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"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESAREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BANGALURU''

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ABSTRACT

BACKGROUND OF THE STUDY

Physiological response to pain creates harmful effects that prolong the body's recovery after the surgery. Patients routinely report mild to moderate pain even though pain medications have been administered. Complementary strategies based on sound research findings are needed to supplement post-operative pain relief using non-pharmacological management. Despite the technological advances in health care, routine analgesic procedures in postoperative pain control remain inadequate and thus require complementary therapies and interventions. Foot and hand massage has the potential to assist pain relief. Massaging the foot stimulates the mechanoreceptors that activate nerve fibers to release endorphin which prevents pain transmission from reaching consciousness. The aim of the present study is to evaluate the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru.

OBJECTIVES:

1) To assess the level of incisional pain among mothers of post caesarean section.

2) To determine the effectiveness of foot massage on reduction of incisional pain on mothers of post caesarean section.

3) To find out the association between the post-operative pain of caesarean section with their selected demographic variables.

DESIGN:

Pre-experimental design one group pre-test post-test was selected for the study.

SUBJECT:

The participants were 30 women from the selected area, Bengaluru.

SAMPLING METHOD:

Non-probability purposive/ judgemental sampling technique was used to select the samples for study.

COLLECTION TOOL:

Tool used was numerical pain scale to assess pain intensity and in-vivo bio-physiologic methods.

DATA ANALYSIS:

The obtained data was analysed by using descriptive and inferential statistics and interpreted in terms of objectives and hypothesis of the study. The level significance was set at 0.05level.

RESULTS:

In pre-test among 30 LSCS mothers, the incisional pain level were 70.0% of mothers have severe pain, 30.0% mothers were having incisional pain level and none of the mothers have mild pain. In post-test 70.0% were having moderate incisional pain, 30.0% were having mild incisional pain and none of the mothers had no severe pain. The chi square value was 34.80 which is higher than the table value 5.991 [χ^2 (0.05,2df)] which is highly significant at $P \leq 0.05$ level. Thus, the research hypothesis was accepted. Hence the foot massage was to be effective in decreasing the incisional pain level of LSCS mothers.

a) Association between the age group and pre-test incisional pain level among caesarean section mothers:

The association between the age group and pre-test incisional pain level among caesarean section mothers tested that the obtained $\chi^2 = 1.03$ is less than the table value 7.815. It shows that the association is statistically not significant at $P > 0.05$. The research hypothesis is rejected.

b) Association between the educational status and pre-test incisional pain level among the caesarean section mothers:

The association between the educational status and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 0.32$ is less than the table value 7.815. It shows that the association is statistically not significant at P> 0.05. The research hypothesis is rejected

c) Association between the occupation and pre-test incisional pain level among the caesarean section mothers:

The association between the occupation and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 1.10$ is less than the table value 7.815. It shows that the association is statistically not significant at P> 0.05. The research hypothesis is rejected.

d) Association between the parity and pre-test incisional pain level among the caesarean section mothers:

The association between the parity and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 8.45$ is more than the table value 7.815. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

e) Association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers:

The association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 3.97$ is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

f) Association between the type of family and pre-test incisional pain level among the caesarean section mothers:

The association between the type of family and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 7.65$ is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

g) Association between the religion and pre-test incisional pain level among the caesarean section mothers:

The association between the religion and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 7.47$ is more than the table value 5.991. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

h) Association between the residency and pre-test incisional pain level among the caesarean section mothers:

The association between the residency and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 6.43$ is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

i) Association between the family income monthly and pre-test incisional pain level among the caesarean section mothers:

The association between the family income monthly and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 0.11 is more than the table value 7.815. It shows that the association is statistically significant at P > 0.05. The research hypothesis is rejected.

j) Association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers:

The association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 1.39 is more than the table value 7.815. It shows that the association is statistically significant at P > 0.05. The research hypothesis is rejected.

CONCLUSION:

Findings of the study revealed that the foot massage had significant effect on the incisional pain among the mothers who had undergone lower segmental caesarean section.

Hence it was concluded that the foot massage was an effective non-pharmacological, non- invasive and cost effective method that could be used effectively for the management of post -operative pain.

KEYWORDS:

Post lower segmental caesarean section incisional pain, foot massage, women, descriptive and inferential stastistics, selected demographic variables, non-probability purposive/judgemental sampling.

INTRODUCTION

"The way a woman gives birth can affect the whole of the rest of her life. How can that not matter? Unless the woman herself does not matter''''''

Pregnancy is a unique experience for the women and each pregnancy brings every woman a new feeling of joy and adaptation with the pregnancy. Pregnancy is the most exciting period of expectation and fulfillment in women's life. Pregnancy and child birth is a great event in the life of every women for which she aspire and longs for with great expectation.[1]

Childbirth is one of the most marvellous and memorable segment in a woman's life. It does not really matter if the child is the first, second or the third one. Each experience is unique and calls for a celebration. The fear, pain, physiological changes and anxiety about childbirth often prevents most women from enjoying this experience. It is very important to communicate hopes or fears about labour and delivery with your doctor, based on which critical decisions can be made in the best interest of the mother and child.[1]

Labor begins when the fetus is mature enough to be able to sustain life outside of the uterus without any difficulty when passing through birth canal. Three important components of labor must work together for labour to progress normally.[2]

- Power (uterine contraction)
- Passenger(position, presentation of fetus)
- Passage (pelvis)

Most of the mothers are healthy during pregnancy and have good reason to avoid surgical deliveries; whenever the condition does not permit caesarean section is suggested. After caesarean section the mother may report more pain and increased difficulty coping with pain and other discomforts.[3]

Caesarean section (C.S) is the birth of the foetus through a trans-abdominal incision in the uterus. It is one of the common surgical procedure in worldwide. It has played a major role in lowering both maternal and perinatal morbidity and mortality rates during the past century. The initial purpose of the operation was to preserve the life of mother with obstruction labour and her new born .[4]

Moreover, there are various classifications that indicate of caesarean section as absolute or relative, common or uncommon, maternal and foetal. The absolute indication includes severe cephalic disproportion, major degree of placenta previa, cancer cervix, vaginal atresia, transverse lie. Types of C.S are elective and emergency caesarean section. Types of caesarean section incision are classic (vertical) incision and low segment (transverse) incision.[5]

Pain is defined by the International Association for the Study of Pain (IASP) as "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.[6]

Additionally, pain management of post caesarean section is necessary for mothers and medical reasons. Good pain relief improves mobility and woman's ability to breastfeed and care for her infant. Opioid drugs are routinely administered for post caesarean section pain but it has the common side effects of dizziness, drowsiness, headache, nausea, insomnia, vomiting, and weakness. And there is concern for opioid transmission to the neonate through breast feeding, so the reduction of opioid use is desirable.[7]

Moreover, post caesarean section incisional pain is defined as an unpleasant sensory and emotional experiencing arising from actual or potential tissue damage. Pain includes not only the perception of an uncomfortable stimulus but also the response to the perception.[7] Moreover, types of pain can be divided into acute pain and chronic pain. Acute pain is experienced immediately after surgery (up to 7) days and pain which lasts more than 3 months after injury is considered to be chronic pain. Acute and chronic pain can arise from cutaneous, deep somatic or visceral structures.[8]

Postoperative pain can complicate and delay 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.[9]

In recent years many complementary therapies such as massage, soothing music, relaxation, mind-body techniques, massage, herbal medicines, hypnosis, and therapeutic touch are used to help manage pain and sympathetic responses like heart rate and blood pressure.[10]

In India, massage therapy is licenced by The Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) in March 1995. Massage therapy is based on Ayurveda, the ancient medicinal system that evolved around 600 BC. In ayurveda, massage is part of a set of holistic medicinal practices, contrary to the independent massage system popular in some other systems.

The purpose of massaging is to give comforts such as general relaxation in body, Reducing pain perception, good sleep, by affecting the locomotor system and the nervous system as well as cardiovascular system. The technological advances in health care routine analgesics procedures in post-operative pain control remain inadequate and thus require complementary therapies and interventions.[11]

In advanced health care services, massage has taken an essential role. It has been shown importance to reduce stress, improve blood circulation, decrease pain, sleep enhance, reduce swelling, promote relaxation, decrease doses of analgesics and increase oxygen capacity of the blood. Foot massage has also been recognized as a non- drug treatment for postoperative pain[9]. The ankle and foot consist of 34 joints, with many joints and reflex patterns. The nerve distribution to the feet is extensive. The position of the joint mechanoreceptors is through the central nervous system. The sensory and motor centres of the brain contribute a large area to the foot. The feet often are easy place to begin a massage for a woman who is nervous or in pain. Massage of the foot is one of the best ways to enhance a high degree of nervous system input for relaxation and relief pain.[10]

Additionally, many studies proved that, foot massage stimulates the parasympathetic nervous system, resulting in relaxation and reduction in pain via a neural gating mechanisms and an increase in body awareness. The gate control theory of pain states that a gate or a series of gates exists throughout the length of the spinal cord. Pain massages that originate from the periphery travel to the gate in the spinal cord. If the gate is open, then pain massages get through to the brain, if the gate is closed, then the brain does not receive the pain massages.[12]

Women undergoing caesarean section who have a high pain levels are in special need of attention and care because of a higher risk of decreased ability to breastfeed and to take care of their new born. In this study he added that, with persistent pain recalled significantly more pain on the day after caesarean section. Also rates of chronic pain after caesarean section have been between 6%and 18%.[13]

The nurse who plays a role in the medical pain management, she must be aware about their pharmacological side effects. Post caesarean section sedation and pain scores throughout the treatment and for at least 2hours after treatment is recommended. Foot massage is a pain relief, reached easily, in-expensive and has no harmful to mothers. For example massages involves gentle application of touch and movement to muscles tendons, and ligaments blocks pain impulse perception and helps relaxation of muscles.[14]

Taylor C (2003), United Sates, states that many non-pharmacologic methods relieve pain but are not widely used. Complementary therapies are attracting attention and patients are interested in alternatives to biomedicine. In response to patients' interests, nurses are exploring ways to incorporate therapies such as the following:

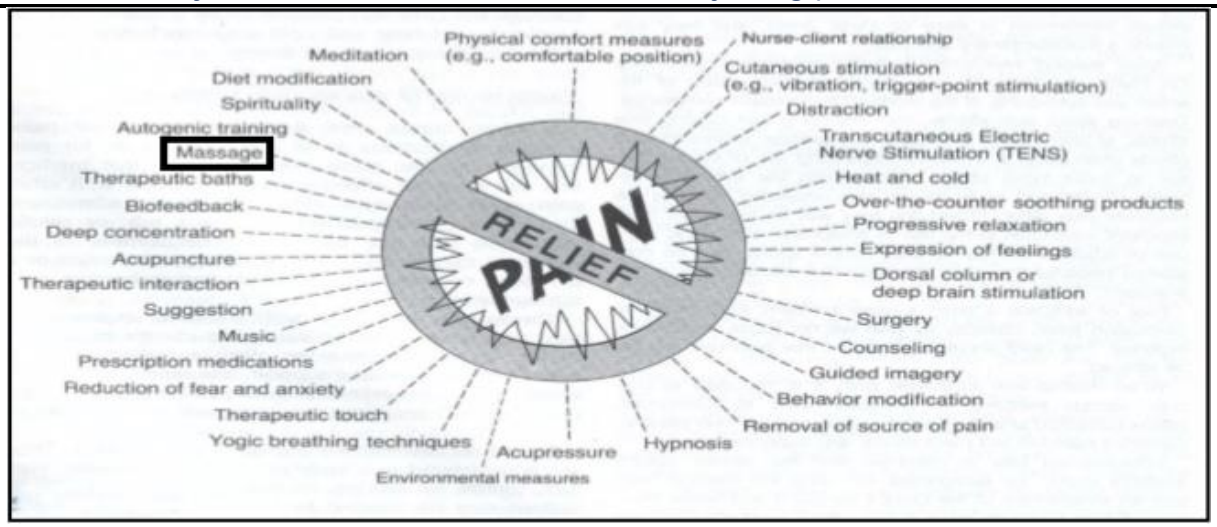


Fig: Non- Pharmacological Pain Relief Measures

NEED FOR THE STUDY

The birth of the child is generally viewed as a time of rejoicing despite the physical pain and exhaustion experienced by the mother. Caesarean section is the most frequently performed surgery in the world.[15] These are more common than surgeries due to many factors, one is certain, is nearly 50% of world population are women and pregnancy is still a common condition.[16]

Internationally the rate of caesarean section is increase. During the last decade there has been 2-3 fold raised in the incidence. The W.H.O. recommends that a caesarean section rate of 10-15% should be exceeded. The result of national sentinel caesarean section audit shows that caesarean section rates are high as above 24% in most the developing countries.[17]

In a descriptive study done Sweden in 2007, to assess the women's experience of post-operative pain and pain relief after caesarean birth identified that women experienced highest pain during the first 24 hours. 785 of women scored greater than or equal to 4 on visual analogue scale, which can be seen as inadequately treated pain. There was difference between elective and emergency caesarean birth in the levels of pain. Eventually post-operative pain negatively affected breast feeding and infant care.[18]

It takes a long to recover from caesarean than from vaginal birth. The mother feels that they are handicapped by lack of mobility and pain. It is difficult for them to establish their maternal roles in the first few days after caesarean section as the pain relief with analgesics are adequate.[19]

It is very important to control the analgesics load after caesarean section since it can pass through breast milk to the baby. A combination of alternative therapy with analgesics can reduce the analgesics use, it minimises side effects and cost is effective along with comforting the patient.[20]

Despite the technological advances in he alth care, routine analgesics in post-operative pain control remain inadequate and thus require complementary therapies and interventions. Massage therapy is an upcoming treatment modality in managing pain, which has root in complementary and alternative therapy. It is considered as a form of medical treatment in many countries. The purpose of massage is to assist the treatment procedures by affecting the loco motor system, nervous system as well as the cardiac system.[21]

In the present study setting, the investigator has found that the patient's satisfaction and comfort with the analgesics administered is reduced. There are 2-3 caesarean sections per day on an average in the selected hospital. The mothers post-operatively are receiving Injection Pethidine 50mg and Injection Phenergan 25mg intramuscularly and are continued as a night dose. Injection Tramadol is administered intravenously every 8th hourly. And it is found that despite of all these medications, the mothers are demanding for more analgesics.

The investigator from her personal experience during her clinical practice has found that massage comforts the patient to a significant level. Especially foot and hand massage has a soothing effect on the patient, relieves pain and also promotes sleep. There is no need to re-position the patient and is very comfortable and accessible.

Considering all these facts, the investigator found it is necessary to introduce foot and hand massage therapy to post caesarean mothers to aid in their comfort and recovery.

Hence the investigator was interested to the study: "A study to assess the effectiveness of foot massage on reduction of incisional pain among post caesarean section mothers in selected Hospital at Bengaluru. So that complimentary therapies can be incorporated in to pain relief regimen.

OBJECTIVES

Research objectives are specific accomplishments the researcher hopes to achieve by conducting the study. To answer the research question the investigator should identify specific research aims or objectives. The objective include obtaining answers to research questions for testing the research hypothesis, but may also encompass broader aims as developing recommendations. The objectives help to focus the study and to avoid unnecessary collection of data which is not strictly necessary to understand and solve the problems identified. It helps to organize the study in defined parts and phases. The present study is aimed to finding the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in a selected hospital at Bengaluru.

STATEMENT OF THE PROBLEM:

"A study to assess the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru**.**

OBJECTIVES OF THE STUDY:

1. To assess the level of incisional pain among mothers of post caesarean section
2. To determine the effectiveness of foot massage on reduction of incisional pain on mothers of post caesarean section
3. To find out the association between the post-operative pain with their selected demographic variables.

HYPOTHESIS:

H_1: There will be a significant difference in the intensity of pain level before and after foot massage.

H_2: There will be a significant association between the level of pain before and after foot massage with their variables.

Operational definition:

- **Assess :**

  In this study assess it refers to evaluate or estimate the nature, quality, ability, extent, or significance of incisional pain

- **Effectiveness :**

  In this study effectiveness refers to the desired result or consequence of foot massage as evidenced by subjective pain measurement on Numerical Intensity Pain Scale and changes in the physiological parameters like Blood, Pulse and Respiration.

- **Foot massage :**

  In this study it refers to foot massage involves applying pressure on the feet of the post caesarean section mothers.

- **Post- caesarean section incisional pain :**

  Pain is a physical suffering or discomfort caused by an incision made after surgery. In this study it refers to subjective study experience of physical suffering or discomforts following caesarean section, which reported by the mother and measured on Numerical Intensity Pain Scale.

- **Post- caesarean section mothers :**

  In this study post caesarean section mothers are those mothers who have undergone caesarean section irrespective to their gravida after 5 hours of surgery and within the first 24 hours of child birth.

ASSUMPTIONS

- Pain is a multidimensional phenomenon
- Pharmacological management alone may not help in reducing postoperative pain
- Patients who has undergone abdominal surgery may have moderate to severe pain
- Massage is a safe treatment modality without risk or side effects
- There will be a reduction in the post caesarean incisional pain level after foot massage.

DELIMITATIONS:

Study will be delimited to

- Mothers who delivered by caesarean section,

- Mothers who will give consent to participate
- Present during data collection

CONCEPTUAL FRAMEWORK

ROY'S ADAPTATION MODEL - MODIFIED

A conceptual framework is a theoretical approach to study the problems that are scientifically based, which emphasises the selection, arrangement and classification of its concepts.

A conceptual framework is referred to as the interrelated concepts or abstracts that are assembled together in some rational scheme by virtue of their relevance to a common theme. The overall objective of a framework is to make scientific findings meaningful and generalizable and they also give direction for relevant questions of practical problems.

The conceptual framework for this study is developed by the investigator based on Roy's Adaptation Model. The focus of this theory is the adaptation of the individual to various stimuli, both from the environment and from within. An individual's behaviour is based on the input, control process, output, and feedback mechanism.

Sister Calista, Roy views people as individuals who are in constant interaction with the surrounding environment, an integral whole with biological, psychological, and social components. Individuals have certain needs which they endeavour to meet in order to maintain integrity. The needs are divided into adaptive needs such as physiological, self-concept, role function, and interdependence.

Input: They are the various stimuli which provoke or stimulate the individual. The adaptation level of the individual is determined by the different stimuli to which he/she is exposed. Focal, contextual and residual are the three different stimuli present. The individual is exposed to a variety of stimuli during the post-operative period. To cope with these stimuli, she requires various types of comfortable and supportive measures like positioning, massage, relaxation techniques, and deviation techniques.

Focal stimuli: Focal stimuli are those which immediately confront the person. In this study, it is the post-operative pain experienced by post-operative mothers with lower segmental caesarean section.

Contextual stimuli: Contextual stimuli are all other internal and external stimuli of the person that can be identified as having a positive or negative influence on the situation. In this study, the post-operative mothers with incisional pain will be influenced by contextual stimuli like altered nutrition, anxiety, fear of the unknown surroundings, and poor social support.

Residual stimuli: Residual stimuli are those internal factors whose current effects are unclear. The beliefs, attitudes and traits of an individual developed from the past, but affecting the current responses. In this study, they are the past experiences, previous hospitalisation, sociocultural orientation, contact with healthcare professionals, pain threshold, and lack of knowledge regarding the outcome.

Control process: The control process includes biological and psychological coping mechanisms. Regulator and cognator are the two sub-system coping mechanisms.

Regulator: A sub-system coping mechanism which responds automatically through neural-chemical-endocrine processes. In post-operative of lower segmental caesarean section mothers, thoracic, nerves transmit pain stimuli to the dorsal root ganglia and to the posterior horn of the spinal cord. From there the impulse will be transmitted to the thalamus and to the sensory cortex of the brain.

The cognator: Responds through the complex process of perception, information, processing, learning, judgement and emotion. The individual uses the cognitive subsystem by perceiving the information given by the caregivers. In this study the investigator explains the impact of foot massage on postoperative pain and the client will understand, appreciate and cooperate positively and manifest positive behaviour.

Output: Output is the decreased or increased perception to the stimuli and corresponding adaptive or maladaptive behavioural responses.
In this study, it is the decreased intensity of postoperative pain corresponding adaptive behavioural responses.

Feedback: When the output becomes a non-adaptive behaviour response, it may contribute as one of the stimuli which require confrontation or intervention.

The adaptive modes: Adaptive or effectors modes are a classification of ways of coping that manifest regulator or cognator activity.

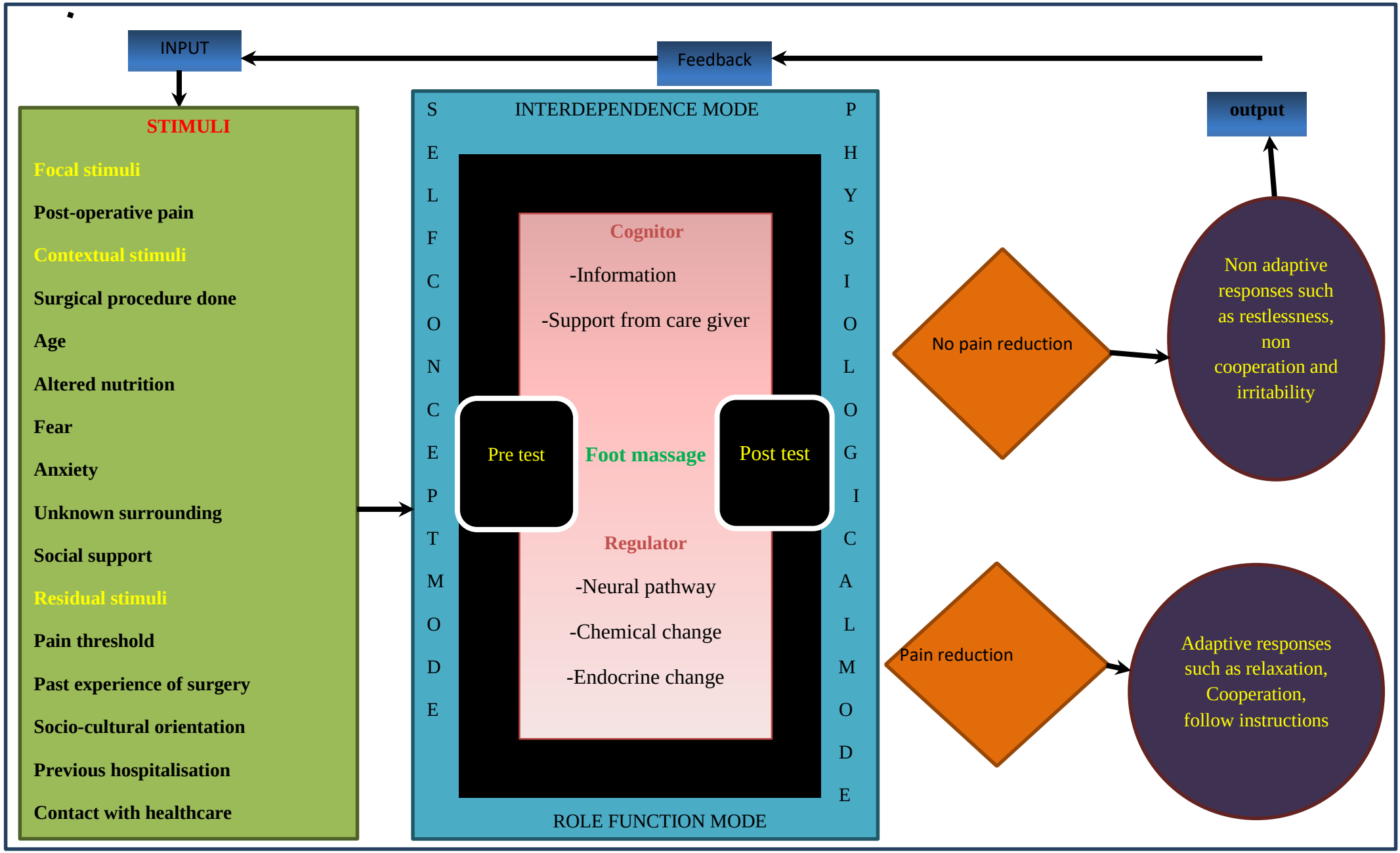
The physiological mode: It involves the body's basic needs and ways of dealing with adaptation with regard to fluid and electrolytes, nutrition, circulation, oxygenation, elimination, exercise and rest, and the regulation of senses, temperature and endocrine function. Excessive fatigue, fluid electrolyte imbalance, muscular rigidity, irritability, clenching fists, teeth, biting complaints of pain, and elevated blood pressure and heart rate are ineffective or maladaptive responses of physiological mode.

Self-concept mode: Self-concept is related to the basic need for psychic integrity, composite of beliefs, and feelings that one holds about oneself at a given time. In this study, self-concept refers to the maintenance of moral, spiritual self, and confidence which are adaptive responses; and anxiety, fear, lack of self-control over pain, and irritated mood which are ineffective responses.

Role function mode: Role function is the performance of duties based on given positions in the society. Accepting one's own role as head of the family, mother, teacher, etc. are adaptive responses. Restlessness, non-cooperation with care providers, and indifference are ineffective or maladaptive responses.

Interdependence mode: It is the relationship with significant others and the supportive system. In this study, cooperation, maintenance of good interpersonal relationship with the care providers and the investigator are adaptive responses whereas uncooperative behaviour is the non-adaptive response.
Foot massage will help conserve energy, increase circulation, reduce heart rate and blood pressure relieves pain, promote comfort and relax muscles of the individual during post-operative period.

Fig no 2 **Conceptual framework on impact of foot massage on post-operative LSCS patients based on Roy's Adaptation Model**



REVIEW OF LITERATURE

A review of literature is a compilation of resources that provide the ground work for further study. It helps with the conceptualization of research problems and the determination of specific problems and the determination of specific methodology to be used for further exploration of the problems. (Talbot LA 1995)

Thus the review of literature is an essential step in the development of a research project. It helps the researcher to design the proposed study in a scientific manner to achieve the desired result. It helps to determine the gaps consistencies and inconsistencies in the available literature about a particular subject under the study.

This chapter attempts to present a review of studies alone, methodology adopted and conclusion assured by earlier investigators; which helps to study the problem in depth. The sources to obtain more information on the selected topic were internet search, text book, published journals, published and un published thesis.

In this chapter, the researcher presents the review of literature under the following headings:

1. **Literature related to foot massage on LSCS**
2. **Literature related to effectiveness of foot massage on pain**
3. **Literature related to effectiveness of foot massage on other variable**

LITERATURE RELATED TO FOOT MASSAGES ON LSCS

The study was conducted in the caesarean section postnatal rooms in Benha University Maternity Hospital sample. It was involved 148 mothers, divided into 74 mothers as control group that received post caesarean section hospital routine care for pain relief and 74 mothers as intervention group that received 10 minutes foot massage for pain relief every 6 hours, 12 hours and 18 hours. With a convenience sample type and tools of data collection was used as structured interviewing questionnaire, modified McGill pain questionnaire short form and likert scale. The result shows there was significant relieving of pain level among intervention group compared to control group at different assessment times ($P<0.001$).[24]

A study was conducted on effectiveness of foot and hand massage on 281 patients attended for caesarean operations to the obstetric care units 281 were selected by random sampling method and evenly divided into three groups. Those patients who were control group,
foot and hand massage group, and a foot massage group, each of which included 25 patients. The result showed that pain intensity in foot and hand massage group was 5.76+1.23 in pre-test score was significant decrease right after the massage intervention (3.00+1.08) at $p<.001$, in foot and hand massage group when compared with control group.[25]

A study on foot and hand massage as an intervention for postoperative pain on 18 post caesarean mothers pain intensity and pain distress was assess by using a 0 to 10 numeric rating scale, and reported that there was statistically significant decrease in post-operative pain intensity from 4.65 to 2.35 ($t=8.154$ $p<.001$), pain distress from 4.00 to 1.88 ($p<.001$) and also decrease in sympathetic response to pain that is heart rate

and respiratory rate, hence foot and hand massage is an effective, in expensive, low risk for the post-operative pain management.[26]

A study on foot and hand massage on post caesarean pain and vital findings on 75 post caesarean mothers reported that there was statistically significant change in vital findings except pulse were observed, post-operative pain intensity levels decreased from 4.36+1.70 to 1.88($p<.001$) and concluded that performing massage intervention resulted in a considerable decrease in the vital findings of the patient, and reduced pain.[27]

An experimental study was done in 2006, in Turkey, in the obstetrical wards for a period of 12 weeks among 75 post caesarean mothers selected from 281 by random sampling technique, to prove the effectiveness of hand and foot massage on post caesarean pain. It proved that there was a significant reduction in pain intensity was significantly meaningful in intervention group when compared with a control group at 0.001 level of significance. It was also noted that vital findings were measured comparatively higher before the massage in the test group, and they were found to be relatively lower in measurements conducted right after the massage, at 0.001 level of significance. The tool used was Numerical Intensity Pain Scale.[28]

An experimental study was conducted to determine the efficiency of foot and hand massage on reducing postoperative pain in patients who had caesarean operation. This pre-test – post-test design study was planned as a randomized controlled experimental study. In the results, it was reported that the reduction in pain intensity was significantly meaningful in both intervention groups when compare to the control group. It was also noted that vitals findings were measured comparatively higher before the massage in the test group, 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.[29]

A comparative study was conducted by Jamileh Mokhtani & co. to compare the impact of foot reflexology massage & Bensone relaxation on severity of pain after caesarean section. A quasi experimental time series designs and clinical trial was used. Non probability convenient method of sampling was used. Samples were placed in two group, foot reflexology massage and Bensone relaxation and a control group. Pain was measured using a standard numerical pain scale. Comparison of the mean of pain severity was separately significant between two groups and measured group ($p<0.05$). Difference between the mean of pain severity also was significant between foot reflexology massage and Bensone relaxation ($P=0.0001$). They concluded that foot reflexology massage and Bensone relaxation were effective on decreasing pain severity after women abdominal surgical operation and the impact of the reflexology massage was superior.[30]

An experimental study was conducted to investigate the effect of foot reflexology on pain in caesarean section patients. This clinical trial study was carried out on 62 women who were referred to for caesarean section in Alzahara Hospital (Rasht city). They were randomly divided into two groups of case and control. The reflexology group received a 30-minute foot massage in two sessions, with 24-hour interval. Data gathering tool included a demographic from, step-visual analogue scale and pain score form. They found out that there was no demographical difference between two groups and they were matched completely. In case group, severity of pain after first stage of foot reflexology was significantly lower than before reflexology session and also in control group respectively ($P<0.001$, $P<0.0001$). The severity of pain after second stage

was significantly reduced in case group as compared with control group. In general, foot reflexology appears to be useful method of reducing pain.[31]

LITERATURE RELATED TO EFFECTIVENESS OF FOOT MASSAGE ON PAIN

A study was conducted, a Non-equivalent control group, pre-test post-test design study in a university hospital in Seoul Korea on 40 patients who operated under G/A from July 7, 2000 to Feb 20, 2001 to investigate the effects of foot massage on pain in post abdominal operative patients. Severity of pain was checked with VAS and vital signs were measured with PR, SBP and DBP. Collected data were analysed by the chi-square, Fishes exact test, t-test and repeated measures ANOVA. The severity of pain decreased significantly in the experimental group as compared to the control group following foot massage t= -3.37, p=.002. The PR in the experimental group was lower than that is the control group following foot massage (F=7.73, P=.008). The SBP in the experimental group was lower than that in control group following foot massage (F=25.75, P=.000).

A study conducted to investigate whether a 20-minute foot and hand massage (5 minutes to each extremity), which was provided 1 to 4 hours after a dose of pain medication, would reduce pain perception and sympathetic responses among postoperative patients. . A convenience sample 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 from 4.00 to 1.88 ($t = 5.683$, $p<0.001$). Statistically significant decreases in sympathetic responses to pain (i.e., heart rate and respiratory rate) were observed although blood pressure remained unchanged. This pain was reduced by the intervention, thus supporting the effectiveness of massage in postoperative pain management. The authors concluded: “Foot and hand massage appears to be an effective, inexpensive, low-risk, flexible, easily applied strategy for postoperative pain management.” Nurses can provide much toward patient comfort and healing by providing and/or teaching massage techniques to family members. Improved patient outcomes include post-operative pain control, without excessive use of risky narcotics, shorter patient recovery times and fewer complications following surgery from patient mobilization.

A study was conducted, a quasi-experimental research approach with one group pre-test post-test with interrupted time series design was conducted in a cardio-thoracic speciality hospital, Kolkata (n=30) to determine the effect of ten minutes foot massage on two phases of postoperative coronary artery bypass graft (CABG) patients on pain, blood pressure, pulse rate, respiration. There was significant reduction in the heart rate, respiration and blood pressure measurements between the pre and post-test pain scores indicating a significant difference ($P<0.001$) and the opinionnaire showed that most of the patients (80-90%) expressed a positive opinion on foot massage.

A randomized controlled study was conducted at Anaesthetic Department, Stepping Hill Hospital, Stockport, England, examined the effect of foot massage on patients, perception of care received following laparoscopic sterilisation as day care patients. Fifty-nine women were randomly allocated into two groups. The experimental group received a foot massage and analgesia postoperatively; whilst the control group

received only analgesia postoperatively. Each participant was asked to complete a questionnaire on the day following surgery. This examined satisfaction, memory and analgesia taken. The 76% percentage response rate was comparable with other patient satisfaction studies following day care surgery. Statistical analysis showed no significant overall difference in the pain experienced by the two groups; however, 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 ($p<0.001$). This study has attempted to explore the use of foot massage in a systemic way and is therefore a basis for further study.

A study was conducted in an interventional study on foot reflexology (FR) to test if foot reflexology affects the wellbeing, voiding, bowel movements, pain and sleep in women who underwent an abdominal operation. One hundred and thirty subjects were randomised into three groups; 15 minutes foot reflexology/foot massage/talking were given for 4-5 days respectively.

Results show that the women in the foot reflexology group were more able to void without problems, after the indwelling catheter had been removed than women in the comparison groups. There was also a tendency in the FR group for the indwelling catheter to be removed earlier than in the other groups. In comparison the FR-group slept worse than the others. The foot massage (FM) group showed significant results in the subjective measures of wellbeing, pain and sleep.

LITERATURE RELATED TO EFFECTIVENESS OF FOOT MASSAGE ON OTHER VARIABLES

A study was conducted, a quasi-experimental repeated measures design study to find out the immediate effect of a five-minute foot massage on patients in critical care, at Miami Japan, reflected that critical care can be considered to be a stressful environment at both physiological and psychological levels for patients. A five-minute foot massage was offered to 25 patients, selected by purposive sampling which showed there was no significant effect from the intervention on peripheral oxygen saturation. However, a significant decrease in heart rate, ($p<0.01$) blood pressure, ($p=0.02$) and respiration ($p<0.038$) was observed during the foot massage intervention. Result 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 the intensive care unit.

A study conducted, a comparative study in Osaka Japan to find out the effect of foot massage. Foot bath and Foot massage combined with Foot bath for relaxation compared with that of a control group. Ten subjects (mean age 72, S.D 2.2) physiological data (H.R and foot skin temperature) were continuously measured and subjective comfort data were obtained before care, immediately after care, Analysis done by one way ANOVA, Tukey's test and Fried man test. Immediately after care, Foot massage resulted in significant decrease in HR in comparison with control group. ($P=0.01$).

A study conducted , an experimental study (pre-test post-test quasi experimental design) in Japan to investigate the effects of biofeedback using foot massage. The sample consisted of four men and sixteen women (age range 61-69 years). Four trained researchers massaged the feet of the subjects and measured vital sign changes. Bio feed-back also was investigated before and after the foot massages. Results showed that the average biofeedback and temperature were lower before and after the foot massage ($P<0.01$). The average PR, respiratory rate and blood pressure however, were found to be lesser after the foot massage ($P<0.01$).

A study conducted to investigate the effect of pre-operative foot massage on intra and post -operative outcomes in 105 females subjects who had a laparoscopic gynaecologic surgery procedure done. The subjects received a 30 minute massage (Foot Massage group) or 30 minutes of passive touch (Control group.) patients in the massage group received significantly less intra operative narcotics (2.2+ 1.1 versus 2.8 + 2.0mg of fentanyl /kg/hour) Patients in the massage group had significantly less postoperative anxiety (massage group, 9.83+ 2.9 vs control group 11.24+ 3.6).

A study conducted in Seoul – Kyanggi province area of Korea to investigate the effect of foot massage on sleep, vital sign, and Fatigue in the elderly. Data were collected from 20 elderly by convenience sampling and analysed the change of sleep and sleep satisfaction, vital signs (PR, Respiration, SBP and DBP) and general fatigue between pre and post foot massage using paired t-test. Result showed significant difference in the sleep and fatigue between pre and post foot massage ($P=0.05$).

A study conducted, an experimental study (pre-test post-test control group design) in Gachon, Korea among 50 preoperative patients undergoing total hysterectomy 25 were in the experimental group (10 mts foot massage) and 25 in the control group from 10th July to 18th September 2000 to examine the effect of foot massage on anxiety response. The levels of anxiety were measured by VAS, state anxiety scale, BP, PR and respiratory rate. Data analysed using chi-square – test, t-test and ANOVA. The results showed significant reduction in anxiety level systolic blood pressure, pulse rate and respiration rate of the experimental group after foot massage. Significant differences were found in anxiety level, systolic blood pressure, pulse and respiratory rate between the experimental and control groups after foot massage.

A study was conducted in a randomised control trial of reflexology for menopausal symptoms in the Department of Complementary Medicine, School of Sport and Heath Sciences, University of Exeter, UK, revealed mean (SD) scores for anxiety fell from 0.43 (0.29) to 0.22 (0.25) in the reflexology group and from 0.37 (0.27) to 0.27 (0.29) in the control group who received foot massage over the same period. Mean (SD) scores for depression fell from 0.37 (0.25) to 0.20 (0.24) in the reflexology group and from 0.36 (0.23) to 0.20 (0.21) in the control group. The result revealed foot reflexology was not shown more effective than foot massage in the treatment of psychological symptoms occurring during menopause.

A study was conducted in a randomized control trial in a large teaching hospital in England on the impact of foot massage and guided relaxation following cardiac surgery (CABG). Twenty-five subjects were randomly assigned to either a control or one of the two intervention groups (control group n=7, treatment followed normal ward protected, guided relaxation group n=9 and foot massage group n =9, both followed

normal ward protocol along with 20 minutes of either guided relaxation or foot massage). Psychological and physical variables were measured immediately before and after the intervention using VAS. Results showed no significant effects on physiological parameters. There was a significant effect of the intervention on the calm scores among the massage group (x=29.78) (P=0.014). Although not significant, the guided relaxation group also reported substantially higher levels of calm than the control group (x=13.89). There was a clear trend across all patients in the psychological variables for both foot massage and to a lesser extent, guided relaxation to improve psychological wellbeing. This intervention appears to be effective non-invasive technique for promoting psychological wellbeing among CABG patients.

An experimental study was conducted at Massachusetts general hospital Boston on 87 cancer patients on the effects of foot massage and relaxation on decreasing anxiety, pain and nausea. The subjects were given 10-minutes slow, firm, gentle stroke towards the heart from the base of the toes up the foot, and lower limb to the knee. It was found to have significant effect on the perception of pain and nausea when measured with a Visual Analogue Scale. Patients reported pain levels decreased significantly after the foot massage (p=0.01). The findings for a reduction in nausea and an increase in relaxation were equally significant; no change occurred in the control group.

A study evaluated that ten minute reflexology treatments can provide relief from pain, nausea and anxiety according to a report from the School of Nursing, Division of Science and Design, University of Canberra, Australia. Nurses at the school conducted an empirical study on the use of foot massage as a nursing intervention in patients hospitalised with cancer. 87 patients participated in the study and each received a 10-minute reflexology foot massage (5 minutes per foot). The results revealed that the treatments produced a significant and immediate effect on the patients' perceptions of pain, nausea and relaxation when measured with a visual analogue scale.

A study conducted on Foot Massage: A nursing intervention to modify the distressing symptoms of pain and nausea in patients hospitalized with cancer. Researchers noted a significant decrease in anxiety for patients diagnosed with breast or lung cancer and a significant decrease in pain for patients with breast cancer.

RESEARCH METHODOLOGY

This chapter deals with the methodology of the study. Research methodology is a way to systematically solve the research problems. It includes the steps, procedures and strategies for gathering and analysing the data in a research investigation.

This chapter comprises of the research approach, research design, setting of the study, variables under study, population, sample, sampling techniques, sampling criteria, construction of data collection instruments, validation and testing of tool, development of therapy plan and validation, pilot study, plan for data collection and plan for data analysis.

The present study aimed at finding the effectiveness of foot massage on reduction of incisional pain among the post caesarean section in selected hospital at Bengaluru.

Research Approach

Research approach indicates the procedure for conducting study. The choice of appropriate approach depends on the purpose of the study. The primary objective of the evaluative research approach is to determine the extent to which a given programme or procedure is effective. Hence an evaluative research approach was considered as the most appropriate one.

Evaluative research is an applied form of research that involves finding out how well a programme, practice, or policy is working. Its goal is to assess or evaluate the success of the programme.

An evaluative research approach using pre-intervention tests (O1) and post intervention tests (O2) was adopted for this study in order to accomplish the objectives.

In the present study the researcher aimed at finding the effectiveness of foot massage on reduction of incisional pain among the post caesarean section in selected hospital at Bengaluru.

Research Design

Research design is the overall plan for addressing a research question including specification for enhancing the integrity of the study (Treece EW 1999)

Pre-experimental one group pre-test, post-test design was adopted for the study. The pre-test was carried out to assess the level of incisional pain and measuring the physiological variable among the mothers of caesarean section prior to foot massage. After that post-test pain was assessed by using numerical pain scale and physiological variable also assessed by using in-vivo bio-physiologic method.

Subjects	**Pre-treatment**	**Treatment**	**Post-treatment**
Post-operative mothers with lower segmental caesarean section who had pain > 3 marked on the numerical pain scale	O_1	X	O_2

Fig no 2: Schematic representation of the study design

The schematic representation of the research design indicates the following sequential activities that had been carried out to collect the data.

O_1: Assessment of level of pain and measuring of physiological variable.

X: Foot massage for 10-15 minutes.

O_2: Recording level of pain immediately after the intervention and the physiological variable.

VARIABLES UNDER STUDY

A variable is a concept that has measurable changing attributes. Variables are qualities, properties or characteristics of persons, things or situations that change or vary. In quantitative research an activity is aimed at trying to understand how or why things vary and to learn how difference in one variable is related to the difference in another.

Independent variable

Independent variable is the variable that stands alone and does not depend on any other. It is the variable that precedes the dependent variable. It is also called cause, stimuli, experiment or treatment; the variable that is manipulated by the researcher, in order to study the effect upon the dependent variable. In this study, the independent variable is the foot massage received by the post-operative mothers who had undergone lower segmental caesarean section.

Dependent variable

Dependent variable is the outcome or criterion variable that is hypothesized to be caused by the independent variable. In this study, the dependent variables are the level of pain reduction and satisfaction after foot massage by the post-operative mothers who had undergone lower segmental caesarean section.

Attribute variable

Attribute variable are the characteristics or element of the human subjects that are used to control the decided sample. These variables are also referred as socio demographic variable. The attribute variables or socio demographic variable described in this study are age, types of family, religion, residency, education, occupations of the mothers, family monthly income, family members accompanying the mothers, parity or number of children, previous exposure to LSCS.

Setting of the study

Setting is the physical location and the condition in which the data collection takes place. The pilot study was conducted in Life Plus Hospital, Indra Nagar and the main study was conducted in Shifaa Hospital Dar-us-Salam, Queen's Road, Bengaluru.

Population

The entire set of individuals or objects having some common characteristics. In this study, the population comprises of all the women who had undergone lower segmental caesarean section, in Shifaa Hospital Dar-us Salam Queens Road Bengaluru, and have met the inclusion criteria at the time of data collection.

Sample and Sample Size

A sample is a subject of the population selected. About 30 women who met the inclusion criteria formed the sample for the study.

Sampling Technique

Sampling refers to the process of selecting a portion of the population to represent the entire population. In this study non probability purposive sampling technique has been used to select the sample. Purposive sampling is based on the belief that a researchers knowledge about the population can be used to handpick the cases to be included in the sample.

Criteria for selection of samples

Inclusion criteria

The study includes women who are:

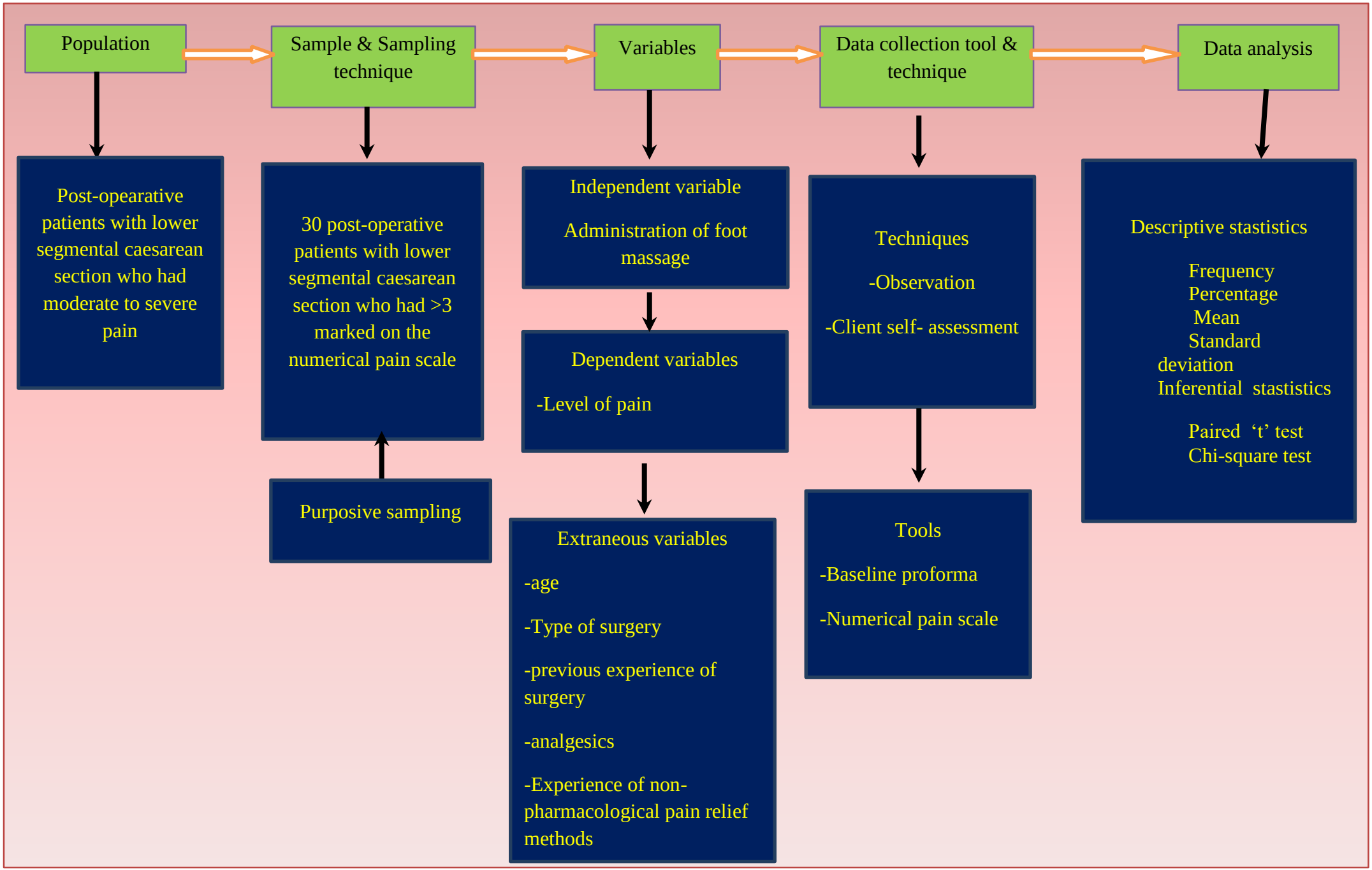
- Post caesarean section mothers, after 5 hours of surgery and within the first 24 hours of child birth
- Mothers who are hemodynamic ally stable

Exclusion criteria

The study excludes

1. Mothers with deep vein thrombosis
2. Mothers who are under the effect of anaesthesia

Fig no 3: SCHEMATIC REPRESENTATION OF RESEARCH DESIGN



DATA COLLECTION TOOL

DEVELOPMENT OF THE DATA COLLECTION INSTRUMENT

Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. Observational methods are the techniques for acquiring information for research purposes through direct observation and recording of phenomena. The tools selected for this study were:

1. Numerical pain scale and
2. In-vivo bio-physiologic methods

DATA COLLECTION METHOD: - Observation method

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

1. Review of literature provided adequate content for the tool preparation.

2. Direct contact with the patients and significant others during clinical posting.

3. Opinion of experts from obstetrics and gynaecology and nursing departments.

4. Construction of a baseline Pro forma.

5. Construction of numerical pain scale to assess pain intensity.

6. Used of in-vivo bio-physiologic methods for measuring of physiological variables.

6. Content validity.

7. Pre-testing of the tool.

8. Reliability of the tool and instruments used was ascertained by rate-interrater reliability.

DESCRIPTION OF DATA COLLECTION INSTRUMENT

The data collection instruments consisted of two tools.

Tool I – NUMERICAL PAIN SCALE TO ASSESS THE LEVEL OF PAIN INTENSITY

The numerical rating scale comprised of a 10 cm horizontal line with end points marked as ‘0’ and ‘10.’ An increase in score denotes an increase in pain level and the score ranges from 0 – 10.

0 - No pain

1- 3 - Mild Pain

4- 6 - Moderate Pain

7 – 9 - Severe Pain

10 - Worst pain possible

For analysis the score 0 was given to no pain, 1-3 mild pain, 4-6 moderate pain, 7-9 severe pain and 10 worst pain possible respectively.

Tool II - IN- VIVO BIOPHYSIOLOGIC METHODS

CONTENT VALIDITY

Content validity refers to the degree to which an instrument measures what it is supposed to measure.

The content validity of the present tool along with the evaluation criteria checklist were submitted to 5 experts in the field of obstetrics and gynaecology, for their opinion on the items in the tool. There was 100% agreement by experts and minimal modifications were made in base line pro forma based on the given suggestion.

RELIABILITY OF THE TOOL

Reliability is defined as the extent to which the instrument yields the same results on repeated measure; it is concerned with consistency, accuracy, stability and homogeneity.

In this study standardised numerical pain assessment scale were used to measure the pain intensity of patients and in-vivo bio-physiologic methods for measuring physiologic variables.

Pre testing was done by administering tools to four post-operative patients with lower segmental caesarean section in the post-operative wards of the Life Plus hospital, the reliability of tool was established by testing the internal consistency and was established through test and retest method.

PILOT STUDY

A pilot study is defined as a small scale version or a trial run of the major study. Its function is to obtain information for improving the project or for assessing the feasibility. The principal focus is on the assessment of the adequacy of measurement. Prior to the study the investigator underwent 3 months training on foot massage under an expert in the Eastern Salon & Spa.

The pilot study was conducted in the postoperative unit Life Plus Hospital from 16.5.2019 to 19.5.2019. The investigator obtained formal permission from the concerned authority prior to the study. The study was conducted on 4 postoperative patients with lower segmental caesarean section who fulfilled the inclusion criteria for the selection of the sample. The purpose of the study was explained to the subjects and a written consent was obtained after assuring confidentiality. Baseline information was collected. The numerical pain score was obtained and foot massage (intervention) was given for 10-15 minutes. Pain intensity were checked immediately after intervention and physiological variable were checked.

The tools were found feasible and practical. Analysis of the data was done using descriptive and inferential statistics. No further changes were made in the tool after the pilot study and the investigator proceeded for the main study.

DATA COLLECTION PROCESS

Data collection for the main study was done in the postoperative unit of Shifaa Hospital from 21.5.2019 to 20.6.2019. Formal permission obtained from the administrator before data collection. The purpose of the study was explained to the subjects and written consent was obtained after assuring confidentiality. Pre-assessment pain intensity was recorded. Foot massage with low stroke manipulations was applied on each leg of the subject for 7 minutes. Pain intensity was recorded immediately after the intervention. The data collection process was terminated by thanking the subjects for their cooperation.

1. PLAN FOR DATA ANALYSIS

Analysis is the systematic organisation and synthesis of research data and the testing of the research hypothesis using that data.

- The data obtained will be analysed using both descriptive and inferential statistics based on the objectives and hypotheses of the study.
- Baseline proforma containing sample characteristics will be analysed by using frequency and percentage.
- Impact of foot massage on pain intensity would be analysed by range, mean and standard deviation.
- Test of significance will be determined by using paired ‘t’ test.
- Association between pre-foot massage pain score and the selected variables would be analysed by chi- square test.

Plan for Data Analysis:

No.	Data analysis	Method	Purpose
1.	Descriptive statistics	-frequency and percentages -mean and standard deviation	-for analysis of the demographic data -for analysing the pre-test and post-test scores
2.	Inferential statistics	-Paired ‘t’ test - chi square test	-To find out the association between the pre-test pain level of post-operative lower segmental caesarean section with their selected demographic variable.

PROTECTION OF HUMAN RIGHTS

The proposed study was conducted after the approval of dissertation committee of the Karnataka College of Nursing Bangalore. Permission was obtained from the concerned authorities of nursing colleges Bangalore. Consent of each subject was obtained before starting the data collection. Assurance was given to them that the anonymity of each individual would be maintained.

RESULTS

Statistics analysis is a method of rendering quantitative information meaningfully and intelligently. Statistical procedures enable the researcher to reduce, summarize, organize, evaluate, interpret and communicate the obtained data into numeric information.

This chapter deals with analysis and interpretation of data collected from 30 women regarding who had undergone lower segmental caesarean section. Keeping a view on objectives of the study, one group pre-test and post-test experimental design through quantitative approach was adopted to evaluate the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru**.**

The data was collected from the respondents before and after the administration of foot massage. The collected information was organized, tabulated, analysed and interpreted using descriptive and inferential statistic. Analysis was done based on the objectives and hypothesis of the study. The level of significance was set at 0.05 level.

The data were analysed on the basis of objectives of the study:

1. To assess the level of incisional pain among mothers of post caesarean section
2. To determine the effectiveness of foot massage on reduction of incisional pain on mothers of post caesarean section
3. To find out the association between the post-operative pain with their selected demographic variables.

HYPOTHESIS:

H_1: There will be a significant difference in the intensity of pain level before and after foot massage.

H_2: There will be a significant association between the level of pain before and after foot massage with their variables.

The data organized and presented in following section:

Section-1: Frequency and percentage distribution of selected socio-demographic variables of mothers with LSCS at selected Hospital in Bengaluru.

Section-2: Assessment of pain level before and after the foot massage among the postoperative caesarean section mothers.

Section-3: Comparison of pain level before and after the foot massage among post-operative caesarean section mothers.

Section-4: Comparison of physiological variable before and after the foot massage among the postoperative caesarean section mothers.

Section-5: Find out the Association between levels of pre-foot massage pain score and the selected variables.

Section - 1: Demographic Characteristics of Respondents

TABLE – 1

Classification of Respondents by Personal Characteristics

N=30

Characteristics	Category	Respondents	
		Number	Percent
Age group (years)	18-22	6	20.0
	23-27	8	26.7
	28-32	12	40.0
	33 & above	4	13.3
Educational status	Primary	5	16.7
	High school	6	20.0
	PUC	9	30.0
	Degree & above	10	33.3
Occupation	House wife	13	43.4
	Daily wages	7	23.3
	Private	6	20.0
	Government	4	13.3
Parity	One	9	30.0
	Two	9	30.0
	Three	8	26.7
	Four	4	13.3
Previous exposure lower segmental caesarean section	Yes	15	50.0
	No	15	50.0
Total		30	100.0

Table-1 depicts the frequency and percentage distribution of samples by age, educational status, occupational status, parity and previous exposure to LSCS. Among 30 samples, (20%) were in the age group of 18-22 years, (26.7) were in the age group of 23-27 years, (40.0%) were in the age of 28-32 years and remaining (13.3) the group of 33& above.

Regarding educational status it was observed that (16.7) were having primary education, (20.0%) were having high school education, (30.0%) were having PUC education and (23.3%) were having degree & above. Regarding occupational status (43.4%) were house wife, (23.3%) were daily wages, (20.0%) were private and (13.3%) were having government job. Regarding parity (30.0%) were having one, (30.0%) were having two, (26.7%) were having three and (13.3) were having four number of parity. Among (50.0%) were having previous exposure to LSCS and (50.0%) were not exposed to LSCS.

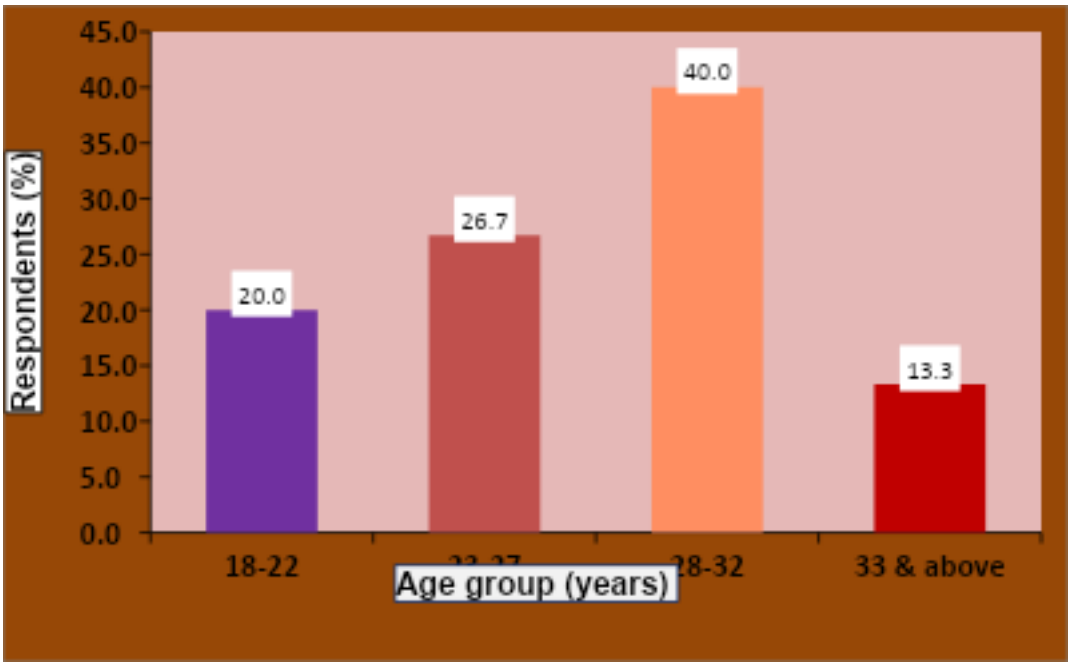


Figure 1: Classification of Respondents by Age group

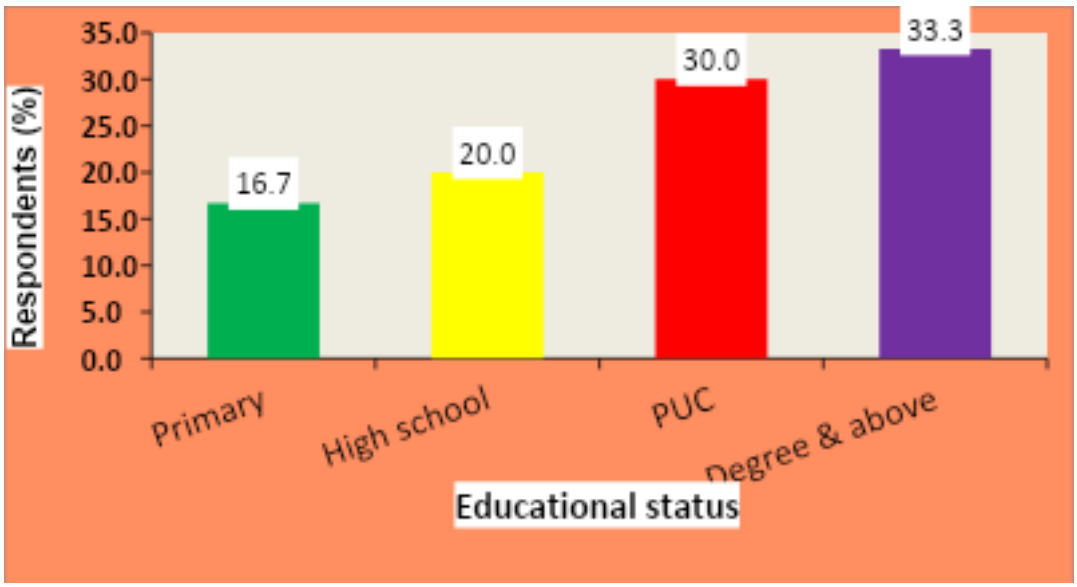


Figure 2: Classification of Respondents by Educational status

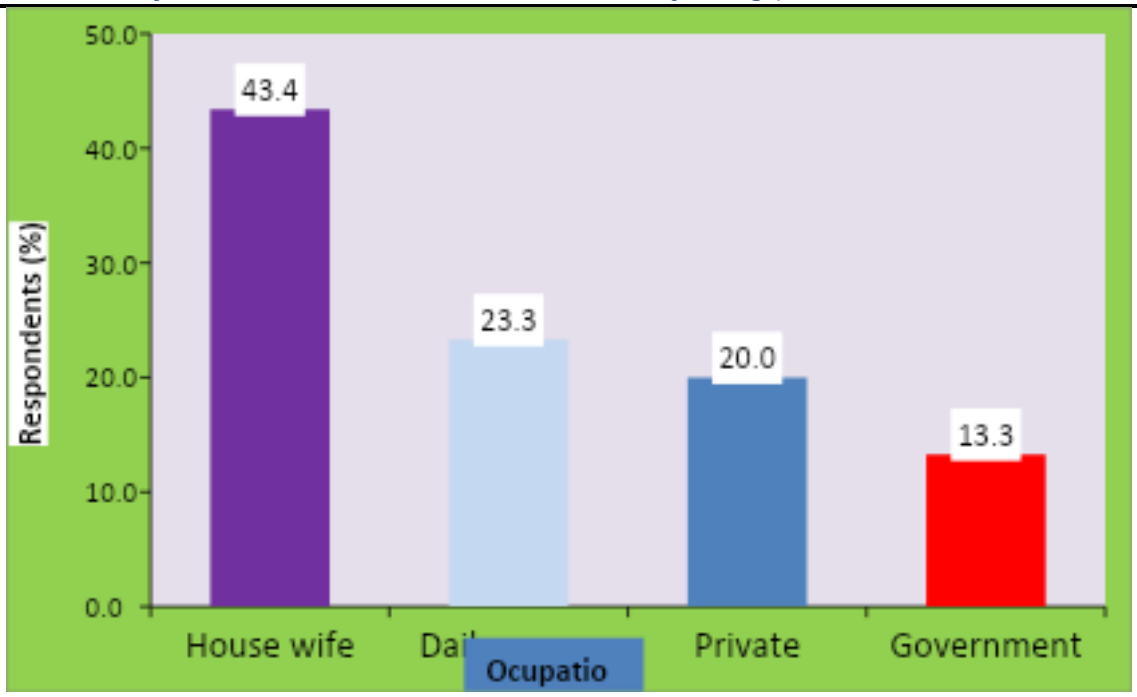


Figure 3: Classification of Respondents by Occupation

Figure 4: Classification of Respondents by Parity

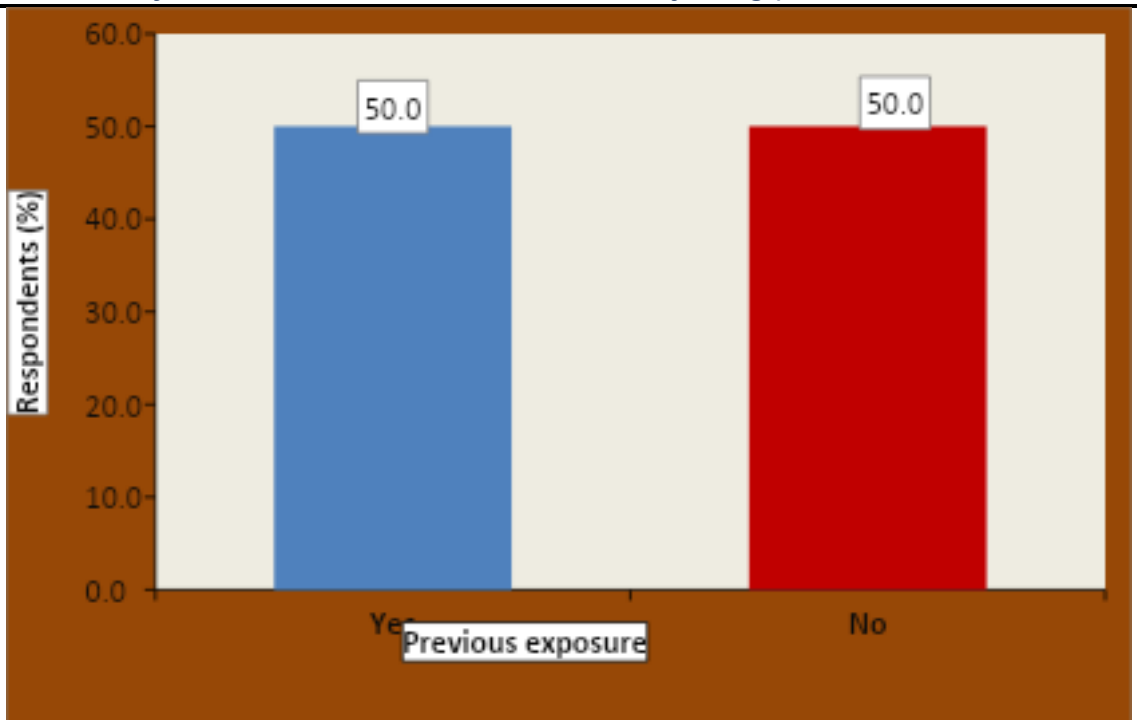


Figure 5: Classification of Respondents by Previous exposure lower segmental caesarean section

TABLE – 2

Classification of Respondents by Related Characteristics

Characteristics	Category	Respondents	
		Number	Percent
Type of family	Nuclear	18	60.0
	Joint	12	40.0
Religion	Hindu	11	36.7
	Muslim	12	40.0
	Christian	7	23.3
Residency	Rural	10	33.3
	Urban	20	66.7
Family income	Rs.10000-15000	9	30.0
	Rs.15000-20000	11	36.7
	Rs.20000-25000	3	10.0
	Rs.25000 & above	7	23.3
Family members accompanying mother	Spouse	13	43.3
	Parents/In-laws	8	26.7
	Son/daughter	4	13.3
	Brother/Sister in-law	5	16.7
Total		30	100.0

Table-2 depicts the frequency and percentage distribution of samples by type of family, religion, residency, family income and family members accompanying with the mothers. Among the 30 samples, (60.0%) were nuclear family, (40.0%) were joint family. Regarding the religion (36.7%) were Hindu, (40.0%) were Muslims, and (23.3%) were Christian. Regarding the residency (33.3) were rural and (66.7%) were urban. Regarding the family income (30.0%) were having Rs 10000-15000 family income, (36.7%) were having Rs 15000-20000 family income, (10.0%) were having Rs 20000-25000 family income and (23.3%) were having Rs 25000 & above family income. Regarding the family members accompanying with the mothers (43.3%) were with the spouse, (26.7%) were with the parents/ in-laws, (13.3%) were with the son/daughter and (16.7%) were with the brother/ sister in-laws.

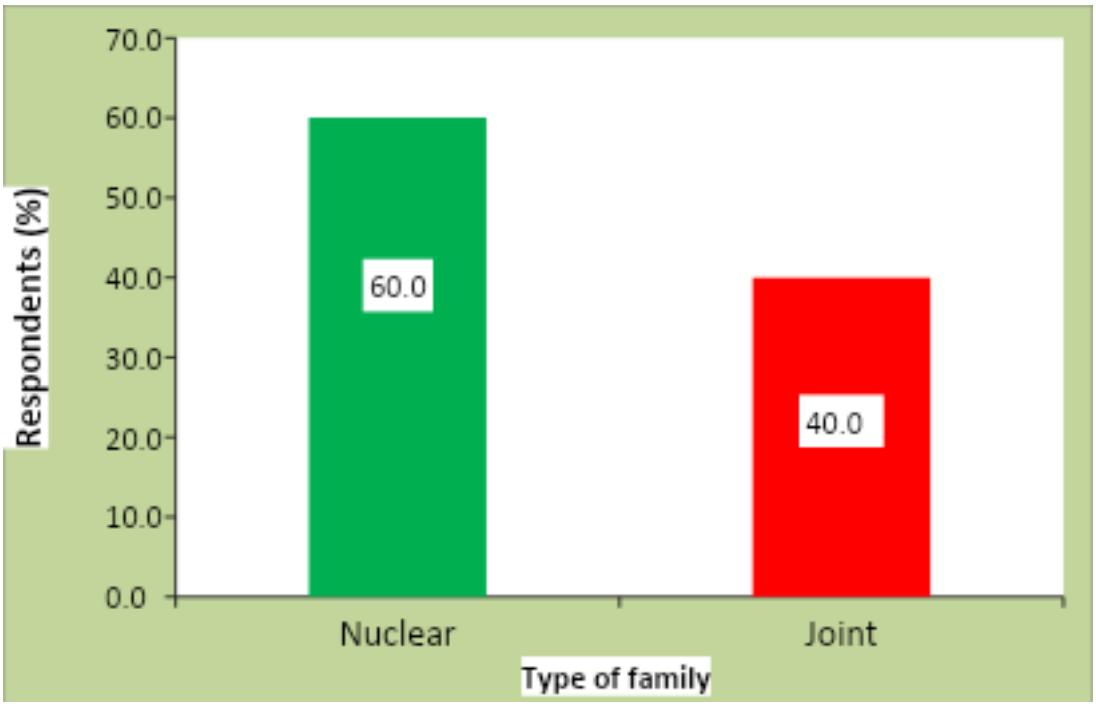


Figure 6: Classification of Respondents by Type of family

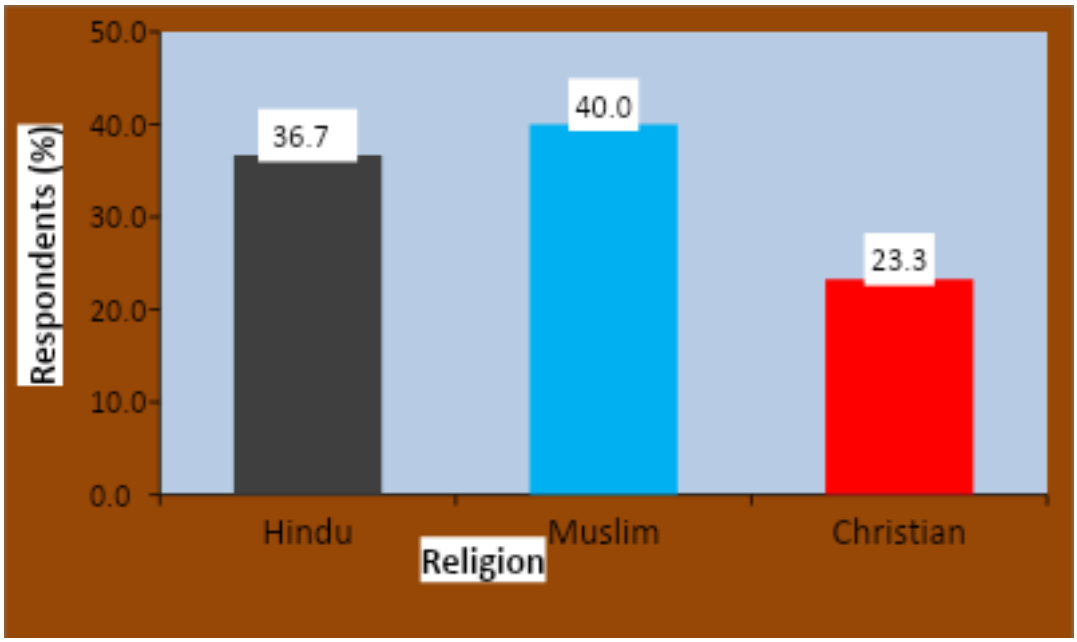


Figure 7: Classification of Respondents by Religion

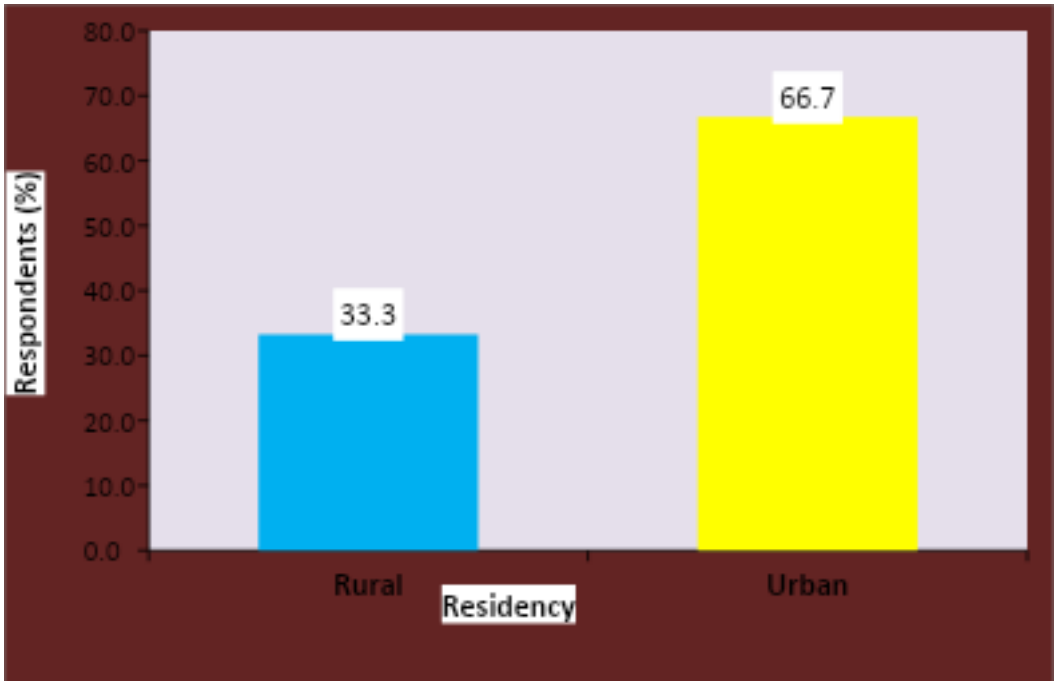


Figure 8: Classification of Respondents by Residency

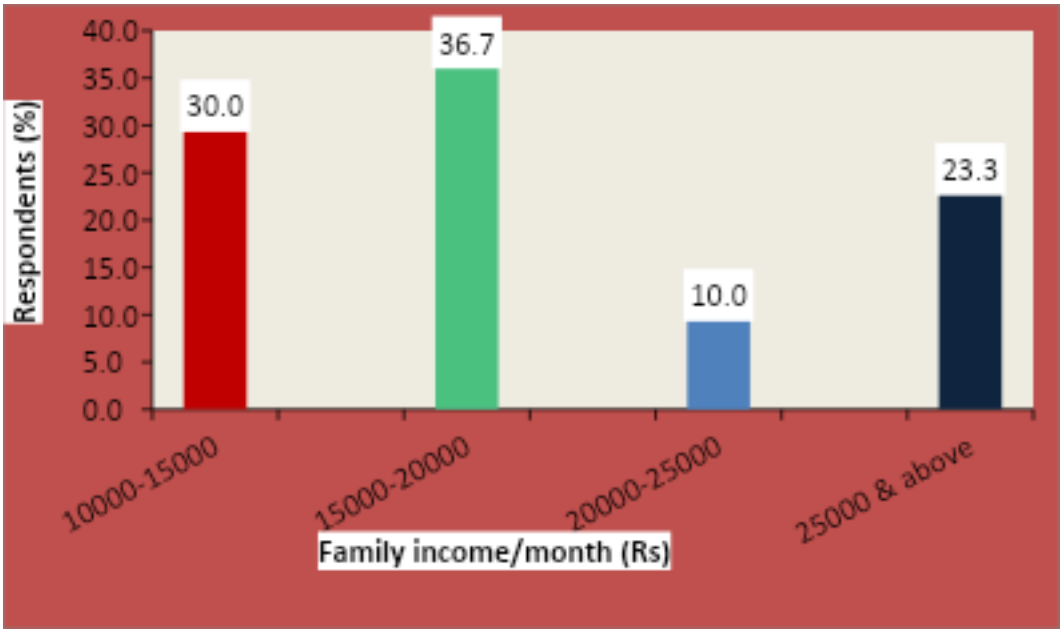


Figure 9: Classification of Respondents by Family income

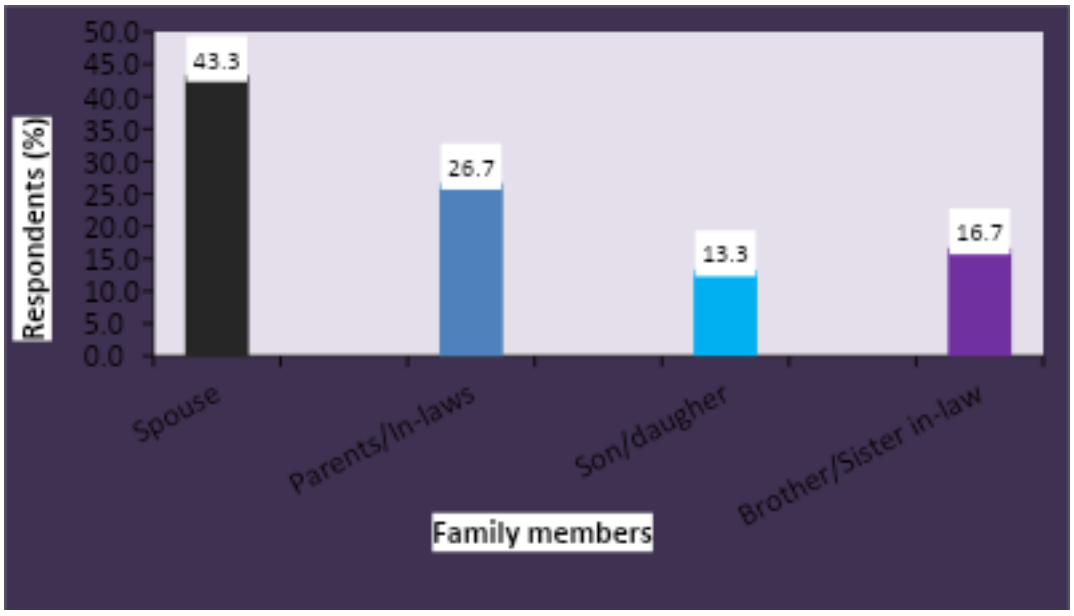


Figure 10: Classification of Respondents by Family members accompanying with mother

Section – 2: Overall Pre -test and Post- test Incisional pain level among Caesarean section mothers

TABLE – 3

Classification of Respondent Pre- test Incisional pain level among Caesarean section mothers

Pain Level	Category	Respondents	
		Number	Percent
Mild	1-3 Score	0	0.0
Moderate	4-6 Score	9	30.0
Severe	7-9 Score	21	70.0
Total		30	100.0

Table no 3 shows the classification of respondent on pre-test incisional pain level among the caesarean section mothers. Out of 30 mothers, majority had 21 (70.0%) severe pain level, 9 (30.0%) had moderate pain level and none of had mild pain.

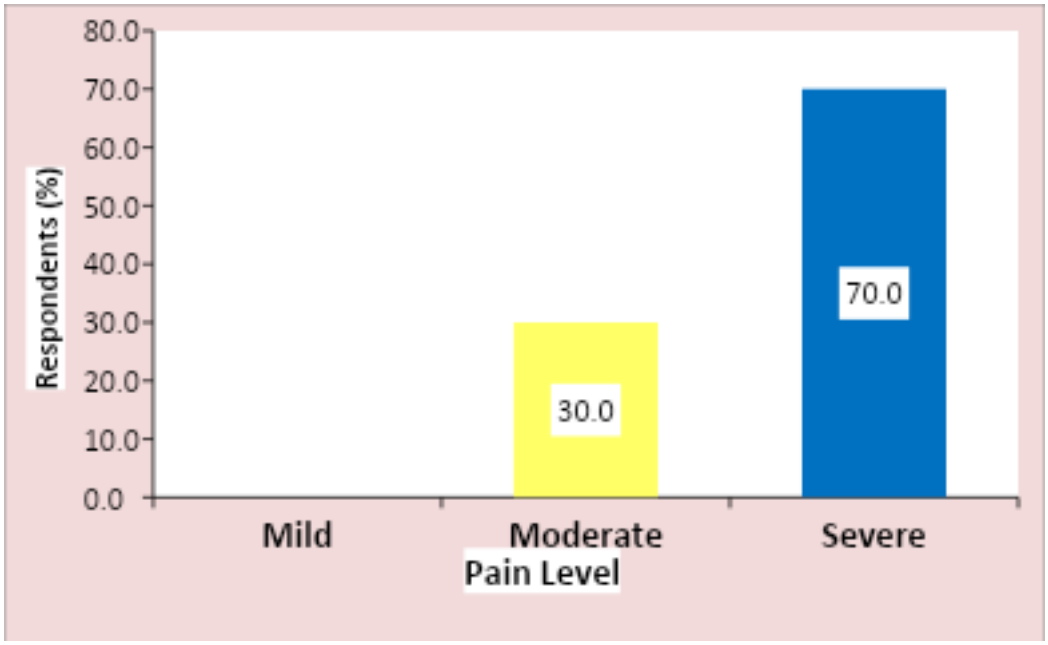


Figure 11: Classification of Respondent Pre-test Incisional pain level among Caesarean section mothers

TABLE -4

Classification of Respondents of Post-test incisional pain level on LSCS mothers

Pain Level	Category	Respondents	
		Number	Percent
Mild	1-3 Score	9	30.0
Moderate	4-6 Score	21	70.0
Severe	7-9 Score	0	0.0
Total		30	100.0

Table no 4 shows the classification of respondents on post-test incisional pain level on LSCS mothers. Out of 30 mothers majority had 21 (70.0%) moderate pain level, 9 (30.0%) mild pain level and none of had severe pain.

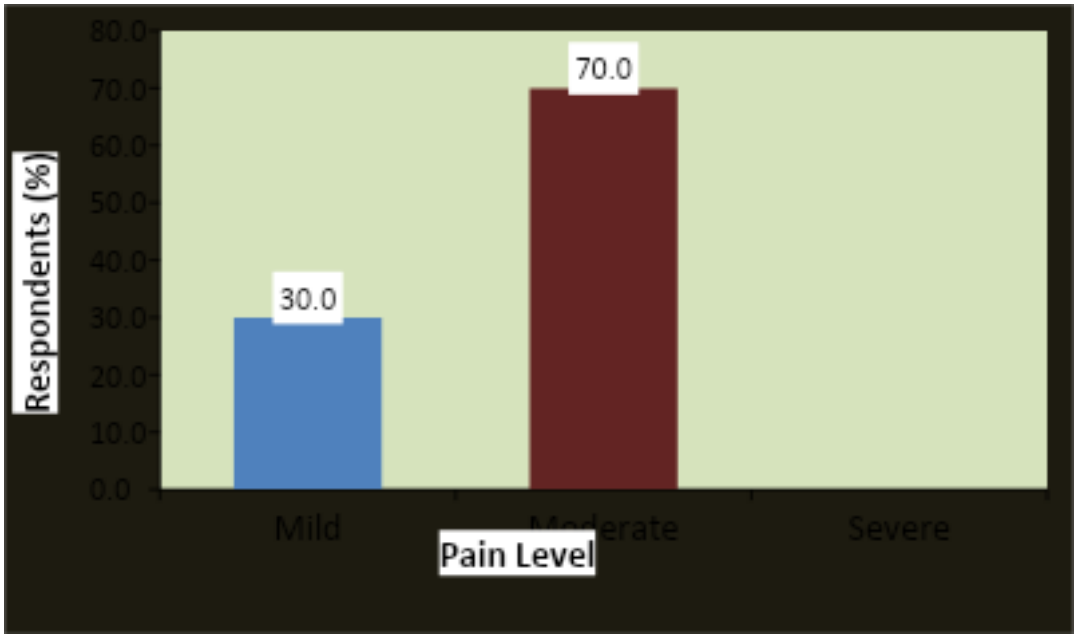


Figure 12: Classification of Respondents of Post- test Incisional pain level among Caesarean section mothers

TABLE – 5

Classification of Respondents on Pre- test and Post- test Incisional pain level among Caesarean section mothers

Pain Level	Category	Classification of Respondents				χ^2 Value
		Pre test		Post test		
		N	%	N	%	
Mild	1-3 Score	0	0.0	9	30.0	34.80*
Moderate	4-6 Score	9	30.0	21	70.0	
Severe	7-9 Score	21	70.0	0	0.0	
Total		30	100.0	30	100.0	

* Significant at 5% level, χ^2 (0.05,2df) = 5.991

In pre-test among 30 LSCS mothers, incisional pain level were 70.0% of mothers have severe pain, 30.0% mothers were having incisional pain level and none of the mothers have mild pain. In post-test 70.0% were having moderate incisional pain, 30.0% were having mild incisional pain and none of the mothers had severe pain. The chi square value was 34.80 which is higher than the table value 5.991 [χ^2 (0.05,2df)] which is highly significant at $P \leq 0.05$ level.

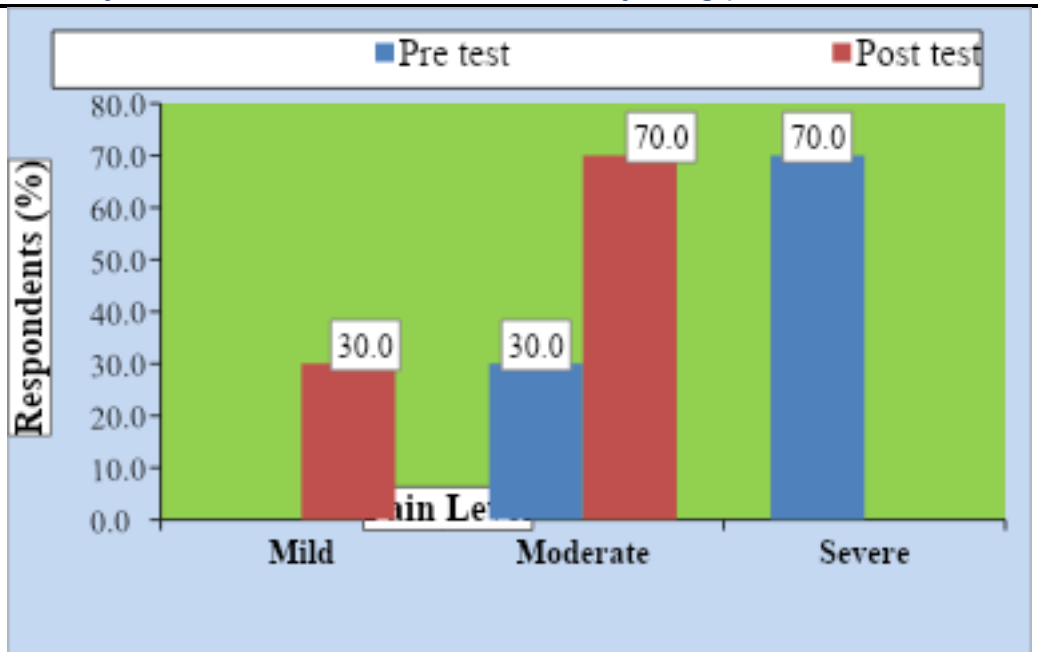


Figure 13: Classification of Respondents on Pre -test and Post- test Incisional pain level among Caesarean section mothers

TABLE – 6

Classification of Respondents on Pre- test and Post -test Pulse rate level among Caesarean section mothers

Pulse rate Level	Category	Classification of Respondents				χ^2 Value
		Pre test		Post test		
		N	%	N	%	
Normal	72-80	10	33.3	20	66.7	6.69*
Non normal	Above 80	20	66.7	10	33.3	
Total		30	100.0	30	100.0	

* Significant at 5% level, χ^2 (0.051 df) = 3.841

Table no 6 depicts that in pre-test of 30 mothers, the pulse rate of 20 (66.7%) were non-normal and 10 (33.3%) were normal. In post-test among 30 mothers, the pulse rate of 10 (33.3%) were non-normal and 20 (66.7&%) were normal pulse rate. The chi square value was 6.69 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at $p \leq 0.05$ level.

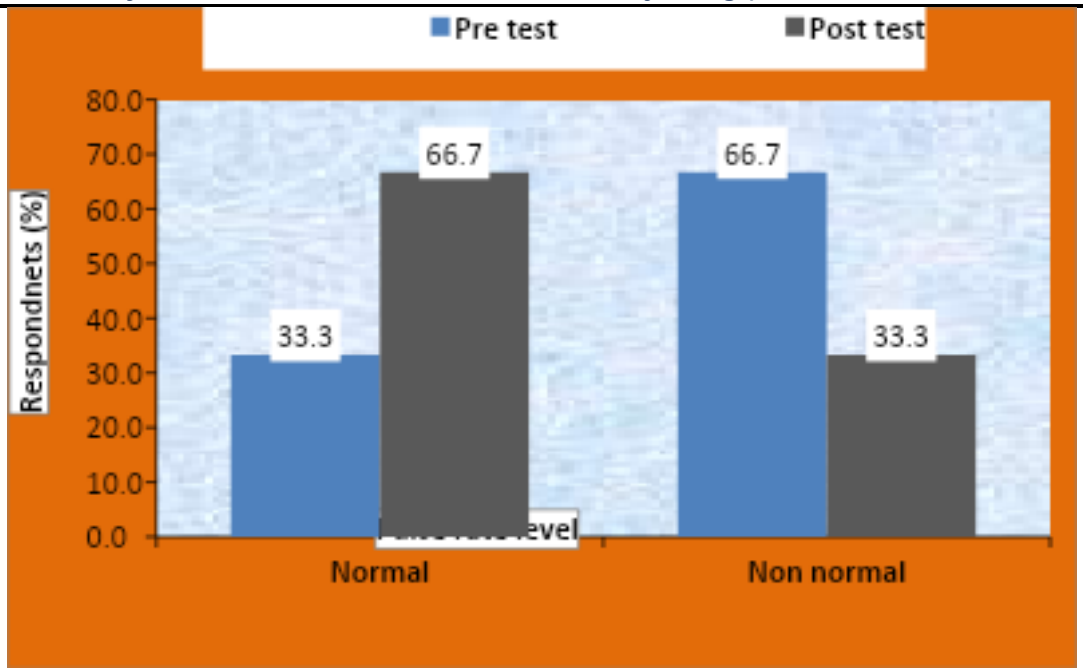


Figure 14: Classification of Respondents on Pre-test and Post-test Pulse rate level among Caesarean section mothers

TABLE – 7

Classification of Respondents on Pre- test and Post -test Respiration rate level among Caesarean section mothers

Respiration rate Level	Category	Classification of Respondents				χ^2 Value
		Pre test		Post test		
		N	%	N	%	
Normal	16-20	11	36.7	28	93.3	21.17*
Non normal	Above 20	19	63.3	2	6.7	
Total		30	100.0	30	100.0	

* Significant at 5% level, χ^2 (0.05,1df) = 3.841

Table no 7 depicts that in pre-test of 30 mothers, 19 (63.3%) were having non normal respiration rate and 11 (36.7%) were normal. In post-test 2 (6.7%) were having non normal respiration rate and 28 (93.3%) were normal. The chi square value was 21.17 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at P ≤0.05 level.

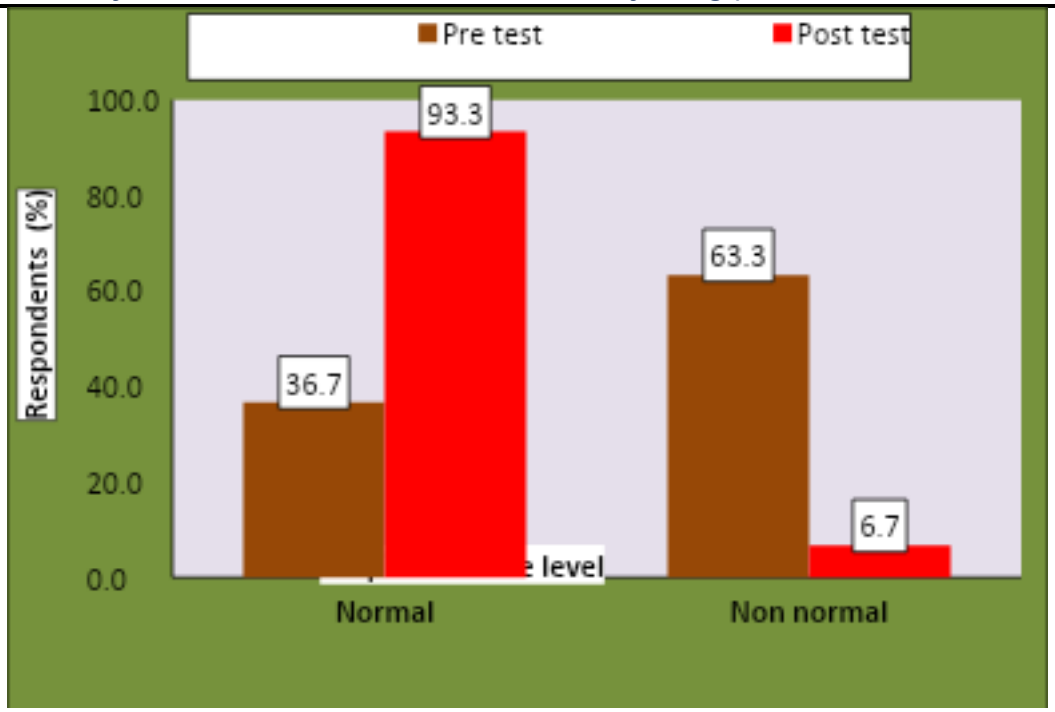


Figure 15: Classification of Respondents on Pre-test and Post-test Respiration rate level among Caesarean section mothers

TABLE – 8

Classification of Respondents on Pre -test and Post- test Blood pressure level among Caesarean section mothers

Blood pressure Level	Category	Classification of Respondents				χ^2 Value
		Pre test		Post test		
		N	%	N	%	
Normal	120/80	0	0	17	56.7	23.72*
Non normal	Above/Below	30	100.0	13	43.3	
Total		30	100.0	30	100.0	

* Significant at 5% level, χ^2 (0.05,1df) = 3.841

Table no 8 depicts that among 30 mothers, in pre-test 30 (100.0%) were having non normal blood pressure and none of mothers were normal. In post-test 13(43.3%) were having non normal blood pressure and 17 (56.7%) were normal. The chi square value was 23.72 which is higher than the table value 3.841 [χ^2 (0.05,1df)] which is highly significant at $P \leq 0.05$ level.

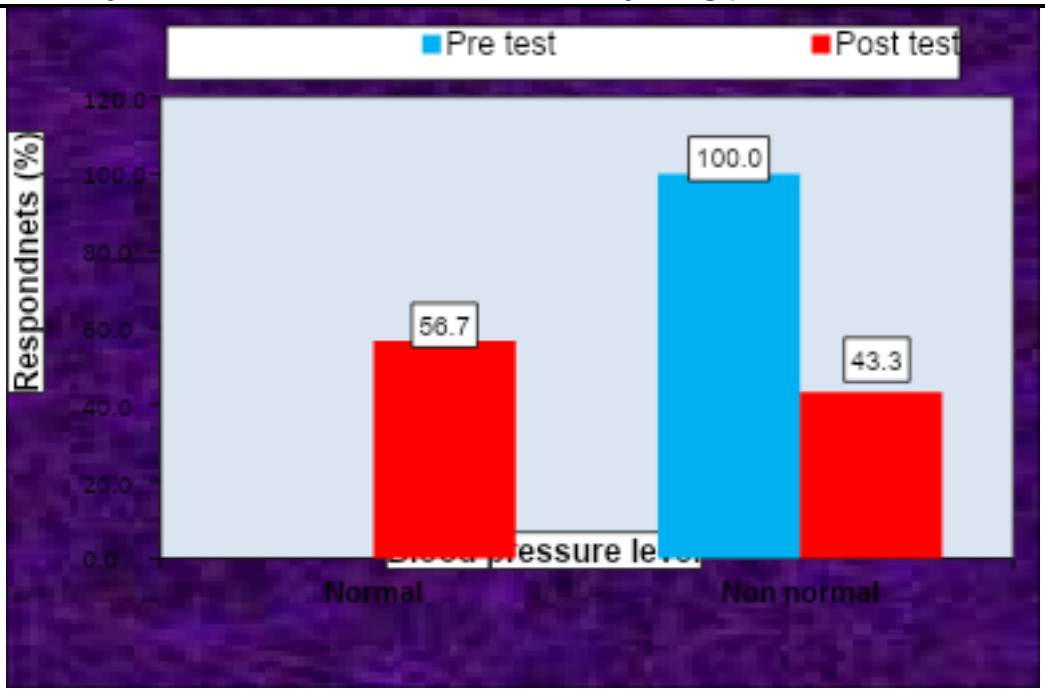


Figure 16: Classification of Respondents on Pre-test and Post-test Blood pressure level among Caesarean section mothers

TABLE – 9

Over all Pre-test and Post-test Mean Pulse rate among Caesarean section mothers

N=30

Aspects	Pulse rate		Paired 't' Test
	Mean	SD	
Pre test	82.13	3.38	13.67*
Post test	79.47	3.01	
Difference	2.67	1.07	

* Significant at 5% level, t (0.05,29df) = 2.045

Table no 9 depicted that the overall aspect wise comparison of pre-test and post-test mean pulse rate scores of mothers on LSCS is tested for statistical significance of foot massage. Paired 't' test and the results are considered significance wherever 2.045 [t(0.05,2df at the level P ≤ 0.05.

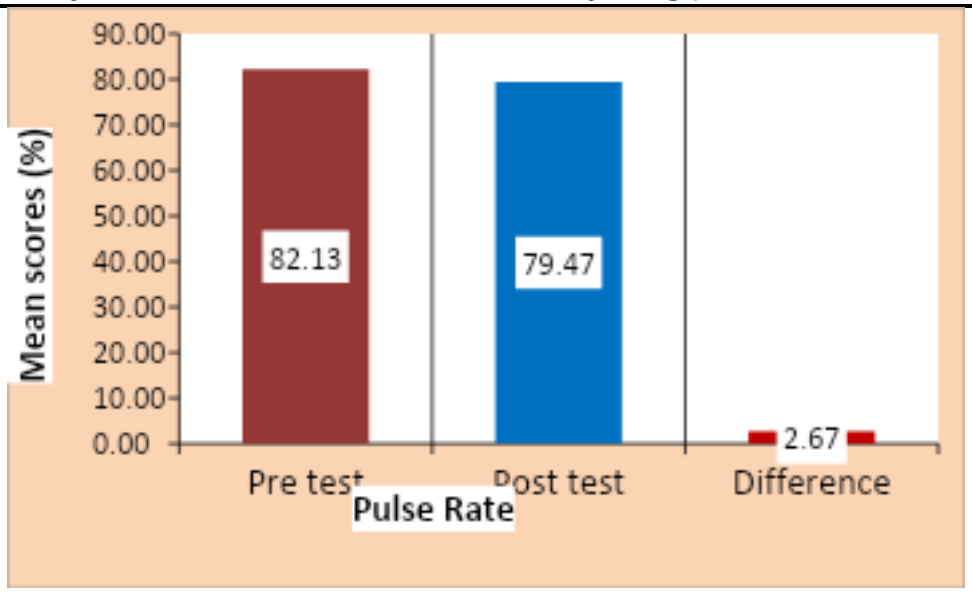


Figure 17: Over all Pre-test and Post-test Mean Pulse rate among Caesarean section mothers

TABLE – 10

Over all Pre-test and Post-test Mean Respiration rate among Caesarean section mothers

N=30

Aspects	Pulse rate		Paired 't' Test
	Mean	SD	
Pre test	21.00	1.91	11.16*
Post test	18.80	1.68	
Difference	2.20	1.08	

* Significant at 5% level, t (0.05,29df) = 2.045

Table no 10 depicted that the overall aspect wise comparison of pre-test and post-test mean respiration rate scores of mothers on LSCS is tested for statistical significance of foot massage. Paired 't' test and the results are considered significance wherever 2.045 [t (0.05,2 df)] at the level $P \leq 0.05$.

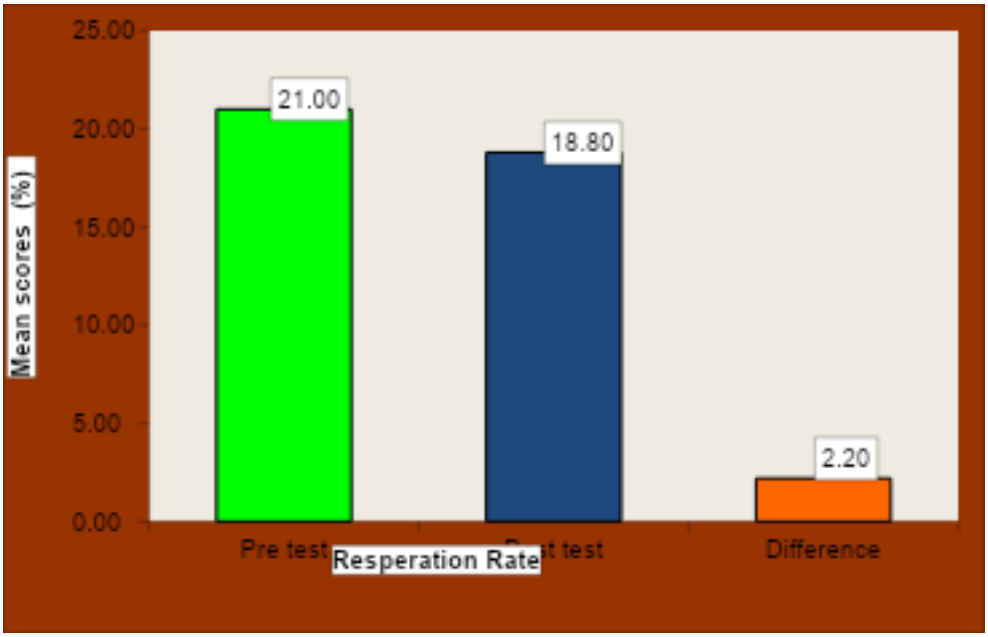


Figure 18: Over all Pre-test and Post-test Mean Respiration rate among Caesarean section mothers

Section - 3 : Association between Demographic variables and Post- test Incisional pain level among Caesarean section mothers

TABLE – 11

Association between Demographic variables and Pre-test Incisional pain level among Caesarean section mothers

n=30

Demographic Variables	Category	Sample	Pain Level				χ^2 Value	P Value
			Mild		Moderate			
			N	%	N	%		
Age group (years)	18-22	6	2	33.3	4	66.7	1.03 NS	P>0.05 (7.815)
	23-27	8	2	25.0	6	75.0		
	28-32	12	3	25.0	9	75.0		
	33 & above	4	2	50.0	2	50.0		
Educational status	Primary	5	1	20.0	4	80.0	0.32 NS	P>0.05 (7.815)
	High school	6	2	33.3	4	66.7		
	PUC	9	3	33.3	6	66.7		
	Degree & above	10	3	30.0	7	70.0		
Occupation	House wife	13	3	23.1	10	76.9	1.10 NS	P>0.05 (7.815)
	Daily wages	7	2	28.6	5	71.4		
	Private	6	2	33.3	4	66.7		
	Government	4	2	50.0	2	50.0		
Parity	One	9	1	11.1	8	88.9	8.45*	P<0.05 (7.815)
	Two	9	1	11.1	8	88.9		
	Three	8	4	50.0	4	50.0		
	Four	4	3	75.0	1	25.0		
Previous exposure lower segmental caesarean section	Yes	15	7	46.7	8	53.3	3.97*	P<0.05 (3.841)
	No	15	2	13.3	13	86.7		
Type of family	Nuclear	18	2	11.1	16	88.9	7.65*	P<0.05 (3.841)
	Joint	12	7	58.3	5	41.7		
Religion	Hindu	11	2	18.2	9	81.8	7.47*	P<0.05 (5.991)
	Muslim	12	2	16.7	10	83.3		
	Christian	7	5	71.4	2	28.6		
Residency	Rural	10	6	60.0	4	40.0	6.43*	P<0.05 (3.841)
	Urban	20	3	15.0	17	85.0		
Family income/month	R.10000-15000	9	3	33.3	6	66.7	0.11 NS	P>0.05 (7.815)
	Rs.15000-20000	11	3	27.3	8	72.7		
	Rs.20000-25000	3	1	33.3	2	66.7		
	Rs.25000 & above	7	2	28.6	5	71.3		
Family members accompanying mother	Spouse	13	3	23.1	10	76.9	1.39 NS	P>0.05 (7.815)
	Parents/In-laws	8	2	25.0	6	75.0		
	Son/daughter	4	2	50.0	2	50.0		
	Brother/ Sister in-law	5	2	40.0	3	60.0		
Combined		30	9	30.0	21	70.0		

* Significant at 5% Level, NS: Non-significant

Note: Figures in the parenthesis indicate Table value

Table above 11 depicts that the association of pre-test incisional pain level scores of samples on foot massage of lower segmental caesarean section mothers with their selected demographic variables.

a) Association between the age group and pre-test incisional pain level among caesarean section mothers:

The association between the age group and pre-test incisional pain level among caesarean section mothers tested that the obtained $\chi^2 = 1.03$ is less than the table value 7.815. It shows that the association is statistically not significant at P> 0.05. The research hypothesis is rejected.

b) Association between the educational status and pre-test incisional pain level among the caesarean section mothers:

The association between the educational status and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 0.32$ is less than the table value 7.815. It shows that the association is statistically not significant at P> 0.05. The research hypothesis is rejected.

c) Association between the occupation and pre-test incisional pain level among the caesarean section mothers:

The association between the occupation and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 1.10$ is less than the table value 7.815. It shows that the association is statistically not significant at P> 0.05. The research hypothesis is rejected.

d) Association between the parity and pre-test incisional pain level among the caesarean section mothers:

The association between the parity and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 8.45$ is more than the table value 7.815. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

e) Association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers:

The association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 3.97$ is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

f) Association between the type of family and pre-test incisional pain level among the caesarean section mothers:

The association between the type of family and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 7.65$ is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

g) Association between the religion and pre-test incisional pain level among the caesarean section mothers:

The association between the religion and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 7.47$ is more than the table value 5.991. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

h) Association between the residency and pre-test incisional pain level among the caesarean section mothers:

The association between the residency and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 6.43$ is more than the table value 3.841. It shows that the association is statistically significant at $P < 0.05$. The research hypothesis is accepted.

i) Association between the family income monthly and pre-test incisional pain level among the caesarean section mothers:

The association between the family income monthly and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 0.11$ is more than the table value 7.815. It shows that the association is statistically significant at $P > 0.05$. The research hypothesis is rejected.

j) Association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers:

The association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 1.39$ is more than the table value 7.815. It shows that the association is statistically significant at $P > 0.05$. The research hypothesis is rejected.

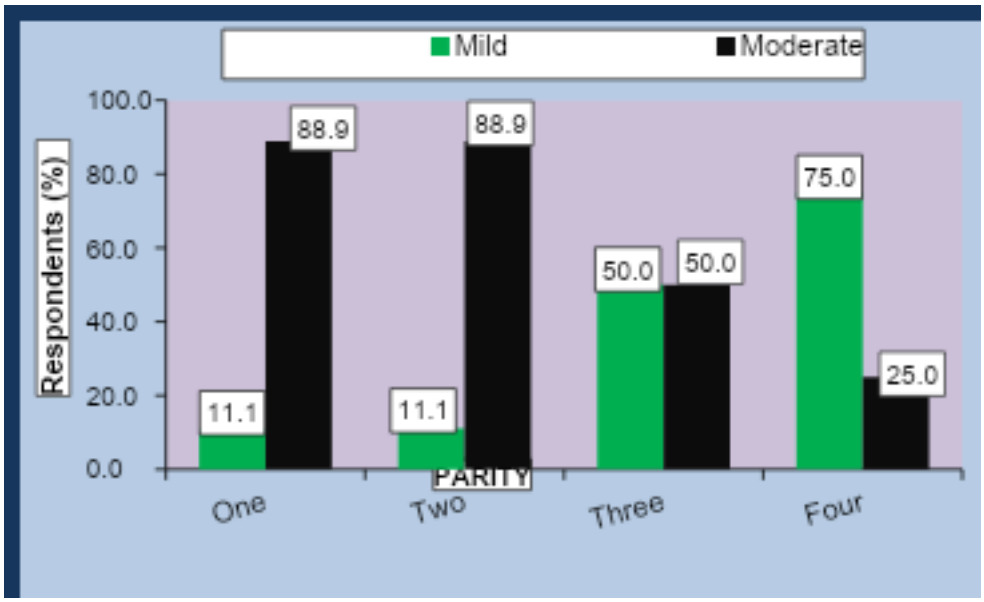


Figure 19: Association between Parity and Pre-test Incisional pain level among Caesarean section mothers

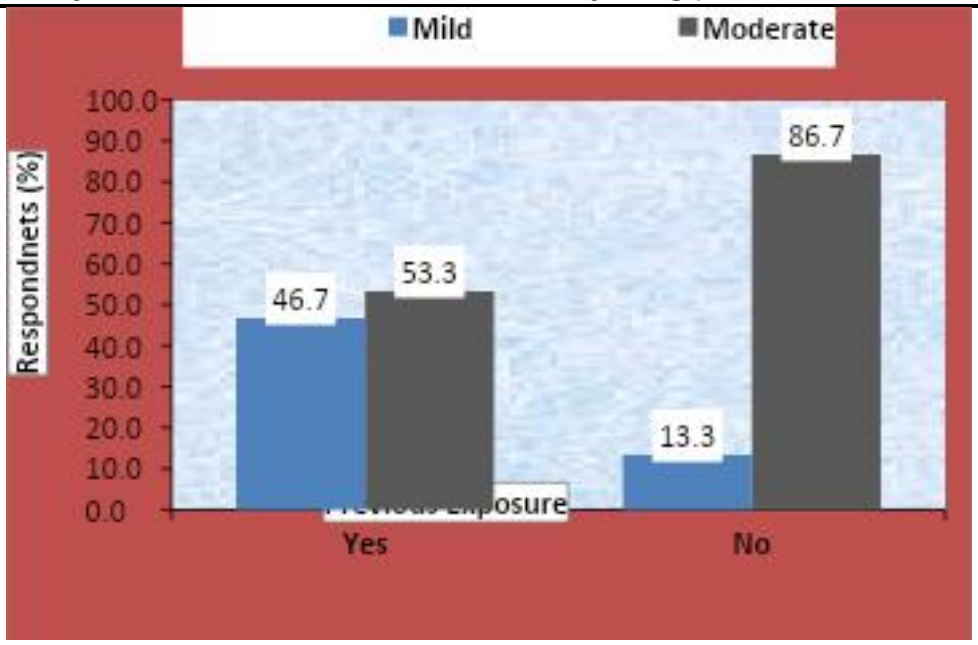


Figure 20: Association between Previous exposure lower segmental caesarean section and Pre-test Incisional pain level among Caesarean section mothers

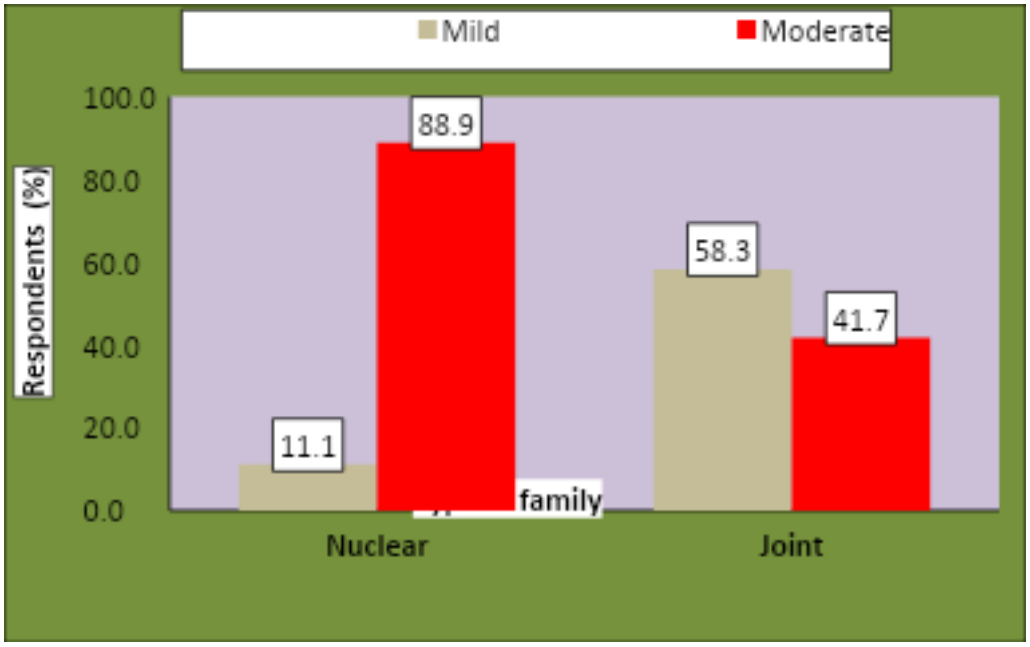


Figure 21: Association between Type of family and Pre-test Incisional pain level among Caesarean section mothers

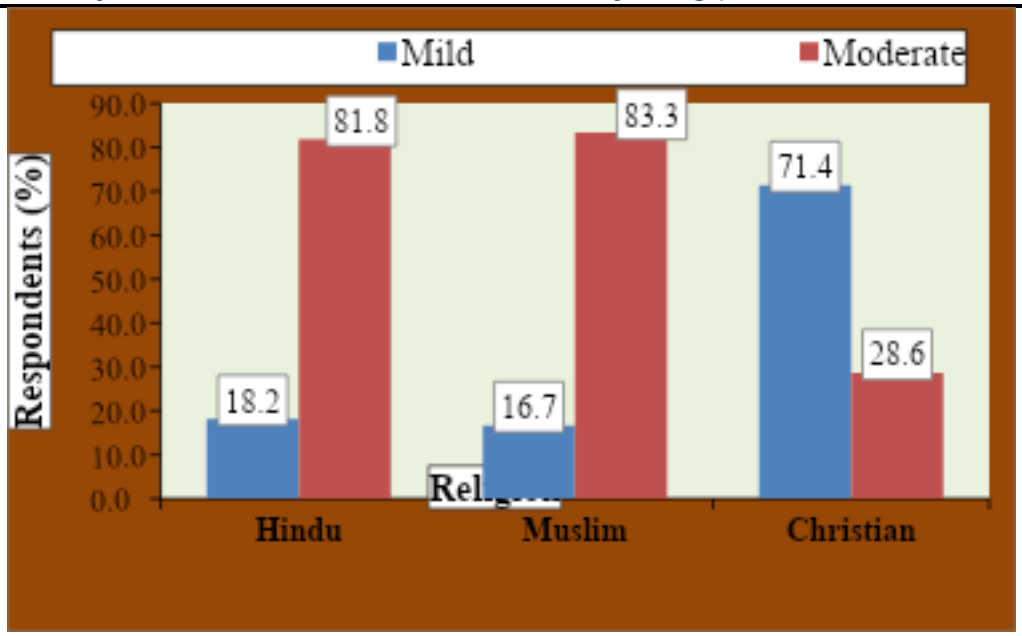


Figure 22: Association between Religion and Pre-test Incisional pain level among Caesarean section mothers

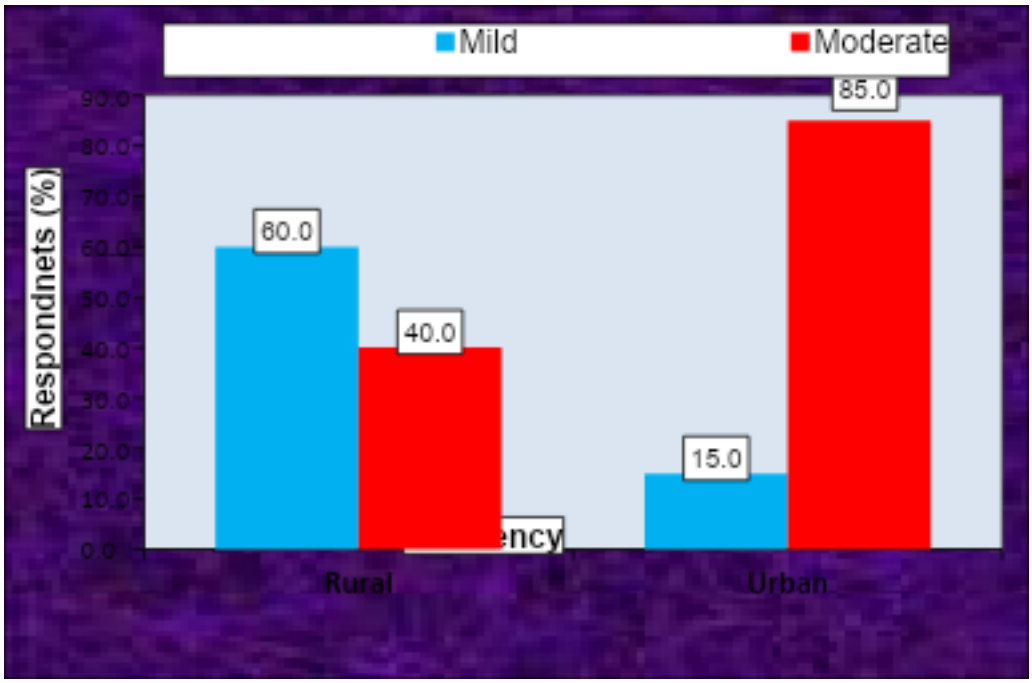


Figure 23: Association between Residency and Pre-test Incisional pain level among Caesarean section mothers

DISCUSSION

In order to find meaningful answers to research question, the collected data must be processed, analysed in an orderly coherent fashion, so that pattern and relationship can be discussed. This chapter discusses the findings of the study derived from the statistical analysis with is pertinence of objectives and related literature of the study.

The present study was undertaken to assess the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru. A pre experimental one group pre-test post-test design was used to assess the effectiveness of foot massage on pain among post-operative mothers.

Thirty post-operative LSCS mothers at Shifaa hospital were selected for the study by using non probability purposive sampling method. Pre-test was conducted by using numerical rating scale for pain and in-vivo bio-physiologic method for measurement of physiological variable for all the subjects.

The findings of the study were discussed under the following:

1. The findings related to socio demographic variable samples.

2. The findings related to assess the pain level before and after the foot massage among the postoperative caesarean section mothers.

3. The findings related to effectiveness of pain level before and after the foot massage among post-operative caesarean section mothers.

4. The findings related to physiological variable before and after the foot massage among the postoperative caesarean section mothers.

5. The findings related to association between levels of pre-foot massage pain score and the selected variables.

1. The findings related to socio demographic variable sample.

The study findings demonstrated that out of 30 mothers, (20%) were in the age group of 18-22yrs, (26.7) were in the age group of 23-27yrs, (40.0%) were in the age of 28-32yrs and remaining (13.3) the group of 33 & above.

Regarding educational status it was observed that (16.7) were having primary education, (20.0%) were having high school education, (30.0%) were having PUC education and (23.3%) were having degree & above. Regarding occupational status (43.4%) were house wife, (23.3%) were daily wages, (20.0%) were private and (13.3%) were having government job. Regarding parity (30.0%) were having one, (30.0%) were having two, (26.7%) were having three and (13.3) were having four number of parity. Among (50.0%) were having previous exposure to LSCS and (50.0%) were not exposed to LSCS.

Among the mothers, (60.0%) were nuclear family, (40.0%) were joint family. Regarding the religion (36.7%) were Hindu, (40.0%) were Muslims, and (23.3%) were Christian. Regarding the residency (33.3) were rural and (66.7%) were urban. Regarding the family income (30.0%) were having Rs.10000-15000 family income, (36.7%) were having Rs 15000-20000 family income, (10.0%) were having Rs20000-25000 family income and (23.3%) were having Rs25000 & above family income. Regarding the family members accompanying with the mothers (43.3%) were with the spouse, (26.7%) were with the parents/ in-laws, (13.3%) were with the son/daughter and (16.7%) were with the brother/ sister in-laws.

2. The findings related to assess the pain level before and after the foot massage among the postoperative caesarean section mothers.

In the present study the overall pre-test incisional pain level among the caesarean section mothers. Out of 30 mothers, majority had 21 (70.0%) severe pain level, 9 (30.0%) had moderate pain level and none of had mild pain.

In overall post-test incisional pain level on LSCS mothers. Out of 30 mothers majority had 21 (70.0%) moderate pain level, 9 (30.0%) mild pain level and none of had severe pain.

3. The findings related to effectiveness of pain level before and after the foot massage among post-operative caesarean section mothers.

In pre-test among 30 LSCS mothers, the incisional pain level were 70.0% of mothers have severe pain, 30.0% mothers were having incisional pain level and none of the mothers have mild pain. In post-test 70.0% were having moderate incisional pain, 30.0% were having mild incisional pain and none of the mothers had no severe pain. The chi square value was 34.80 which is higher than the table value 5.991 [χ^2 (0.05,2df)] which is highly significant at $P \leq 0.05$ level. Thus, the research hypothesis was accepted. Hence the foot massage was to be effective in decreasing the incisional pain level of LSCS mothers.

A study was conducted on effectiveness of foot and hand massage on 281 patients attended for caesarean operations to the obstetric care units 281 were selected by random sampling method and evenly divided into three groups. Those patients who were control group, foot and hand massage group, and a foot massage group, each of which included 25 patients. The result showed that pain intensity in foot and hand massage group was 5.76+1.23 in pre-test score was significant decrease right after the massage intervention (3.00+1.08) at $p<.001$, in foot and hand massage group when compared with control group. Freeman, L., (2009): Mosbys Complementary & Alternative Medicine (3rd ed). Chin: Mosby Elsevier, PP. 364-385.

This study and the previous findings showed that the effectiveness of pain level before and after the foot massage among post-operative caesarean section mothers.

4. The findings related to physiological variable before and after the foot massage among the postoperative caesarean section mothers.

In pre-test of 30 mothers, the pulse rate of 20 (66.7%) were non-normal and 10 (33.3%) were normal. In post-test among 30 mothers, the pulse rate of 10 (33.3%) were non-normal and 20 (66.7%) were normal pulse rate. The chi square value was 6.69 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at $p \leq 0.05$ level.

The overall aspect wise comparison of pre-test and post-test mean pulse rate scores of mothers on LSCS is tested for statistical significance of massage. Paired 't' test and the results are considered significance wherever 2.045 [t(0.05,2df at the level $P \leq 0.05$)].

In pre-test of 30 mothers, 19 (63.3%) were having non normal respiration rate and 11 (36.7%) were normal. In post-test 2 (6.7%) were having non normal respiration rate and 28 (93.3%) were normal. The chi square value was 21.17 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at $P \leq 0.05$ level.

The overall aspect wise comparison of pre-test and post-test mean respiration rate scores of mothers on LSCS is tested for statistical significance of massage. Paired 't' test and the results are considered significance wherever 2.045 [t (0.05,2 df)] at the level $P \leq 0.05$.

Among 30 mothers, in pre-test 30 (100.0%) were having non normal blood pressure and none of mothers were normal. In post-test 13(43.3%) were having non normal blood pressure and 17 (56.7%) were normal. The chi square value was 23.72 which is higher than the table value 3.841 [χ^2 (0.05,1df)] which is highly significant at $P \leq 0.05$ level.

The findings of the present study is supported by the findings of this study

A study was conducted, a quasi-experimental repeated measures design study to find out the immediate effect of a five-minute foot massage on patients in critical care, at Miami Japan, reflected that critical care can be considered to be a stressful environment at both physiological and psychological levels for patients. A five-minute foot massage was offered to 25 patients, selected by purposive sampling which showed there was no significant effect from the intervention on peripheral oxygen saturation. However, a significant decrease in heart rate, ($p<0.01$) blood pressure, ($p=0.02$) and respiration ($p<0.038$) was observed during the foot massage intervention. Result 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 the intensive care unit.

5. The findings related to association between levels of pre-foot massage pain score and the selected variables.

In the present study the association was sought between the mean pre- test knowledge level of women and with selected socio demographic variables such as age, educational status, occupational status, parity, previous exposure to LSCS, family income, religion, type of family, residency, family members accompanying with the mothers. Among this selected socio demographic variables, a significant association was found between parity ($\chi2 = 8.45$), previous of exposure to LSCS ($\chi2 = 3.97$), type of family ($\chi2 = 7.65$), religion ($\chi2=7.47$), residency ($\chi2=6.43$), t $P \leq 0.05$ level of significance.

Thus, the research hypothesis H_2 stated in the study was accepted by the investigator as there is significant association found between selected demographic variables and mean pre-test pain scores of mothers with LSCS.

The other socio demographic variables such as age group $\chi 2 = 1.03$, educational status ($\chi 2 = 0.32$), occupation ($\chi 2 = 1.10$), family income ($\chi 2 = 0.11$), family members accompanying ($\chi 2 = 1.39$) did not show any significant association with the pre-test pain level of samples.

Summary

The findings of the present study were analysed and discussed with the findings of similar studies conducted in the past. This helped the investigator to prove that the findings were true and foot massage was effective in reducing incisional pain in mothers who had undergone LSCS.

CONCLUSION

The study was conducted to assess the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru**.** In the present study, 30 women were selected by using convenience sampling technique.

The research approach adopted in the present study as a quantitative approach, with one group pre-test post-test experimental design was used. A numerical pain scale and in-vivo bio-physiologic methods was used to assess the incisional pain level and physiological variables.

The following conclusion were drawn from the study:

- Majority of the samples belonged to the age group of 28-32 (40.0%)
- 33.3% of samples had degree and above.
- 43.4% mothers were house wife.
- 30.0% were having one child and 30.0% were having two children.
- 50.0% were previous exposure to LSCS and 50.0% were not exposed to LSCS.
- 60.0% of mothers were from the nuclear family.
- 40.0% of mothers were Muslims.
- Majority of the mothers were from urban 66.7%.
- 36.7% of mothers were having 15000-20000 monthly income
- 43.3% of mothers were with their spouse.

- With regard to the pre-test incisional pain level among the caesarean section mothers. Out of 30 mothers, majority had 21 (70.0%) severe pain level, 9 (30.0%) had moderate pain level and none of had mild pain.
- With regard to the post-test incisional pain level on LSCS mothers. Out of 30 mothers majority had 21 (70.0%) moderate pain level, 9 (30.0%) mild pain level and none of had severe pain.
- The overall aspect wise comparison of pre-test and post-test mean pulse rate scores of mothers on LSCS is tested for statistical significance of foot massage. Paired 't' test and the results are considered significance wherever 2.045 [t(0.05,2df at the level $P \leq 0.05$.
- The overall aspect wise comparison of pre-test and post-test mean respiration rate scores of mothers on LSCS is tested for statistical significance of foot massage. Paired 't' test and the results are considered significance wherever 2.045 [t (0.05,2 df)] at the level $P \leq 0.05$.
- To evaluate the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers. A paired 't' was done to indicate statistical significance difference between the pre-test and post-test. In the pre-test incisional pain level of mothers were having 70.0% of severe pain, 30.0% of mothers were having incisional pain level and none of the mothers have mild pain. In post-test 70.0% of mothers were having moderate incisional pain, 30.0% of mothers were having mild incisional pain and none of the mothers had severe pain. The chi square value was 34.80 which is higher than the table value 5.991 [χ^2 (0.05,2df)] which is highly significant at $P \leq 0.05$ level.

In the present study the association was sought between the mean pre- test incisional pain level of mothers with LSCS and with selected socio demographic variables:

1. **Association between the age group and pre-test incisional pain level among caesarean section mothers:**

   The association between the age group and pre-test incisional pain level among caesarean section mothers tested that the obtained $\chi^2 = 1.03$ is less than the table value 7.815. It shows that the association is statistically not significant at $P > 0.05$. The research hypothesis is rejected.

2. **Association between the educational status and pre-test incisional pain level among the caesarean section mothers:**

   The association between the educational status and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 0.32$ is less than the table value 7.815. It shows that the association is statistically not significant at $P > 0.05$. The research hypothesis is rejected.

3. **Association between the occupation and pre-test incisional pain level among the caesarean section mothers:**

   The association between the occupation and pre-test incisional pain level among the caesarean section mothers tested that the obtained $\chi^2 = 1.10$ is less than the table value 7.815. It shows that the association is statistically not significant at $P > 0.05$. The research hypothesis is rejected.

4. **Association between the parity and pre-test incisional pain level among the caesarean section mothers:**

   The association between the parity and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 8.45 is more than the table value 7.815. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

5. **Association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers:**

   The association between the previous exposure to LSCS and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 3.97 is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

6. **Association between the type of family and pre-test incisional pain level among the caesarean section mothers:**

   The association between the type of family and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 7.65 is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

7. **Association between the religion and pre-test incisional pain level among the caesarean section mothers:**

   The association between the religion and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 7.47 is more than the table value 5.991. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

8. **Association between the residency and pre-test incisional pain level among the caesarean section mothers:**

   The association between the residency and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 6.43 is more than the table value 3.841. It shows that the association is statistically significant at P < 0.05. The research hypothesis is accepted.

9. **Association between the family income monthly and pre-test incisional pain level among the caesarean section mothers:**

   The association between the family income monthly and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 0.11 is more than the table value 7.815. It shows that the association is statistically significant at P > 0.05. The research hypothesis is rejected.

10. **Association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers:**

    The association between the family members accompanying mothers and pre-test incisional pain level among the caesarean section mothers tested that the obtained χ^2 = 1.39 is more than the table value 7.815. It shows that the association is statistically significant at P > 0.05. The research hypothesis is rejected.

NURSING IMPLICATION

The finding of the study has implication on the field on Nursing education, Nursing practice, Nursing research and Nursing administration.

1. NURSING EDUCATION:

Alternative and complementary therapies are increasing in popularity (British Medical Association, 1993). Nurses seem to be equipped to act as advocates with regard to pain management in order to assess and alleviate pain of the patients. The use of non-pharmacological measures like foot massage can be easily incorporated in nursing education along with other complementary therapies. To equip nurses to provide holistic care the nursing curriculum needs to cover non-pharmacological measures such as foot massage for pain management. Nurse educators need to highlight the non-pharmacological pain relief measures like foot massage in the curriculum of basic nursing education as part of pain assessment and management. Ongoing education can be planned for graduate students. Students can be given a project work to experiment the need for foot massage in pain management. Foot message as a non-pharmacological pain management method can be highlighted as a part of in-service education programmed. Family members should also be educated on foot massage techniques which will enable them to help and care for the individual who is in pain and thereby making these measures beneficial to common people.

2. NURSING PRACTICE:

Today, more than ever, healthcare reform calls nursing to provide cost effective care. Concern about possible side effects of drug treatment and heavy expenses on medical care are the reasons why people seek complementary and alternative medicine, because the dimensions of pain involve physical, psychological, social and spiritual health. There will be a potential reduction in the quality of life. Pain related anxiety, and sleeplessness release stress hormones, which have deleterious effects upon post-surgical outcome.

Using the current research findings nurses can use foot massage as an effective intervention in their practice. Foot massage is cost effective, easy to learn, and has no adverse effects. It does not require additional equipment, extra preparation, or expenditure. Foot massage as a means of touch can be used by the nurses to communicate care and concern for the patients. As nurse educator, there are abundant opportunities for the nursing professional to educate the women, patients as well as student nurses regarding cervical cancer and the measure to prevent it. The findings of this study can be incorporated in the training of other healthcare personnel and family members in providing healthcare.

3. NURSING ADMINISTRATION:

Today, there is an increasing need for quality and holistic care. The findings of this study could be made use of by nursing and non-nursing personnel. Nursing administrators are in the key position to formulate policies and the execution of quality nursing based on research findings with necessary changes in nursing education and practice. They should develop nursing practice standards, protocols, and manuals for pain assessment and management. Awareness programmed could be organized and information could be disseminated through media, like newspapers, magazines, television and internet. In-service education for the staff nurses could be provided with special emphasis on the use of foot massage to relieve pain in postoperative patients. Administration plays a major role in regulating and coordinating the laws. A nursing administrator has a significant role in encouraging and motivating the staff nurses and nursing students to improve their

knowledge in order to keep in pace with changing need of the present society. The nurse administrator can mobilize the available resource towards the in-service education of staff nurses which will prepare them to conduct awareness programs regarding cervical cancer.

4. NURSING RESEARCH:

A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continuous development of a relevant body of knowledge. It is apparent that there are significant gaps in research with regard to foot massage and pain management. It is also observed that the published research studies and trials on foot massage in the Indian setting are very limited.

Nurse researchers should be aware of the new trends in the existing healthcare system. Emphasis should be laid on research in the area of non-pharmacological measures of pain management in postoperative patients. The findings of the research need to be disseminated through publications so that the utilization of such research findings is encouraged.

LIMITATIONS

1. The study was confined to specific geographical area (Bengaluru), which imposes limits on generalization

2. The study was carried out on a small sample which also imposes limits on generalization.

3. The study was limited to those who came for lower segmental caesarean sections only in one hospital.

SUGGESTIONS

1. Complimentary therapy cell could be arranged in the institution and multidisciplinary team could be established.

2. Pain assessment and management could be given emphasis in postoperative care practices.

3. Continuing nursing education programmes can be initiated on non-pharmacological pain management.

4. Complimentary therapies can be incorporated into routine practice

5. Findings of this study can be utilized to educate family members and non-nursing personnel to provide quality services in hospitals.

RECOMMENDATIONS

1. The study can be replicated on a larger sample, spread over different hospitals for the generalization of findings.

2. The study could be undertaken during chronic painful experience like cancer pain.

3. A comparative study can be conducted with more than one intervention.

4. Study can be conducted by assessing more variables like pulse, respiration, blood pressure, anxiety, sleep quality, stress etc.

SUMMARY

This chapter has dealt with the implication of the study in the field of nursing, limitations, suggestions and recommendations for the research. On the whole, conducting this study was a rich learning experience for the investigator. The result of this study shows that hand and foot massage is an effective non-pharmacologic measure in reducing pain of women who have undergone abdominal hysterectomy. Hand and foot massage is an effective, simple, non-invasive, cost effective method that can be used easily without any side effects or extra efforts from the part of practitioners.

SUMMARY

Pain is an expected outcome postoperatively. The inadequacy of postoperative pain management was shown in many studies and the pain is often underestimated and untreated. Routinely post- operative pain is poorly controlled by pharmacological means alone and the patients report mild to severe pain even though pain medication have been administered.

Effective postoperative pain control can be achieved through combination of both, pharmacological and non-pharmacological therapies. Massage is one of the most widely used complimentary therapies in nursing practice. Massage therapy retains its usefulness and significance even in the last step for saving life from immediate death as in cardiopulmonary arrest in spite of all the advancement in the knowledge and complexes of techniques.

Throughout history, caregivers have used massage techniques to soothe a painful body part. However scientific evidence for the effectiveness of massage as a non-pharmacological method of pain relief is recent. Foot massage can certainly reduce pain because cutaneous stimulation stimulates nerve fibers which encourage the release of endorphins that have analgesic properties and produce relaxation. Relaxation may increase pain threshold and modify an individual's pain perception. Foot massage reduces pain based on Gate Control Theory also.

STATEMENT OF THE PROBLEM

" A study to assess the effectiveness of foot massage on reduction of incisional pain among the post caesarean section mothers in selected hospital at Bengaluru**".**

OBJECTIVES OF THE STUDY:

1. To assess the level of incisional pain among mothers of post caesarean section
2. To determine the effectiveness of foot massage on reduction of incisional pain on mothers of post caesarean section
3. To find out the association between the post-operative pain with their selected demographic variables.

HYPOTHESIS:

H_1: There will be a significant difference in the intensity of pain level before and after foot massage.

H_2: There will be a significant association between the level of pain before and foot massage with their variables

Conceptual Frame work

The conceptual frame work used for the present study was based on Roy's Adaptation model. The focus of this theory is the adaptation of the individual to various stimuli both from the environment and from within.

Reliability

Reliability of the tool was established prior to the study and the tool was found to be feasible to collect the data. It was followed by a pilot study, which did not show any flaw in the design of the final study. Data collected from the samples were analysed by using descriptive and inferential statistics.

Independent variable

Independent variable is the variable that stands alone and does not depend on any other. It is the variable that precedes the dependent variable. It is also called cause, stimuli, experiment or treatment; the variable that is manipulated by the researcher, in order to study the effect upon the dependent variable. In this study, the independent variable is the foot massage received by the post-operative mothers who had undergone lower segmental caesarean section.

Dependent variable

Dependent variable is the outcome or criterion variable that is hypothesized to be caused by the independent variable. In this study, the dependent variables are the level of pain reduction and satisfaction after foot massage by the post-operative mothers who had undergone lower segmental caesarean section.

Attribute variable

Attribute variable are the characteristics or element of the human subjects that are used to control the decided sample. These variables are also referred as socio demographic variable. The attribute variables or socio demographic variable described in this study are age, types of family, religion, residency, education, occupations of the mothers, family monthly income, family members accompanying the mothers, parity or number of children, previous exposure to LSCS.

In this study a quasi-experimental design was adopted. Purposive sampling technique was used to select the subjects. Thirty mothers who have undergone lower segmental caesarean section, who meets the inclusion criteria were used to assigned for the one group pre-test post-test design.

The investigator prepared a Baseline Pro forma consisting of 10 items and numerical pain scale and in-vitro bio-physiologic methods to assess the effectiveness of foot massage on reduction of incisional pain of mothers with LSCS. The content validity was established by 5 experts. Reliability of the 0-10 numerical pain rating scale was done by comparing it with 0-10 numerical pain rating scale.

The pilot study was conducted Life Plus Hospital from 15th to 19th of june 2019. The sample size for the pilot study was 4.

The main study was conducted with 30 subjects from 27th June to 15th July 2019. The data was analysed using descriptive and inferential statistics (Paired 't' test, Repeat and Chi-square test).

The main study was conducted in three phases:

Phase 1: Pre- test was done by assessing the incisional pain using numerical pain scale and in-vitro bio-physiologic methods to measure physiological variables followed by administration of foot massage.

Phase 2: Post test was conducted after administration of foot massage by using the same pain scale. .

Phase 3: The data collected were analysed using descriptive and inferential statistics based on the objectives and hypothesis of the study.

The findings of the study were discussed under the following:

1. The findings related to socio demographic variable samples.

2. The findings related to assess the pain level before and after the foot massage among the postoperative caesarean section mothers.

3. The findings related to effectiveness of pain level before and after the foot massage among post-operative caesarean section mothers.

4. The findings related to physiological variable before and after the foot massage among the postoperative caesarean section mothers.

5. The findings related to association between levels of pre-foot massage pain score and the selected variables.

1. **The findings related to socio demographic variable sample.**

The study findings demonstrated that out of 30 mothers, (20%) were in the age group of 18-22 yrs, (26.7) were in the age group of 23-27 yrs, (40.0%) were in the age of 28-32 yrs and remaining (13.3) the group of 33 & above.

Regarding educational status it was observed that (16.7) were having primary education, (20.0%) were having high school education, (30.0%) were having PUC education and (23.3%) were having degree & above. Regarding occupational status (43.4%) were house wife, (23.3%) were daily wages, (20.0%) were private and (13.3%) were having government job. Regarding parity (30.0%) were having one, (30.0%) were having two, (26.7%) were having three and (13.3) were having four number of parity. Among (50.0%) were having previous exposure to LSCS and (50.0%) were not exposed to LSCS.

Among the mothers, (60.0%) were nuclear family, (40.0%) were joint family. Regarding the religion (36.7%) were Hindu, (40.0%) were Muslims, and (23.3%) were Christian. Regarding the residency (33.3) were rural and (66.7%) were urban. Regarding the family income (30.0%) were having Rs 10000-15000 family income, (36.7%) were having Rs 15000-20000 family income, (10.0%) were having Rs 20000-25000 family income and (23.3%) were having Rs 25000 & above family income. Regarding the family members accompanying with the mothers (43.3%) were with the spouse, (26.7%) were with the parents/ in-laws, (13.3%) were with theson/daughter and (16.7%) were with the brother/ sister in-laws.

2. The findings related to assess the pain level before and after the foot massage among the postoperative caesarean section mothers.

In the present study the overall pre-test incisional pain level among the caesarean section mothers. Out of 30 mothers, majority had 21 (70.0%) severe pain level, 9 (30.0%) had moderate pain level and none of had mild pain.

In overall post-test incisional pain level on LSCS mothers. Out of 30 mothers majority had 21 (70.0%) moderate pain level, 9 (30.0%) mild pain level and none of had severe pain.

3. The findings related to effectiveness of pain level before and after the foot massage among post-operative caesarean section mothers.

In pre-test among 30 LSCS mothers, the incisional pain level were 70.0% of mothers have severe pain, 30.0% mothers were having incisional pain level and none of the mothers have mild pain. In post-test 70.0% were having moderate incisional pain, 30.0% were having mild incisional pain and none of the mothers had severe pain. The chi square value was 34.80 which is higher than the table value 5.991 [χ^2 (0.05,2 df)] which is highly significant at $P \leq 0.05$ level. Thus, the research hypothesis was accepted. Hence the foot massage was to be effective in decreasing the incisional pain level of LSCS mothers.

4. The findings related to physiological variable before and after the foot massage among the postoperative caesarean section mothers.

In pre-test of 30 mothers, the pulse rate of 20 (66.7%) were non-normal and 10 (33.3%) were normal. In post-test among 30 mothers, the pulse rate of 10 (33.3%) were non-normal and 20 (66.7&%) were normal pulse rate. The chi square value was 6.69 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at $P \leq 0.05$ level.

The overall aspect wise comparison of pre-test and post-test mean pulse rate scores of mothers on LSCS is tested for statistical significance of massage. Paired 't' test and the results are considered significance wherever 2.045 [t(0.05,2df at the level $P \leq 0.05$)].

In pre-test of 30 mothers, 19 (63.3%) were having non normal respiration rate and 11 (36.7%) were normal. In post-test 2 (6.7%) were having non normal respiration rate and 28 (93.3%) were normal. The chi square value was 21.17 which is higher than the table value 3.841 [χ^2 (0.051 df)] which is highly significant at $P \leq 0.05$ level.

The overall aspect wise comparison of pre-test and post-test mean respiration rate scores of mothers on LSCS is tested for statistical significance of massage. Paired 't' test and the results are considered significance wherever 2.045 [t (0.05,2 df)] at the level $P \leq 0.05$.

Among 30 mothers, in pre-test 30 (100.0%) were having non normal blood pressure and none of mothers were normal. In post-test 13(43.3%) were having non normal blood pressure and 17 (56.7%) were normal. The chi square value was 23.72 which is higher than the table value 3.841 [χ^2 (0.05,1df)] which is highly significant at $P \leq 0.05$ level.

5. The findings related to association between levels of pre-foot massage pain score and the selected variables.

In the present study the association was sought between the mean pre- test knowledge level of women and with selected socio demographic variables such as age, educational status, occupational status, parity, previous exposure to LSCS, family income, religion, type of family, residency, family members accompanying with the mothers. Among this selected socio demographic variables, a significant association was found between parity ($\chi 2 = 8.45$), previous of exposure to LSCS ($\chi 2 = 3.97$), type of family ($\chi 2 = 7.65$), age of religion ($\chi 2 = 7.47$), religion ($\chi 2 = 7.47$), residency ($\chi 2 = 6.43$), t $P \leq 0.05$ level of significance.

Thus, the research hypothesis H_2 stated in the study was accepted by the investigator as there is significant association found between selected demographic variables and mean pre-test pain scores of mothers with LSCS.

The other socio demographic variables such as age group $\chi 2 = 1.03$, educational status ($\chi 2 = 0.32$), occupation ($\chi 2 = 1.10$), family income ($\chi 2 = 0.11$), family members accompanying ($\chi 2 = 1.39$) did not show any significant association with the pre-test pain level of samples.

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ANNEXURE–1.a

LETTER SEEKING EXPERT OPINION IN VALIDATING TOOL AND CONTENT

To

Subject: letter requesting opinion and suggestion for establishing content validity of the tool.

Respected Sir/Madam,

I Ms. Shinggamayum Samida II-year MSc. Nursing student (obstetrics and gynaecology) of Karnataka College of Nursing, Bangalore, working on dissertation title **" A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESAREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BANGALURU"** to be submitted to Rajiv Gandhi University of Health Science in partial fulfilment for degree of Master of Science.

I humbly request you to kindly give your valuable suggestion and expert comment on the contents of the tool.

Thank you for the time spent in going through this tool.

Yours faithfully,

Ms. Shinggamayum Samida
IInd year Msc, Nursing student
Karnataka College of Nursing,Bengaluru-64

Enclosures:

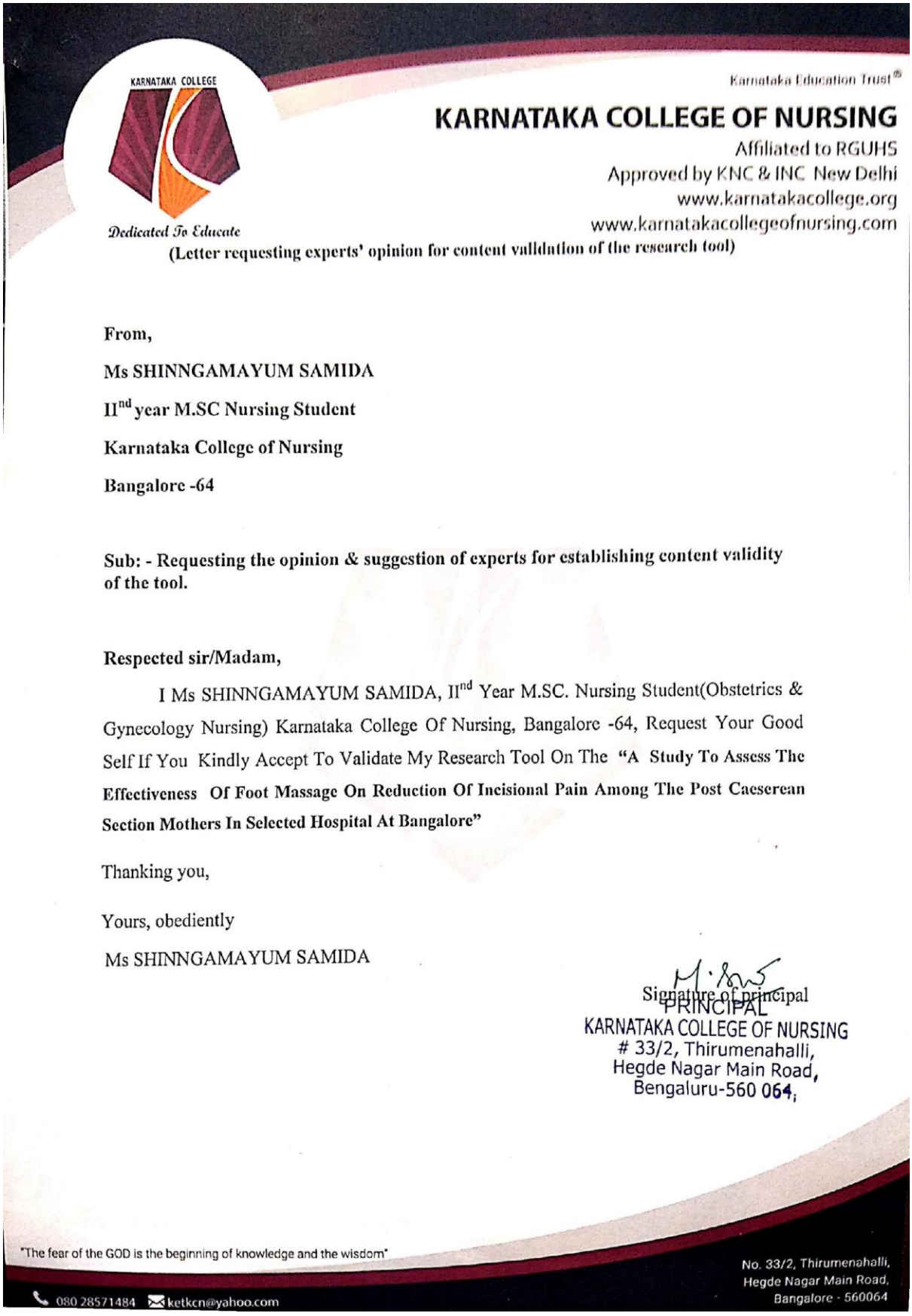
1. Research Objectives, operational definition, research methodology
2. Tools
   a) demographic questionnaire
   b) pain measurement scale
   c) measurement of physiological variable
3. Criteria for content validity
4. Content validity certificate

Forwarded by

DR. M BHARATHI

PRINCIPAL

ANNEXURE-1.b



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(Letter requesting experts' opinion for content validation of the research tool)

From,

Ms SHINNGAMAYUM SAMIDA

II[nd] year M.SC Nursing Student

Karnataka College of Nursing

Bangalore -64

Sub: - Requesting the opinion & suggestion of experts for establishing content validity of the tool.

Respected sir/Madam,

I Ms SHINNGAMAYUM SAMIDA, II[nd] Year M.SC. Nursing Student(Obstetrics & Gynecology Nursing) Karnataka College Of Nursing, Bangalore -64, Request Your Good Self If You Kindly Accept To Validate My Research Tool On The **"A Study To Assess The Effectiveness Of Foot Massage On Reduction Of Incisional Pain Among The Post Caeserean Section Mothers In Selected Hospital At Bangalore"**

Thanking you,

Yours, obediently

Ms SHINNGAMAYUM SAMIDA

Signature of principal

PRINCIPAL
KARNATAKA COLLEGE OF NURSING
33/2, Thirumenahalli,
Hegde Nagar Main Road,
Bengaluru-560 064.

"The fear of the GOD is the beginning of knowledge and the wisdom"

080 28571484 ketkcn@yahoo.com

No. 33/2, Thirumenahalli,
Hegde Nagar Main Road,
Bangalore - 560064

ANNEXURE-1.c

ACCEPTANCE LETTER

TOPIC

A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESEREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BENGALURU

I

Would/ would not agree to validate the research tool.

NAME:

DESIGNATION:

SIGNATURE:

DATE:

ANNEXURE-2

CONTENT VALIDITY CERTIFICATE

I hereby certify that I have validated the tool of M_s Shinggamayum Samida 2nd year MSc Nursing undertaking a study on **"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESEREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BANGL0RE."**

Name :

Designation :

Place: Bengaluru

Date: 18/05/2020

:

Signature of experts

ANNEXURES–3

LIST OF THE EXPERTS

1. **Joby Jacob M.sc (N)**

   Principal,

   KNN College of Nursing

   Bangalore.

2. **Mrs. Jeeva Rani M.sc(N)**

   Principal, Professor

   Golden College of Nursing

   Bangalore

3. **Jamuna P.P**

   Professor (OBG Dept)

   Ambedkar College of Nursing

   Bangalore.

4. **Mrs. Blessy Mathew**

   Associate professor (OBG Dept)

   Aditya College of Nursing

   Bangalore

5. **Mrs.Gayathri**

   Associate professor (OBG)

   Sofia College of Nursing

   Bengaluru

6. **Mrs.Poornima Hariharan M. Sc (N)**

   Professor,

   Karnataka College of Nursing

   Bangalore

7. **Mrs.Nandine R M.sc (N)**

Professor,

Karnataka College of Nursing, Bangalore

8. **Ms. Subashini M, Sc(N)**

Professor,

Karnataka College of Nursing Bangalore

9. **Mr. Surendra H.S.**

Statistician

ANNEXURE-4

Letter Seeking Permission For Conducting Pilot Studies

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LETTER SEEKING PERMISSION FOR CONDUCTING NURSING RESEARCH STUDY

To,

Life Plus,
Hospital, Indiranagar,
A.M.O

Through:
Principal,
Karnataka College of Nursing
Bangalore

Subject: Permission to conduct research study at.. Life Plus..... Hospital at Bangalore.

Respected Madam/Sir,

With reference to the above subject I would like to bring your kind notice that I, Ms Shinngamayum Samida, IInd years M. Sc Nursing (Obstetric And Gynaecology Nursing) Student of Karnataka College of Nursing, Bangalore have to submit a dissertation to Rajiv Gandhi University of Health Science as a part of my curriculum, My topic of dissertation is **"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION INCISIONAL PAIN AMONG THE POST CAESAREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BANGALORE".** I would like to conduct my research study in your Esteem hospital. I request you to kindly grant me my permission to conduct the study, hoping for your positive response.

Thanking you,

Yours faithfully,

Ms. Shinngamayum Samida
IInd years M. Sc Nursing
Karnataka college of Nursing
Bangalore

THE LIFE PLUS HOSPITAL
266/C, 80 Feet Road, Indiranagar,
Sri C.V. Raman Hospital Road,
BENGALURU - 560 038.

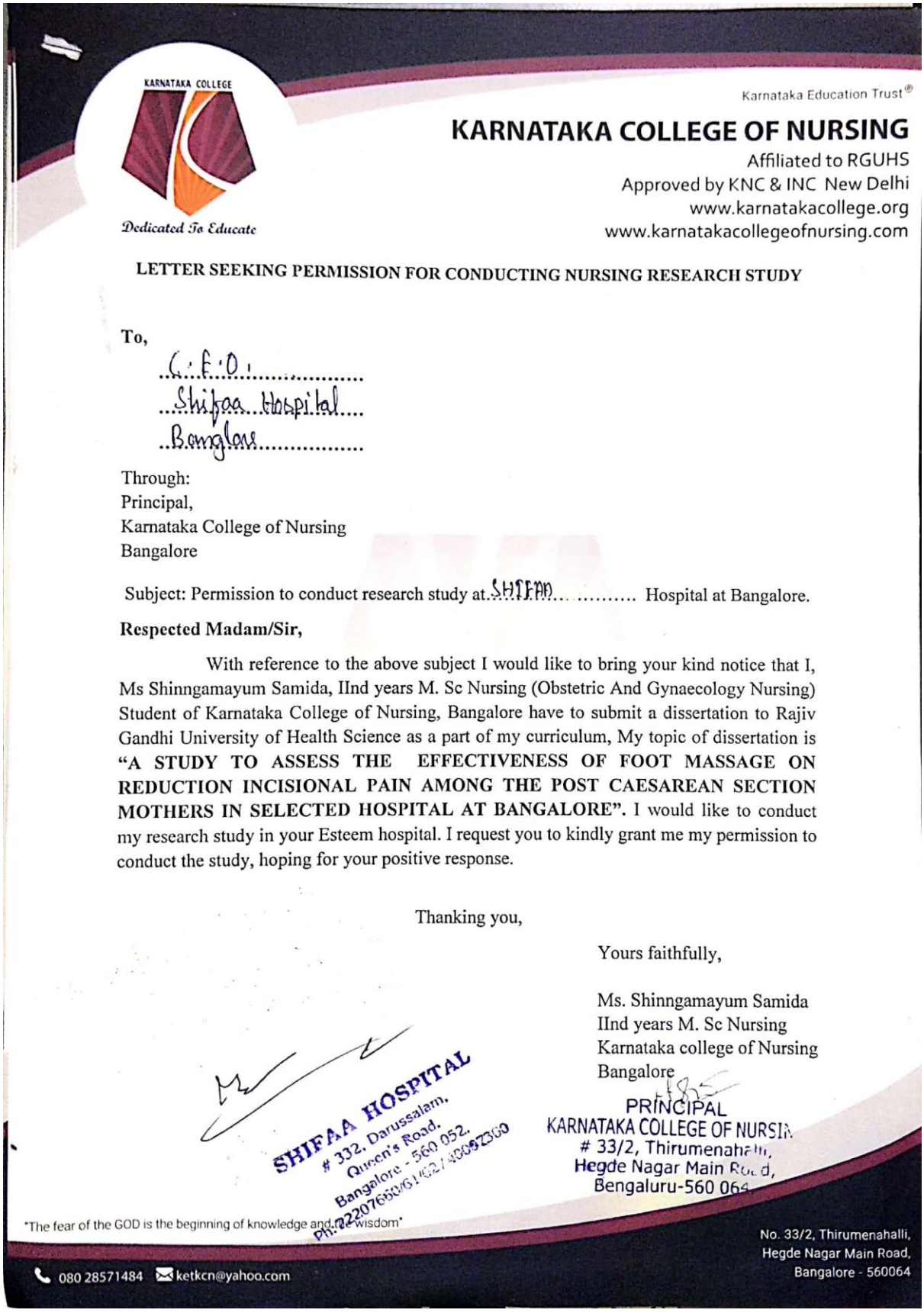
PRINCIPAL
KARNATAKA COLLEGE OF NURSING
33/2, Thirumenahalli,
Hegde Nagar Main Road,
Bengaluru-560 064.

"The fear of the GOD is the beginning of knowledge and the wisdom"

No. 33/2, Thirumenahal
Hegde Nagar Main Roa

ANNEXURE-5

Letter seeking permission for conducting research main study



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LETTER SEEKING PERMISSION FOR CONDUCTING NURSING RESEARCH STUDY

To,

C.E.O.
Shifaa Hospital
Banglore

Through:
Principal,
Karnataka College of Nursing
Bangalore

Subject: Permission to conduct research study at Shifaa Hospital at Bangalore.

Respected Madam/Sir,

With reference to the above subject I would like to bring your kind notice that I, Ms Shinngamayum Samida, IInd years M. Sc Nursing (Obstetric And Gynaecology Nursing) Student of Karnataka College of Nursing, Bangalore have to submit a dissertation to Rajiv Gandhi University of Health Science as a part of my curriculum, My topic of dissertation is **"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION INCISIONAL PAIN AMONG THE POST CAESAREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BANGALORE".** I would like to conduct my research study in your Esteem hospital. I request you to kindly grant me my permission to conduct the study, hoping for your positive response.

Thanking you,

Yours faithfully,

Ms. Shinngamayum Samida
IInd years M. Sc Nursing
Karnataka college of Nursing
Bangalore

SHIFAA HOSPITAL
332, Darussalam,
Queen's Road,
Bangalore - 560 052.

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KARNATAKA COLLEGE OF NURSING
33/2, Thirumenahalli,
Hegde Nagar Main Road,
Bengaluru-560 064.

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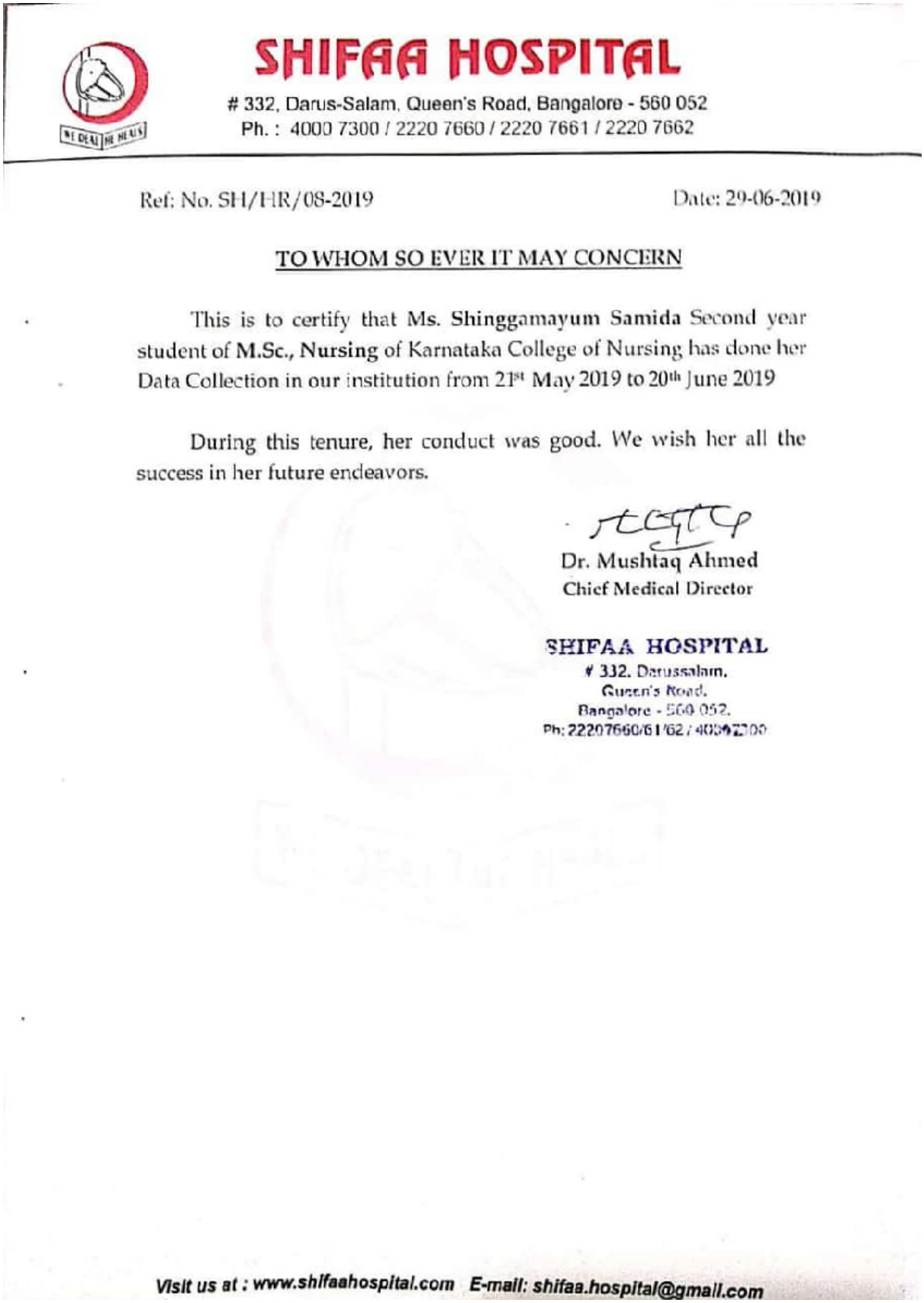
080 28571484 ketkcn@yahoo.com

No. 33/2, Thirumenahalli,
Hegde Nagar Main Road,
Bangalore - 560064

ANNEXURE-6

Certificate for Conducting Research Issues by Shifaa Hospital



SHIFAA HOSPITAL

332, Darus-Salam, Queen's Road, Bangalore - 560 052
Ph. : 4000 7300 / 2220 7660 / 2220 7661 / 2220 7662

Ref: No. SH/HR/08-2019 Date: 29-06-2019

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Ms. Shinggamayum Samida** Second year student of **M.Sc., Nursing** of Karnataka College of Nursing has done her Data Collection in our institution from 21st May 2019 to 20th June 2019

During this tenure, her conduct was good. We wish her all the success in her future endeavors.

Dr. Mushtaq Ahmed
Chief Medical Director

SHIFAA HOSPITAL
332, Darussalam,
Queen's Road,
Bangalore - 560 052.
Ph: 22207660/61/62 / 40007200

Visit us at : www.shifaahospital.com E-mail: shifaa.hospital@gmail.com

ANNEXURE-7

Foot Massage Training Certificate

ANNEXURE-8

LETTER SEEKING CONSENT OF THE SUBJECTS TO PARTICIPATE IN RESEARCH STUDY

Dear Participant, I am a post graduate nursing student of the Karnataka College of Nursing, Bangalore. I am conducting **"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESEREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BENGALURU"** This study will help to gain the knowledge the women regarding the usefulness of foot massage. I have attached numerical pain scale and measurement of physiological variable. Your opinion and experience are very important to me.

I therefore request you to be honest in all your opinion and experience.

I assure you that the information you provide will be kept confidential and will be used only for the study purpose. kindly sign the consent form given below.

Yours Truly

SHINGGAMAYUM SAMIDA

CONSENT FORM

I, hereby consent for the above said study knowing that all the information provided by me will be treated with utmost confidentiality by the investigators and this will be helpful to find the effectiveness of foot massage to reduce incisional pain level among the women who's undergone LSCS at selected hospital in Bengaluru.

Place: Bengaluru

Date: 18/05/2020

Signature of the participant

ANNEXURE-9

RESEARCH AND ETHICAL COMMITTEE

KARNATAKA EDUCATION TRUST

KARNATAKA COLLEGE OF NURSING

♯32/2, Thirumenahalli, Hegde Nagar Main Road , Jakkur post, Yelahanka Hobli,

Bengaluru - 560064

CERTIFICATION

This is to certify that the synopsis titled **"A STUDY TO ASSESS THE EFFECTIVENESS OF FOOT MASSAGE ON REDUCTION OF INCISIONAL PAIN AMONG THE POST CAESEREAN SECTION MOTHERS IN SELECTED HOSPITAL AT BENGALURU".** submitted by Ms Shinggamayum Samida, women, department of OBG Nursing has been critically evaluated and has been granted ethical clearance to continue the above mention study.

Place: Bengaluru

Date: 18/05/2020

PRINCIPAL

Karnataka College of Nursing

Bangalore

CO-ORDINATOR

Research ethical committee

Karnataka College of Nursing

Bangalore

ANNEXURE-10

DATA COLLECTION TOOL

TOOL-1

PART-I: DEMOGRAPHIC DATA

Instruction: The investigator places a tick mark (√) in the space provided against the relevant answer.

Date…….

DEMOGRAPHIC DATA:

1. **Age in years**
   a) 18 – 22
   b) 23- 27
   c) 28- 32
   d) 33-above
2. **Type of family**
   a) Nuclear family
   b) Joint family

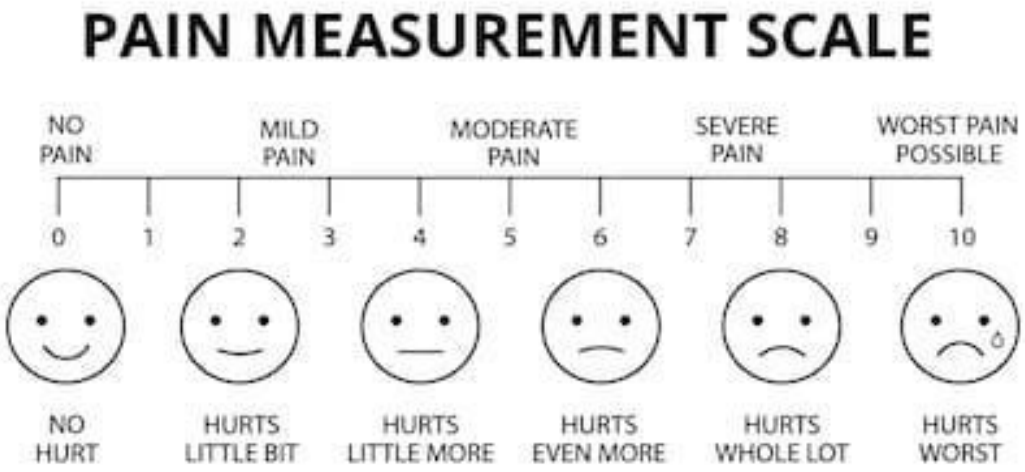
3. **Religion**
    a) Hindu
    b) Muslim
    c) Christian
4. **Residency**
    a) Rural
    b) Urban
5. **Educational status**
    a) Primary
    b) High school
    c) PUC
    d) Degree and above
6. **Occupation of the mothers**
    a) Housewife
    b) Daily wages
    c) Private
    d) Government
7. **Family income**
    a) 10000-15000
    b) 15000-20000
    c) 20000-25000
    d) 25000 and above
8. **Family members accompanying the mothers**
    a) Spouse
    b) Parents/ In-laws
    c) Son / daughter
    d) Brothers / sisters in- laws
9. **Parity/ No of children**
    a) One
    b) Two
    c) Three
    d) Four
10. **Previous exposure lower segmental caesarean section**
    a) Yes
    b) No

PART-II A

TOOL-2

NUMERICAL RATING SCALE FOR PAIN (Pre intervention)

Instruction: Please place a tick (√) on the scale according to your level of pain at present.



NUMERICAL PAIN SCALE TO ASSESS THE LEVEL OF PAIN INTENSITY

The numerical rating scale comprised of a 10 cm horizontal line with end points marked as ‘0’ and ‘10.’ An increase in score denotes an increase in pain level and the score ranges from 0 – 10.

0 - No pain

1- 3 - Mild Pain

4- 6 - Moderate Pain

7 – 9 - Severe Pain

10 - Worst pain possible

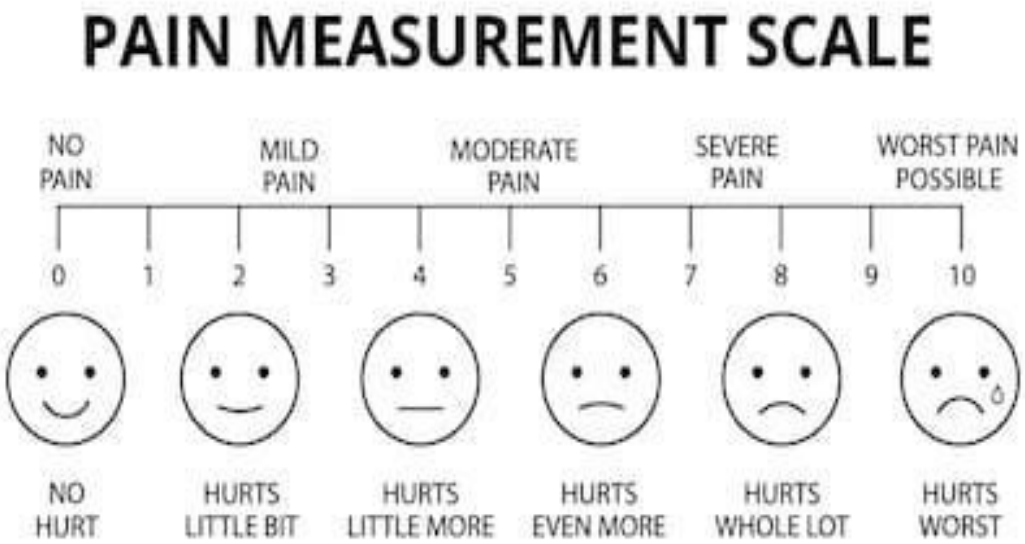
For analysis the score 0 was given to no pain, 1-3 mild pain, 4-6 moderate pain, 7-9 severe pain and 10 worst pain possible respectively.

PART-II B

TOOL-3

NUMERICAL RATING SCALE FOR PAIN (Post intervention)

Instruction: Please place a tick (√) on the scale according to your level of pain at present.



0 - No pain

1- 3 - Mild Pain

4- 6 - Moderate Pain

7 – 9 - Severe Pain

10 - Worst pain possible

For analysis the score 0 was given to no pain, 1-3 mild pain, 4-6 moderate pain, 7-9 severe pain and 10 worst pain.

PART-III

Measurement of Physiological variables including pulse, respirations and blood pressure.

PHYSIOLOGICAL VARIABLES	NORMAL RATE	PATIENT RESULT BEFORE PRE-TEST	PATIENT RESULT AFTER POST-TEST
PULSE RATE			
RESPIRATION RATE			
BLOOD PRESSURE			

ANNEXURE-11

DESCRIPTION OF THE PROCEDURE

INTRODUCTION

A good foot Massage is an incredible healing force that can help to alleviate many symptoms such as pain, headache, insomnia, chronic fatigue, dizziness, as well as help treat the underlying cause of many internal diseases such as Liver disease, Kidney disease, Heart disease, High blood pressure, plus virtually any disease known to man. It is also one of the most enjoyable experiences that we can have, if the proper hand and foot massage techniques are used. A proper foot massage is one of the strongest stress and pain relieving treatment.

MEANING

The word massage comes from the Greek word “Masso” means to knead or to press gently.

DEFINITION

Rubbing and kneading of muscles and joints of the body to stimulate their actions and vital function. It is a healing art.

HISTORY

Therapeutic massage has a long history in Thailand, with the techniques having passed unchanged down the centuries. Its roots can be traced back to ancient India where Jivaka Komarabhacca, a physician, who was a friend and contemporary of Lord Buddha, established the techniques, which are still used to this day, some 2,500 years ago. Knowledge of massage in Thailand has been handed down by word of mouth across the generations, from father to son, from mother to daughter and from teacher to pupil. With the advent of a

written alphabet, in the reign of King Ramkamhaeng the Great, Thai scholars began to prepare records of all aspects of Thai life and society, and the founding knowledge of what has become Thai massage was inscribed for future generations. Sadly, most of these ancient records were destroyed in 1776 when Thailand's illustrious capital of Ayuthaya was sacked by the Burmese invaders. What little that was left was literally graven in stone when King Rama III, wishing to preserve the ancient traditions, had the remaining texts inscribed on the walls of one of the best known of Bangkok's temples, called Wat Poh. Nowadays there are many different kinds of massage practiced in Thailand, and of the most interesting of these is foot massage. The theory is simple but the practice is far more complex because the force applied by the fingers must be very carefully and precisely directed to a specific nerve on the foot. Each part of the foot is reputedly linked to another, often distant, part of the body, with influence extending not just to the muscles but also to the vital organs as well.

CLASSIFICATION OF MASSAGE

According to Dr Kellog

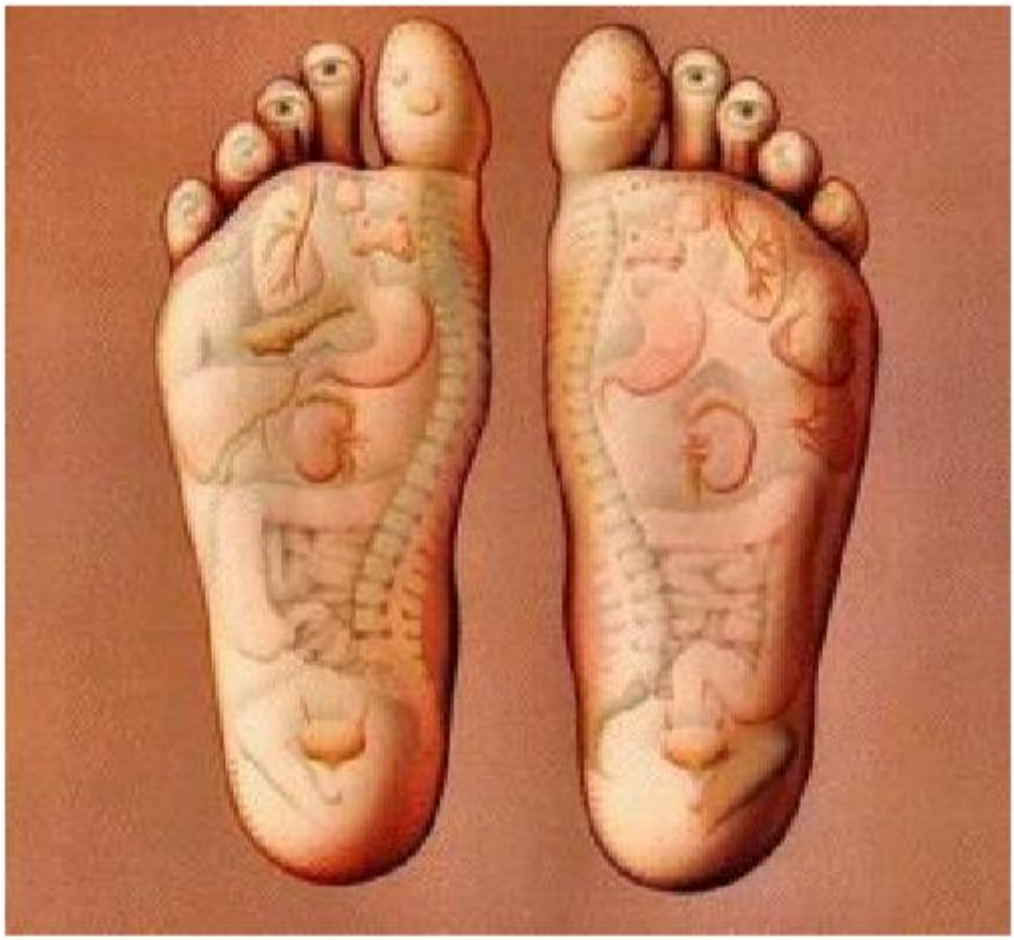
- Touch
- Stroking
- Friction
- Kneading
- Percussion
- Vibration
- Joint movement

POINTS TO BE CONSIDERED DURING THE MASSAGE

- Comfort and support of the patient
- The bed should be wide and good in position
- Comfort of the operator
- The room should be warm and noise free
- Massager should not have cold extremities
- Massager should have good physical strength
- Massager should not have any bad habits
- Massager should have good knowledge and skill

STEPS IN FOOT MASSAGE

- Lubrication of the foot along with the soul
- Give friction with the palms to the soles by grasping, the leg with one hand at ankle
- Press the soles on reflex areas with the tips of thumbs of both hands over entire soles
- Knuckle stroking with the right hand over the soles
- Give friction to the foot with the ends of fingers upon the dorsum of foot and then sides of the foot vigorously from toes to heel.
- Thumb kneading and near the heel with the tips of fingers several times
- Squeezing of the foot
- Toe stretching
- Joint movements to ankles



EFFECTS OF MASSAGE

Rejuvenation

The most immediate benefit of getting a foot massage is the release of physical and mental tension from the body. As blockages are removed and full energy is restored, cells are rejuvenated with fresh oxygen. According to Reflexology of Wisconsin, the aim of foot massage is to unify mind, body and spirit in a state of relaxation and healing.

Biological Effects

According to Reflexology of Wisconsin, foot massage is useful for normalizing the functioning of glands in the body. A foot massage is believed to boost circulation and assist digestion. Someone suffering from sinus congestion may find quick respiratory relief when getting a foot massage.

Pain Reduction

One might wonder how it is possible that applying pressure to a point on the foot can actually relieve pain in other places of the body. Nevertheless, a person experiencing back pain, a migraine headache or arthritis pain may get natural pain relief from foot massage.

Childbirth

When a woman has passed her due date to give birth, a foot massage may be an effective natural way to induce labor. One reflexology point is located just inside the heel of each foot. Another is located in the arch of the foot, just in front of the heel. A third is found between the big and second toes. According to Maternity Accupressure.com, all of these points should already feel tender to the touch. Firm pressure should be administered and released when a contraction begins. A foot massage is also very useful during delivery. While applying pressure to these points on the foot and in doing so the woman may find some pain relief to bring her through her contractions

CONTRAINDICATIONS

- Acute infectious diseases
- Febrile conditions
- Skin disease
- Various kinds of tumors, particularly malignant
- Psychosis
- Abscess
- Hematological disorders
- Varicose veins

CONCLUSION

A foot massage is more than just a relaxing treatment. When performed by a trained therapist, foot massage provides many benefits to the patient. The body is treated as a holistic unit and applying pressure to specific points on the foot is used to reconnect the energy pathways throughout the body. This energy exchange freshens the blood supply and has a soothing effect on the nervous system.

ANNEXURE-12

PHOTOGRAPHY OF THE STUDY