move around ,not able to attend their basic needs. It also causes poor maternal and newborn attachment, poor breast feeding practices & lack of newborn care. This condition made the researcher feel hard and decided to use complimentary therapy like hand and foot massage as a pain control measure for post caesarean mothers at Institute of Obstetrics and Gynaecology, Egmore Chennai-8.

1.2. STATEMENT OF THE PROBLEM

Effectiveness of hand and foot massage as pain control measures for mothers following caesarean section at Institute of Obstetrics & Gynaecology. Egmore, Chennai-8.

1.3. OBJECTIVES

1) To assess the pain level before administering hand and foot massage among experimental and control group.

2) To assess the pain level after administering hand and foot massage among experimental group

3) To compare pain level between experimental &control group.

4) To associate level of pain with certain demographic variables.

1.4. OPERATIONAL DEFINITION

Effectiveness refers to outcome of massage therapy in reducing the level of pain among mothers under went caesarean section.

Hand and Foot massage refers to systematic & scientific manipulation of the soft tissue of both hands and foot of post caesarean mothers by using finger tips ,finger pads &palms of the hand for a period of 20 minutes by the researcher (5 minutes in each limb).

Pain control measures refer to the intervention used to minimize pain.

Mothers are women who underwent elective and emergency caesarean section.

Caesarean section is an incision made over the lower abdomen to deliver the baby.

1.5. ASSUMPTION

1) All caesarean mothers experience pain in early postoperative days.

2) Analgesics are used to relieve pain.

3) Hand and foot massage can promote sense of well being..

1.6 HYPOTHESIS

H0- There is no significant difference in pain experienced by mothers who underwent caesarean section between experimental and control

H1 –There is significant difference in pain experienced by mothers under went caesarean section after administering hand and foot massage.

1.7 DELIMITATION

Study is limited for 4 weeks at caesarean ward at Institute of Obstetrics and Gynaecology Chennai-8.

CHAPTER-II

REVIEW OF LITERATURE

Review of literature refers to an extensive and systematic examination of publications relevant to the research project. It is a key step in research process. Nursing research is considered as a continuing process in which knowledge gained from earlier studies is an integral part of research.

According to ***Polit and Hungler (2007)*** the review of literature is defined as a broad comprehensive in depth systematic and critical review of scholarly publications, unpublished scholarly print materials, audiovisual materials and personal communications. A researcher analyses existing knowledge before developing into a new area of study while conducting a study, when interpreting the results of the study, and when making judgments about applications of a new knowledge in nursing practice. An extensive review of literature relevant to the research topic was done to gain insight and to collect maximum information for laying the foundation of the study. In this present study, Review of literature deals with the following major heading.

This chapter gives an account of summary of the reviewed literatures relevant to the topic of the study. The available literature is arranged in two parts.

2.1. PART-I: REVIEW OF RELATED LITERATURE.

Section A : Studies related to pain and its management

Section B : Studies related to hand and foot massage

Section C : Studies related to Hand and foot massage on caesarean mothers.

2.2. PART II : CONCEPTUAL FRAMEWORK

2.1.1. SECTION A- STUDIES RELATED TO PAIN AND ITS MANAGEMENT

A. PAIN

Black M.J et al (2006) states that pain is an expected outcome postoperatively. yet one of the most frequent post operative problem is inadequate administration .All patients who have just had surgery will experience pain. Pain medication should be given when needed prior to pain becoming severe.

Hawks J.H (2006) states that the effective pain control is best achieve through pharmaceutical and non pharmaceutical therapies .Although pharmaceutical medication continue to serve as a major contribute to pain management .Non pharmaceutical techniques are being increasingly used to provide pain relief.

Keena A.N (2001) states that post operative pain is a routine poorly controlled by pharmacological means alone .Complementary strategies based on sound research findings are needed to aid in post operative pain relief as patient routinely report mild to moderate pain even though pain medication have been administered.

Taylor (2003) states that non pharmacological methods relieve pain but are not widely used .complementary therapies are attracting attention and patient are interested in alternative to biomedicine.

The Observational Pain Behaviour Tool by ***Simons & Malabar (1995)*** is an assessment tool designed specifically for everyday use with elderly patients in hospital settings. The tool is based on the pain tool described by Keefe and Block. The tool consists of a data sheet, a pain assessment chart and a menu of observable pain behaviors that are to be recorded. These behaviours had been found to discriminate between manifestations of pain and depression in tests using alert adults. Scoring is

based on entering the behavior on the sheet as being present at a certain moment and does not include information on pain intensity.

The Non-Communicative Patient's Pain Assessment Instrument by ***Snow et al. (2004)*** consists of four sections and combines information about pain behaviour (words, noises, facial expression, bracing and restlessness), care conditions and a Likert scale of pain intensity.

B. PAIN MANAGEMENT

Amin Hanjani S et al (1992) Philadelphia, conducted a prospective study with sixty-two patients on Cold therapy in the management of postoperative caesarean section pain. Result reveals the amount of analgesia requested, infection rate, and length of hospital stay did not show a significant difference between the two groups. There is no objective evidence to show that the use of cold therapy in postoperative caesarean section pain relief is beneficial.

Angle, S.Halpern conducted study by randomized controlled trial examining pain relief after caesarean section revealed inadequate pain relief in 33% of women who received intra thecal morphine 0.2 mg followed by acetaminophen with codeine on a patient-request basis on the first postoperative day. This was compared with a 9% incidence in women who received regular doses of naproxen in addition to existing pain therapy. The use of naproxen, however, did not affect the incidence of inadequate analgesia on the second postoperative day, with both control and treatment groups experiencing similar incidences of inadequate pain relief respectively.

Caroline A Smith et al (2011) from Australia Conducted a randomized controlled trials comparing aromatherapy with placebo, no treatment or other non-pharmacological forms of pain management in labour. we included two trials (535 women) the trials found no differences between groups for the secondary outcomes of use of pharmacological pain relief .

Cıtak Karakaya I et al (2011)conducted a study at turkey to investigate the effects of a physiotherapy program on incision pain and functional activities in the early post-cesarean period. Fifty women were evaluated after Cesarean operation with regard to times of ambulation and return of bowel activity, intensity of incision pain, difficulty in functional activities and number of analgesics required additional to routine pain control procedure. Twenty-four women received only routine nursing care, and a physiotherapy program was applied to the study group ($n = 26$), additionally. Postoperative ambulation and return of bowel activity were earlier in the study group ($p < 0.05$). Incision pain and difficulty in functional activities decreased significantly within 2 days in both groups, and the values were lower in the study group ($p < 0.05$). Study group needed less medication for pain control ($p < 0.05$).Findings revealed the effectiveness of a physiotherapy program in the early post-cesarean period in a wider perspective than the current literature, and are considered to be valuable for increasing the quality and productivity of the postnatal care, therefore improving well-being after childbirth.

This study was conducted by ***Jaafarpour M, et al (2008)*** to know analgesic effect of trans cutaneous electrical nerve stimulation on caesarean under spinal anesthesia which included 108 patients from Mostafa Khomeini hospital Ilam, who have been enrolled as study subjects. 54 subjects were randomly allocated to each of study groups .A standardized questionnaire was used for data collection and Visual analogue Scale was used to determine severity of pain. The result of this study showed that intensity of pain and usage of sedative drug remarkably reduced after use of trans cutaneous electrical nerve stimulation.

Hamza, Mohamed A. M.D conducted a study on Trans cutaneous electrical nerve stimulation produces comparable decreases in postoperative opioid requirements and opioid‐related side effects. One hundred women undergoing major Gynaecological procedures with a standardized general anesthetic technique were enrolled in the study. Standard 100‐mm visual analog scales were used to assess pain, sedation, fatigue, and nausea at specific intervals after surgery. TENS decreased postoperative opioid

analgesic requirements and opioid - related side effects when utilized as an adjunct to patient controlled analgesic after lower abdominal surgery.

Mariah Snyder et al (2003) author states that Nurses have used complementary therapies for many years to relieve anxiety, promote comfort, and reduce or alleviate pain. The therapies described in this article are examples of the many therapies available for nurses to consider when planning care for patients with chronic pain. The increasing body of scientific knowledge is providing more guidance about the efficacy of specific therapies. Number of the complementary therapies, such as journaling, hand massage, and imagery, can be taught to patients and their families, thus promoting self-care. Evaluating the effectiveness of the complementary therapy to promote comfort in patients with chronic pain is essential. Most importantly, nurses need to pursue research to further the scientific basis for many of the complementary therapies.

Oyuela García J et al conducted a study on psycho prophylactic programs that have been widely used in women to face the fear-tension-pain cycle, reducing anxiety and pain during labour. The aim was to demonstrate if it reduces the caesarean rate.300 low risk pregnant women were included; 100 in the intervention group and 200 in the control group. Chi-square, Student's t test and odds ratio were used. In intervention group observed a caesarean rate reduction with fewer maternal and perinatal complications

Pui Shan So et al (2008) China conducted a study to evaluate the effectiveness of touch therapies (on relieving both acute and chronic pain; to determine any adverse effect of touch therapies. Randomized Controlled Trials (RCTs) or Controlled Clinical Trials (CCTs) .Twenty four studies involving 1153 participants. Results of trials conducted by more experienced practitioners appeared to yield greater effects in pain reduction. Whether more experienced practitioners or certain types of touch therapy brought better pain reduction should be further investigated. Two of the five studies evaluating analgesic usage supported the claim that touch therapies minimized analgesic usage.

Oyuela García J et al conducted a study on psycho prophylactic programs that have been widely used in women to face the fear-tension-pain cycle, reducing anxiety and pain during labour. The aim was to demonstrate if it reduces the caesarean rate.300 low risk pregnant women were included; 100 in the intervention group and 200 in the control group. Chi-square, Student's t test and odds ratio were used. In intervention group observed a caesarean rate reduction with fewer maternal and perinatal complications.

Reza N (2007)conducted a study at Iran Music may be considered as a potential method of post caesarean pain therapy due to its non invasiveness and lack of side effects. In this study we evaluated the effect of intra operative music under general anesthesia for reducing the postoperative morphine requirements after caesarean section .In a double blind placebo-controlled trial, 100 women (ASA I) scheduled for elective caesarean section under general anesthesia , were randomly allocated into two groups of fifty. Post operative pain and anxiety were evaluated by visual analog scale (VAS) up to six hours after discharge . Morphine was given intravenously for reducing pain to VAS < or = 3 post operatively .There was not statistically significant difference in VAS for pain between two groups up to six hours postoperatively (P>0.05). In addition, morphine requirements were not different between two groups at different time intervals up to six hours postoperatively (P>0.05). There were not statistically significant difference between two groups regarding postoperative anxiety score and vomiting frequency (P>0.05).As per conditions of this study, intra operative Spanish music was not effective in reducing postoperative pain after caesarean section. In addition postoperative morphine requirement, anxiety, and vomiting were not affected by the music during general anesthesia.

Seah YS, et al (1990) studied on Bilateral ilio inguinal nerve block with local anesthetic drugs to treat postoperative pain in lower segment caesarean section under general anesthesia had show profound effective. We used the same method but with lower concentration 0.375% marcaine 10 ml to each side in 12 patients. We compare the pain score and the requirement for pethidine intramuscular injection to 12 patients as control group. Pain score

were less in the block patients within 8h after surgery, and total amount of pethidine given was 700 mg. In control group, the pain score were higher at the first 8 h than nerve block group during the study (p less than 0.05), and the total amount of pethidine requirement was 1250 mg. There were no observed adverse effect during the study

Soledad Cepeda (2009) conducted a study to evaluate the effect of music on acute, chronic or cancer pain intensity, pain relief, and analgesic requirements. We included randomized controlled trials (RCTs) that evaluated the effect of music on any type of pain in children or adults. We excluded trials that reported results of concurrent non-pharmacological therapies. Three studies evaluated opioids requirements two hours after surgery: subjects exposed to music required 1.0 mg (18.4%) less morphine (95% CI: -2.0 to -0.2) than unexposed subjects. Five studies assessed requirements 24 hours after surgery: the music group required 5.7 mg (15.4%) less morphine than the unexposed group (95% CI: -8.8 to -2.6). Five studies evaluated requirements during painful procedures: the difference in requirements showed a trend towards favoring the music group (-0.7 mg, 95% CI: -1.8 to 0.4).Listening to music reduces pain intensity levels and opioid requirements, but the magnitude of these benefits is small and, therefore, its clinical importance unclear.

Smith CA, et al reviewed seven trials involving 366 women and using different modalities of pain management were included in this review. The trials included one involving acupuncture (n = 100), one involving audio-analgesia (n = 25), one involving aromatherapy (n = 22), three trials of hypnosis (n = 189) and one trial of music (n = 30). The trial of acupuncture decreased the need for pain relief (relative risk (RR) 0.56, 95% confidence interval (CI) 0.39 to 0.81). Women receiving hypnosis were more satisfied with their pain management in labor compared with control (RR 2.33, 95% CI 1.55 to 4.71). No differences were seen for women receiving aromatherapy, music or audio analgesia.

Sylvia M. Kubscha et al (2002) Studied on Non-pharmacological and non-invasive interventions such as cutaneous stimulation to relieve pain.

a one group pre-test post-test experimental design measured variables before and after intervention in all subjects. after being screened for inclusion, 50 patients (38 adults, 12 children) were admitted to the study and were treated with cutaneous stimulation to relieve pain. Following intervention subjects reported significantly reduced pain, and demonstrated reduced heart rate, and blood pressure readings. The location of pain significantly influenced heart rate and diastolic blood pressure but not pain level

Yildirim G et al (2004) The study was conducted among pregnant women admitted to Women and Children's Hospital at Turkey .The study involved 40 cases, with 20 in the experimental group and 20 in the control group. Data were obtained through the visual analogue scale, inspection form, observation form and postnatal interview form. Study results demonstrated that nursing support and patient-directed education concerning labour and non pharmacological pain control methods were effective in reducing the perception of pain by pregnant women & leading to a more satisfactory birth experience.

2.1.2. SECTION B- REVIEW RELATED TO HAND AND FOOT MASSAGE

Adams R, etal (2010)A convenience sample was used to identify research participants. Pain levels before and after massage therapy were recorded using a 0 - 10 visual analog scale. Quantitative and qualitative methods were used for analysis of this descriptive study. Hospital inpatients (n = 53) from medical, surgical, and Obstetrics units participated in the current research by each receiving one or more massage therapy sessions averaging 30 minutes each. Before massage, the mean pain level recorded by the patients was 5.18 . After massage, the mean pain level was 2.33 (SD: 2.10). The observed reduction in pain was statistically significant: paired samples $t(52) = 12.43$, $r = .67$, $d = 1.38$, $p < .001$. Qualitative data illustrated improvement in all areas, with the most significant areas of impact reported being overall pain level, emotional well-being, relaxation, and ability to sleep. This study shows that integration of massage therapy into the acute care setting creates overall positive results in the patient's ability to deal with

the challenging physical and psychological aspects of their health condition. The study demonstrated not only significant reduction in pain levels, but also the interrelatedness of pain, relaxation, sleep, emotions, recovery, and finally, the healing process.

A Randomized Controlled Trial Study done by ***Coban A, Sirin A (2007)*** at Province Health Ministry Central Primary Health Care Clinic, Turkey to evaluate the effect of foot massage for decreasing physiological lower leg edema . Eighty pregnant women were randomly divided into two groups; study group had a 20 min foot massage daily for 5 days whereas the control group did not receive any intervention beyond standard prenatal care. Foot massage was found to have a positive effect on decreasing normal physiological lower leg edema in late pregnancy.

Dr.Cronfalk, et al. conducted a study with eighteen people who had lost a relative to cancer. Nine chose foot massage, eight chose hand massage and one asked for both. Only three had previous experience of soft tissue massage Relatives were offered a 25-minute hand or foot massage once a week for eight weeks "The massages provide physical touch and closeness and helped to diminish the feelings of empty space and loneliness that people felt. Study participants also told us that the massages helped them to balance the need to grieve and the need to adapt to life after the loss of their relative.

A study was conducted by ***Diego MA, et al (2002)*** to assess fetal activity during mid gestation (Mean age=19.8 weeks) was studied in response to vibratory stimulation of the mother's abdomen (at the height of the fetal head), foot massage, hand massage, or control condition (no stimulation). The fetuses of mothers who received a 3-min foot massage showed greater movement than the control fetuses. Furthermore, our findings indicate that stimulating the mothers' feet, but not the hands, can evoke fetal activity in mid gestation.

Grealish L, et al (2000) Australia. The study was developed from the earlier work of Ferrell-Torry and Glick (1992). In a sample of 87 subjects, a 10-minute foot massage (5 minutes per foot) was found to have a significant

immediate effect on the perceptions of pain, nausea, and relaxation when measured with a visual analog scale. The use of foot massage as a complementary method is recommended as a relatively simple nursing intervention for patients experiencing nausea or pain related to the cancer experience.

Hattan J, et al (2002) conducted a randomized control study at Institute of Nursing and Midwifery, United Kingdom . Twenty-five subjects were randomly assigned to either a control or one of two intervention groups There was a significant effect of the intervention on the calm scores (ANOVA, P=0.014).These interventions appear to be effective, noninvasive techniques for promoting psychological wellbeing in this patient group.

Hayes J, et al (1999) A research study was conducted at hatfield in which a five-minute foot massage was offered to 25 patients. A quasi-experimental design was used. Physiological data (heart rate, mean arterial blood pressure, respirations and peripheral oxygen saturation) were obtained from the patient bedside monitoring system. Results indicated foot massage had the potential effect of increasing relaxation as evidenced by physiological changes during the brief intervention administered to critically ill patients in intensive care.

A randomized-controlled study examined the effects of foot massage on patients' perception of care received following surgery. The sample of 59 women who underwent laparoscopic sterilization as day case patients were randomly allocated into two groups. The experimental group received a foot massage and analgesia post-operatively, whilst the control group received only analgesia post-operatively. Each participant was asked to complete a questionnaire on the day following surgery. This examined satisfaction, memory and analgesia taken. Statistical analysis showed the mean pain scores recorded following surgery showed a significantly different pattern over time, such that the experimental group consistently reported less pain following a foot massage than the control group studied by ***Hulme J, Waterman H et al .***

Kolcaba K, et al United States of America conducted a study to test the effectiveness of hand massage as an intervention that affects nursing home residents' comfort and satisfaction. Results are presented for 35 participants who received hand massage and 25 participants in a comparison group. Findings showed no significant differences in comfort levels or satisfaction with care over time.

Mitchinson AR, etal (2007)Conducted a Randomized controlled trial where six hundred five veterans (mean age, 64 years) undergoing major surgery participated .Patients were assigned to the following 3 groups: (1) control (routine care), (2) individualized attention from a massage therapist (20 minutes), or (3) back massage by a massage therapist each evening for up to 5 postoperative days. Result reveals decreases in pain intensity (P = .001), pain unpleasantness (P < .001), and anxiety (P = .007). In addition, patients in the massage group experienced a faster rate of decrease in pain intensity (P = .02) and unpleasantness (P = .01) during the first 4 postoperative days compared with the control group. There were no differences in the rates of decrease in long-term anxiety, length of stay, opiate use, or complications across the 3 groups. Massage is an effective and safe adjuvant therapy for the relief of acute postoperative pain in patients undergoing major operations.

Oh HJ, Park JS (2004) Korea. The study was a nonequivalent, control group, non- synchronized design. The subjects of this study consisted of 15 patients for the hand group, 15 patients for the hand holding group and 17 patients for the control group awaiting surgery in the operation room of a general hospital in Daegu. As an experimental treatment, hand massage was carried out by the Hand Massage Protocol developed by Snyder (1995) and interpreted by Cho (1998) and hand holding developed by Cho (1998). VAS score, systolic blood pressure and pulse rate. Hand massage and hand holding are effective nursing interventions that alleviates the psychological and physiological anxiety of patients with local infiltration anesthesia.

Song RH, Kim DH (2006) conducted study at two different nursing homes at korea .Non-equivalent control group pretest-posttest quasi-

experimental study with 50 elderly subjects. An experimental group and a control group were organized with 25 subjects respectively, and foot massage was provided for 12 sessions, 30 minutes per session. The selected dependent variables were sleep disturbance, depression disorder, and physiological indices (blood plasma serotonin, serum cortisol), measured before and after foot massage was offered. Foot massage as a successful nursing intervention to elderly who undergo a change in sleep, and suffer from a depression disorder due to a deterioration in sleep.

Sylvia Carlson (2006) A recent study of 20 minutes of foot and hand massage helped to significantly reduce pain the day after surgery. The study looked at 18 subjects, 20 years or older, who were recovering from a variety of surgeries. It was a very effective and inexpensive way to help people manage pain

Terence Vanderheiden, D.P.M., After surgery, it is not uncommon for patients to have pain. Foot and hand massages were given to post-operative patients and the research study found that pain scores, heart rate and respiratory rate decreased. It should be noted that the massages were given 1-4 hours after the patients took their pain medications, so this could have affected the results.

Uppsala University Sweden conducted a Randomized Clinical Trial in which the Subjects in the massage group received anywhere from six to 10 massages, each lasting 30 minutes. Subjects received the massages one to three times per week. Participants received an average of seven massages. One person administered all massages, and each session was adjusted to meet subjects' individual pain thresholds. Results of the study showed that, during treatment, there was a significant improvement in self-rated health, mental energy and muscle pain for subjects in the massage group as compared to those in the relaxation group.

2.1.3. SECTION –C STUDIES RELATED TO HAND & FOOT MASSAGE ON POST CAESAREAN PATIENT

Degirmen N Ozerdogan et al (2011) conducted a study at Nursing college osmangazi university, Turkey using pretest-posttest randomized controlled experimental study design to determine the efficiency of hand and foot massage on reducing postoperative pain in patient who had caesarean section. It was also noted that vital findings were measured comparatively higher before the massage in the test groups, and they were found to be relatively lower in the measurements conducted right before and after the massage, which was considered to be statistically meaningful. Foot and hand massage proved useful as an effective nursing intervention in controlling postoperative pain.

A study was conducted by ***Hsiao-Lan et al (2004)*** to know the effectiveness of hand and foot massage using convenience sampling method with18 participants, all of whom were aged 20 or older. The massage consisted of petrissage, friction and kneading for five minutes on each hand and each foot, for a total of 20 minutes. Perceived pain intensity was measured using a scale that ranged from 0 (no pain) to 10 (pain as bad as you can imagine). Perceived distress was measured on a similar scale, ranging from 0 to 10.Results of the study showed significant reductions in both pain intensity and distress after the 20-minute massage, as well as significant decreases in heart rate and respiratory rate, but not systolic and diastolic blood pressure. “The findings from the study indicated that a 20-minute foot and hand massage significantly reduced both pain intensity and distress resulting from incisional pain on the first postoperative day,”

Wang HL et al (2004) Using convenience sample a study was conducted by clarian health partners at Methodist hospital Indiana university at USA, with 18 patients rated pain intensity and pain distress using a 0 to 10 numeric rating scale. They reported decreases in pain intensity from 4.65 to 2.35 ($t = 8.154$, $p < .001$) and in pain distress from 4.00 to 1.88 ($t = 5.683$, $p < .001$). Statistically significant decreases in sympathetic responses to pain (i.e., heart rate and respiratory rate) were observed although blood pressure

remained unchanged. The patients experienced moderate pain after they received pain medications. This pain was reduced by the intervention, thus supporting the effectiveness of massage in postoperative pain management.

2.2. PART –II: CONCEPTUAL FRAME WORK

Conceptual frame work is brief explanation of a theory to be tested in a study (Groves 2003).The conceptual framework of this study is based on the Callista Roy Adaption Model (1984).According to Roy a system is a set of units so related or connected as to form a unity or whole & characterized by inputs, outputs, control process &feedback processes.

INPUT

A Stimulus is the degree of change or stimulus most immediately confronting the person & the one to which the person must make an adaptive response, that is the factor which precipitates behavior.

In this study input refers to selected demographic variables (age, education, occupation, type of family & support system) & Obstetrics variables (gravida, parity, caesarean section, birth interval & anesthesia).

CONTROL PROCESS

Roy views the perception of the person &links the regulator with cognator.

In this study control process refers to perception of pain among post caesarean mothers.

EFFECTORS

Effectors are the ways of coping the manifest regulator and cognator activity.

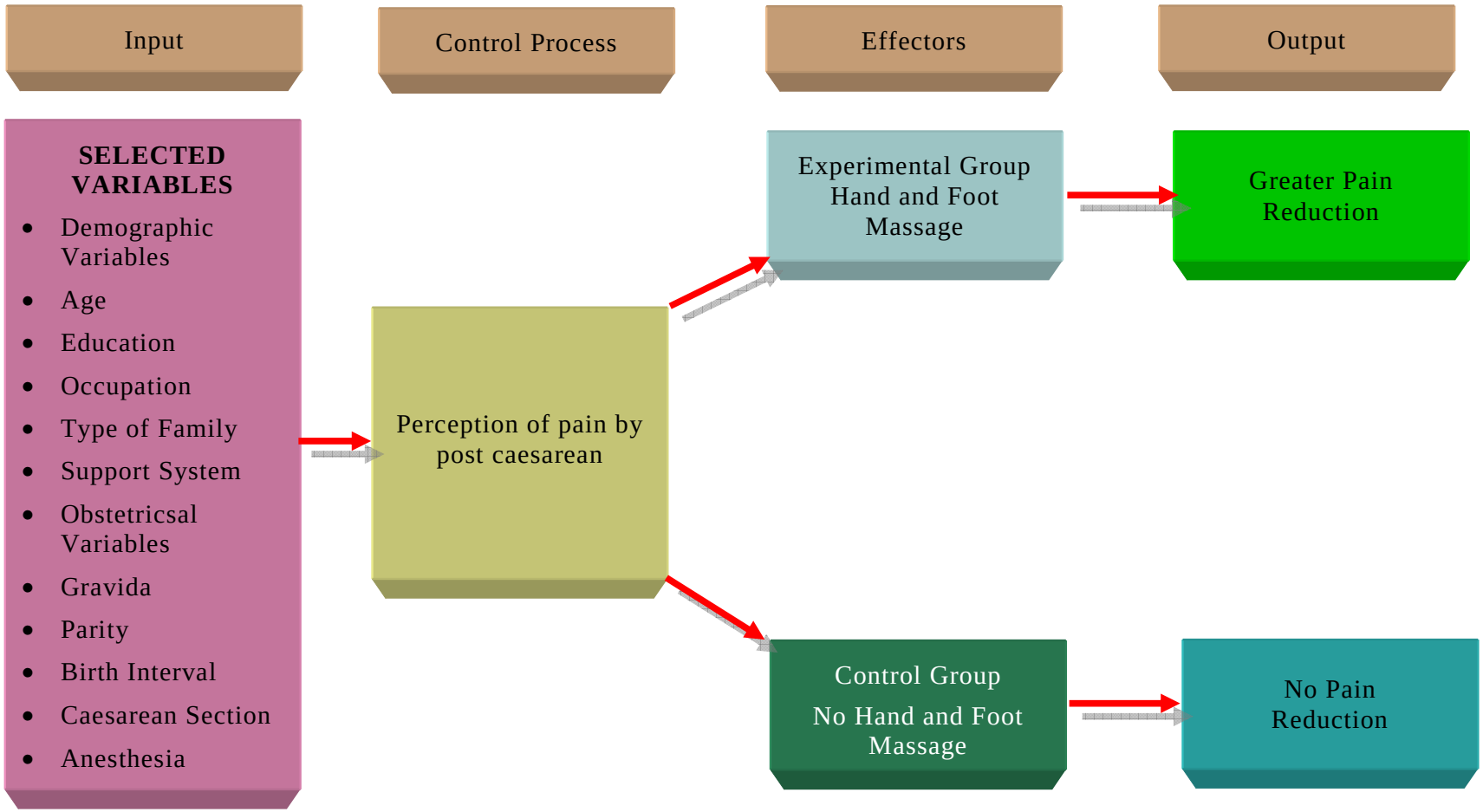
In this study effectors refers to providing hand and foot massage to experimental group and no hand and foot massage on control group.

OUTPUT

Adaptive responses promotion of comfort, pain reduction, improved physical activity.

In this study there was greater pain reduction in experimental group.

FIG-1: MODIFIED ROY'S ADAPTATION MODEL (1984)



CHAPTER-III
RESEARCH METHODOLOGY

3.1. METHODOLOGY

Methodology is the most important part of research study, which enables the researcher to form blueprint of the research undertaken. Research methodology involves the systematic procedure by which the researcher starts from the time of initial identification of the problem to its final conclusion.

This chapter describes the research design, variables in the study, setting of the study, population, sample size, criteria for selection of the sample, sampling technique, development and description of the tool, content validity, pilot study, procedure for data collection and plan of data analysis.

3.2. RESEARCH APPROACH AND DESIGN

The approach adopted for the study is quantitative –evaluative approach.

True experimental study design was used in the study. An experimental design studies are observable changes that take place in order to establish a cause & effect relationship. The aim of experimental research is to understand the nature of relationships among phenomena.

3.4. VARIABLES

The study variables are

Independent Variable - Hand & foot massage

Dependent variable - Post caesarean pain.

3.4. SETTING OF THE STUDY

The study was conducted at Institute of Obstetrics & Gynaecology Egmore and it is the second biggest hospital in South East Asia providing care exclusively for women & children. It is one of the premier tertiary care

centre in Tamil Nadu. The bed occupancy rate is 100%. This institution is a 755 bedded hospital .The caesarean ward comprises of 60 beds and average length of stay is 3 days.

3.5. POPULATION

The target population of this study were postnatal mothers 24 hrs after caesarean section admitted at caesarean wards (30& 31) at Institute of Obstetrics and Gynaecology. Chennai-8

3.6. SAMPLE SIZE

The sample size was 60.

Experimental Group – 30

Control Group – 30

3.7. SAMPLING TECHNIQUE

The sample of the study were selected using simple random sampling. Lots were prepared according to the number of eligible study subjects. All had equal chance of being enrolled for the study. Every week 15 subjects were allotted by randomization to experimental or control group.

3.8. CRITERIA FOR SELECTION OF SAMPLE

A. Inclusion criteria

- Mothers who underwent elective and emergency caesarean section.
- Mothers who were on the first post operative day 24 hrs after surgery.
- Mothers with mild to moderate pain.
- Mothers with stable vital signs.

B. Exclusion criteria

1) Mothers with complications such as pre-eclampsia, gestational diabetes mellitus, anemia, heart disease & post partum hemorrhage.

2) Mothers whose babies are admitted in newborn intensive care unit.

3) Mothers whose babies are still birth & Intrauterine death.

4) Mothers with skin infection /inflammation/burns.

5) Mothers who had participated in pilot study.

3.9. DEVELOPMENT AND DESCRIPTION OF THE TOOL

The investigator developed the data collection tool after extensive review of literature and discussion with experts, to collect the data needed for the study. The tool consists of two sections.

SECTION-A: DEMOGRAPHIC DATA

It comprises of demographic variables like age, education, occupation, type of family and support system.

Obstetricsal variables comprises of gravida, parity, birth interval, history of caesarean section, anesthesia and sterilization.

SECTION-B: BEHAVIOURAL OBSERVATION CHECKLIST

It consist of assessment of verbal response, facial expression, posture and physical activity.

SCORING TECHNIQUE

Section B was scored based on the behavioral observation

Total Score – 12

0– no pain

1-4 = mild pain

5-8 = moderate pain

9- 12= severe pain

3.10. TESTING OF THE TOOL

The content of the tool was validated by medical, nursing and statistical experts. The suggestions of the experts were incorporated in the study and the tool was finalized. The refined tool was used for data collection.

Reliability of the tool was assessed using test retest method. The tool was administered and tested in 10 subjects. They were selected according to inclusive criteria. It was administered first time and again administered after 2 days to the same subject. In both times responses were similar and calculated using correlation coefficient value is 0.81. This correlation coefficients are very high and it is reliable tool for assessing the effectiveness of Hand & foot massage.

3.11. ETHICAL CONSIDERATION

Institutional ethics committee, Madras Medical College reviewed and approved the study to be conducted on human subjects. Informed consent was obtained from caregivers of each study subjects after detailed explanation about the nature of the study.

3.12. PILOT STUDY

The pilot study was conducted in caesarean ward, Institute of Obstetrics and Gynaecology Egmore, Chennai-8 for a period of 1 week from 21.03.2010 to 27.03.2010. Formal permission was obtained from the concerned authority. 6 eligible samples (experimental group - 3, control group - 3) were chosen from the main population using probability simple random technique. Written Informed consent was obtained from the patient of the sample and data were collected for 3 consecutive days. The instrument was found reliable for proceeding with the main study. The other opinion and suggestions were incorporated in the main study to accomplish the objectives of the study.

3.13. PROCEDURE FOR DATA COLLECTION

The data collection was done for 4 weeks from 29:8:2011 to 29:09:2011. After a brief self introduction & establishing rapport, interview was conducted in Tamil & informed written consent was obtained.

DESCRIPTION OF INTERVENTION

The data was collected from each samples as follows demographic and Obstetricsal variables were collected .Pre test done from both groups of experimental and control group with behavioral observation checklist .In experimental group 20 minutes of hand and foot massage was provided once a day with routine care 4 hours after analgesic. The post test was done 1 hour after massage, the same procedure repeated on the second day. The control group received only the routine care and post test was done on the same way.

3.14. DATA ANALYSIS AND INTERPRETATION

Data were collected, arranged, tabulated & was analyzed by using descriptive and inferential statistics.

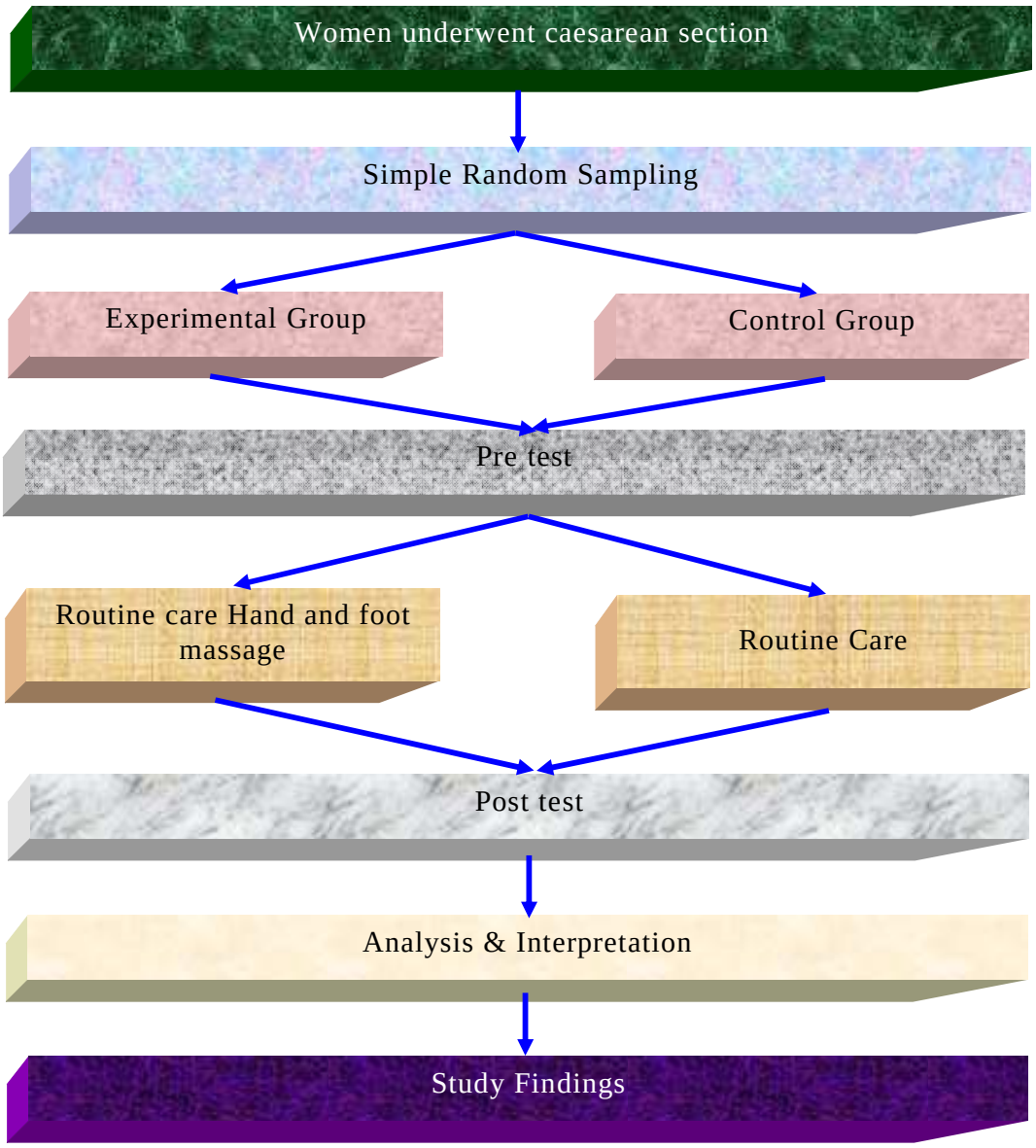
DESCRIPTIVE STATISTICS

- Frequency and percentage distribution were used to describe the demographic variables.
- Mean and standard deviation were used to evaluate the effectiveness of hand and foot massage.

INFERENTIAL STATISTICS

- Student Paired ‘t’ test was used to compare the pre and post test.
- Student independent ‘t’ test was used to compare the pain level between experimental and control group.
- Pearson Chi square test was used to associate the findings with certain demographic data.

3.15: SCHEMATIC REPRESENTATION OF RESEARCH STUDY DESIGN



CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

Analysis is a method for rendering quantitative, meaningful and providing intellectual information. So that the research problem can be studied and tested including the relationship between the variables.

This chapter deals with the analysis and interpretation of the data collected from the selected sample of 60 post caesarean mothers to evaluate the effectiveness of hand and foot massage as pain control measures The findings based on descriptive and inferential statistical analysis are presented under the following section

ORGANIZATION OF DATA

4.1 SECTION-I: Description of the demographic & Obstetricsal data of the post caesarean mothers

4.2 SECTION-II: Assess the pain level before administering hand and foot massage between experimental and control group.

4.3 SECTION-III: Assess the pain level after administering hand and foot massage among post caesarean mothers in experimental group.

4.4 SECTION-IV: Evaluate the effectiveness of hand and foot massage

4.5 SECTION-V: Compare the pain level between experimental &control group.

4.6 SECTION-VI: Associate level of pain with certain demographic data.

4.1.SECTION-I: DISTRIBUTION OF THE DEMOGRAPHIC & OBSTETRICSAL DATA OF THE POST CAESAREAN MOTHERS

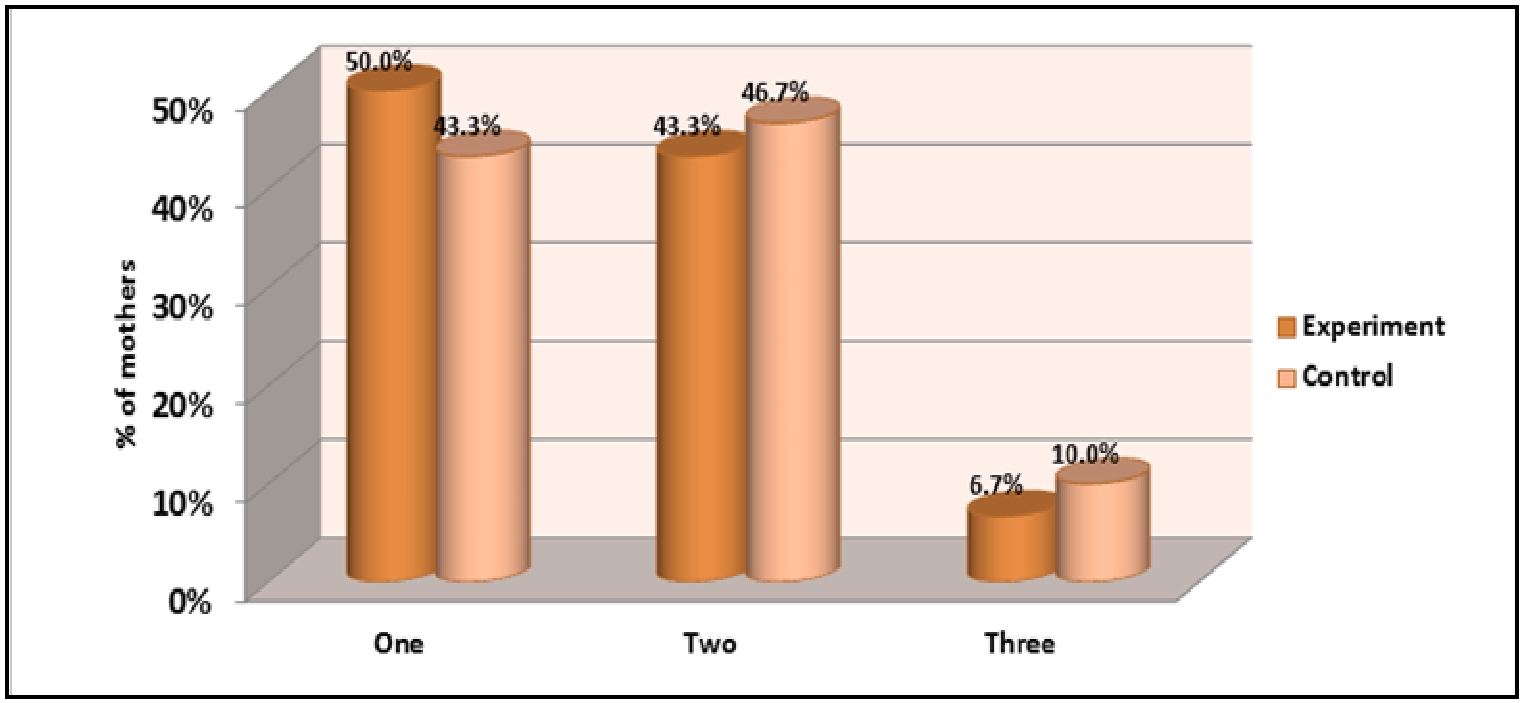
Table-4: Frequency and percentage distribution of the demographic data of the post caesarean mothers.

		Group			
		Experiment n=30		Control n=30	
		frequency	%	Frequency	%
Age	< 30 yrs	3	10.0%	2	6.7%
	30 -35 yrs	19	63.3%	16	53.3%
	35 -40 yrs	6	20.0%	10	33.3%
	40 -45 yrs	2	6.7%	2	6.7%
Educational status	No formal education	2	6.7%	2	6.7%
	Primary	9	30.0%	12	40.0%
	Secondary	13	43.3%	13	43.3%
	Degree	6	20.0%	3	10.0%
Occupation	Professional	0	0.0%	1	3.3%
	Company	1	3.3%	0	0.0%
	Coolie	2	6.7%	1	3.3%
	House wives	27	90.0%	28	93.3%
Type of family	Nuclear family	21	70.0%	19	63.3%
	Joint family	9	30.0%	11	36.7%
Human support	Mother	24	80.0%	24	80.0%
	Mother in law	4	13.3%	3	10.0%
	Sister	2	6.7%	2	6.7%
	Husband	0	0.0%	1	3.3%

The above table shows that 63.3%in experimental & 53.3% in control group are at the age group of 30-35 years. About 6.7% experimental & control group have no formal education, 90% in experimental & 93.3% in control group post caesarean mothers were housewives. 80% in experimental and control groups support system during hospitalization were their mothers.

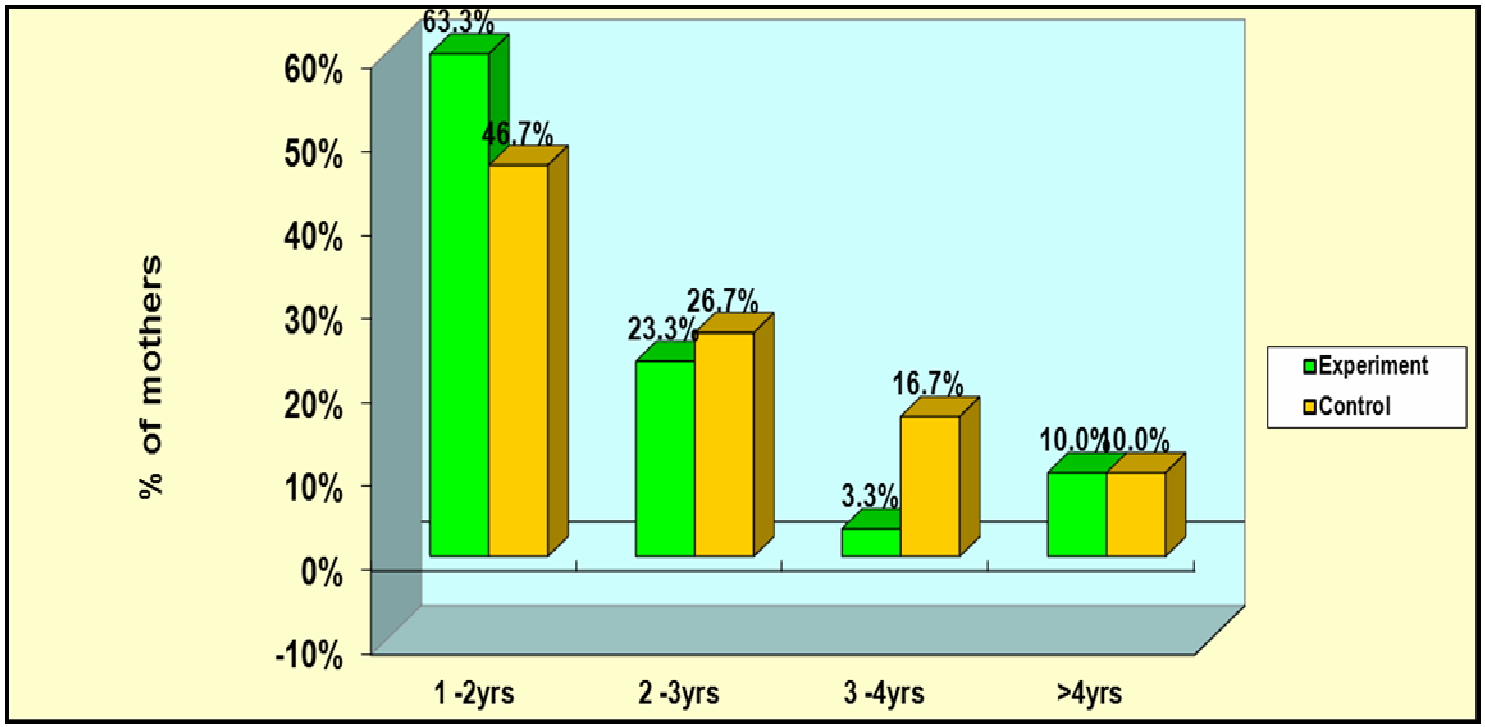
OBSTETRICSAL DATA

Figure-3: Distribution of parity among post caesarean mothers in experimental and control group.



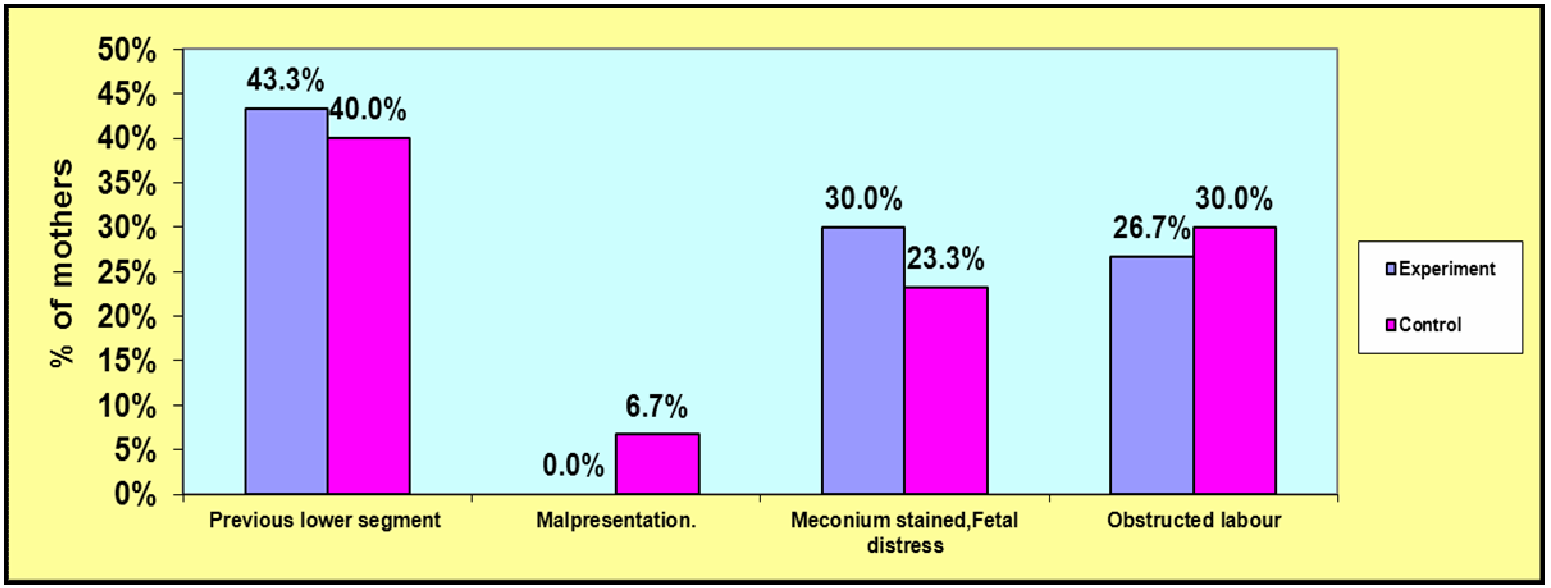
The above figure depicts 50% of the post caesarean mothers in the experimental group& 43.3% in control group had one child and about 6.7% in experimental group and 10% in control group had three children.

Figure-4: Distribution of birth interval among post caesarean mothers in experimental and control group.



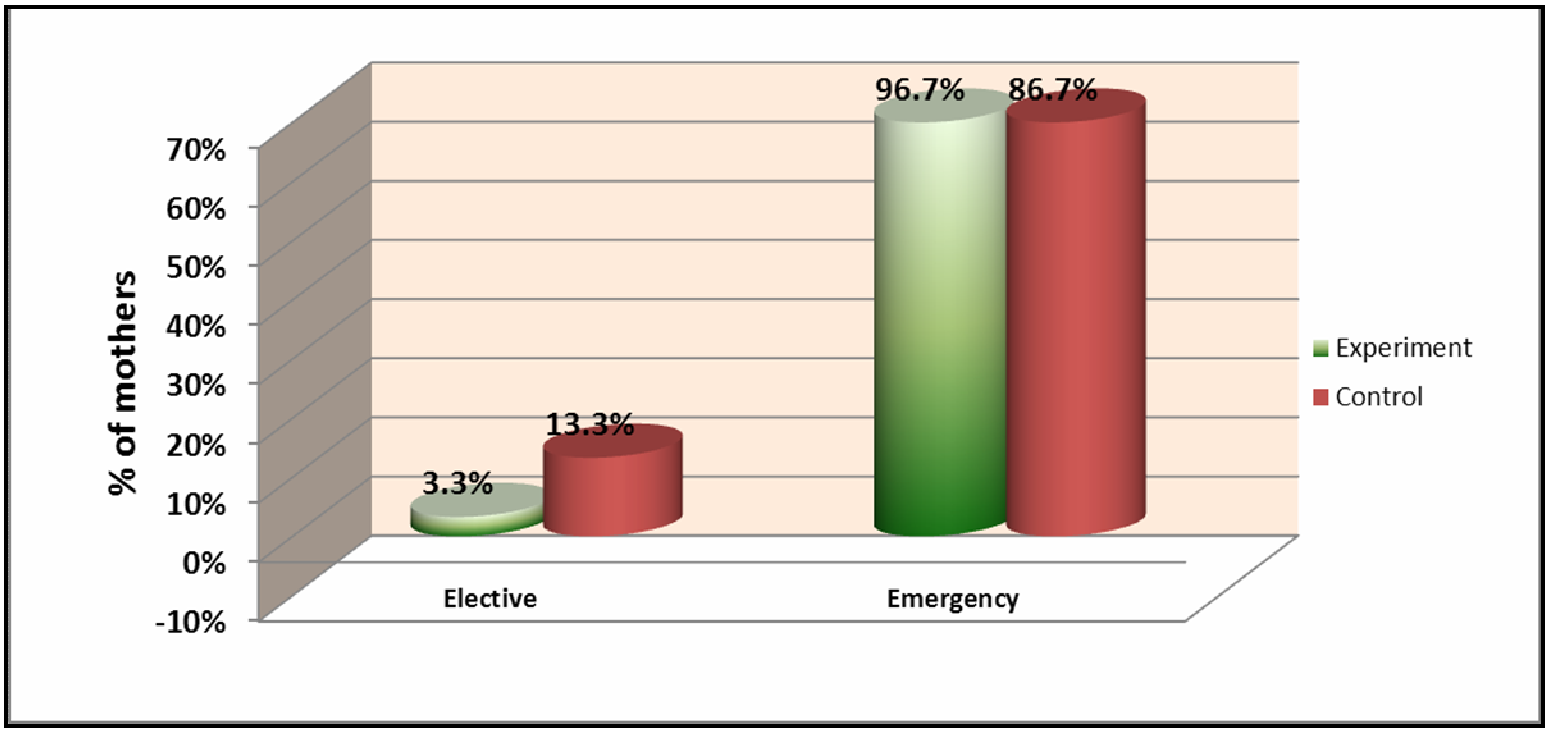
The above figure depicts 63.3% of the post caesarean mothers had birth interval 1-2yrs in experimental group and 46.7 % in control group. 10% in experimental and control group had birth interval of more than 4 years

Figure-5: Distribution of indication of caesarean section among post caesarean mothers in experimental and control group



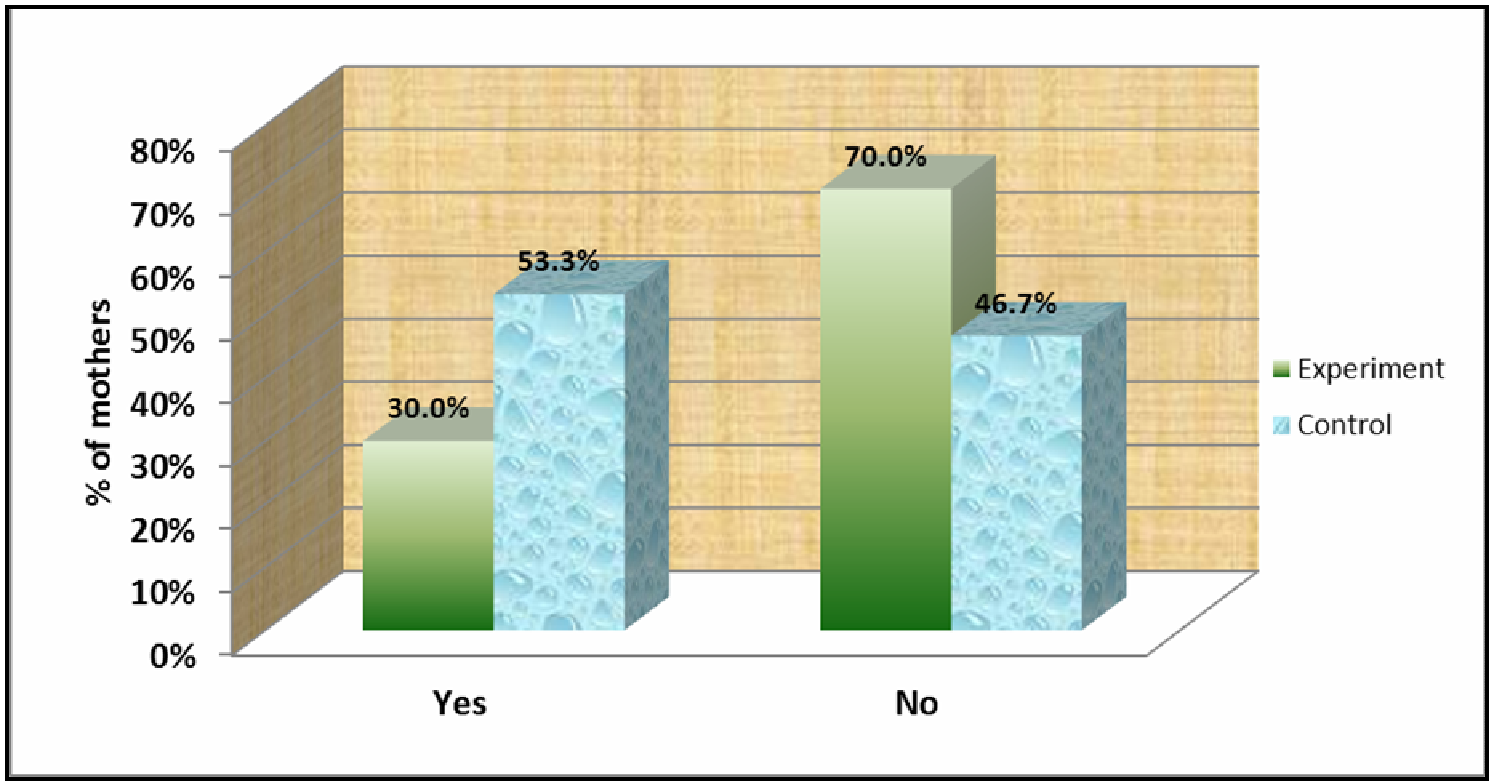
The above figure depicts 43.3% of post caesarean mothers in the experimental group & 40% in control group major indication was previous caesarean section, 30% post caesarean mothers in the experimental group & 23.3% in control group indication was meconium stained and fetal distress.

Figure-6: Distribution of caesarean section performed among post caesarean mothers in experimental and control group.



The above figure depicts 96.7% post caesarean mothers in the experimental group & 86.7% in control group caesarean section was performed as emergency and 13.3% post caesarean mothers in the experimental group & 3.3% in control group caesarean section was performed as elective.

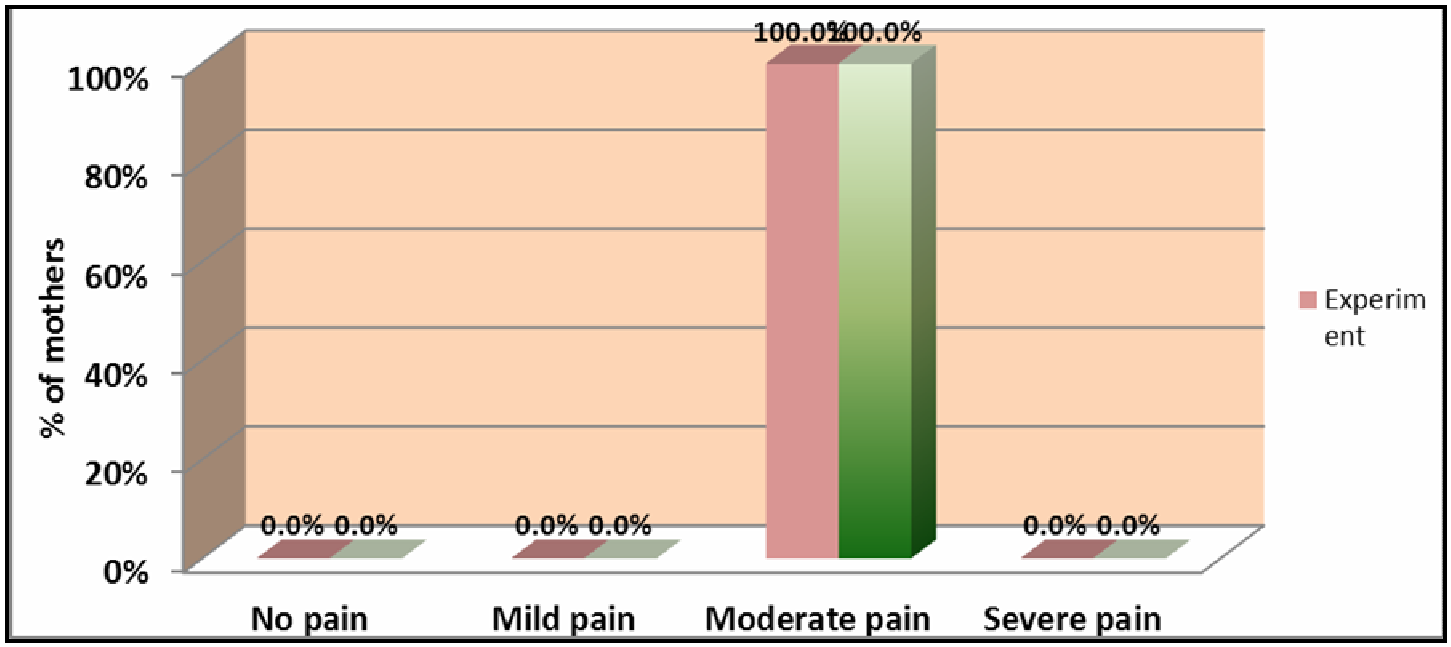
Figure-7: Distribution of sterilization among post caesarean mothers in experimental and control group .



The above figure depicts majority 70% post caesarean mothers in the experimental group & 46.7% in control group had not under gone and only 30% undergone sterilization in experimental group and 53.3% in the control group

4.2 SECTION II: PAIN LEVEL BEFORE ADMINISTERING HAND AND FOOT MASSAGE BETWEEN EXPERIMENTAL AND CONTROL GROUP.

Figure – 8: Distribution of pretest pain level between experimental and control group among post caesarean mothers.



All the post caesarean mothers of experimental and control group were experiencing moderate level of pain.

Table-7: Percentage distribution of verbal response to pain

			Experimental		Control		Pearson Chisquare test
			n	%	N	%	
DAY1	Pretest	Has no pain	0	0.0%	0	0.0%	$\chi 2=0.0$ p=1.00 DF=1
		Complain of pain	28	93.3%	28	93.3%	
		Moaning with pain	2	6.7%	2	6.7%	
		Calls out for analgesic	0	0.0%	0	0.0%	
	Posttest	Has no pain	0	0.0%	0	0.0%	$\chi 2=1.51$ p=0.21 DF=1
		Complain of pain	30	100.0%	29	96.7%	
		Moaning with pain	0	0.0%	1	3.3%	
		Calls out for analgesic	0	0.0%	0	0.0%	
DAY2	Pretest	Has no pain	0	0.0%	0	0.0%	$\chi 2=1.51$ p=0.21 DF=1
		Complain of pain	30	100.0%	29	96.7%	
		Moaning with pain	0	0.0%	1	3.3%	
		Calls out for analgesic	0	0.0%	0	0.0%	
	Posttest	Has no pain	3	10%	0	0.0%	$\chi 2=3.84$ p=0.05* DF=1
		Complain of pain	27	90%	30	100.0%	
		Moaning with pain	0	0.0%	0	0.0%	
		Calls out for analgesic	0	0.0%	0	0.0%	

The above table reveals that there was significant difference in verbal response to pain level ($\chi 2=3.84$ p=0.05) between experimental and control group.

Table-8: Percentage distribution of facial expression to pain.

			Experimental		Control		Pearson Chisquare test
			N	%	n	%	
DAY1	Pretest	No pain	0	0.0%	0	0.0%	$\chi 2=0.0$ p=1.00 DF=1
		Grimace	28	93.3%	28	93.3%	
		Tensed jaw and wrinkled forehead	2	6.7%	2	6.7%	
		Compressed lips and tears over the cheek	0	0.0%	0	0.0%	
	Posttest	No pain	22	100.0%	16	53.3%	$\chi 2=2.58$ p=0.10 DF=1
		Grimace	8	100.0%	14	46.7%	
		Tensed jaw and wrinkled forehead	0	0.0%	0	0.0%	
		Compressed lips and tears over the cheek	0	0.0%	0	0.0%	
DAY2	Pretest	No pain	0	0.0%	0	0.0%	$\chi 2=4.90$ p=0.02* DF=1
		Grimace	24	80.0%	16	53.3%	
		Tensed jaw and wrinkled forehead	6	20.0%	14	46.7%	
		Compressed lips and tears over the cheek	0	0.0%	0	0.0%	
	Posttest	No pain	27	90.0%	21	70.0%	$\chi 2=3.84$ p=0.05* DF=1
		Grimace	3	10.0%	9	30.0%	
		Tensed jaw and wrinkled forehead	0	0.0%	0	0.0%	
		Compressed lips and tears over the cheek	0	0.0%	0	0.0%	

The above table reveals that there was significant difference in facial expression of pain level on ($\chi 2=3.84$ p=0.05) between experimental and control group.

Table-9: Assessment of posture

			Experimental		Control		Pearson Chisquare test
			n	%	N	%	
DAY1	Pretest	Relaxed posture	0	0.0%	0	0.0%	$\chi 2$=0.0 p=1.00 DF=1
		Refused to turn to the side	0	0.0%	0	0.0%	
		Remain rigid	30	100.0%	30	100.0%	
		Attains a flexed position	0	0.0%	0	0.0%	
	Posttest	Relaxed posture	0	0.0%	0	0.0%	$\chi 2$=0.0 p=1.00 DF=1
		Refused to turn to the side	30	100.0%	30	100.0%	
		Remain rigid	0	0.0%	0	0.0%	
		Attains a flexed position	0	0.0%	0	0.0%	
DAY2	Pretest	Relaxed posture	0	0.0%	0	0.0%	$\chi 2$=2.5 p=0.11 DF=1
		Refused to turn to the side	21	70.0%	15	50.0%	
		Remain rigid	9	30.0%	15	50.0%	
		Attains a flexed position	0	0.0%	0	0.0%	
	Posttest	Relaxed posture	22	73.3%	5	16.7%	$\chi 2$=19.4 p=0.01* DF=1
		Refused to turn to the side	8	26.7%	25	83.3%	
		Remain rigid	0	0.0%	0	0.0%	
		Attains a flexed position	0	0.0%	0	0.0%	

The above table reveals that there was significant difference in posture($\chi 2$=19.4 p=0.01*) between experiment and control group.

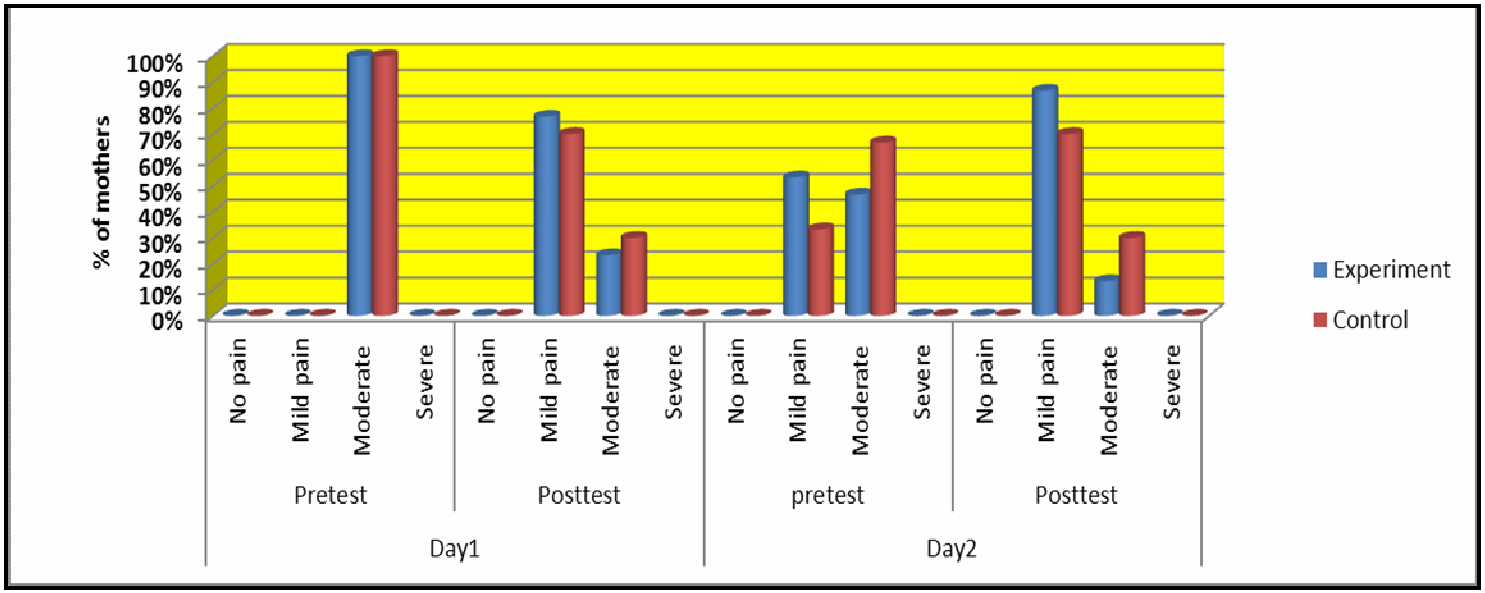
Table-10: Assessment of physical activity

			Experimental		Control		Pearson Chisquare test
			N	%	n	%	
DAY1	Pretest	Turns side to side. Sits on bed	0	0.0%	0	0.0%	$\chi 2=0.15$ p=0.69 DF=1
		Tries to lie side & sitting .	0	0.0%	0	0.0%	
		Needs to hold the relatives hand or railings	15	50.0%	14	46.7%	
		Rigid	15	50.0%	16	53.3%	
	Posttest	Turns side to side. Sits on bed	0	0.0%	0	0.0%	$\chi 2=0.65$ p=0.41 DF=1
		Tries to lie side & sitting .	12	40.0%	9	30.0%	
		Needs to hold the relatives hand or railings	18	60.0%	21	70.0%	
		Rigid	0	0.0%	0	0.0%	
DAY2	Pretest	Turns side to side. Sits on bed	0	0.0%	0	0.0%	$\chi 2=1.71$ p=0.19 DF=1
		Tries to lie side & sitting .	15	50.0%	10	33.3%	
		Needs to hold the relatives hand or railings	15	50.0%	20	67.7%	
		Rigid	0	0.0%	0	0.0%	
	Posttest	Turns side to side. Sits on bed	0	0.0%	0	0.0%	$\chi 2=4.81$ p=0.02* DF=1
		Tries to lie side & sitting .	27	90.0%	20	83.3%	
		Needs to hold the relatives hand or railings	3	10.0%	10	16.7%	
		Rigid	0	0.0%	0	0.0%	

The above table reveals that there was significant difference in physical activity on second day onwards ($\chi 2=4.81$ p=0.02)in pretest and post test between experiment and control group

4.3. SECTION-III: PAIN LEVEL AFTER ADMINISTERING HAND AND FOOT MASSAGE AMONG POST CAESAREAN MOTHERS

Figure-9: Distribution of pain level after administering hand and foot massage among post caesarean mothers in experimental and control group.



The figure depicts that there was a statistically significant difference in the pain level after intervention among experimental and control group.

4.4. SECTION-IV: EFFECTIVENESS OF HAND AND FOOT MASSAGE

Table-11: Effectiveness of Hand and Foot Massage

		Max score	**Mean score**	**Mean Difference in pain score with 95% Confidence interval**	**Percentage Difference in pain score with 95% Confidence interval**
Experiment Group	Pre test	12	6.53	3.96 (3.57 – 4.34)	33.0% (29.8% –36.2%)
	Post test	12	2.57		
Control Group	Pre test	12	6.57	2.84 (2.33 – 3.34)	23.6% (19.4% –27.8%)
	Post test	12	3.73		

In experiment Group, mothers had reduced 33.0% of pain score whereas in control group mothers had reduced 23.6% pain score. Difference is 9.4%. experimental group mothers were benefitted than Control Group.

4.5. SECTION-V: COMPARISON OF PAIN LEVEL BETWEEN EXPERIMENTAL &CONTROL GROUP

Table-12: Comparison of Pain Score between experimental and control group.

	Experimental	**Control**	**Student's independent t-test**
Pretest	6.53 ± 0.57	6.57± 0.57	t=0.22 P=0.82 DF= 58 not significant
Posttest	2.57 ± 0.89	3.73 ± 1.27	t=4.10 P=0.01** DF= 58 significant
Student's paired t-test	t=29.49 P=0.001*** DF= 29 significant	t=13.30 P=0.001*** DF= 29 significant	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

In pretest, experimental Group mothers were having 6.53 score and control Group mothers were having 6.57 score. The difference was 0.04 score. It is small difference. This difference is statistically not significant.

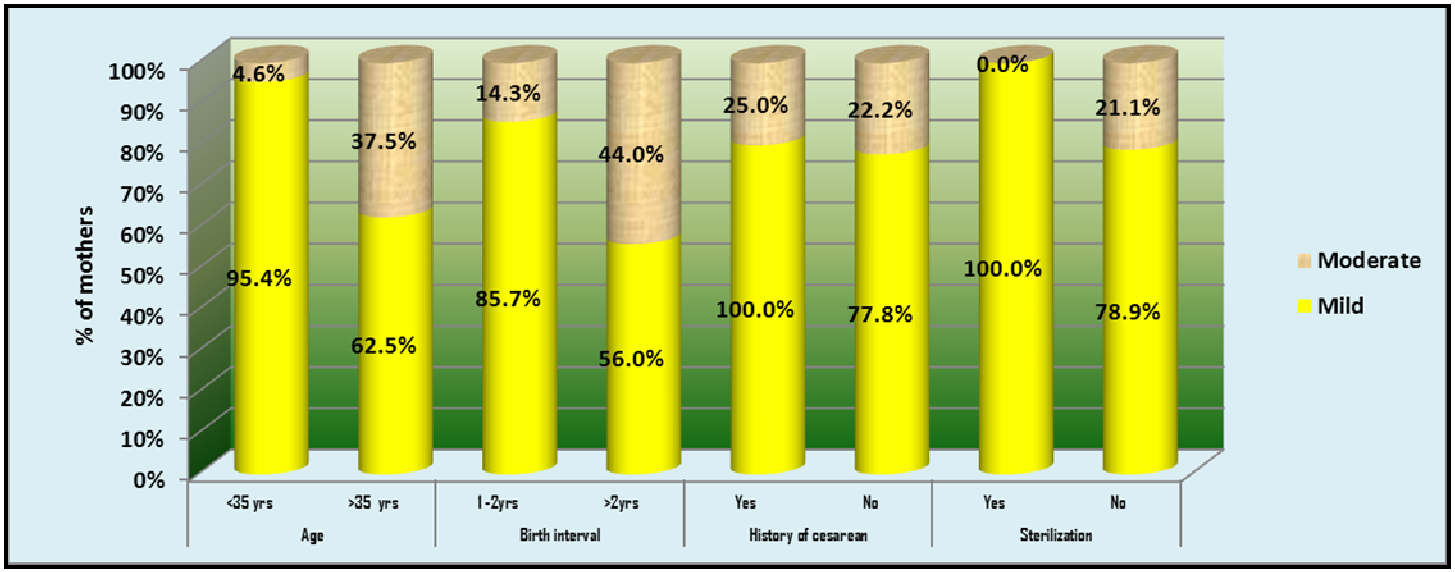
In post test, experimental Group mothers were having 2.57 score and control Group mothers were having 3.73 . The difference is 1.16 score. Difference was large. This difference is statistically significant .

In experimental Group, mothers have reduced their score from 6.53 to 2.57. Due to the intervention they were able to reduce 3.96 score from base line score . This reduction was statistically significant.

In control group, mothers were reduced their score from 6.57 to 3.73. They were able to reduce 2.84 score from base line. This reduction was statistically significant.

4.6 SECTION VI : ASSOCIATE LEVEL OF PAIN WITH CERTAIN DEMOGRAPHIC VARIABLES.

Figure- 10: Association of post test pain level with certain demographic variables .



* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above figure depicts statistically significant difference in post test pain level of experimental group reveals that the age, birth interval, history of caesarean section and sterilization are the significant factors for pain reduction.

CHAPTER-V
DISCUSSION

The study aimed to evaluate the effectiveness of hand and foot massage as pain control measures for mothers following caesarean section. The investigator carried out the study in caesarean ward at Institute Of Obstetrics And Gynaecology, women and children hospital Egmore, Chennai.

The relief of post-cesarean delivery pain is important. Good pain relief improves mobility and reduces the risk of thrombo embolic disease, which may have been increased during pregnancy. Pain may impair the mother's ability to optimally care for her infant in the immediate postpartum period and may adversely affect early interactions between mother and infant. It is necessary, therefore that pain relief be safe and effective and results in no adverse neonatal effects during breast-feeding.

Massage is defined as the systematic manipulations of soft tissues by manual or mechanical means. Nurses have used massage –a back rub to improve circulation, promote comfort and enhance sleep. More recently investigations have used examine hand and foot massage as an alternative to back or body massage .The duration of massage varies from 5-20 minutes (wang & keck) suggested that 20 minutes of massage was required to achieve the desired effect, but little evidence exist substantiate their calm.

Reviews of the massage literature concluded that it has a beneficial effect on anxiety and tension, depression and stress hormones (cortisol & catecolamine).The evidence of the beneficial effect of massage on reducing pain is positive.

A total of 60 caesarean mothers were selected by probability sampling technique - simple random sampling technique, based on inclusion criteria. A written permission was obtained to conduct the study from human ethical committee. The investigator personally examined the purpose of the study and

establish good rapport with the post caesarean mothers before giving intervention and assumed confidentiality.

The data was collected from each samples as follows demographic and Obstetricsal variables were collected .Pre test done from both groups of experimental and control group with behavioral observation checklist .In experimental group 20 minutes of hand and foot massage was provided once a day with routine care 4 hours after analgesic. The post test was done 1 hour after massage, the same procedure repeated on the second day. The control group received only the routine care and the post test was done on the same way.

Data analysis and interpretation were done using percentage, mean and standard deviation, Pearson chi square test, student's paired t-test and student's independent t-test.

1) Higher proportion 19(63.3%) of post caesarean mothers were from the age group of 30-35 years in experimental and 16(53.3%)control group, then half proportion 13(43.3%) of the mothers were educated up to secondary education both in experimental and control group and majority 28(93.3%) experimental 27(90%)of control group post caesarean mothers are house wife . Majority of 21 (70%)post caesarean mothers in experimental group are from nuclear family in control group it is 19 (63.3%) and high proportion of 24(80%) in both groups human support were mothers.

2) More than half of the proportion 50% of the post caesarean mothers had one child 43.3% two and6.7% three child in experimental group and in control group 43.3% of mothers had one,46.7% two and about 10% had three children .

3) Highest proportion 63.3% of the post caesarean mothers had birth interval of 1-2yrs and about 10% had birth interval of more than 4 years in experimental group and in control group 46.7% of the post caesarean mothers had birth interval 1-2yrs and 10% more than 4 years in control group.

4) The main indication for caesarean section in this study were due previous caesarean section 43.3%, 30% meconium stained and fetal distress, 26.7 % obstructed labour in experimental group and in control group 40% are due to previous caesarean section, 6.7% mal presentation, 23.3% meconium stained and fetal distress, 30 % obstructed labour .

5) Higher proportion 96.7% caesarean section performed as emergency and only 3.3% as elective in experimental group and about 86.7 % caesarean section performed as emergency and 13.3% as elective in control group.

6) Majority of proportion 70% of mother in experimental group had not under gone sterilization and about 53.3%in control group undergone sterilization .

The first objective was to assess the pain level before administering hand and foot massage

Despite the technological advances in health care , routine analgesic procedures in post operative pain control remain inadequate and thus require complementary therapies and interventions . ***Power (2005)***

Wang HL, Keck JF conducted a study by convenience sampling of 18 patients rated pain intensity and pain distress using a 0 to 10 numeric rating scale. They reported decreases in pain intensity from 4.65 to 2.35 ($t = 8.154$, $p < .001$) and in pain distress. The patients experienced moderate pain after they received pain medications

Majority of post caesarean mothers before massage their level of pain among experimental and control group mothers are moderate level.

The second objective is to assess the pain level after administering hand and foot massage.

The relatively unspecialized nerve cell endings that initiate the sensation of pain are called nociceptors; these are sensory receptors that send signals of pain and are generally located at the surface of the internal tissues

and beneath the skin, densely in the hands and feet. Therefore, applying foot and hand massage is considered to be significantly appropriate method in pain reduction. ***(Henderson 2008)***

The massage consisted of petrissage, friction and kneading for five minutes on each hand and each foot, for a total of 20 minutes. Results of the study showed significant reductions in both pain intensity and distress after the 20-minute massage. "The findings from the study indicated that a 20-minute foot and hand massage significantly reduced both pain intensity and distress resulting from incisional pain on the first postoperative day," ***Hsiao-Lan Wang, R.N., and Juanita F. Keck, 2004***

Comparison with pretest and posttest level of pain between experimental and control group it shows that there is a statistically significant difference in experimental group from second day onwards.

The third objective was to associate pain level between experimental &control group.

Degirmen N, Ozerdogan N, Sayiner D, Kosgeroglu N, Ayranci U conducted a study with pretest-posttest design study which was planned as a randomized controlled experimental study. It was also noted that vital findings were measured comparatively higher before the massage in the test groups, and they were found to be relatively lower in the measurements conducted right before and after the massage, which was considered to be statistically meaningful. Foot and hand massage proved useful as an effective nursing intervention in controlling postoperative pain.

The pre-assessment level of pain showed a mean value of 6.53 in experimental group and mean value of 6.57 in control group. The comparison of pre-assessment level of pain between experimental and control groups revealed that student's independent 't' test value was t=0.22 P=0.82 DF= 58 which did not show any statistical significance .

The post-assessment level of pain showed a mean value of 2.57 in experimental group and mean value of 3.73 in control group. The comparison of pre-assessment

level of pain between experimental and control groups revealed that student's independent 't' test value was t=4.10 P=0.01** DF= 58 significant which is statistical significance.

The fourth objective was to correlate level of pain with certain demographic data.

Nixon M, et al (1997) Data were analyzed using analysis of covariance repeated measures (within subjects) design. Controlling for age, the results indicated that massage produced a significant reduction in patients' perceptions of pain over a 24 hour period. A linear positive relationship emerged between patients' age and the duration of the massage.

In this study association between demographic variables and their level of post test pain in experimental group reveals that the age, birth interval, History of caesarean and Sterilization are significant factors for pain reduction.

HYPOTHESIS

HO: The study reveals that there is no significant difference in pain experienced by mothers who under went caesarean section between experimental and control group before hand and foot massage. The similar study was also conducted by ***Wang HL, Keck JF*** states that patients experienced moderate pain after they received pain medications, there by null hypothesis was proven.

H1: The study reveals that there is significant difference in pain level by mothers who under went caesarean section between experimental and control group after hand and foot massage. The similar study was also conducted by ***Diegrmen. N***, states its an effective nursing intervention in controlling postoperative pain and hence hypothesis was proven.

CHAPTER – VI
SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS.

6.1. SUMMARY

Pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage (International Association). A Caesarean section is usually performed when a vaginal delivery would put the baby's or mother's life or health at risk, although in recent times it has been also performed upon request.

Postoperative pain can complicate and delay a patient's recovery, lengthen hospital stays and costs, and interfere with a patient's return to activities of daily living. In many people, pain medications can have unpleasant side effects. Research indicates that massage can decrease postoperative pain, decrease postoperative pain intensity, decrease postoperative pain unpleasantness/distress, decrease sympathetic responses to postoperative pain, decrease doses of analgesics and increase levels of calmness/feelings of well-being. (American Massage Therapy Association).

The data was collected from each samples as demographic and Obstetricsal variables were collected. Pre test done from both groups experimental and control group with behavioral observation checklist. In experimental group 20 minutes of hand and foot massage was provided once a day with routine care 4 hours after analgesics. The post test was done 1 hour after massage, the same procedure repeated on the second day. The control group received only the routine care the post test was done on the same way.

The pilot study was conducted in caesarean ward, Institute of Obstetrics and Gynaecology, Chennai-8 for a period of 1 week from 21.03.2010 To 27.03.2010. Formal permission was obtained from the concerned authority. The instrument was found reliable for proceeding with

the main study. The other opinion and suggestions were incorporated in the main study to accomplish the objectives of the study.

THE MAIN OBJECTIVE OF THE STUDY WERE

1) To assess the pain level before administering hand and foot massage among experimental and control group.

2) To assess the pain level after administering hand and foot massage among experimental group

3) To compare pain level between experimental &control group.

4) To associate level of pain with certain demographic variables.

6.2. MAJOR FINDINGS OF THE STUDY

1) Higher proportion 19(63.3%) of post caesarean mothers were between the age group of 30-35 years in experimental and 16(53.3%) in control group.

2) More than half proportion 13(43.3%) of the mothers were educated up to secondary education both in experimental and control group

3) Majority 28(93.3%) in experimental group and 27 (90%) in control group post caesarean mothers are house wife.

4) Majority of post caesarean mothers are from nuclear family 21 (70%) experimental 19 (63.3%) in control group

5) High proportion 24 (80%) in both experimental and control groups human support were mothers.

6) More than half of the proportion 50% of the post caesarean mothers have one child 43.3% two and6.7% have three child in experimental group and about 43.3% have one child, 46.7% two and 10% three child in control group.

7) Highest proportion 63.3% of the post caesarean mothers have birth interval 1-2yrs ,23.3% 2-3yrs,3.3% 3-4yrs and 10% had more than 4

years in experimental group and 46.7% of the post caesarean mothers have birth interval 1-2yrs ,26.7% 2-3yrs,16.7% 3-4yrs and 10% had birth interval more than 4 years in control group.

8) Majority of 43.3% caesarean section indication was previous caesarean section, 30% meconium stained and fetal distress, 26.7 % obstructed labour in experimental group and where as 40% due to previous caesarean section, 6.7% mal presentation, 23.3% meconium stained and fetal distress,30 % obstructed labour in control group.

9) Higher proportion 96.7% caesarean section performed as emergency and 3.3% as elective in experimental group and in control group86.7 % as emergency caesarean section and 13.3% as elective in control group.

10) Majority of proportion 70% had not under gone sterilization and 30% undergone sterilization in experimental group and in control group 46.7% not under gone sterilization and 53.3% undergone sterilization .

11) All the post caesarean mothers who had participate in the study experience moderate level of pain.

12) The pre-assessment level of pain showed a mean value of 6.53 in experimental group and mean value of 6.57 in control group. The comparison of pre-assessment level of pain between experimental and control groups revealed that student's independent 't' test value was t=0.22 P=0.82 DF= 58 which did not show any statistical significance.

13) The post-assessment level of pain showed a mean value of 2.57 in experimental group and mean value of 3.73 in control group. The comparison of post-assessment level of pain between experimental and control groups revealed that student's independent 't' test value was t=4.10 P=0.01 DF= 58 significant which is statistical significance.

14) Association between demographic variables and their level of posttest pain in experimental group reveals that the age, birth interval, History of caesarean and Sterilization are significant factors for pain reduction.

6.3. CONCLUSION

The present study assessed the effectiveness of hand and foot message as a pain control measure in reducing post caesarean pain . During postnatal period there are various physical, psychological and social changes takes place, inspite of it the major problem is pain in post caesarean mothers which can complicate and delay patient recovery, lengthen hospital stay. It also interferes with the activities of daily living .As a nursing personnel our responsibility is to promote comfort & improve maternal and child attachment. The result revealed that the level of pain score had been reduced. Hence the investigator concluded that the hand and foot massage has helped in improving physical activity, comfort and sense of wellbeing along with routine analgesics administered to the study subjects.

6.4. IMPLICATIONS FOR NURSING PRACTICE

The investigator recommend the following implications drawn from the study which are of vital concern for nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE

- Midwife should practice hand and foot massage as it reduces both pain intensity and distress resulting from incision pain on the first post operative day.
- Hand and foot massage is an effective, inexpensive low risk, flexible and easily applied strategy for caesarean pain management.
- Midwives can adopt hand and foot massage which will promote comfort and psychological wellbeing.
- Hand and foot massage strengthens muscles and improves her physical activity.
- Birth companion may be educated and trained on hand and foot massage.

NURSING ADMINISTRATION

- Collaborate with governing bodies to formulate standard policies and protocols to emphasize on nursing care for post caesarean mothers.
- Arrange and conduct workshops, conferences, seminars on non-pharmacological methods to reduce pain perception.
- Provide opportunities for nurse midwives to attend training programmes on complementary and alternative therapies for pain management.

NURSING EDUCATION

- Nurse educators should encourage nursing students to know the benefits of hand and foot massage as an intervention for reducing post caesarean pain.
- Make use of available literature and studies related to non-pharmacological measures for pain relief for post caesarean mothers.

NURSING RESEARCH

- The study will be a valuable reference material for future research.
- The findings of the study would help to expand the scientific body of professional knowledge upon which further researches can be conducted.
- Hand and foot massage may be studied more scientifically and can used as a specific nursing intervention.

6.5. RECOMMENDATIONS FOR FURTHER RESEARCH

- Similar study can be replicated on large sample.
- Similar study can be conducted on other way by increasing the frequency and duration of hand and foot massage.
- Study can include all types of caesarean mothers irrespective of their illness or complications.

- Study can be compared with various other alternative method like acupuncture, relaxation, touch & music therapy.
- A comparative study can be conducted in other settings like corporate, district hospital , primary health centre and in private hospitals.

SUGGESTION FOR FUTURE

- Complementary therapy cell could be arranged in the institution and multidisciplinary team could be introduced.
- Pain assessment and management should be given emphasis in postoperative nursing care practices
- Non-pharmacological methods of pain management should be emphasized in nursing curriculum.
- Nurses can be given training programme on non-pharmacological pain management.
- Findings of this study can be utilized to educate family members and non-nursing personnel to provide quality services in hospital

6.6. LIMITATIONS

- It needs much explanation to get consent from mother because they think that this massage may produce complete reduction from post caesarean pain.
- The samples were post caesarean mothers without any illness and complications.
- The intervention was started 24 hours after surgery.
- Study was conducted on mothers admitted at institute of Obstetrics and Gynaecology.

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WEBPAGE

1) www.google.com

2) www.pubmed.com

3) www.medline

4) www.cochrane

MASSAGE TECHNIQUE

HAND MASSAGE

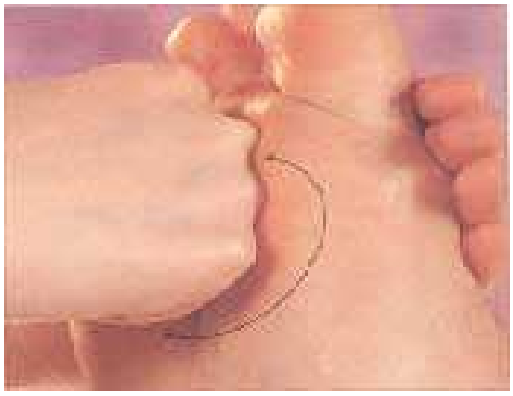
The muscles are grasped with both hands on opposite sides of each other, and then are twisted and compressed against each other.

Tips of thumbs follow in tiny circles. When one thumb up near wrist, other down towards fingers. Keep thumbs in contact with each other.

FOOT MASSAGE

Make circular motions with your thumb and fingers over the sole of the foot, and use more pressure in areas such as the heel.

Knead the sole by holding the foot with one hand and making a fist with the other, using moderate pressure into the sole



PROTOCOL

HAND AND FOOT MASSAGE

INTRODUCTION

The data was collected from each samples as follows demographic and Obstetricsal variables were collected .Pre test done from both groups of experimental and control group with behavioral observation checklist .In experimental group 20 minutes of hand and foot massage was provided once a day with routine care 4 hours after analgesic. The post test was done 1 hour after massage, the same procedure repeated on the second day. The control group received only the routine care the post test was done on the same way. Degirmen N Ozerdogan et al (2011) conducted study at Turkey using pretest-posttest randomized controlled experimental study design to determine the efficiency of hand and foot massage on reducing postoperative pain in patient who had caesarean section. Foot and hand massage proved useful as an effective nursing intervention in controlling postoperative pain.

DEFINITION

Massage is defined as scientific way of treating some forms of disease by manipulation applied in a variety of ways to soft tissue of the body.

PURPOSES

- Massage increases the circulation .
- Massage increases the general flexibility.
- Massage can assist recovery from fatigue.
- Massage helps in stimulation of autonomic reflexes.
- Massage reduces pains

TYPES OF MASSAGE

1) PETTRISSAGE - Manipulations are those in which the soft tissue (mainly muscles) are compressed either against underlying bone or against themselves.

2) FRICTION – These are small range ,deep, penetrating movements performed on specific anatomical structures with the tip of the fingers or thumbs.

3) KNEADING – This can be performed with one or both hands working alternatively, in which soft tissues are being pressed against the underlying bone in a circular direction.

PROCEDURE

- Provide privacy for the subjects.
- Fill the basin with water, clean the feet and dry off
- Place large towel under the hands and pillows under the foot.
- Performed 5 minutes of hand and foot massage over each extremities

வழவமைக்கப்பட்ட நேர்காணல் படிவம்

பிரிவு–அ

மக்கள் தொகை கணிப்பியல் சார்ந்த புள்ளி விவரத் தகவல்கள்

குறியீட்டு எண்:

1) வயது

அ) 20 வயதுக்குக் கீழ் ☐

ஆ) 21 முதல் 35 வரை ☐

இ) 36 முதல் 40 வரை ☐

ஈ) 41 முதல் 45 வரை ☐

2) கல்வி தகுதி

அ) முறையாக கல்வி பயிலாதவர்கள் ☐

ஆ) ஆரம்பக் கல்வி ☐

இ) மேல்நிலைக் கல்வி ☐

ஈ) பட்டப்படிப்பு ☐

3) பணி

அ) தொழிற்கல்வி வேலை ☐

ஆ) எளிய வேலை ☐

இ) கூலி வேலை ☐

ஈ) வீட்டு வேலை ☐

4) குடும்ப வகை

அ) தனிக்குடும்பம் ☐

ஆ) கூட்டுக்குடும்பம் ☐

இ) நிரப்பப்பட்ட குடும்பம் ☐

5) மருத்துவமனையில் உங்களுக்கு ஆதரவளிக்கும் நபர்

அ) தாயார் ☐

ஆ) அத்தை ☐

இ) தங்கை ☐

ஈ) கணவர் ☐

மகப்பேறு பற்றிய தகவல்

1) பிறப்பின் வரிசை

அ) முதல் கர்ப்பம் ☐

ஆ) இரண்டாம் கர்ப்பம் ☐

இ) மூன்றாம் கர்ப்பம் ☐

ஈ) நான்கும் அதற்கு மேலும் ☐

2) குழந்தை பெற்றெடுத்த எண்ணிக்கை

அ) ஒன்று ☐

ஆ) இரண்டு ☐

இ) மூன்று ☐

ஈ) நான்கும் அதற்கு மேலும் ☐

3) குழந்தை பேரின் இடைவெளி

அ) 1-2 ஆண்டு ☐

ஆ) 2-3 ஆண்டு ☐

இ) 3-4 ஆண்டு ☐

ஈ) 4 ஆண்டுகள் அதற்கு மேல் ☐

4) அறுவை சிகிச்சை வகை

அ) மேல் வயிறு ☐

ஆ) அடி வயிறு ☐

5) உயிருடன் இருக்கும் குழந்தைகளின் எண்ணிக்கை

அ) ஒன்று ☐

ஆ) இரண்டு ☐

இ) மூன்று ☐

ஈ) நான்கு ☐

6) முந்தைய குழந்தைப்பேறு அறுவை சிகிச்சை மூலம் பெற்றெடுத்தீர்களா?

அ) ஆம் ☐

ஆ) இல்லை ☐

7) அறுவை சிகிச்சை மேற்கொண்ட காரணம்

அ) முந்தைய அறுவை சிகிச்சை ☐

ஆ) சிசுவின் மூச்சுத் திணறல் / காட்டுமலம் ☐

இ) மாறுபட்ட உதயம் ☐

ஈ) தடைபட்ட பிரசவம் ☐

8) அறுவை சிகிச்சையின் முறை

அ) திட்டமிட்ட அறுவை சிகிச்சை ☐

ஆ) அவசர அறுவை சிகிச்சை ☐

9) அறுவை சிகிச்சை முன் எந்தவகையான மயக்க மருந்து கொடுக்கப்பட்டது

அ) முதுகு தண்டுவடம் மூலம் மயக்க மருந்து ☐

ஆ) மயக்க மருந்து ☐

10) அறுவை சிகிச்சையோடு குடும்பக் கட்டுப்பாடு செய்தீர்களா

அ) ஆம் ☐

ஆ) இல்லை ☐

பிரிவு-ஆ: நடத்தை சரிபார் பட்டியல்

வ. எண்	வாய்மொழி அறிக்கை	மதிப்பீடு	ஆராய்ச்சிக்கு முன்	ஆராய்ச்சிக்கு பின்	முகத்தில் ஏற்படும் உணர்ச்சி மாற்றங்கள்	மதிப்பீடு	ஆராய்ச்சிக்கு முன்	ஆராய்ச்சிக்கு பின்	நிலை	மதிப்பீடு	ஆராய்ச்சிக்கு முன்	ஆராய்ச்சிக்கு பின்	உடல் சார்ந்த நடவடிக்கை	மதிப்பீடு	ஆராய்ச்சிக்கு முன்	ஆராய்ச்சிக்கு பின்
1.	வலி இல்லை	0			வலி இல்லை	0			சோர்வற்ற நிலை	0			திரும்பிப்படுப்பது, கட்டிலில் உட்காருவது	0		
2.	வலி	1			முகம் கோனுதல்	1			திரும்பிப் படுக்க மறுத்தல்	1			திரும்பிப் படுக்க உட்கார முயற்சிப்பது	1		
3.	முனங்கலுடன் சேர்ந்த வலி	2			நெற்றியில் சுருக்கம், வாய் இருகுதல்	2			இருக்கமான நிலை	2			உறவினர்கள் கை அல்லது கட்டிலின் படி தேவைப் படுதல்	2		
4.	வலி மருந்து கேட்பது	3			உதடுகளின் இருக்கம் மற்றும் கண்ணீர் விடுதல்	3			மடக்கிய நிலை	3			இருக்கம்	3		
மொத்த மதிப்பீடு																

மொத்த மதிப்பீடு -12

0 - வலியில்லை

1-4 - குறைவான வலி

5-8 - மிதமான வலி

9-12 - அதிகமான வலி

STUDY TOOLS

I .STRUCTURED INTERVIEW SCHEDULE

A. DEMOGRAPHIC DATA

CODE NO

1. Age

a) Below 20 years.
b) 21 - 35 yrs.
c) 36 – 40 yrs.
d) 41 – 45 yrs.

2.Educational status

a) Non formal education
b) Primary
c) Secondary
d) Degree

3.Occupation

a) Professional
b) Company
c) Coolie
d) House wife

4. Type of family

a) Nuclear
b) Joint
c) Extended

5. Support system during hospitalization

a) Mother
b) Mother in law
c) Sister
d) Husband.

B. OBSTETRICAL DATA :

1.Gravida

a) 1
b) 2
c) 3
d) Above 4

2.Parity

a) 1
b) 2
c) 3
d) 4

3.Birth interval

a) 1-2yrs
b) 2-3yrs
c) 3-4yrs
d) More than 4 years.

4.Type of operation

a) Classical
b) Lower Segment caesarean section

5. Number of living children

a) One
b) Two
c) Three
d) Four

6. History of previous caesarean section.

a) Yes
b) No

7.Indication for caesarean section

a) Previous caesarean section
b) Meconium stained and fetal distress
c) Malpresentation
d) Obstructed labour

8.Type of caesarean section

a) Elective
b) Emergency

9. Caesarean section performed under

a) General Anesthesia
b) Spinal Anesthesia.

10.Whether sterilization done along with caesarean section

a) Yes
b) No

II. BEHAVIORAL OBSERVATION CHECK LIST

S.No	Verbal Response	Score	Pre Assessment	Post Assessment	Facial Expression	Score	Pre Assessment	Post Assessment	Posture	Score	Pre Assessment	Post Assessment	Physical Activity	Score	Pre Assessment	Post Assessment
1	Has no pain	0			No pain	0			Relaxed posture	0			Turns side to side. Sits on bed	0		
2	Complain of pain	1			Grimace	1			Refused to turn to the side	1			Tries to lie side & sitting .	1		
3	Moaning with pain	2			Tensed jaw and wrinkled forehead	2			Remain rigid	2			Needs to hold the relatives hand or railings	2		
4	Calls out for analgesic	3			Compressed lips and tears over the cheek	3			Attains a flexed position	3			Rigid	3		
Total Score																

Total Score – 12

0 – No pain
1-4 - Mild pain
5-8 - Moderate pain
9-12 –Severe pain