A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE Vs REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT, TAMILNADU

By

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A Thesis submitted to

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This thesis does not contain any part of work that has been submitted for the award of any diploma, degree, associate ship or other similar title in this university or any other university without citation.

SIGNATURE OF CANDIDATE

Ms. ARZTA SOPHIA

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ABBREVIATIONS

WHO	World Health Organization
UNICEF	United Nations Children's Emergency Fund
NICU	Neonatal Intensive care unit
CAM	Complementary Alternative Medicine
RCTs	Randomized Clinical Trials
NIH	National Institute of Health
FIL	Feedback Inhibitor of Lactation
LSCS	Lower Segment Caesarean Section
C I	Confidence Interval
RCT	Randomized Controlled Trial
OR	Odds Ratio
MMR	Maternal Mortality Rate
MDG	Millennium Development Goal
SRS	Sample Registration System
TCM	Traditional Chinese Medicine

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ABSTRACT

Lactation and breast feeding are essential for the mother and the neonate in the early period of life to protect and promote health. Lactation is very important for successful Breastfeeding, Good lactation is established only when the mother is relaxed and free from distractions. To promote this, reflexology and acupressure is used as a complimentary alternative medicine to enhance lactation and breastfeeding.

Statement of the Problem:

A comparative study to assess the effectiveness of acupressure Vs reflexology on lactation among immediate postnatal mothers in selected hospitals, Kanyakumari district, Tamilnadu.

Objectives

1. To assess the adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure
2. To assess the adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology.
3. To compare the pretest and posttest scores on adequacy of lactation in experimental group I and II among immediate postnatal mothers.
4. To determine the effectiveness of acupressure Vs reflexology on adequacy of lactation between experimental group I and group II.
5. To find out the association between posttest scores on adequacy of lactation among experimental group I and II of immediate postnatal mothers with the selected demographic variables.

Hypothesis

RH_1: There is a significant difference in adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure.

RH_2 There is a significant difference in adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology

RH_3: There is a significant difference between acupressure and reflexology on lactation among immediate postnatal mothers on experimental group I and II.

RH_4: There is a significant association between posttest score and adequacy of lactation with selected demographic variables in group I and group II among immediate postnatal mothers.

Research Methodology

A Quas experimental design was used in this study. The sample size of the study was 250 immediate postnatal mothers. The instrument used for data collection were breast assessment tool, breast feeding tool and structured interview to collect demographic variables. Acupressure experimental group I and reflexology for experimental group II was given to immediate postnatal mothers on individual basis. Effectiveness of acupressure and reflexology among immediate postnatal mothers was assessed using breast assessment and breast feeding tool.

Results

- Acupressure and reflexology are effective in promoting lactation adequacy on postnatal mothers. The 't' test value for experimental group I and II, level of breast secretion and breast feeding was 15.73 and 14.12 ($P< 0.05$).
- Effectiveness of acupressure vs reflexology on lactation, 't' test value was 10.69 for breast secretion and 9.86 for breast feeding in experimental group I and II.
- There is no significant association between posttest score of breast secretion with demographic variables of immediate postnatal mothers such as occupation, monthly income, type of diet, antenatal check up, gestational age, initiation of breast feeding in experimental group I and II.
- There is no significant association between breast feeding with demographic variables such as occupation, monthly income, type of diet, initiation of breast feeding and number of times breast feeding given in experimental group I and II.
- There is significant association between posttest scores of breast secretion with age of the mother, education, family support, birth weight, type of feed given and sex of the baby in group I and II.

There is significant association between posttest scores of breast feeding with age, education, family support, birth weight, type of feed given and sex of the baby in experimental group I and II.

Conclusion

Both acupressure and reflexology were an effective intervention to promote lactation among immediate postnatal mothers. The results of this study showed that complementary therapies were useful in promoting lactation among immediate postnatal mothers.

Implications

The study has major implications for nursing practice, nursing education, nursing administration and nursing research.

(Key words: Acupressure, Reflexology, Immediate Postnatal Mothers, Adequacy Lactation)

CHAPTER - I

INTRODUCTION

CHAPTER - I

INTRODUCTION

God created women with an innate ability to feed her neonate with breast milk which is naturally healthy, economical, convenient and important for proper development. Breast milk is best for the neonate. Mother is the greatest gift from God to the world. Every woman should be respected and supported. Child birth creates an immense joy in the whole family. It is a joy and expectation of the entire family[1, 2, 3]

Mother is a person who can completely fulfill the needs of the new born baby in the early neonatal period by feeding her neonate with breast milk.[4] The postpartum period involves the mother passing through many changes emotionally and physically.[5]

The word lactation is derived from a Latin word lactan which means sucking. The word which is used to refer to the action of lactating comes from the word lactate which means to produce and to supply breast milk to feed the baby**.** Lactation is under the control of numerous endocrine glands particularly the pituitary hormones prolactin and oxytocin.[6] Lactation is influenced by the sucking process and by maternal emotions. Milk production is influenced by the maternal well being. Child birth and breast feeding are unique experience in the life of each woman. Human milk is remarkable and renewable resource. It cannot be duplicated. Human milk has no substitute and the breast is the natural apparatus for feeding the baby.[7]

Breast milk is not only the best, but also must for the wellbeing of the babies. Lack of feeding especially exclusive breast feeding during the first few days of baby's life is important. W.H.O. estimates that 1.5 millions of infant's life can be saved each year through breast feeding**.**[8] Breast feeding is the most important thing for every mother and baby. It is the unique experience to be cherished**.**[9]

Breast milk is always available at proper temperature and requires no preparation. It is fresh and free from contamination and reduces the chances of gastrointestinal disturbances.[10] A healthy mother secretes 450 ml to 600 ml of breast milk daily. The human milk gives about 70 kilo calories per hundred milliliters. Human milk is highly complex, species specific uniquely designed to meet the needs of the human neonates. Breast feeding is also known as nursing the neonate. It is an easy and in expensive way to feed the baby. After birth the health of the baby depends on the nurturing practice adapted by the mother and the family. The breast milk is one of the fundamental rights of each child. The first milk secreted is called colostrum during the first 2 days after the birth of the child. Colostrum is yellowish sticky and a perfect food for the newborn for its sterile stomach which has a laxative property and evacuates the bowl thus meconium is eliminated from the gut.[11]

In the millennium development goals by 2015 reduction of child mortality by early exclusive and continued breast feeding is important. Breast feeding reduces the infant mortality and morbidity rates.[12] Healthy child makes a wealthy nation. Naturally the fetus gets its nutrition from his or her mother before delivery. After the baby is born the neonate gets warmth, develops an attachment and gets comfort from the mother. Early initiation of breast feeding can prevent 22% of all deaths among the neonates below one month in developing countries. All the neonates could be fed with breast milk from day one, 16% of neonate deaths could be prevented.[13]

Care of the mother and baby is very important during the neonatal period because it lays the foundation for good health. Breast milk is the safest and most wholesome nourishment for the baby and protects it against illness. The breast milk contains essential nutrients such as proteins, fats, sugars, vitamins, minerals and anti infective factors.[12]

About 1.4 million deaths of child below 2 years were due to sub optimal breast feeding. 20 % of neonatal deaths can be prevented by exclusive breast feeding.[10]

Nutrition is the key factor in promoting health of a new born. Breast feeding the neonate is giving nourishment. It also gives a social and psychological bonding between the mother and the baby.[14] Previous researches have shown that babies fed on infant formula from a younger age tend to have more health issues in later life. Good nutrition plays a vital role in the development of an infant.[15]

Breast feeding gives numerous benefits both for the infant and the mother. Breast milk provides babies with essential nutrients and the facts are clear that breast fed babies has less chance of getting diarrhea and vomiting infections. The breast fed babies also have fewer chest infections, are less likely to become obese, have asthma and lower respiratory infections, ear infections, among others.[16] It is positively associated with children's cognitive development.[17,18,19] Breast feeding also gives the benefit to the mother by reducing the risks of obesity and cutting back on household expenses.[20]

The Complementary and Alternative Medicine (CAM) can be defined as "Medical and health care practices outside the realm of conventional medicine, which are yet to be validated using scientific methods. The NIH defined CAM as″ Healthcare systems, practices, and products not presently considered to be part of conventional medicine.[21] Complementary and Alternative Medicine (CAM) are based on the philosophies and techniques which provides a system of diagnosis, treatment and prevention of diseases. The CAM gives importance to the whole person as an unique individual, on the energy of the body, it influence on health and diseases, on the healing

power of nature and the body's own ability to heal itself on the treatment of the causes of the disease, not symptoms of the diseases. The CAM therapies are used with the intention of reducing the stress, improving the wellbeing, preventing the illness, avoiding or minimizing the side effects of allopathic medicines and symptoms, and or to control or cure diseases.[22]

Acupressure is an ancient healing system in China which uses the fingers to press on the key points on the surface of the skin to stimulate the body's natural self-curative abilities. When the key points are pressed, the key points release muscular tension and promote the circulation of the blood and the human body's life force as well as the ability which helps in healing. Acupuncture and acupressure use the same key points on the human body, but acupuncture system uses the needles, where as the acupressure gives us the gentle but firm pressure of the hands as well as the feet.

Randomized clinical trials were conducted on the efficacy of acupressure for the disease symptoms management. Findings from 16 out of 23 research studies show that primarily for the management of patient's nausea and vomiting during the pregnancy and during the chemotherapy. Findings from 9 out of 10 research studies show that the acupressure is effective for reducing pain in patients during labour, postpartum lactation and after trauma. Findings from four research studies show that acupressure is effective in the management of dyspnea. Findings from six research studies show that acupressure is effective in reducing fatigue and insomia in the sample population. So it can be concluded that acupressure may be useful for the management of multiple disease related symptoms in a variety of patients. The acupressure as an intervention which may help to improves the patient outcomes.[23]

Reflexology is one of the alternative and ancient therapy known in Egypt, China and India which promotes the body's own healing power. It is suitable for any age groups, from babies to senior citizens. Reflexology is a natural healing therapy which is highly effective in dealing with many health complaints. Foot reflexology promotes equilibrium and well being with long lasting impact. The benefits of reflexology is that it promotes breast milk secretion**,** reduces the stress and tension, improves the blood circulation and activates the lymph drainage, assist in elimination of toxins, strengthen the immune system and harmonizes vital functions, enable a deep state of relaxation and well being and ease pregnancy, labour and delivery.

A randomized clinical trial study was conducted on Reflexology is a popular form of complementary and alternative medicine (CAM). The aim of this study is to critically evaluate the evidence for or against the effectiveness of reflexology in patients with any type of medical condition. Six electronic databases were searched to identify all relevant randomized clinical trials (RCTs). Their methodological quality was assessed independently by the two reviewers using the Jadad score. Overall 23 studies met all needed criteria. They relate to a wide range of medical conditions. Five give the findings as positive. Eight RCTs suggested that reflexology is effective for the following conditions such as diabetes, lactation, premenstrual syndrome, cancer patients, multiple sclerosis, symptomatic idiopathic detrusor over-activity and dementia.[24]

1.1 BACKGROUND OF THE STUDY

Puerperium is a period in which mother has to under go many changes physiologically and psychologically. All her systems are reverting to her normal state except the breast. This is a period between early puerperium seven days and late up to six weeks. This period of care and support is very essential for the mother which promotes breast feeding. [25]

In the year 2007 the number of children in the world dying before the fifth birthday was below 10 million to 9.7 million. Annually out of 2.1 million deaths in India. Most of the deaths occurred during the neonatal period. Early initiation of breast feeding and exclusive breast feeding for the first 6 months are the key interventions to achieve millennium development goal I and millennium development goal IV with reduction in children malnutrition and mortality 309000 new born die in the first 24 hours of birth every year in India.[26]

The number of children in India breast fed with in first hour of life is less than 43% in urban areas, 41% in rural India. Tamilnadu do not fair greatly when it comes to initiating breast feeding with in hours, 64% Kerala and 55 % in Tamilnadu.[27]

In India almost 96% of mothers breast feed their babies, but accordingly to National Family Health Survey – 3, the practice of initiation of breast feeding with in one hour of birth is only 24.5% and exclusive breast feeding is 46.4% of mothers.[28] More than 10 million children in the world die each year. Most of these deaths are due to preventable diseases and majority of these occurs in poor countries. In developing countries like India one in every ten children dies before his fifth birthday. About 70 % of the mortality is due to preventable causes like diarrhea and respiratory infections.[29]

Breast feeding can annually reduce a minimum of 3,436,560 respiratory infections and 3,900,000 episodes of diarrhea in India. Breast feeding can also prevent 4915 deaths annually due to breast cancer in India.[30] One out of every ten infants dies before the fifth birthday as compared to 1 in 143 children from high income countries. According to UNICEF infant mortality in India was 57/1000 live births and neonatal mortality was 43/1000 live births in the year 2008.[31]

Among 9.7 million under 5 deaths globally 2.1 million are in India alone. 27 million births occur every year in India out of which 1.7 million children die before one year of age and 1.08 million newborns die with in one month of age. Most of these deaths during first few months are related to suboptimal breast feeding.[32]

In India 23% of women experienced breast feeding problems during puerperium. In the first two weeks 33% of postnatal mothers experience breast feeding problems, 23% in the following weeks. In India women's breast feeding problems accounts for 31.7% in the first month of life. This can be prevented by proper support, intervention and education. About 120 mothers had inadequate feeding which prepared them for early weaning.[33]

In developing countries like India about 34 of every 1000 live births results in neonatal deaths. In India the neonatal mortality is 69/1000 live births in 1980, 53/1000 live births in 1990. In recent years neonatal mortality rates has remain static and decreasing only from 48 – 44/1000 live births from 1995 to 2000.[34] Exclusive breast feeding of infants less than 2 years of age has the greatest impact on child survival with the potential to prevent over 8 lakh deaths in children under five in the developing world.[35]

Acupressure is an ancient Chinese technique based on the principles of acupuncture, and involves the use of finger pressure (without the needles) on specific points along the body. Acupressure can help alleviate ailments such as stress, breast pain and aids in breast milk production.[36]

Reflexology is a gentle form of therapeutic treatment applied to the feet and sometimes to the hands. Reflexology is considered to be a holistic healing technique that aims to treat the individual as a whole, in order to induce a state of balance and harmony in body, mind and spirit. By applying gentle pressure at the reflexes point at the dorsum where the toes join the feet. It helps to normalize the function of hypothalamus to synthesize and transport of oxytocin to the posterior pituitary there by promoting the milk ejection reflex in to the ampula of the lactiferous ducts.[37]

Nowadays, the usage of complementary alternative medicine (CAM) to manage hypo lactation is remarkable. However, one of the major reasons cited for the current revival of CAM is the growing awareness of occurrence of side effects due to women misconceptions that these medicines are inherently safer and more healthful. It was highly informative to assess the impact of educational sessions about hypo lactation management using CAM on postnatal mother's knowledge and awareness.

Acupressure Therapy is **a**n ancient healing arts developed in Asia over 5,000 years ago. Using the power and sensitivity of the hand instead of needles, acupressure points are effective in relieving stress-related ailments, in self treatment and in preventive health care. Acupressure reduces tension, increases circulation, reduce stress and pain.[36]

Reflexology is one of the mild forms of exercise by stimulating the function of the vital organ through, massage and applying pressure to reflex points on the joints, foot and hand. Reflexology therapists believe that each point corresponds to different

body parts and functions. Reflexology is a therapy using the pressure points of the hands and feet which gives a reflex action through the nervous system of the body. Reflexology offers a natural approach to restoring balance and harmony within the body, mind and spirit. Reflexology is an entirely natural treatment which aims to normalize and harmonize the functions of the body.

TREATMENT APPROACH FOR LACTATION

Alternative medicine

The effectiveness of complementary remedies used to promote lactation:

- **Garlic.** Consuming 20 grams (gm) of garlic cloves in 200 ml of milk or 100 ml of water, then add honey/sugar/jaggery half tea spoon. This promotes lactation among postnatal mothers.

- **Dry Fish.** Dry fish which is soaked in salt and dried.50 grams (gm) of dried fish is given which promotes breast milk secretion.

- **Herbal remedies.** Fenugreek has a positive effect in increasing the production of milk in nursing mothers. It also maintains the glycemic effect in women.

- **Shavasana.** This is given to a mother who has decreased breast milk secretion 2 times a day for 15 minutes to improve breast milk secretion.

- **Metaclopramide.** This increases the serum prolactin and milk production among lactating women. Daily dose of 30 and 45 milligram (mg) will be effective.

- **Domperidone.** It produces significant increase in prolactin level and enhancing lactation among mothers of preterm infants, lactation after caesarean delivery at full term. Dosage 10 milligram (mg) 3 times daily, 20 milligram (mg) 3 times daily.

- **Sulpiride.** It is a selective dopamine antagonist 50 milligram (mg) twice daily**.**
- **Intranasal Oxytocin substitutes.** Endogenous oxytocin is given as nasal spray or nasal drops dose of 2 IU per drops can be given to promote milk let down reflex.[38]

There are other natural remedies commonly used for adequacy of lactation, including:

- Fennel seeds
- Cumin seeds
- Cinnamon
- Acupuncture
- Music therapy
- Acupressure
- Breast massage
- Reflexology.[39]

1.2 NEED AND SIGNFICANCE OF THE STUDY

Lactation is a physiological process. Human milk is nature's perfect recipe for baby's growth and development. This special blend of nutrients nourishes the baby and provide a unique balance of fat, vitamins, minerals, sugars and proteins. Breast milk empowers babies with disease fighting immunoglobulin to protect babies during early weeks of life.[40]

The first postpartum week is a critical period for establishment of breast feeding normally during the first 2 days minimal amount of milk is produced. But it will be significantly increased in the 2nd and 3rd postpartum days when lactogenesis II occurs. Therefore lactation difficulties during the first postpartum weeks are associated with risk of early termination of breast feeding and delayed onset of milk production. So there is an need for intervention and support during the postnatal period.[41]

According to United Nation Children Fund state that the world children report 2011, of the 136.7 million babies born worldwide everywhere, only 32.6% are breast feed exclusively for the first 6 months.[42] The release of healthy people 2010 projected that 75% mothers breast feed in early postpartum, 50% for 6 months and 25% for one year.[30]

The World wide maternal perception of insufficient milk production is a most common reason reported by mothers for early cessation of breast feeding (30%-80%).[43] Many authors have reported that the main reason for difficulty in initiating breastfeeding belief that just mother's milk is not sufficient for the baby. Care of the mother and baby in the first 24 hours of any child's life is critical for the health and well being of both.[44]

The life of most of these babies can be saved by skin to skin contact between mothers and new babies and exclusive breast feeding for the six months. In 2012 approximately 6.6 million children worldwide, 18000 children die per day before reaching their fifth birthday.[42] Infant mortality rate is regarded as an important sensitive indicator of health status for community.[36] It reflects the effectiveness of intervention for improving maternal and child health. Major part of infant mortality rate is contributed by neonatal mortality rate.[43]

Around 7.8 lakh of new born dies in the first 28 days. India has the highest newborn deaths in the world. Of every 1000 children born in India 41infants do not live up to the first birthday. Most of the death can be prevented by breast feeding alone by bringing down the number of infant deaths. Exclusive breast feeding can be effective than improving sanitation in reducing neonatal deaths and diseases in developing countries. Babies who were exclusively breast fed are 14 times less likely to die in the first six months.[45]

"Healthy people in 2020" its target include 82% of infants to be breast fed 23.7% of infants with exclusive breast feeding for the first 6 months of life. The first 2 days of breast feeding determine the success of breast feeding. Mothers who breast fed experiences both short and long term health benefits. Human milk contains number of components that are not produced elsewhere in the body such as lactose, casein and alpha-lactalbumin. The rapid increase in milk production occurs in 30-40 hours postpartum. [46]

A study was conducted on lactation problems and their management. The objective is to review on common problems associated with Breast Feeding and their management. It reveals several common problems encountered by postnatal mother during the breast feeding period, such as breast engorgement, plugged milk duct and breast infection, which lead the mother to inadequate breast milk secretion. Incorrect techniques of breast feeding can lead to nipple sore, cracked nipple which acts as important risk factors to lactation problems. It reveals that common lactation problems can be solved by proper breast feeding techniques, education and intervention.[47]

A study was conducted to promote easier latching during breast feeding this promotes sufficient milk transfer from the nipple and areola, when copious amount of breast milk is produced. Pain and tenderness in the nipple causes discomfort in the mother which prevents them from breast feeding the neonate in the early postnatal period.[48]

Breast feeding can help in the reduction of infant mortality and morbidity. All the babies regardless of the type of delivery should be given early exclusive breastfeeding up to 6 months of age.[40]

A Cross Sectional survey was employed to assess the infant feeding practices and indulging factors among primi mothers by using Random Sampling 240 samples were selected. A semi structured questionnaire was used to collect the data and face to face interview was conducted. 27% had adequate knowledge, 36% had moderate knowledge, 37% had inadequate knowledge in exclusive breast feeding and it is strongly influenced by mother's age, education and employment. [49]

Studies shows that the trials and tribulations of the primi mother in breast feeding structured questionnaire on knowledge and difficulty encountered during breastfeeding were formulated. The demographic data such as age, education, occupation, socioeconomic class were also included. This study showed 91.7%, delivered at term, 65% delivered by caesarean section. Knowledge on positioning the breast and nipple were 54% and 55%, feeling of insufficient secretion were 19.44%, 20.37% had pain in the breast, 3.70% had inverted nipple. The Support system for primi mothers were 65% mothers, 20% partner, 13.89% mother in-laws, 12% doctors and 5% nurses. This study showed that counseling nursing mothers for proper lactation

before delivery and continued thereafter will promote successful and sustained breastfeeding.[50]

Determine the effect of acupuncture for the sustenance of breast feeding during the first 3 months, 90 women were randomly selected and divided into two groups, acupuncture and observation group. Acupuncture therapy was given twice weekly for three weeks. At the end of the third week, post enrollment was significantly higher in the acupuncture group than the observation group (51.2% versus48.8%) (60% versus100% $P<0.03$). This clearly showed that acupuncture treatment were more effective in maintaining breast feeding until the third month of newborns lives.[51]

A clinical trial study was conducted among 150 pregnant women, the samples were divided equally into three groups. One group was an intervention group, one control group and one educational group. The intervention group was given training on application of acupressure at GP21 point. Educational group received education related to exclusive breast feeding and the control group received the routine care. The infants weight and height were measured at first month and third month of birth. The mean age of the mother in training group, education group and control group were 23 – 24 years. There was a significance difference found between the 3 groups after one month of intervention. The study concluded that face to face training and education was effective in promoting breast feeding.[52]

The effectiveness of reflexology on lactation the investigator gave foot massage for hundred new mothers for 10 – 15 minutes and found lactation was initiated in 43.47 hours in the treatment group. In the control group it was 66.97 hours. It was found that foot massage was helpful in promoting lactation than drugs.[53]

The investigator found that immediate postnatal mothers perceived less milk supply during the first postnatal day. The common complaints were not enough milk to satisfy the needs of the newborn. So the investigator selected non pharmacological method to promote lactation. It is cost effective and has no side effects both for the mother and the neonate. Acupressure and reflexology further promotes early recovery of the immediate postnatal mothers, enhances comfort and aids in exclusive breast feeding.

1.3 STATEMENT OF THE PROBLEM

A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE Vs REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS AT KANYAKUMARI DISTRICT, TAMIL NADU

1.4 OBJECTIVES

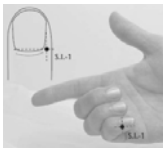
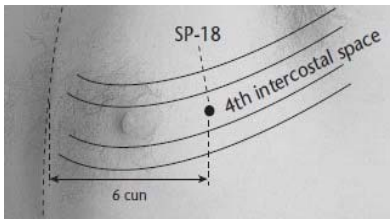
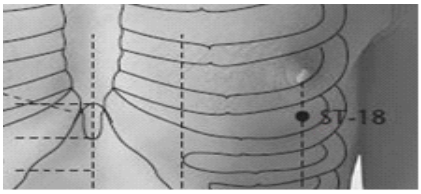
6. To assess the adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure.
7. To assess the adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology.
8. To compare the pretest and posttest scores on adequacy of lactation in experimental group I and II among immediate postnatal mothers.
9. To determine the effectiveness of acupressure Vs reflexology on adequacy of lactation between experimental group I and group II.
10. To find out the association between posttest scores on adequacy of lactation among experimental group I and II of immediate postnatal mothers with the selected demographic variables.

1.5 OPERATIONAL DEFINITIONS

1.5.1 Compare the effectiveness

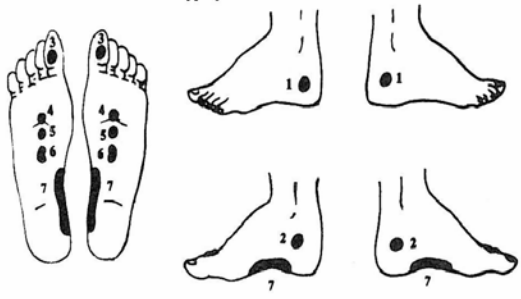
It refers to significant increase in breast secretion and breast feeding, as determined by significant difference between the post test scores of experimental group I (Acupressure) and experimental group II (Reflexology).

1.5.2 Acupressure (Experimental group I)

Acupressure Points and Location	Technique / Procedure
 • **Shaozi (SI 1)** This point is located 1 cun posterior to the corner of the nail on the ulnar side of the little finger.	• The immediate postnatal mothers were made to lie down comfortably. The investigator gave acupressure to the alternate fingers at the Shaozi (SI 1) for 6 seconds and release for 2 seconds with out pressure.
 • **Tianxi (SP 18)** This point is located at the centre of the 4th intercotal space 6 cun from the midline above the nipple.	• Acupressure was given on Tianxi (SP 18) on each breast for 6 seconds and released for 2 seconds with out pressure. This was continued for 5 minutes on each point.
 • **Rugen (ST 18)** This point is located between the 6th intercostal space below the nipple I cun below ST 17.	• The investigator gave pressure on Rugen (ST 18) for 6 seconds and release for 2 seconds with out pressure. This was continued for 5 minutes on each point. • The total duration of intervention is 30 minutes (10 minutes on each hand and breast) 3 times for 3 days.

1.5.3 Reflexology (Experimental group II)

Reflexology is a technique; investigator applied the pressure on the reflex point with thumb

Reflex points	Technique/ Procedure
	• The immediate postnatal mothers was made to lie down comfortably in supine position
	• Relaxation exercises – massage the foot all over slowly and gently twist the spine area on the foot. **(1 minute for each foot)**
	• Thumb walking up and down on the spine **(2 minute for each foot)**
	• Stimulate the meridian points such as • Ovary • Uterus • Pituitary gland and endocrine system • Solar plexus • Adrenal gland • Kidney • Sympathetic nervous system (**1 minute for each point, 7 minutes/foot**). Total duration of treatment was 15 minutes/foot (total treatment duration 30 minutes three times a day)

1.5.4 Lactation

Lactation includes

1. **Breast assessment** includes Breast, Type of nipple, Shape of nipple after feeding, Comfort level of nipple, General feeding and satisfaction of the mother.
2. **Breast feeding** includes Alertness of the baby, Audible swallow, Number of times urine passed, Number of times motion passed, Duration of sleep, Satiety of the baby.

1.5.5 Immediate postnatal mothers

Immediate postnatal mothers refers to the women who have delivered the full term baby within first, second and third postnatal days.

1.6 HYPOTHESES

Level of significance at 0.05

RH_1 : There is a significant difference in adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure.

RH_2 : There is a significant difference in adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology

RH_3 : There is a significant difference between acupressure and reflexology on lactation among immediate postnatal mothers on experimental group I and II.

RH_4 : There is a significant association between posttest score and adequacy of lactation with selected demographic variables in group I and group II among immediate postnatal mothers.

1.7 ASSUMPTION

The study assumes that:

1. Immediate postnatal mothers have difficulty in breast feeding in first week of puerperium.
2. Acupressure and Reflexology on lactation has an impact in promoting adequacy of lactation and relaxation.
3. Immediate postnatal mothers require complimentary therapy to maintain lactation for exclusive breast feeding.

1.8 DELIMITATIONS

The study was limited to,

- Immediate postnatal mothers who have delivered their full term baby.
- Immediate postnatal mothers admitted in C.S.I. Hospital Neyyoor and Nagercoil.
- Comparing the effectiveness of Acupressure Vs Reflexology on lactation.
- The study limited to 250 immediate postnatal mothers.

1.9 CONCEPTUAL FRAMEWORK

Conceptual framework is a theoretical approach to the study of problems that are scientifically based and emphasizes the selection and clarification of its concepts. A conceptual framework states functional relationship between events and is not limited to statistical relationships.

1.9.1 CONCEPTUAL FRAMEWORK BASED ON CALLISTA ROY'S ADAPTATION MODEL WAS USED FOR THE PRESENT STUDY

Theoretical framework provides clear description of variables suggesting ways or methods to conduct the study and guiding the interpretation, evaluation and integration of study findings.[54]

A theoretical framework can be defined as set of concepts and assumptions that integrates them into meaningful configuration.[55]

This study is based on Callista Roy's adaptation model, **(1984)** which would be relevant to promote the adequacy of lactation by providing acupressure and reflexology among immediate postnatal mothers.

Callista Roy's adaptation model is an "open" system. This system is characterized by input, control process, effectors and output. In these system humans has to be on constant change to adapt to different stimuli which focus on change in a person towards change in behaviour which affect the behaviour of a person. There are regulators which regulate the coping mechanism which response automatically to the changes through neural, chemical and endocrine process such as perception, information processing, learning, judgements and emotion which leads to adaptive response to survival, growth, reproduction and mastery to adapt to the health care system.

The main concepts in Callista Roy's adaptation model are:

1. Input

The adaptation level of the person acts as an input. The internal or external stimuli found in a person have a positive influence on the individual.

2. Coping Process

It is also known as control process which is used by the person to adapt him to modify his behavior. It may be inherited or present with in an individual.

3. Effectors

The regulator and cognator mechanism works with in the four adaptive models, Physiological functions, self concepts, role functions and interdependent.

4. Output

Output is responses made by the person both external and internal stimuli.. It is an adaptive response when he is able to attain the goal, ineffective when the goal is not attained. Output serves as a feedback to the environment.

5. Feed Back

Ineffective adaptive response when the goal is not attained Reinforcement and follow up is needed.

1.9.2 APPLICATION OF CONCEPTUAL FRAMEWORK BASED ON CALLISTA ROY'S ADAPTATION MODEL FOR THE PRESENT STUDY

The main concepts in Callista Roy's adaptation model are:

1. Input

In this study the inputs were the internal and external stimuli of immediate postnatal mothers that include age, education, occupation, income, support system, gestational age, sex of the baby, type of diet, onset of breast feeding and assessment of adaptive behavior by using breast assessment and breast feeding.

2. Control Process

The researcher helps the mother to adapt to the lactation physiology by stimulating the endocrine system through acupressure administered to experimental group I. Reflexology was administered to experimental group II to eliminate toxins, wastes, to strengthen and balance the energy flow in the body thereby promoting and maintaining lactation after half an hour (30 minutes) of initiation of breast feeding.

3. Effectors

Effectors refer to change in behavior and adaptation to lactation physiology leads to adequate lactation, satisfaction of mother and baby.

4. Output

This includes acupressure and reflexology is effective in promoting lactation among immediate postnatal mothers.

5. Feed back

If ineffective adaptive response follow up care of the immediate postnatal mothers is given.

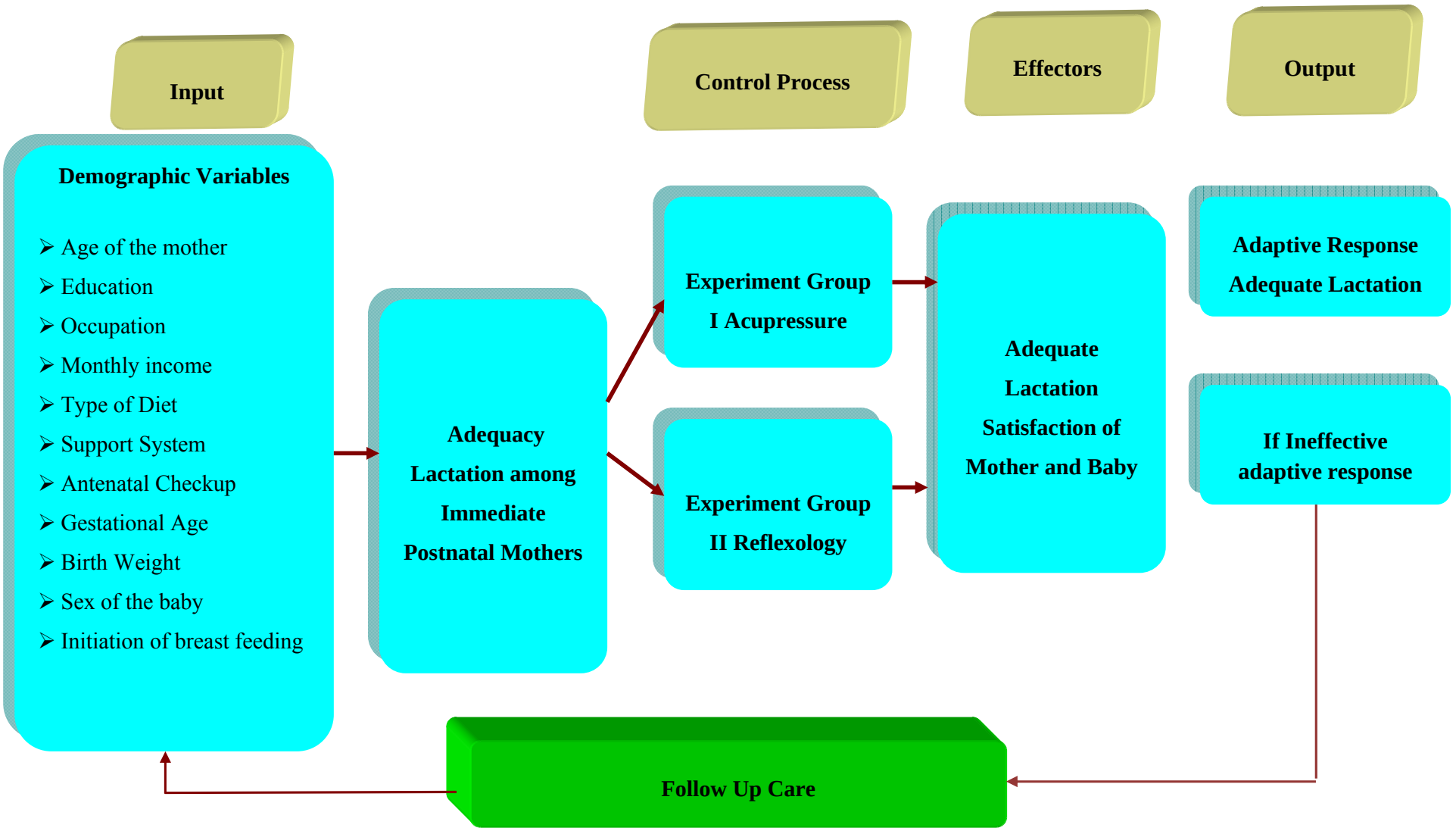


Fig.1.1.1. Conceptual Frame Work based on Callista Roy's (1984) adaptation model

SUMMARY

This chapter has dealt with Introduction, need for the study and statement of the problem, objectives, operational definitions, hypothesis, delimitation and conceptual framework of the study.

OUTLINE OF THE REPORT

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

Chapter II : Review of related literature.

Chapter III : Review Methodology which includes research approach and design, setting, population, sample, sampling technique, data collection, description of tools, validity and reliability of tools, development of acupressure and reflexology intervention, pilot study, data collection procedure and plan for analysis of data.

Chapter IV : Analysis and data interpretation.

Chapter V : Discussion.

Chapter VI : Summary, conclusion, nursing implications, recommendations and limitations of the study.

The report ends with bibliography and Appendices.

CHAPTER – II

REVIEW OF LITERATURE

CHAPTER – II

REVIEW OF LITERATURE

This research is based on thorough undertake of review of literature which familiarize the researcher themselves with the knowledge base. The most important of research literature review is written part of summary on state of evidence related to research problem.[56]

Review of literature serves as an essential background for any researcher for understanding current knowledge of the topic, eliminate the significance of new study, formulating and delimit the problem, suggesting a theoretical framework to choose most appropriate design for study, throws light on the flexibility and reveals constraints of data collection.[56]

The major steps in preparing written research review includes formulating a question, conducting a search through relevant resource retrieving, abstracts and encoding information, analyzing the aggregated information and critiquing the studies, and involves written summary preparation. The review of literature related to present study were from, unbound Medline, books and published articles searched to broaden the understanding and gain insight into the selected problem under study.

The review of literature is classified under the following headings.

2.1 Part 1: Review literature on studies related to

2.1 Reviews related to studies on lactation.

2.2 Reviews related to studies on lactation problems among postnatal mothers.

2.3 Research studies related to effectiveness of acupressure on lactation.

2.4 Research studies on effectiveness of reflexology on lactation.

2.1 REVIEW RELATED TO STUDIES ON LACTATION

A prospective study on 500 healthy mothers' infant pair delivered by both vaginal and caesarean section was selected as a sample for the study. Structured questionnaire, medical record and direct observation was made to obtain information from mother initiated breast feeding within 30 minutes in vaginally delivered mothers and after 30 minutes of post operative recovery among caesarean mothers. The association between breast feeding and factors were determined by using chi square test. The study revealed mean time of breast feeding initiation was 3.35-/+2.6 hours in mothers delivered vaginally. The mean and standard deviation is 6.50-/+3.4 hours and 5.9-/+1.9 hours in caesarean section. Mothers younger than 25 years and presence of trained delivery assistance were associated with mothers practice and early breast feeding initiation. This study concluded that low prevalence of initiation of breast feeding was due to delay in support of the newly delivered mother especially those with caesarean delivery.[57]

A study to assess the knowledge on practice of breastfeeding among postnatal mothers a quantitative approach with descriptive survey design were used. Convenient sampling was used to select 65 postnatal mothers. Data were collected by a check list which includes the knowledge on breastfeeding practice. Among the postnatal mothers 69.23% have age between 21-25 years, 55.38% have primary education, 60% are home

makers, 53.8% live in joint family, 83.07% got knowledge on breastfeeding practice from health care personals. This study showed health care professionals play an important role in promoting breastfeeding.[58]

A study was conducted on birth weight and exclusively breast feeding among 166 infants, among them 86 infants with high birth weight who were born heavier had exclusive breast feeding for three months than infants with low birth weight who were not exclusively breast fed. Exclusive breast feeding infant had gained 2.69 kg when compared with 2.94 kg± 0.67 were not exclusively breast fed. This study showed comparing the birth weight and exclusive breast feeding is essential to increase the birth weight of the neonate.[59]

Post natal period is a stressful and new experience for primi Mothers and obesity can also delay the onset of lactogenesis. The aim of the study was to determine the delayed onset of lactation among first time mothers in relation to maternal obesity and factors associated with ineffective breast feeding, at university of California Davis medical center. This study was a longitudinal, cohort study. The subjects were screened according to the inclusion criteria. 532 primi mothers were selected out of this 431 were interviewed on 0 – 3 days. Lack of nipple discomfort was measured using faces pain scale score between day 0 and day 3 was the significant risk factor. 44% of mothers experienced lactation only after 72 hours post-partum. This study concluded that first time mothers should be given more appropriate lactation support until lactogenesis occurs.[60]

To evaluate the use of hospital formula increased cessation of breast feeding among first time mothers. 210 first time mothers were included in the study.

111infants (53%) were exclusively breast feed during maternity stay and 99 infants (47%) received hospital formula supplementation. The most prevalent reason was perceived insufficient milk supply (18%), signs of inadequate intake (16%) and poor latch or breast feeding (14%).Among first time mothers intending to exclusively breast feed in hospital formula supplementation was associated with nearly two fold greater risk of not fully breast feeding on the day 30. The study concluded to avoid unnecessary hospital formula supplementation and to support breast feeding.[61]

An experimental study on breast feeding mothers who have shown acute physical and mental stress can impair the milk ejection reflex by reducing the release of oxytocin during the feed. It would reduce milk production by preventing full emptying of the breast at each feed. Mothers who experience high level of stress during and after child birth should receive additional lactation guidance during the first week.[62]

Lactation is essential for successive breast feeding. The survey study was conducted among 806 mothers. The data was collected using a questionnaire which consists of 20 questions on breast feeding practices, support, education and breast feeding in public. Mothers who initiate the skin to skin contact in the first hour had a higher rate of breast feeding compared to mothers who did not perform skin to skin contact. Women who were primiparas reported a higher use of formula and breast feed for a shorter duration. The primary reasons for stopping breast feeding were low milk supply and baby did not latch. Improving the quality and quantity of lactation support and education among breast feeding mothers will improve breast feeding in the first six months of baby's life.[63]

A descriptive study on breast feeding was conducted to explore the knowledge and attitude of fathers towards breast feeding in Mangalore. Breast feeding knowledge questionnaire and breast feeding attitude scale was used to collect the data. 200 fathers were selected by purposive sampling. The findings were 142 (71%) had favourable attitude, 150 (75%) had average knowledge, 11(5.5%) had poor knowledge towards breast feeding and demographic variables like education of father, education of spouse, occupation of father, number of children below 3 years had significant association with knowledge and attitude. This study showed fathers should also be educated on breast feeding.[64]

The study was to evaluate the feeding practices among mothers attending immunization clinic. 200 postnatal mothers attending immunization clinic having children up to 2 years of age were selected, a cross- sectional design was used in the study. Data were collected through interview using a pre designed and pretest questionnaire out of 200 mothers, 71.5% initiated breastfeeding within 6 hrs of birth while 4% discarded colostrum, 61.5% gave prelacteal feed. Exclusive breastfeeding was given only by 63.5% of postnatal mothers. The study highlighted the need for breastfeeding intervention program to promote exclusive breastfeeding.[65]

A prospective cohort study was conducted on 393 women with term singleton live cephalic pregnancy was conducted. Logistic regression was used to explore the relationship between infant feeding and mode of delivery. No significant difference was found between instrumental vaginal delivery and caesarean section, 0.84 and 1.15(95% CI 0.69, 1.93). This study depicts that method of operative delivery does not influence exclusive breast feeding.[66]

A descriptive study was conducted to find out the practice of breast feeding among primi mother. Non experimental descriptive survey research design was used in this study. The sampling technique used is purposive sampling technique.30 primi mothers were selected based on the inclusion criteria. Details were collected using an observational check list prepared by the investigator. Among the primi mothers 47% were in the age group of 25-30 years, 30% had primary education, 60% belonged to nuclear family, 73% belonged to Hindu religious, 14% Christians 23% were Muslims, 50% were homemakers, and 50% had no previous information on breast feeding. Regarding practice 37% had done appropriate level of breast feeding there was a statistically significant association between the practice of Breast feeding with related demographic variables such as age, educational status, type of family, religion, area of residence, occupation, and monthly income of family. This study showed that reinforcement, adequate health education and health awareness programs are needed to improve the breast feeding techniques among primipara mothers.[67]

Determine the initiation of breast feeding among mothers a sample of 373 women (aged 17 – 47 years), recruited shortly after delivery from four hospitals in Kuwait and completed a structured - interview administered questionnaire. Multivariate logistic regression analysis was used to identify those factors independently associated with the initiation of breast feeding. In total, 92.5% of mothers initiated breast feeding and at discharge from hospital the majority of mothers were partially breast feeding (55%), with only 30% of mothers fully breast feeding. Pre lacteal feeding was the norm (81.8%) and less than 1 in 5 infants (18.2%) received colostrum as their first feed. Only 10.5% of infants had been exclusively breast fed since birth, the remaining

of the breast fed infants have received either prelacteal or supplementary infant formula feeds at some time during their hospital stay of the mothers who attempted to breast feed. Majority of women (55.4%) delayed their first attempt to breast feed until 24 hours or more after delivery. Breast feeding at discharge from hospital was positively associated with paternal support for breast feeding and negatively associated with delivery by caesarean section and with the infant having spent time in the special care nursery.[68]

A cross-sectional study was conducted among 240 mothers to study the socio-cultural factors affecting breastfeeding practices and decision among rural women. It was found that 56.6% of mothers initiated breastfeeding within first 24 hours of delivery. Shorter duration of breastfeeding was observed among mothers with higher socio economic status. Literacy status had little effect on continuation of breastfeeding for more than six months.81.19% mothers had no knowledge regarding exclusive breastfeeding.[69]

A study has been done to determine factors that may affect the onset time of lactation in vaginal and LSCS deliveries among 300 parturient mothers. There was a meaningful difference between average times of milk-ejection in groups with different types of delivery. The study suggests that any kind of stress including LSCS may postpone milk ejection by hormonal inhibition for few days after delivery and this will result in newborn weight loss and failure of nursing by mothers.[70]

The best food for babies is breast milk. Milk is the fundamental right of the child. To promote breastfeeding a cross-sectional study was undertaken by the

department of obstetrics and gynecology, Adilabad. 100 cesarean mothers were enrolled and data were collected using a pre-designed and pre-tested questionnaire regarding breast feeding .35% of women rejected colostrum, 30% started breastfeeding within 24 hrs, 50% within 48hrs and 20% after 48hr, Pre lacteal feeds were given in 40% of the cases. The reason for giving pre lacteal feeds was no secretion in 10 cases and less breast milk secretion in 30 cases. This clearly shows that there is a need for support, education, intervention and counseling to promote exclusive breast feeding.[71]

The study was conducted to test the hypothesis that delayed onset of lactation could mediate negative effect on perinatal biopsychosocial stress and to evaluate the impact of new perinatal factors. Maternal demographic characteristics like health status and psychological stress during pregnancy were assessed by using a structured questionnaire and medical records. Data were collected with on 1 to 3 days after delivery. The risk of delayed onset of lactation increased in women under gone caesarian section (2.11,95% CI 1.46, 3.05) and whose breast feeding frequency was less than 3 times in the 1st day after child birth (2.14 , 95% CI 1.57 , 2.91). This study indicated women undergone caesarian section and greater gestational body mass index were more likely to experience delayed onset of lactation, earlier termination of breast feeding. [72]

A study on delayed onset of lactogenesis II predicts the cessation of breast feeding. A Multivariable logistics regression model was used to enroll 2491 mothers in the prospective infant feeding practice study II cohort model was used. This study found that age, education, race and parity were the known risk factors for breast feeding cessation. This study recommends routine assessment of delayed lactogenesis II in

postpartum breast feeding follow up and recommends additional early post partum interventions to support favorable breast feeding out comes. Suggests that infant feeding decisions on the perception of breast milk supply can provide more support to lactate and continue breast feeding.[73]

The validation of mother's perception on the timing of the onset of lactation as a marker of lactogenesis stage II was conducted on 60 postnatal mothers by randomized clinical trial after caesarean delivery, at Hartford hospital. After 24 hours post partum, the onset of lactation was assessed 3 times early by both test weighing and maternal perception. In this study milk transfer< 9.2 grams per feeding at 60 hours post partum and maternal perception > = 72 hours post partum were studied. Multivariate logistic regression, bivariate analysis and survival analysis were used to evaluate the determinants of delayed onset of lactogenesis were 71.4 and 79.3%. The four risk factors were found for low milk transfer was significant at ($p < 0.05$). Researcher concluded that maternal perception is a valid indicator of lactogenesis stage II. The study findings suggests that infant feeding decisions on their perception of the adequacy of breast milk supply and more support is needed to lactate and continue breast feeding.[74]

A descriptive study was conducted on knowledge, attitude and practice on breast feeding among 100 postnatal mothers. The knowledge was assessed using a structured knowledge questionnaire. This questionnaire found that 92 % of mothers had inadequate knowledge in initiation of breast feeding, 56% in colostrum feeding and 38% on duration of exclusive breast feeding. The correlation was found between maternal age, education and economic status. This study showed that the knowledge of the mother should be improved on exclusive breast feeding.[75]

A quasi experimental with pre and posttest with out control group was selected for the study. 100 postnatal mothers were selected by purposive sampling technique. Close ended questionnaire used to assess the knowledge on breast feeding problems. Video assisted teaching module regarding management of breast feeding problems was given to the postnatal mothers after the pretest. The results of the study showed that 71% of the postnatal mothers were in the age group of 18 – 25 years, 47% of postnatal mothers had secondary education, 88% of postnatal mothers were house wife's, 75% of postnatal mothers were primigravida mothers. The overall pretest mean score was 29.06 %(8.72 ±3.2) where as in the posttest mean score was 68.3 %(20.5±2.85) and the 't' value ('t'= 18.78) which showed that video assisted teaching program significantly increased the knowledge of postnatal mothers on management of breast feeding problems.[76]

A pilot study was conducted among 30 postnatal mothers who were having an infant less than 2 years of age were selected for the study. Knowledge of breast feeding was assessed using self reported questionnaire. The samples were selected by systematic random sampling who met the inclusion criteria. Mothers age were between 18 – 40 years were included in the study. Among 30 mothers 22(73%) were between the age group 22- 35 years, education 18(60%) were less than secondary school and birth weight of the baby 29(97%) were above 2.5 kg. In the pretest 6 (20%) has correctly offered breast feeding after delivery, 17(59%) has given breast milk initially, 11(37%) has good amount of breast milk. In the posttest 63% knowledge was increased on breast feeding. (P=0.05) This shows that there is an increase in knowledge related to breast feeding.[77]

A cross sectional study was conducted among 122 postnatal mothers, among these postnatal mothers (71.3%) belongs to 20 – 25 years, (77.8%) were home makers, (49.2%) had primary education, (36.9%) initiated breast feeding early and (96.7%) have given colostrum. This study concluded that 85.2 % postnatal mothers were aware of exclusive breast feeding but only 27% have exclusively breast fed. So there should be a strong supportive education and intervention needed to promote breast feeding.[78]

Descriptive cross sectional study was conducted on postnatal mothers. 100 samples were selected for the study. A pre tested questionnaire was used to collect the data from the postnatal mothers. Among them 97% mothers have initiated breast feeding with in 30 minutes of vaginal delivery. 38% of mothers who have undergone caesarean section have initiated breast feeding after 30 minutes, 19% of mothers were given pre lacteal feed. This study shows breast feeding practices and newborn care in the early postnatal period is essential for exclusive breast feeding.[79]

A study was conducted on breast feeding initiation, duration and difficulties in first four months among vaginally delivered mothers and caesarean mothers. The postnatal mothers were given questionnaire to collect data on demographic, mode of delivery and health services. The results showed that vaginal delivery mothers initiated breast feeding early (3.4% and 1.8%) than caesarean section mothers (7.4% and 4.3%) when comparing the problems encountered during breast feeding by vaginal delivery mothers it was less (29%, 40% and 52%). In caesarean mothers it was 33%, 49% and 41%. This study shows that additional supportive care and intervention is needed for immediate postnatal mothers with in the first 24 hours postpartum period to reduce breast feeding problems.[80]

A study was conducted on delay initiation and establishment of feeding using mother to infant bonding scale between the postnatal mother and baby one hour after delivery and 4 days. Lactation was assessed by collecting the breast milk and measuring the milk volume. The result of the study shows that the mean age of participants were 39.6 ± 0.62, initiation of breast feeding 51 ±22 minutes, breast feeding frequency 9 times a day, mean milk volume 661.20 ml (SD = 99).There was a positive association between post delivery stress with initiation of lactation($r = 0.420$, $P< 0.01$), positive emotions was associated with frequency of breast feeding ($r = 0.21$, $P = 0.04$) and milk volume ($r = 0.21$, $P = 0.046$). This study shows that maternal stress can reduce early initiation and maintenance of breast feeding. [81]

A randomized control study was conducted on effect of mother, infant and early skin to skin contact on breast feeding. This study results showed that first breast feed was given by postnatal mothers 26.75%. More successful breast feeding was found in intervention group 58.85% and control group 32.2% with p value of 0.001 greater than the table value. This study showed skin to skin contact promoted early breast feeding. [82]

A study was conducted on indicators of the effective Breast Feeding and estimation of milk volume was measured. 82 full term babys were selected for the study. The Breast milk consumed by the baby at >96 hrs and at 96 hours were studied. The study result showed that the milk consumed by the baby at >96 hrs was 26ml per feed and at 96 hrs it was 54ml. And there was a significant relationship between rooting and observable swallowing in estimated breast milk. ($P<0.01$). In audible swallow ($P<0.001$). This study showed that swallowing and rooting during the first 4 days that is 96 hours was observable and it is used as an indicator in Breast Feeding assessment of full term baby.[83]

2.2 REVIEW RELATED TO STUDIES ON LACTATION PROBLEMS AMONG POST NATAL MOTHERS

A study was conducted on communication through telephone line on breast feeding. Breast feeding support was given to postnatal mothers through the telephone line which is connected to the breast feeding clinic. A certified lactation educator gathered demographic and breast feeding information from the postnatal mothers. Chi - square tests were used to analyze the association between the variables. 78.7% of postnatal mothers got support on exclusive breast feeding while 21.3% of postnatal mothers communicated partially on breast feeding, 64.8% of the babies were 2 months old or less, 64.2% referral sources on breast feeding were family friend, 9.8% of postnatal mothers were referred by the physician to the certified lactation educator. 3.0% of postnatal mothers were referred by hospital personal, 2.0% by others health care providers. Result showed that there is a significant difference between exclusive breast feeding and partial feeding.[84]

A study was conducted on duration of breast feeding and length of postpartum stay. The investigation was done on association between length of postpartum stay, duration of Breast Feeding and Breast Feeding Problems with an intention on early hospital discharge. Samples were selected from the antenatal clinic during the first 3 weeks. Data were collected from mothers in early pregnancy by using a questionnaire. In this study only data from the 2709 (82%) who filled the questionnaire about length of stay in 2 months were analyzed. The result of the study showed that the median duration of Breast Feeding was 7 month in women discharged on day 1 and 8 month in women discharged on any of the following postnatal days. The

findings of the study showed that the maternal characteristics are more important predictors for the duration of Breast Feeding than length of stay in hospital after the birth.[85]

A study was conducted on postnatal mothers, the design selected for this study is quasi experimental pretest posttest control group design. 60 samples were selected using convenient sampling method. 30 samples were included in the experimental group and 30 samples were selected for the control group who met the inclusion criteria. The data were collected using a self administered structured knowledge questionnaire on management of breast feeding problems. Effectiveness was assessed by paired‘t’ test. The‘t’ value was (‘t’=31.68). In unpaired‘t’ test the value was (‘t’ = 10.61) was highly significant at 0.05 level. Association was analyzed using chi square which showed a significant association between knowledge of primigravida with age (χ^2= 8.07), education status (χ^2= 100.8), occupation (χ^2= 7.10) and parity (χ^2= 7.37) at ($p< 0.05$) level. [86]

An evaluative approach one group pretest posttest was conducted on 40 postnatal mothers. The samples were selected by simple random sampling. The mothers age 19 (47.5%) were in the age group of 24 – 29 years, 11(27.5%) were in age group 18 – 23 years, 8(20%) were between 30- 35 years, 16(40%) were from urban area and 24(60%) from rural area. Regarding education 16(40%) completed high school, 12 (30%) completed primary school, 7(17.5 %) were non working, 33 (82.5%) were working, 20(50%) were primi mothers. In the pretest the knowledge on breast engorgement information booklet was 19.95, in the posttest it was 31.47 and the‘t’ value 14.78 was significant at ($P< 0.05$). The study findings depicted that information booklet on home remedies were effective to reduce breast engorgement.[87]

A non experimental exploratory study was conducted among 100 postnatal mothers, samples were selected by using purposive sampling. Knowledge of the postnatal mothers were assesses using a structured questionnaire. Majority (52%) had average knowledge, (64.16%) on symptoms of breast engorgement, (42.6%) on factors leading to breast engorgement. No significant association was found between knowledge of postnatal mothers on breast engorgement with their demographic variables.[88]

A randomized control trial was conducted among postnatal mothers. The samples were selected by simple random sampling. 74 postnatal mothers who fulfilled the inclusion criteria were selected and frequency of exclusive breast feeding and lactation problems were assesses during the first 30 postnatal days. In the intervention group 30 minutes of counseling was given on exclusive breast feeding and lactation related problems. The control group was given the routine health education. The frequency of breast feeding among postnatal mothers who had received counseling was similar to control by 7 days (79.7% vs 82.5% respectively) and 30 days (60.8% Vs 53.3%). The study concluded that exclusive breast feeding decrease the incidence of breast feeding problem in the first month among postnatal mothers.[89]

2.3 RESEARCH STUDIES RELATED TO EFFECTIVENESS OF ACUPRESSURE ON LACTATION.

The study is to determine the effectiveness of back massage on lactation among postnatal mothers in selected hospitals, Indore. A quantitative research approach with non equivalent control group was used for this study. 60 immediate postnatal mothers

were selected by purposive sampling technique (30 in group A and 30 in group B). Acupressure in the form of back massage was given to BL 20 of UB meridian in the experimental group mothers. All the subjects of group A were taken with in two hours after delivery, who had already breast fed the baby once , back massage was given as an intervention and before each feed. Routine care was given to group B. Data was collected using demographic performa and breast feeding assessment tool. The data was analyzed using descriptive and inferential statistics. The study result showed that acupressure is effective in promoting lactation among postnatal mothers. In order to find out the effectiveness of group A paired't' test was used. The result showed that the intervention proved effectiveness promoting lactation. There was an significant difference in the post test score of weight gain on day 1, 2, 3. The't' value urination and stool passed was not significant on the first 2 days but significant on the 3rd day. Paired 't' was used for comparing the effectiveness of back massage in group A. Statistical results reveals 't' value of mean post test weight gain were (5.40 , 3.88, 4.49) On day 1, 2, 3 respectively were significant at $p \leq 0.05$ level. Chi square values were significant at $p \leq 0.05$ level. Mann Whitney 'U' value was 207 and 222 on day 1, 2 which was highly significant at $p \leq 0.01$ level. This indicates that back massage was effective in improving lactation among postnatal mothers.[32]

A quasi experimental study was undertaken on effectiveness of back massage on lactation. 220 mothers were selected as samples by purposive sampling and divided in to two groups (group A, experimental group – 100 cases, group B, control group – 120 cases) Weight gain, number of urination, number of stool passed, duration of sleep was recorded in an assessment form. The computed unpaired 't' value on first, second

and third day was (0.6), (0.77), and (2.1). This indicates urine out put was increased significantly in group A on third day, which showed improved lactation among immediate postnatal mothers. Mean number of stool passed per day and duration of sleep was significant on the third day in group A than in group B. This clearly indicates that back massage is effective in improving lactation among immediate postnatal mothers.[90]

An uncontrolled clinical trial was conducted among mothers who were having insufficient breast milk secretion. 27 postnatal mothers were selected as a sample for the study, 9 were selected for one group and they were given traditional Chinese acupuncture. Another 6 postnatal mothers were selected and they were sham acupuncture. Another group was selected as a control non treatment control group. There was an increase in breast milk secretion which promoted the weight gain of the infants of about 160.13grams (gm). This study finding clearly depicts that traditional Chinese acupuncture was helpful in promoting lactation among postnatal mothers. [91]

A study was conducted to evaluate the effect of acupressure on Milk volume of breast feeding mothers. Randomized control trials in which 60 breast feeding mothers with hypogalactia and meeting the inclusion criteria were selected. Acupressure was given on acupoints SI 1, L 14 and GB 21. In the intervention group as three sections per week each session lasted for 2 – 5 minutes; control group received only routine education. The milk volume was measured after 2 – 4 weeks by an electric pump. Data analysis were done using SPSS package. 't' test showed no significance difference in both groups (P=0.543). Mean Volume of milk before and after intervention were

10.5 (8.3), 33 (13-44) and 36.3 (12.8). In the intervention group 9.5 (7.7), 17.7 (9.5) analysis of variance (ANOVA) test showed that significant difference in mean volume of milk at 2 and 4 weeks ($p< 0.001$). This shows that acupressure was more effective than other alternative therapy in increasing milk volume among breast feeding mothers.[92]

A study was conducted to evaluate the effect of Acupoint Tuina on lactation among postnatal mothers. 56 primi postnatal mothers were selected and allotted to intervention group and control group was given instruction and education on breast feeding. After the intervention breast milk was collected to measure the lactation amount and level of serum prolactin at 48 hours after delivery and the time lactation has started in both groups were observed. The serum prolactin at 48 hours after delivery in postnatal mothers in intervention group was (0.04 ±0.01 mg/dL) was higher than the control group (0.032±0.018) mg/dL. It was also found that the volume of milk was increased in intervention group. This study showed that this acupoint is effective in promotion of lactation and help in postnatal mother to lactate early.[52]

To evaluate the effectiveness of breast massage two groups of 30 mothers each. One group was taught the massage, and the other group was not taught the technique. The babies of mothers in both groups were weighed before and after feeding to determine the amount of milk ingested. Babies in the massage group consumed an average of 22.3 gm more per feeding than the babies in the non-massage group. When the daily totals were compared, the babies in the experimental group received an average of 4.5 ounces of milk more than the babies in the control group. Breast massage significantly increased total solids, lipids, casein concentration and gross

energy. Other studied the effect of breast massage on breast-milk protein. Analyzing milk samples from 39 healthy breastfeeding mothers, they demonstrated a significantly increased whey protein concentration following breast massage.[93]

A study on Lactating women pumping their breasts simultaneously using an electric breast pump, while massaging only one breast and utilizing the other breast as a control. The procedure was repeated the following day with the women massaging the opposite breast. This resulted in 36 pairs of samples for comparison. Mean volume of milk pumped from the massaged breast was 4.8 ml greater than that from the non-massaged breast. Mean creamatocrit from the massaged breast was 1.92% higher than from the non-massaged breast. These results indicate that breast massage can increase volume and fat content of breast milk. Increasing fat content coincidently increases caloric value.[94]

A single blind randomized study was conducted on 276 cases of postpartum hypo lactation postnatal mothers. The postnatal mothers were randomly selected and divided into two groups, intervention group and control group. Intervention group was given acupuncture and control group was given Chinese drug to promote lactation. Lactation volume, prolactin level, urinary frequency, crying time of neonate was recorded. This study shows that acupuncture was effective in promoting lactation among immediate postnatal mothers.[95]

A study was conducted on 276 postnatal mothers to increase the Breast milk secretion acupuncture was given on Shaozi (SI1). After the intervention the postnatal mothers breast milk secretion increased and mammary filling was increased than the control group. This study shows that acupuncture was effective at Shaozi (SI1) in improving milk secretion among postnatal mothers. [96]

2.4 RESEARCH STUDIES ON EFFECTIVENESS OF REFLEXOLOGY ON LACTATION.

Breast milk is best for the neonates, not enough milk is the general complaint of the mother. Therefore, a study is conducted to assess the effectiveness of reflexology in initiation and maintenance of lactation among post natal mothers in selected hospitals, Kanyakumari. A quantitative research approach with posttest control group design (Quasi experimental) was used for the study. 60 postnatal mothers who have under gone lower segment caesarean section were selected by convenient sampling (30 mothers in the experimental group and 30 mothers in the control group) Reflexology is given to experimental group postnatal mothers on day 1 , day 2 , day 3 once a day before feeding. Posttest is conducted at 24, 48 and 72 hours after intervention. Data was collected by using UNICEF breast feeding assessment form. The data was analyzed using descriptive and inferential statistics. The study result showed that administration of reflexology is effective in promotion and maintenance of lactation. In order to find out the effectiveness of reflexology on the experimental group paired "t" test was used. The result showed that the intervention proved effective in promoting lactation. There was a significant difference in the post test initiation and maintenance of lactation scores between experimental and control group. The post test mean score (10.3) in the control group was less than the post test mean score (12.2) in initiation and maintenance of lactation in the experimental group. Chi square test was used to test the significant association between posttest lactation initiations with selected demographic variables. This study concludes that reflexology is effective in initiation and maintenance of lactation. The result of the study showed that regular practice of reflexology would be beneficial in initiation and maintenance of lactation among post natal mothers.[97]

Inadequate milk secretion is one of the main perceptions of the mother in stopping breast feeding. So a study was conducted on the effect of reflex zone therapy on milk production among postnatal mothers with inadequate milk production at medical college hospital, Tirvandrum. This research is an experimental approach with pretest, posttest control group design. Both groups were assessed on socio demographic data, clinical data, breast feeding data, nutrition assessment, milk production and milk availability using structured interview schedule and check list. To assess the reassuring signs of adequate milk production and milk availability to the baby an observation check list was used. Randomly the samples were selected and assigned to two groups (experimental and control) reflex zone therapy was given to intervention group for 3 continuous days and control group receive the routine care. 10 hours after initiation of breast feeding pretest was done then intervention was given before feeding. Post test was done on the 24, 48 and 72 hours. The study revealed that reflex zone therapy can be used by midwives in promoting and maintaining adequate lactation.[98]

A study to assess the effectiveness of reflexology on lactation was conducted among postnatal mothers foot massage was given for hundred new mothers for 10 – 15 minutes and found lactation was initiated in 43.47 hours in the treatment group. In the control group it was 66.97 hours. It was found that foot massage was helpful in promoting lactation than drugs.[53]

A Study conducted in China on Reflexology and Lactation**.** Ten women with reduced milk production chose reflexology. The mother's milk production increased and the use of drugs was avoided. The milk production remained stable for the mothers who found the treatment successful and this study shows that reflexology would be a positive choice for women with reduced milk secretion.[99]

Reflexology uses pressure, touch, massage at a specific location points on hands, feet is beneficial to the body. Reflexology stimulates hypothalamus reflex area with the goal of influencing the release of oxytocin, manufactured in the hypothalamus and important to lactation after birth as well as bonding between mother and child. Reflexology is also useful for the mother who is breast feeding and increases lactation.[100]

A study was conducted to assess the effectiveness of reflexology to support breastfeeding. Each research participant received ten reflexology treatments each, whilst a comparison of (expressed) milk volume before and after the reflexology treatments determined the effect of the treatments on lactation. The overall increase in milk volume for the research participants was 88%. Therapeutic reflexology was thus an effective means of supporting breastfeeding and increasing lactation. Furthermore, the treatments contributed towards increased confidence and satisfaction with breastfeeding. In addition, reflexology helped to ease other maternal complaints including stress, anxiety fatigue and backache.[101]

The study was conducted on effect of reflex zone therapy on initiation and maintenance of lactation among 60 lactation failure mothers. Among them 6 (10%) were in the age group of 20 years, 33 (65%) were in the age group of 21 – 25 years, 18 (30%) were in 26 – 30 years, 3 (5%) were above 30 years. Regarding education of the postnatal mothers 38(63%) had higher secondary education. Parity of the mothers shows that 28 (48%) were primi mothers, 43 (71.7%) were between 1 – 3 postnatal days and 17(28%) of them were between 4 – 5 postnatal days. In the pretest 60(100%) had inadequate lactation. In the posttest 34 (57%) had average lactation and 26(43%)

had adequate lactation. The calculated mean value in the pretest was 5.3±1.69, in the posttest mean value was 19.92±2.22 and the paired 't' test value 47.29, which is significant at ($P< 0.001$) This study showed that reflex zone therapy was effective and comfortable for the subjects in initiation and maintenance of lactation among lactation failure mothers.[6]

CHAPTER - III

MATERIALS AND METHODS

CHAPTER - III

MATERIALS AND METHODS

Research methodology is the conceptual structure within which the research is conducted. It is a blue print for collection, measurement and analysis of data. In research methodology researcher specify which specific design was adopted and how the samples were chosen.

Research methodology is a systematic way to solve the research problem and also to carry out the academic study and research in a correct manner.[56]

The present study was conducted to compare the effectiveness of acupressure Vs reflexology on lactation among immediate postnatal mothers in selected hospitals.

This chapter describes the aspects like research approach, research design, variables, setting, population, samples, sampling technique and criteria for sample selection, development and description of instruments, description of intervention tool, reliability and validity of the tools, ethical consideration, pilot study, data collection procedure and plan for data analysis.

3.1 RESEARCH APPROACH

The research approach is the most essential part of any research. The entire study based on it. The research approach used in the study is an applied form of research to find out how well the intervention is effective. In this study the effectiveness of acupressure and reflexology on lactation among immediate postnatal mothers was evaluated. Therefore an quantitative evaluative approach was essential to test the effectiveness of the intervention for this study.

3.2 RESEARCH DESIGN

It refers to the overall plan for addressing a research question, including specifications for enhancing the integrity of the study.[56]

The design used for the present study was quasi experimental design where the two group pre and post test design was selected to compare the effectiveness of Acupressure and Reflexology on lactation among immediate postnatal mothers.

In this design the extraneous variable to be controlled by homogeneity and the independent variable, which is manipulated.[56]

Fig 3.1.1 Diagrammatic presentation of the design

Randomly selected immediate postnatal mothers	**Pre test**	**Treatment**	**Post Test**
Experimental Group I	**O_1** Assess the adequacy of lactation through breast assessment and breast feeding tool on the day of delivery.	**X_1** Acupressure intervention starts from first day and continued for 3 days	**O_2** Assess the adequacy of lactation through breast assessment and breast feeding tool after 24 hours, 48 hours and 72 hours after intervention.
Experimental Group II	**O_1** Assess the adequacy of lactation through breast assessment and breast feeding tool on the day of delivery.	**X_2** Reflexology intervention starts from first day and continued for 3 days	**O_2** Assess the adequacy of lactation through breast assessment and breast feeding tool after 24 hours, 48 hours and 72 hours after intervention.

O_1 : Pre test on adequacy of lactation among immediate postnatal mothers in experimental group I

X_1 : Acupressure.

O_2 : Post test I on adequacy of lactation among immediate postnatal mothers in experimental group I

O_1 : Pre test on adequacy of lactation among immediate postnatal mothers in experimental group II

X_2 : Reflexology.

O_2 : Post test I on adequacy of lactation among immediate postnatal mothers in experimental group II

3.3 SETTING OF THE STUDY

Research settings are specific places in a research where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study, availability of subject and permission of authorities.[56]

The setting chosen for the study was C.S.I. Mission Hospital Neyyoor and Nagercoil, Kanyakumari District, Tamilnadu. C.S.I. Mission hospital is 0.5 kms away from the Christian College of Nursing Neyyoor and C.S.I. Mission Hospital Nagercoil is 15 kms away from Christian College of Nursing Neyyoor. Approximately 550 - 600 deliveries are conducted every year.

3.4 VARIABLES FOR THE STUDY

Variables are characters that can have more than one value. The categories of variables discussed in the present study was,

3.4.1 Independent Variable: Acupressure Vs Reflexology

3.4.2 Dependent Variable : Lactation among immediate postnatal mothers

3.4.3 Demographic Variables: It consists of demographic characteristics of immediate postnatal mothers, i.e. age, education, occupation, monthly income, type of diet, antenatal visits, weeks of gestation, birth weight, sex of the baby, initiation of breast feeding, number of feeds given per day, family support and type of feed.

3.5 POPULATION

Population is entire aggregation of subject similar characteristics and on whom the researcher would generalize the study findings. The population encompassed the target and accessible population.

3.5.1 Target Population

The population, the investigator had chosen for the present study to make generalization. The target population for the study was all the immediate postnatal mothers.

3.5.2 Accessible Population:

Refers to the aggregate of subject with whom the designated criteria are conformed and accessible population was immediate postnatal mothers in C.S.I.Mission Hospital Neyyoor and Nagercoil. Immediate postnatal mothers who were in the first postnatal day consisted of 125 postnatal mothers in each group. Total samples were 250 postnatal mothers.

3.6 SAMPLE AND SAMPLE SIZE

A sample is the basic element of the population about whom the information was collected, to represent the concept of interest. Immediate Postnatal mothers who have fulfilled the inclusion criteria were selected as the samples of the study.

3.6.1 SAMPLE SIZE

The sample size comprised of 250 immediate postnatal mothers who were in the first postnatal day in C.S.I.Mission Hospital Neyyoor and Nagercoil. The sample size was estimated using the Power Analysis with 227 postnatal mothers, but additional 23 subjects were included to meet the expected attrition rate 10% (227+23 = 250). The researcher included 250 samples for the study, out of which 125 were experimental group I and 125 were experimental group II.

By using power analysis

$$\text{Sample Size} = \frac{z\alpha^2(p \times q)}{d^2}$$

$Z\alpha^2$ = 1.96 it is table value score for 95% interval.

p = assumed or estimated proportion of clients 82% (0.82)

q = 1 – p (1 – 0.82 = 0.18)

d = Margin error, i.e. 5% (0.05)

$$n = \frac{(1.96)^2 \times 0.82\ (1-0.82)}{(0.05)^2}$$

$$n = 227$$

Considering the attrition rate as 10% another 23 members included in the study.

Total sample size = 250

3.7 SAMPLING TECHNIQUE

Simple random sampling technique was adopted for the study.

Simple random sampling is a simple strategy when conducting studies in the target population. The researcher selected the samples using lottery method.

The investigator selected two mission hospitals in KanyaKumari District out of five mission hospitals by using Simple Random Sampling technique. (Lottery Method)

In second stage random sampling, from among the two Hospitals through lottery method the investigator allotted experimental group I and experimental group II

Experimental group I: The immediate postnatal mothers from C.S.I. Mission Hospital, Neyyoor 125 samples were selected using simple random sampling technique. Breast assessment tool and breast feeding assessment tool were administered to assess the adequacy of lactation.

Experimental group II: The immediate postnatal mothers from C.S.I. Mission Hospital, Nagercoil 125 samples were selected using simple random sampling technique. Breast assessment tool and breast feeding assessment tool were administered to assess the lactation adequacy.

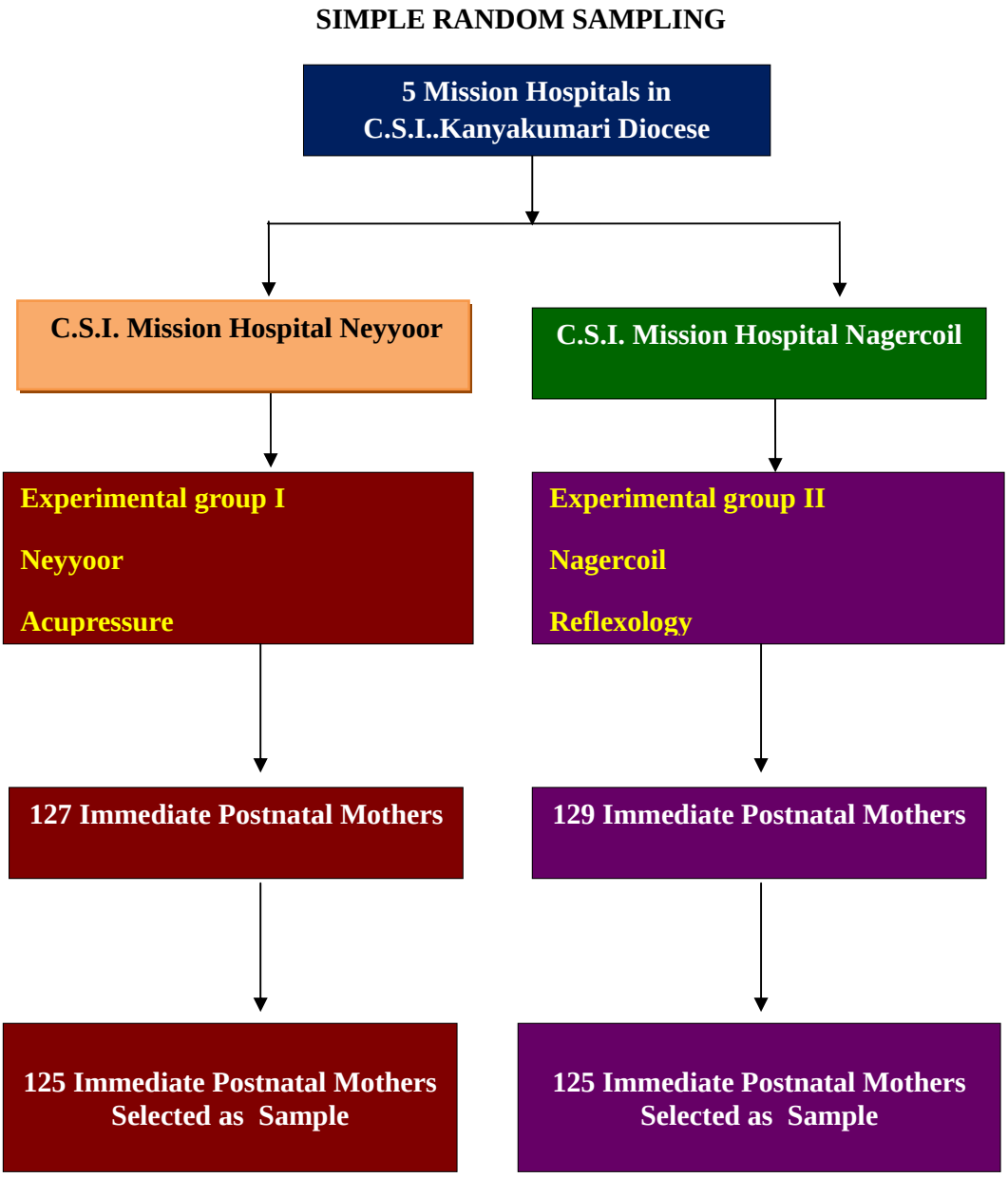


Fig 3.1.2 Diagrammatic presentation of sampling Technique

3.8 CRITERIA FOR THE SELECTION OF SAMPLE

3.8.1 Inclusion Criteria:

Immediate postnatal mothers

- Normal vaginal delivery
- After 2 hours of delivery
- With age group between 18-35years
- Who gave consent to participate in this study
- Who were present during the period of data collection

Baby

- With Full term
- With the gestational weeks of 38 – 41 weeks
- With babies weight from 2.5 to 3.5 k.g.
- Fit to take feeding
- Who gave consent to participate in this study.
- Who were present during the period of data collection

- **Exclusion Criteria:**

Immediate postnatal mothers

- With nipple and breast anomalies
- Who were having any other medical, psychiatric and gynecological problems
- Who were practicing relaxation techniques within the past 6 months

Baby

- Babies with congenital anomalies

3.9 DATA COLLECTION INSTRUMENTS

- **DEVELOPMENT OF THE TOOL**

The investigator used the following steps for preparation of the tools for the study

- Extensive review of literature
- Preparation of the blue print for the tools
- Consultation with experts from the field of study
- Preparation of the final draft of the tools
- Editing of the tools
- Review of literature

The investigator did an extensive review of related literature from books, journals, manuals, reports published researches, newspapers and internet to develop study instruments

- **Preparation of blue print**

  The blue print included Questionnaire to collect Demographic data, breast assessment and breastfeeding tool.

- **Consultation with experts from the field of study**

  The tools were sent to panel of experts comprising from the fields of Maternity Nursing, Medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynecologist, Acupressure and reflexology therapist and nursing research department experts.

- Preparation of the final draft
- Editing of the final tool

- **DESCPRITION OF TOOLS:**

  There are two sections tools were used. They are;

  - Section A: Demographic variables
  - Section B: Breast assessment tool
  - Section C: Breast feeding assessment tool

- **Section A**

It consists of demographic characteristics of immediate postnatal mother's age, education, occupation, monthly income, type of diet, family support, antenatal check up, gestational age, birth weight, sex of the baby, initiation of breast feeding and type of feed

- **Section B**

It consists of Breast assessment tool used to assess the breast secretion among immediate postnatal mothers .The tool has 6 parameters to assess the breast secretion. Each parameter has a maximum score of 3 and minimum score of 1.It has three levels in breast secretion .The total maximum score is 18 and minimum is 6.

Scoring Procedure

Based on the percentage of scores the levels of breast milk secretion were graded in three categories . They are

Level of breast secretion	**Actual Scores**	**Percentage of Scores**
Adequate secretion	13-18	< 72
Moderate secretion	7 – 12	35 -71
Inadequate secretion	0-6	>34

Section C:

It consists of breast feeding assessment tool to assess the breast feeding among immediate postnatal mothers. This tool has 6 parameters to assess the breast feeding adequacy of the baby. Each parameter has a maximum score of 3 and minimum score of 1. It has 3 levels to assess the baby's feeding. The total score is 18. Minimum score is 6.

Scoring procedure:

Based on the percentage of score the level of breast feeding was graded in 3 categories. They are adequate feeding, moderate feeding and inadequate feeding.

Level of breast feeding	**Actual Scores**	**Percentage of Scores**
Adequate feeding	13-18	< 72
Moderate feeding	7 – 12	35 -71
Inadequate feeding	0 - 6	>34

3.10 ACUPRESSURE AND REFLEXOLOGY INTERVENTION

The researcher developed Acupressure (Experimental Group I) and Reflexology (Experimental Group II) therapy were given to the individual immediate postnatal mothers for a period of 3 days for 3 times a day in both groups.

3.11 CONTENT VALIDITY OF THE TOOL

Content validity is the degree to which the items in the instruments adequately represent the content for the concept being measured.

The content validity of the demographic variables, breast assessment tool and breast feeding assessment tool was validated by the panel of experts from the fields of Maternity Nursing, medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynecologist, Statistician, Acupressure and Reflexology therapists and nursing research department experts and the expert's suggestion were incorporated in designing the final tool for the study in consultation with Guide, Co-guide, Advisory Committee members and Statistician for its appropriateness. The tool was modified according to suggestions and recommendation of experts. **(Annexure VI)**

3.12 RELIABILITY OF THE TOOL:

Reliability is the degree of consistency with which an instrument measure what it designed to measure. Investigator administered the tool to 46 immediate postnatal mothers in selected Hospitals, Kanyakumari District, to establish the reliability of the tool.

The tools were translated in Tamil and the reliability was tested. Internal consistency reliability was used. Reliability was assessed by using Cronbach's Alpha method. Alpha Correlation coefficient values for breast assessment tool was r=0.74, breast feeding tool was r = 0.78 which was reliable.

3.13 ETHICAL CONSIDERATION

The investigator considered and followed the ethical principle preceding the investigation. The investigator adhered to the following actions in order to protect the ethical right of the immediate postnatal mothers on lactation.

Human Rights

- Ethical committee approval was received from the Chief Medical Superintendent.
- Written consent was obtained from the Medical Superintendent to conduct the study.
- Content validity was received from the various experts in field of Maternity Nursing, medical Surgical Nursing, Child Health Nursing, Obstetrician, Gynecologist, Statistician, Acupressure and Reflexology Therapists and nursing research department experts

Beneficence & Non-Maleficience

- The investigator is certified to execute the Acupressure and Reflexology.
- Potential benefit and risk was explained to the subjects.

Dignity

- Informed consent was obtained from the subjects related to the study purpose, type of data, nature of commitments, participations and procedure.
- Pilot study was executed to check the feasibility and time requirement of the study.
- Subjects' right to withdraw / withhold the information was ensured before data collection.
- Investigator contact information was disseminated to all the subjects who participated in the study.

Confidentiality

- Confidentiality and anonymity pledge was ensured.

Justice

- Acupressure and Reflexology therapy were given to all the subjects to induce lactation among immediate postnatal mothers.

3.14 PILOT STUDY

The Investigator obtained formal consent from Medical Superintendent and immediate postnatal mothers. The purpose of this study and confidentiality was explained to the immediate postnatal mothers. Pilot study was conducted from 01.02.2015 to 30.05. 2015. The Investigator selected 30 postnatal mothers from C.S.I. Mission Hospital, Neyyoor, KanyaKumari District. Pretest was conducted after 2 hours of initiation of breast feeding using breast assessment tool and breast feeding assessment tool for 20 minutes. The experimental group I received acupressure (investigator applied pressure to SI 1, SP 18 and ST 18) points for 30 minutes for 3 times for 3 days before feeding. The experimental group II received reflexology. It is a series of steps followed which includes relaxation, thump walking, up and down the spine and stimulate the meridian points for 30 minutes. This intervention is done for 3 times a day for 3 days. Post test was done after 24 hours, 48 hours and 72 hours after the intervention by using same pretest scale. The result of the pilot study revealed that the tool was reliable and the study was feasible. The pilot study aided the investigator to determine the method of statistical analysis and the time requirement for data collection and intervention procedure.

3.15 METHOD OF DATA COLLECTION

The data is collected from immediate postnatal mothers in experimental group I and II, after permission obtained from Medical Superintendent and immediate postnatal mothers admitted in C.S.I. Mission Hospital Neyyoor and Nagercoil, Kanyakumari District. The data collection procedure started from June 2015 to September 2016. The investigator selected 250 immediate postnatal mothers (125 immediate postnatal mothers in experimental group I and 125 immediate postnatal mothers in experimental group II) who fulfilled the inclusive criteria were selected as a sample. The samples were explained the purpose and usefulness of the study. The investigator assured the samples about the anonymity and confidentiality. Written consent was taken from each sample. The data collection for each sample was started with introduction of the investigator after confirming the sample. The samples were made comfortable in well ventilated place. After the brief introduction about the purpose of the study to the immediate postnatal mothers, demographic profile was collected. **(Annexure – VIII)**

Pretest

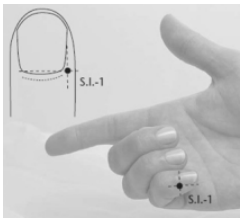
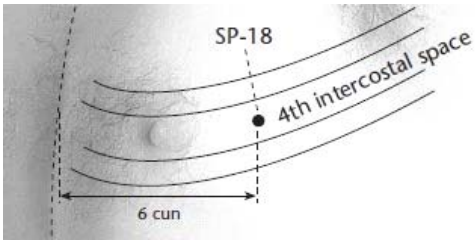
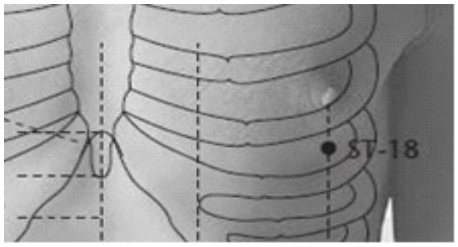
The pretest adequacy of lactation was assessed by using breast assessment and breast feeding tool on the day of delivery for 20 minutes by the investigator before the intervention for experimental group I and group II.

Intervention

After pretest, acupressure (experimental group I) and reflexology (experimental group II) intervention was given to the immediate postnatal mothers after 2 hours for a duration of 30 minutes 3 times for 3 days.

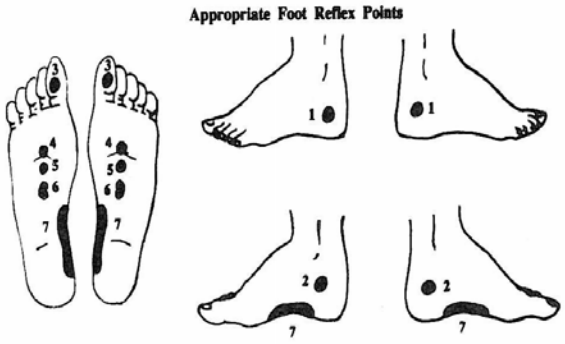
Acupressure (Experimental group I)

Each treatment starts with the relaxation technique.

Acupressure Points and Location	Technique / Procedure
 • **Shaozi (SI 1)** This point is located 1 cun posterior to the corner of the nail on the ulnar side of the little finger.	• The immediate postnatal mothers were made to lie down comfortably. The investigator gave acupressure to the alternate fingers at the Shaozi (SI 1) for 6 seconds and release for 2 seconds with out pressure.
 • **Tianxi (SP 18)** This point is located at the centre of the 4th intercotal space 6 cun from the midline above the nipple.	• Acupressure was given on Tianxi (SP 18) on each breast for 6 seconds and released for 2 seconds with out pressure. This was continued for 5 minutes on each point.
 • **Rugen (ST 18)** This point is located between the 6th intercostal space below the nipple I cun below ST 17.	• The investigator gave pressure on Rugen (ST 18) for 6 seconds and release for 2 seconds with out pressure. This was continued for 5 minutes on each point. • The total duration of intervention is 30 minutes (10 minutes on each hand and breast) 3 times for 3 days.

Reflexology (Experimental group II)

Reflexology is a technique; investigator applied the pressure on the reflex point with thumb

Reflex points	**Technique/ Procedure**
	• The immediate postnatal mothers were made to lie down comfortably in supine position
	• Relaxation exercises – consists of giving massage all over each foot slowly and gently twisting the spine area.. **(1 minute for each foot)**
	• Thumb walking up and down on the spine **(2 minute for each foot)**
	• Stimulate the meridian points with the thumb walking procedure such as • Ovary • Uterus • Pituitary gland and endocrine system • Solar plexus • Adrenal gland • Kidney • Sympathetic nervous system (**1 minute for each point, 7 minutes/foot**). Total duration of treatment was 15 minutes/foot (total treatment duration 30 minutes three times a day)

Posttest

Post test was conducted for each and every immediate postnatal mothers in group I and group II with breast assessment tool and breast feeding tool after 24 hours, 48 hours and 72 hours of intervention.

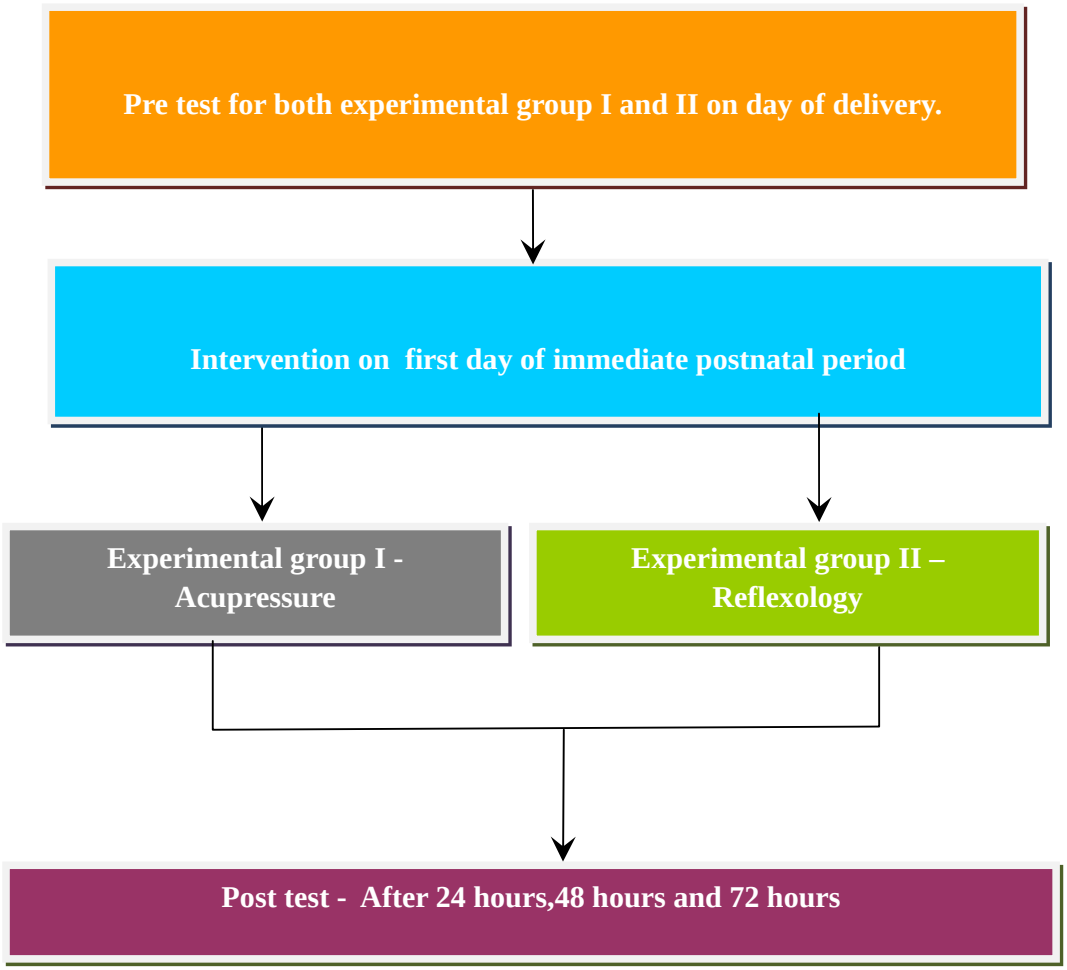


Fig.3.1.3 Schematic Representation of Data Collection Schedules

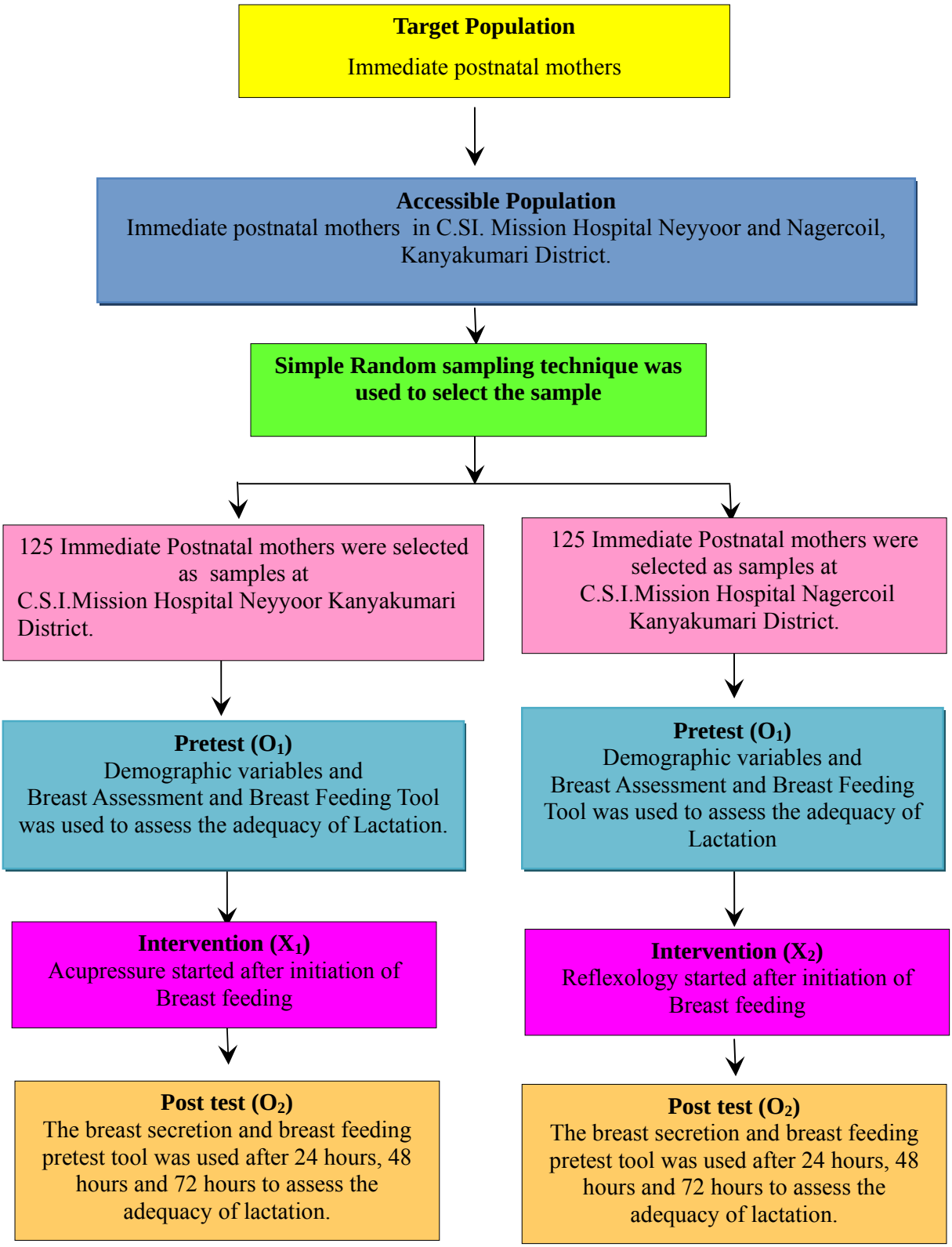


Fig.3.1.4 Schematic Representation of Data Collection Procedure

3.16 DATA ANALYSIS PROCEDURE

The data were collected from 250 immediate postnatal mothers with lactation, coded and entered in the Microsoft Excel Spread Sheet. The data were analyzed using descriptive and inferential statistics.

Descriptive Statistics

- Frequency and percentage distribution were used to analyze the demographic variables.
- Mean, Standard deviation and Mean percentage was used to assess the adequacy of lactation among immediate postnatal mothers.

Inferential Statistics

- Paired t test to compare the pre and post intervention for adequacy of lactation among immediate postnatal mothers in experimental group I and II.
- Unpaired‘t’ test to compare the post test intervention for adequacy of lactation among immediate postnatal mothers in both the groups.
- Chi-square test to associate the post test adequacy of lactation among immediate postnatal mothers with demographic variables.

SUMMARY

Quasi experimental design was carried on 250 immediate postnatal mothers admitted in C.S.I Mission Hospital Neyyoor and Nagercoil, Kanyakumari District by using simple random sampling techniques. Breast assessment tool, breast feeding assessment tool were used to assess the adequacy of lactation among immediate postnatal mothers. The data were collected after obtaining the permission from concerned personnel of the Hospital. Analysis was done by using descriptive and inferential statistics and presented in the form of tables, graphs and figures.

CHAPTER – IV

RESULTS AND ANALYSIS

CHAPTER – IV

RESULTS AND ANALYSIS

The chapter deals with analysis and interpretation of data collected from the immediate postnatal mothers to analyze the effectiveness of acupressure and reflexology on adequacy of lactation among experimental group I and experimental group II

Data analysis was done to organize, provide structure and elicit meaning and with in the description of any study in which data are numerical with some concepts. Descriptive statistics allows the research to summarize, describe the quantitative data and inferential statistics used to determine the relationship and the causality

The data were entered into the Excel Sheet and were analyzed by using the statistical package for social science (PC+ Ver.17).

The findings of the study are organized and presented under the following sections.

ORGANIZATION AND PRESENTATION OF DATA

The data collected are organized and presented under following sections.

SECTION 4.1 Description of demographic variables of immediate postnatal mothers.

SECTION 4.2 Assess the adequacy of lactation among the experimental group I of immediate postnatal mothers before and after acupressure

4.2.1 Frequency and percentage distribution of pre and post test scores on adequacy of lactation among immediate postnatal mothers in experimental group I

SECTION 4.3 Assess the adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology

4.3.1 Frequency and percentage distribution of pre and post test scores on Breast milk secretion among immediate postnatal mothers in experimental group II

4.3.2 Frequency and percentage distribution of pre and post test scores on Breast feeding among immediate postnatal mothers in experimental group II

SECTION 4.4 Determine the effectiveness of acupressure and reflexology on adequacy of lactation among immediate postnatal mothers in experimental group I and II.

4.4.1 Paired "t" test value of pre and post test scores of experimental group I.

4.4.2 Mean, SD, and Mean percentage of experimental group I pre and post test scores on adequacy of lactation.

4.4.3 Paired "t" test value of pre and post test scores of experimental group II.

4.4.4 Mean, SD, and Mean percentage of experimental group II pre and post test scores on adequacy of lactation.

SECTION 4.5 Compare the effectiveness of acupressure and reflexology on adequacy of lactation among immediate postnatal mothers in experimental group I and II.

4.5.1 Frequency and percentage distribution of post test scores on Breast milk secretion among immediate postnatal mothers in experimental group I and II.

4.5.2 Frequency and percentage distribution of post test scores on Breast feeding among immediate postnatal mothers in experimental group I and II.

4.5.3 Unpaired "t" test value of post test scores of experimental group I and II.

4.5.4 Comparison of Mean, SD, and Mean percentage of experimental group I post test scores on adequacy of lactation.

4.5.5 Comparison of Mean, SD, and Mean percentage of experimental group II post test scores on adequacy of lactation.

SECTION 4.6 **Find out the association between post test scores of adequacy of lactation among experimental group I and II of immediate postnatal mothers with their selected demographic variables.**

4.6.1 Chi -square value of association between the post test scores of adequacy of lactation among immediate postnatal mothers in experimental group I with their demographic variables.

4.6.2 Chi -square value of association between the post test scores of adequacy of lactation among immediate postnatal mothers in experimental group II with their demographic variables.

SECTION 4.1: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF IMMEDIATE POSTNATAL MOTHERS

Table 4.1.1 Frequency and percentage distribution of samples according to their demographic variables (N = 250)

S.No	Demographic variables	Experimental group I		Experimental group II	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
1	**Age of the mother**				
	18 – 23 years	6	5	12	9
	24 – 29 years	107	86	100	80
	30 – 35 years	12	9	13	11
2	**Education**				
	No formal education	-	-	-	-
	Primary education	-	-	-	-
	Secondary and higher education	22	18	16	13
	Under graduate	83	66	79	63
	Post graduate	20	16	30	24
3	**Occupation**				
	Sedentary	82	66	93	74
	Moderate	43	34	32	26
	Heavy	-	-	-	-

S.No	Demographic variables	Experimental group I		Experimental group II	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
4	**Monthly income**				
	Below Rupees. 7000	4	3	0	0
	Between Rupees 7001 – 12,000	84	67	42	34
	Above Rupees 12000	37	30	83	66
5	**Type of diet**				
	Vegetarian	41	33	49	39
	Non Vegetarian	84	67	76	61
6	**Family support**				
	Supportive	85	68	91	73
	Non supportive	40	32	34	27
7	**Ante natal check up**				
	Regular	102	82	114	91
	Irregular	23	18	11	9
8	**Gestational age**				
	38 - 39 weeks	96	77	72	58
	39.1 – 40 weeks	27	22	41	32
	40.1 – 41 weeks	2	1	12	10
9	**Initiation of breast feeding**				
	Within 30 minutes	125	100	125	100
	After 30minutes	0	0	0	0
	More than 1hour	0	0	0	0
10	**Birth weight**				
	2.5Kg – 3 kg	67	55	59	47
	3.1 Kg – 3.5 kg	55	44	63	51
	< 3.5 Kg	2	1	3	2

S.No	Demographic variables	Experimental group I		Experimental group II	
		Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
11	**Type of feed given**				
	Colostrum	125	100	125	100
	Water	0	0	0	0
	Formula feed	0	0	0	0
12	**Number of times breast feeding given per day**				
	8 times	64	51	71	57
	6 times	38	30	33	26
	4 times	23	19	21	17
13	**Sex of the baby**				
	Male	77	62	67	55
	Female	53	38	63	45

The above table reveals the frequency and percentage distribution of the demographic variables such as age, education, occupation, monthly income, type of diet, family support, antenatal check up, gestational age, birth weight, sex of the baby, initiation of breast feeding and type of feed.

Demographic profile of the participants from age point of view was found distributed with minor differences in few categories in experimental group I majority 107(86%) of immediate postnatal mothers were in the age of 24 – 29 years, 6 (5%) were in the age group of 18 - 23 years and 12 (9%) were in the age group of above 30 years. In experimental group II majority 100(80%) were in the age group of 24 -29 years, 12 (9%) were 18 – 23years and 13 (11%) immediate postnatal mothers belong to the age group of above 30 years.

Distribution of demographic profile according to the work pattern in experimental group I and II depict that the majority 83 (66%) and 79 (63%) had under graduate education, 22 (18%) and 16 (13%) had secondary education, 20 (16%) and 30 (24%) had post graduate education.

While considering the occupation of immediate postnatal mothers displayed majority 82 (66%) and 93 (74%) were sedentary workers in both groups and 43 (34%) and 32 (26%) were belongs to moderate workers in both experimental group I and II.

With regard to monthly income in experimental group I majority 84 (67%) of immediate postnatal mothers had a monthly income of rupees 7001 – 2000 per month and 4 (3%) had an monthly income below 7000 rupees. 37(30%) had an monthly income of more than rupees 12000.wereas in experimental group II majority 83(66%) had an income of more than rupees 12000 , 42(34%) were having a income of rupees 7001 – 12000.

Family support majority 85(68%) and 91(73%) exhibited good family support and 40(32%) and 34(27%) had less family support in both experimental group I and II.

With regard to gestational age of immediate postnatal mothers majority 96 (77%) and 72 (58%) had 38 – 39 weeks of gestation, 27 (22%) and 41(32%) were in 39.1 – 40 weeks of gestation. 2 (1%) and 12(10%) were in 40.1 – 41 weeks of gestation in both experimental group I and II.

Participants accordingly with initiation of breast feeding in experimental group I and II demonstrated majority 125 (100%) and 125 (100%) initiated breast feeding with in 30 minutes.

While considering the birth weight of the baby majority 67 (55%) were having 2.5 – 3 kg, 55 (44%) were having 3.1 -3.5 kg, 2 (1%) were having a weight of more than 3.5 kg in experimental group I. In experimental group II majority 63 (51%) were having weight of 3.1 – 3.5 kg, 59(47%) were having a weight of 2.5 – 3 kg and 3 (2%) were having weight more than 3.5 kg.

With regard to type of feed given majority 125(100%) and 125(100%) have given colostrum as the first feed.

With respect of breast feeding given per day majority 64(51%) and 71 (57%) were given feeding for 8 times, 38(30%) and 33(26%) have given feeding for 6 times, 23(19%) and 21(17%) have given feeding for 4 times in both groups.

While considering the sex of the baby majority 77(62%) and 67(55%) were male babies whereas 53(38%) and 63(45%) were female babies in experimental group I and II.

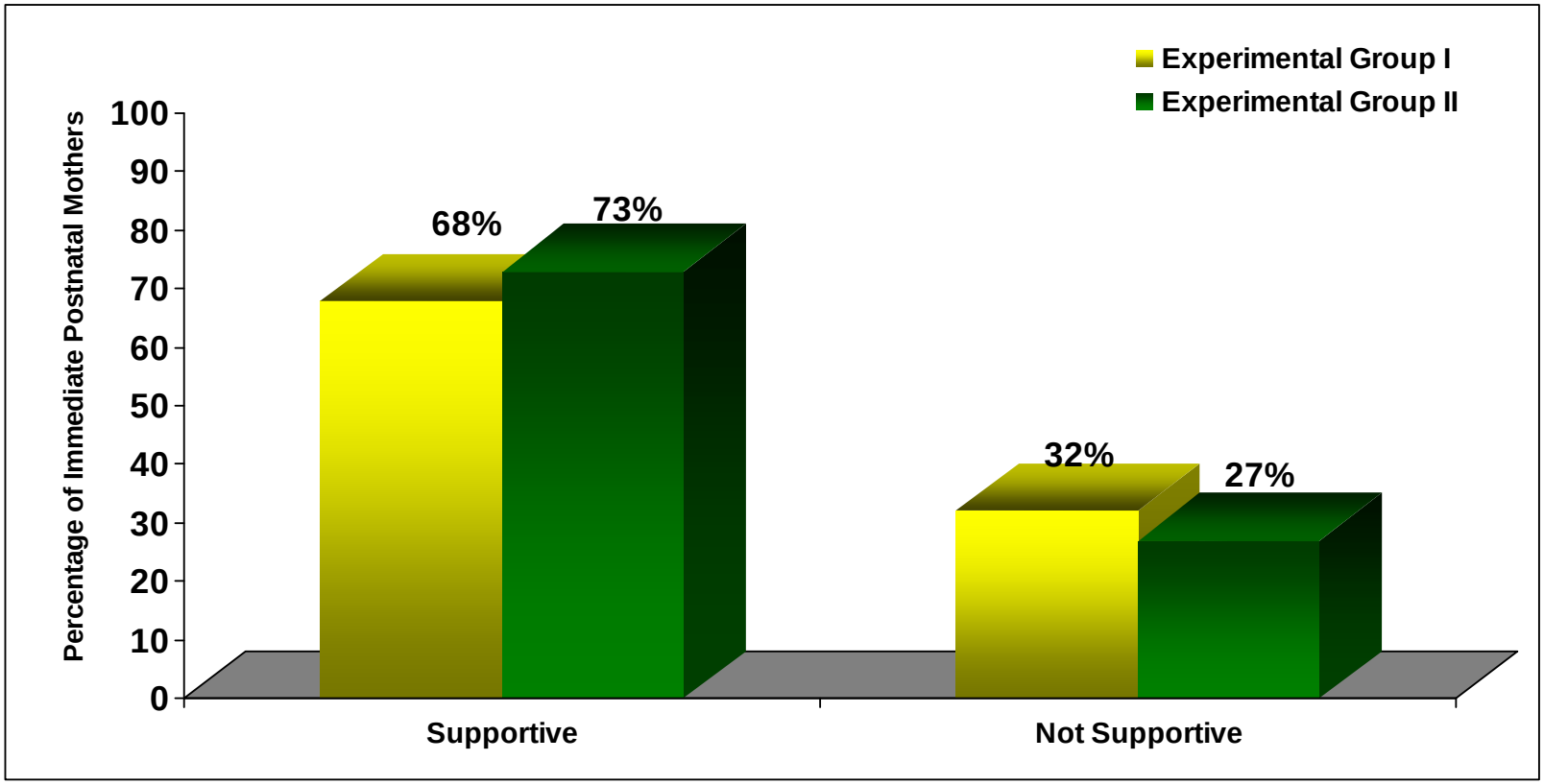


Fig : 4.1.1 Bar Diagram shows the frequency and percentage of Family Support among immediate postnatal mothers in experimental Group I and II

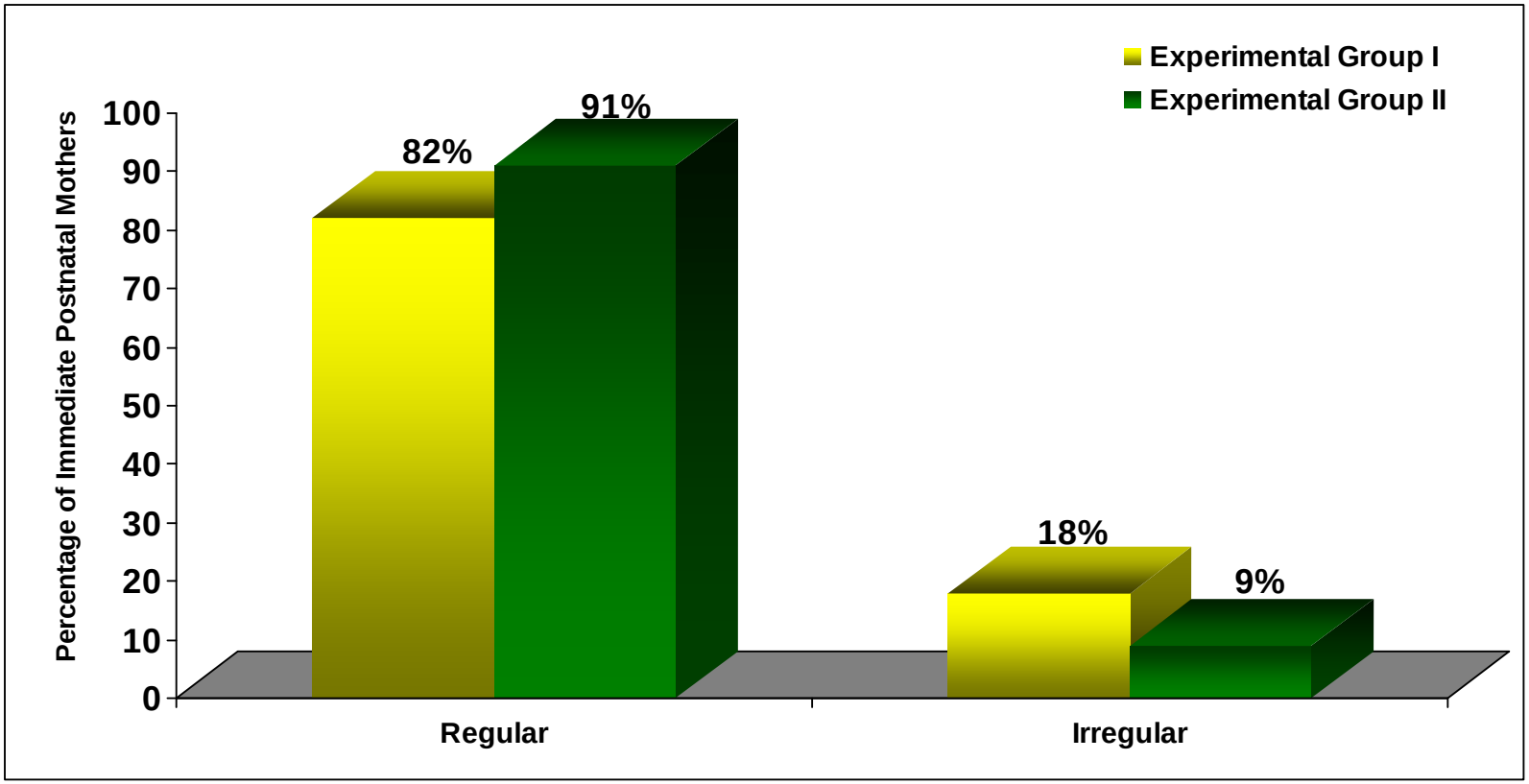


Fig : 4.1.2 Bar Diagram shows the frequency and percentage of Antenatal Check Up among immediate postnatal mothers in experimental Group I and II

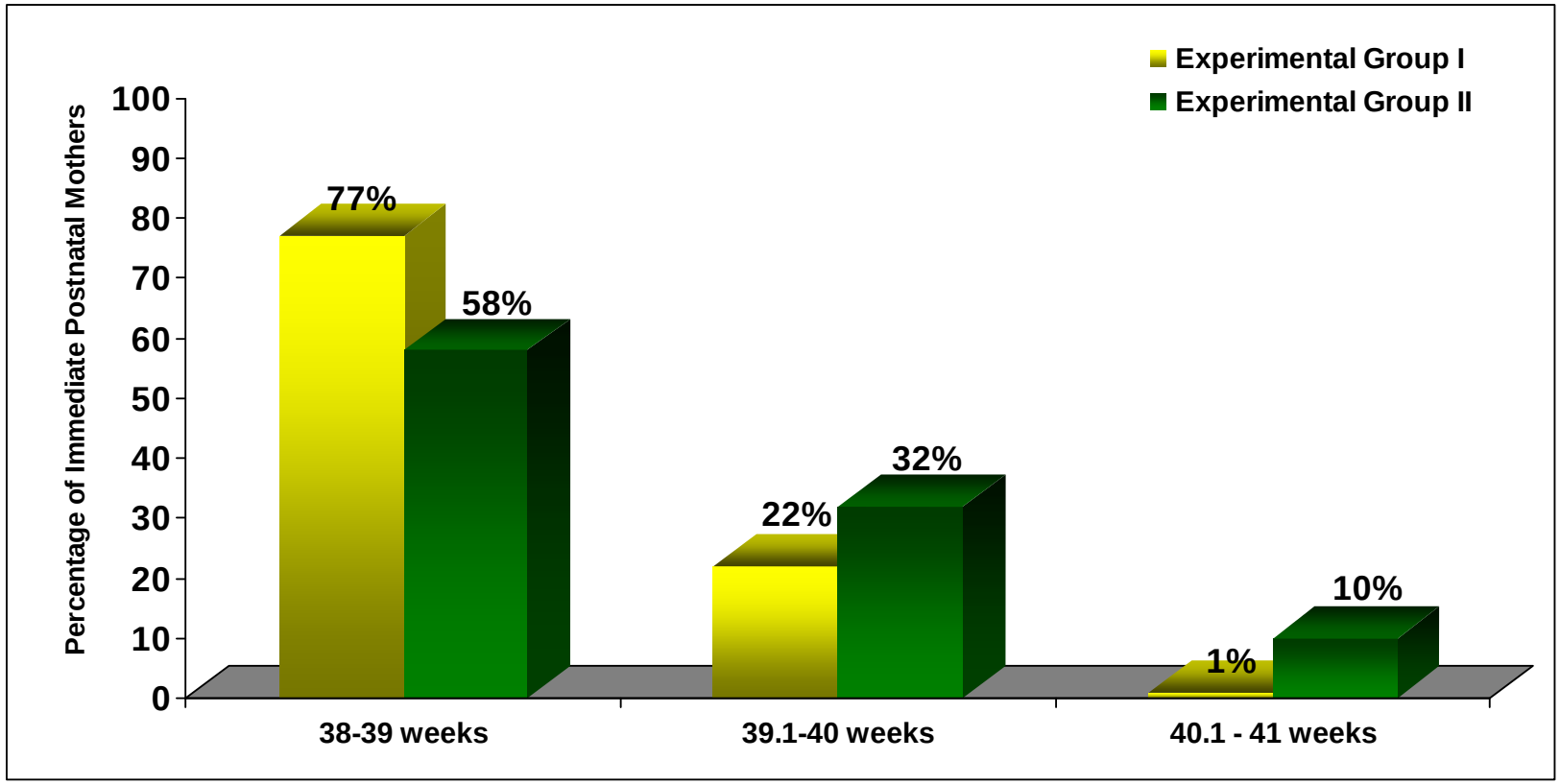


Fig : 4.1.3 Bar Diagram shows the frequency and percentage of Gestational age among immediate postnatal mothers in experimental Group I and II

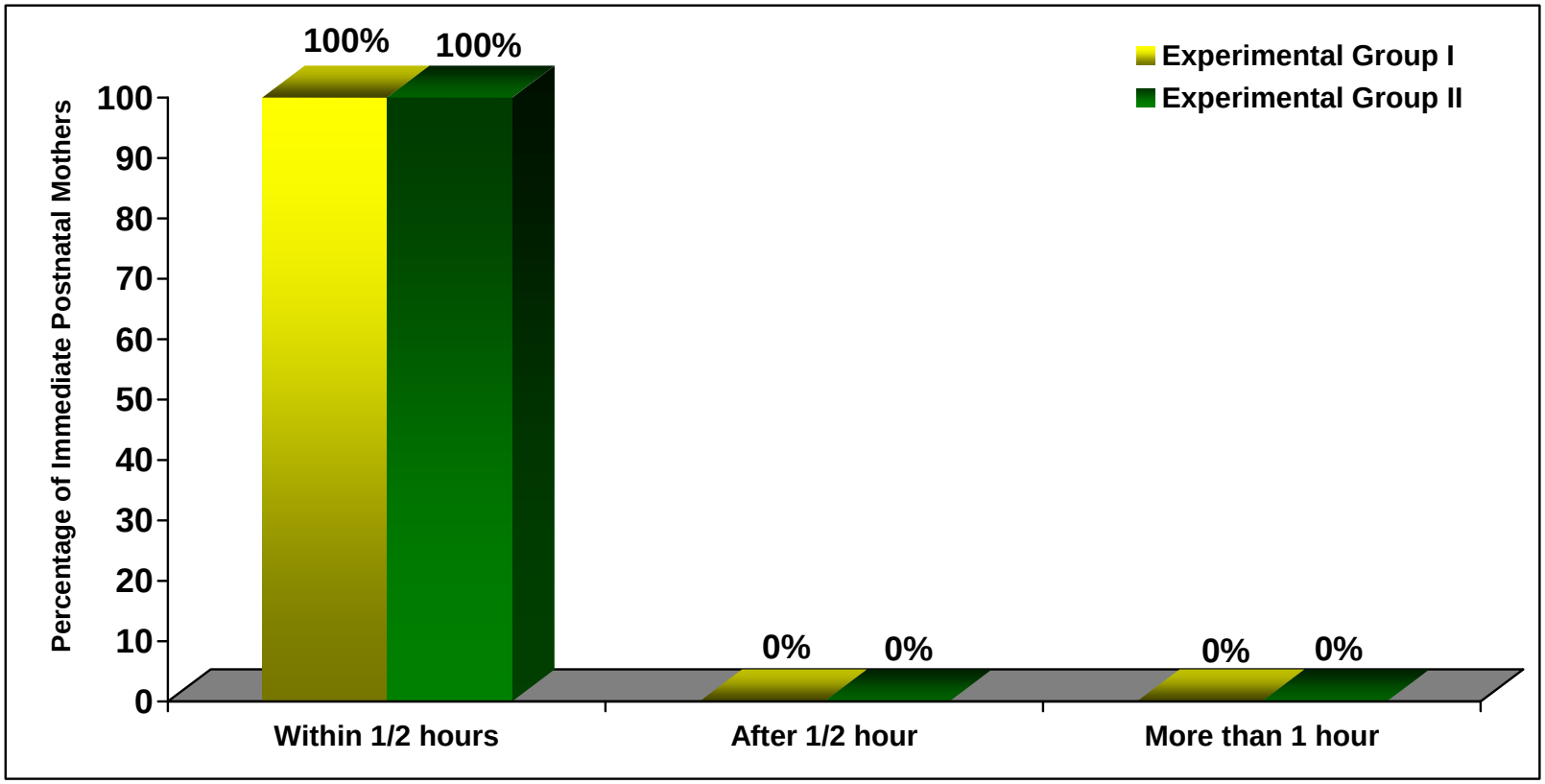


Fig : 4.1.4 Bar Diagram shows the frequency and percentage of Initiation of Breast Feeding among immediate postnatal mothers in experimental Group I and II

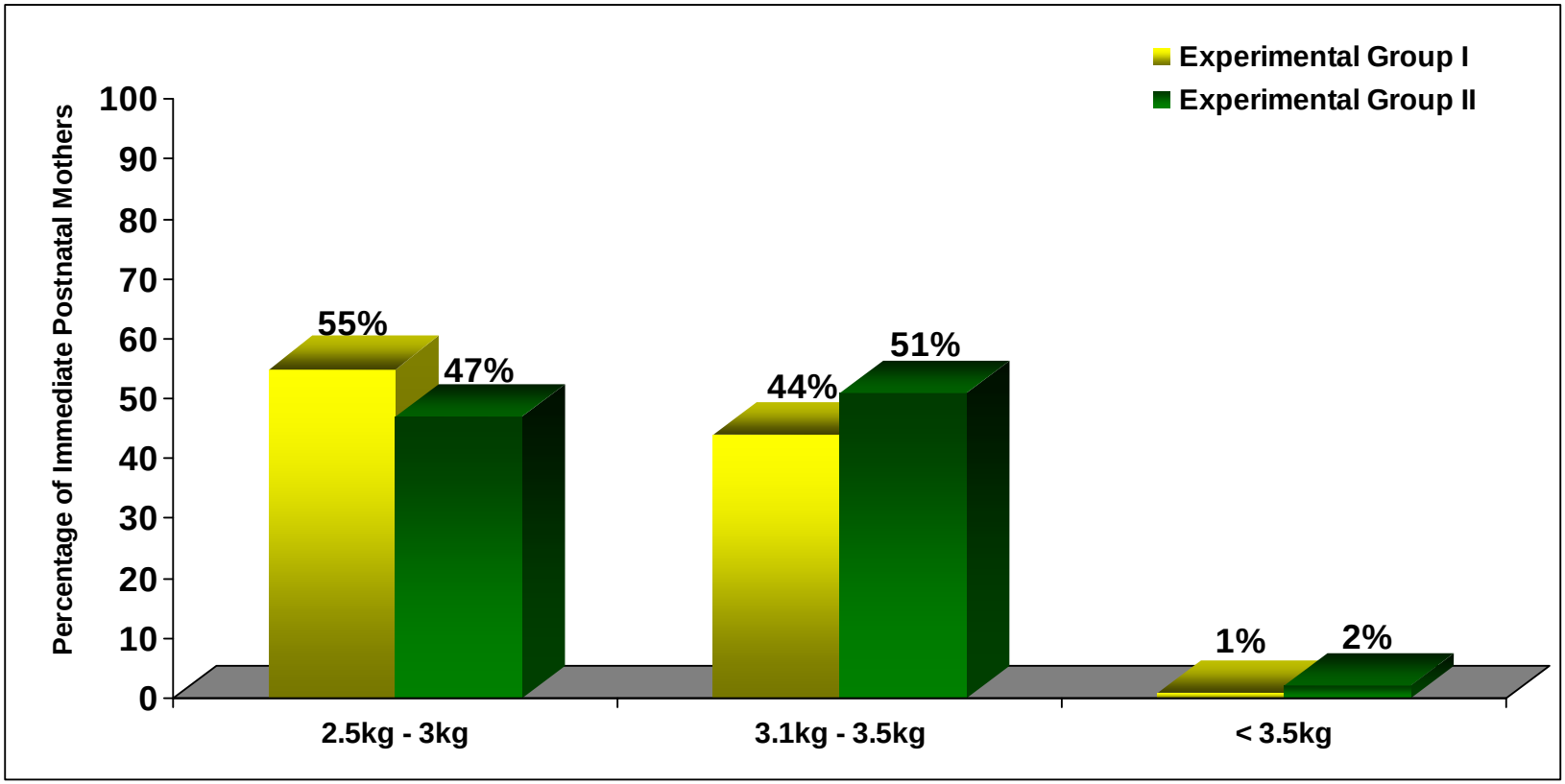


Fig : 4.1.5 Bar Diagram shows the frequency and percentage of Birth weight of the baby among immediate postnatal mothers in experimental Group I and II

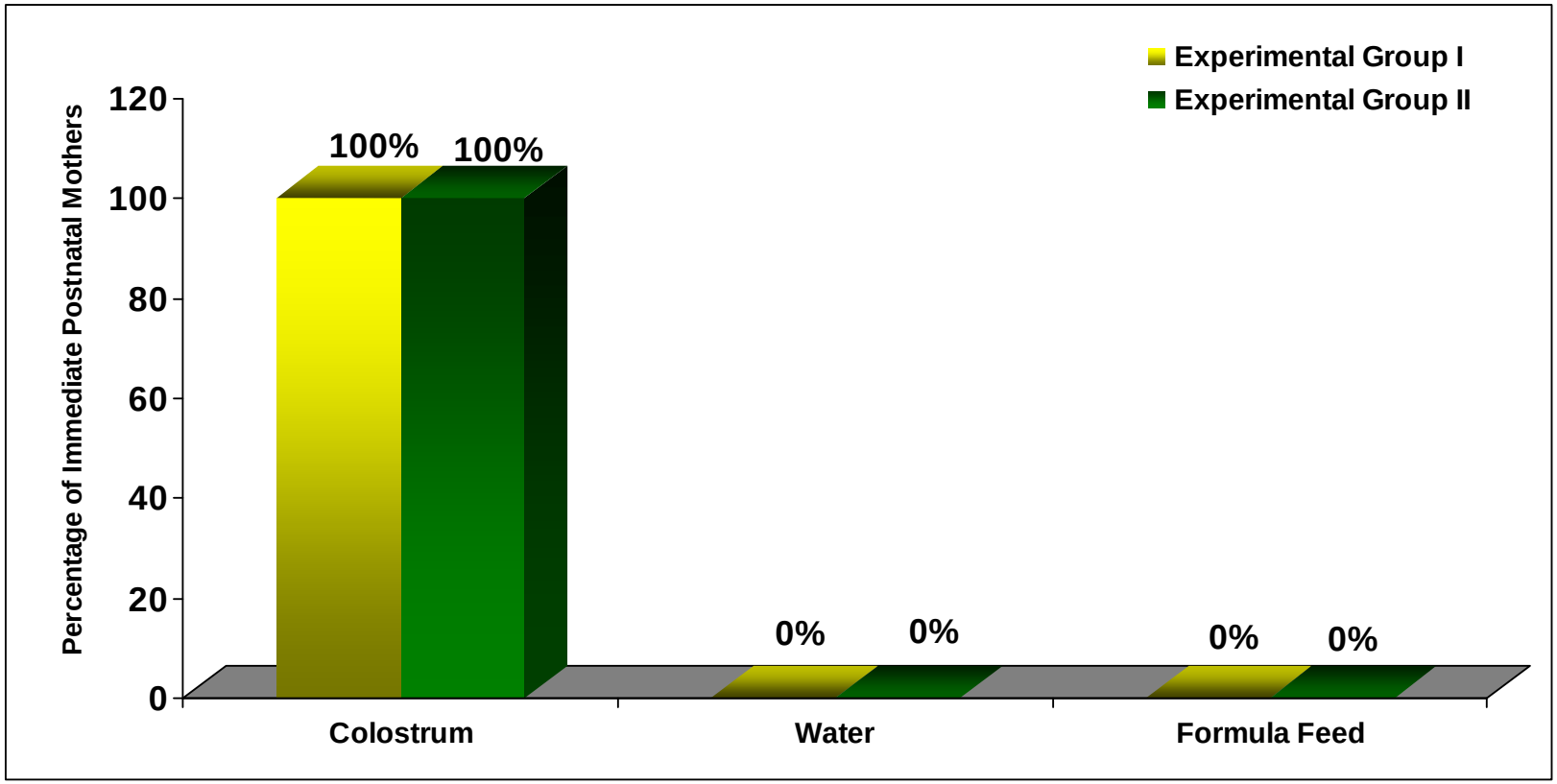


Fig : 4.1.6 Bar Diagram shows the frequency and percentage of Type of Feed Given to the baby among immediate postnatal mothers in experimental Group I and II

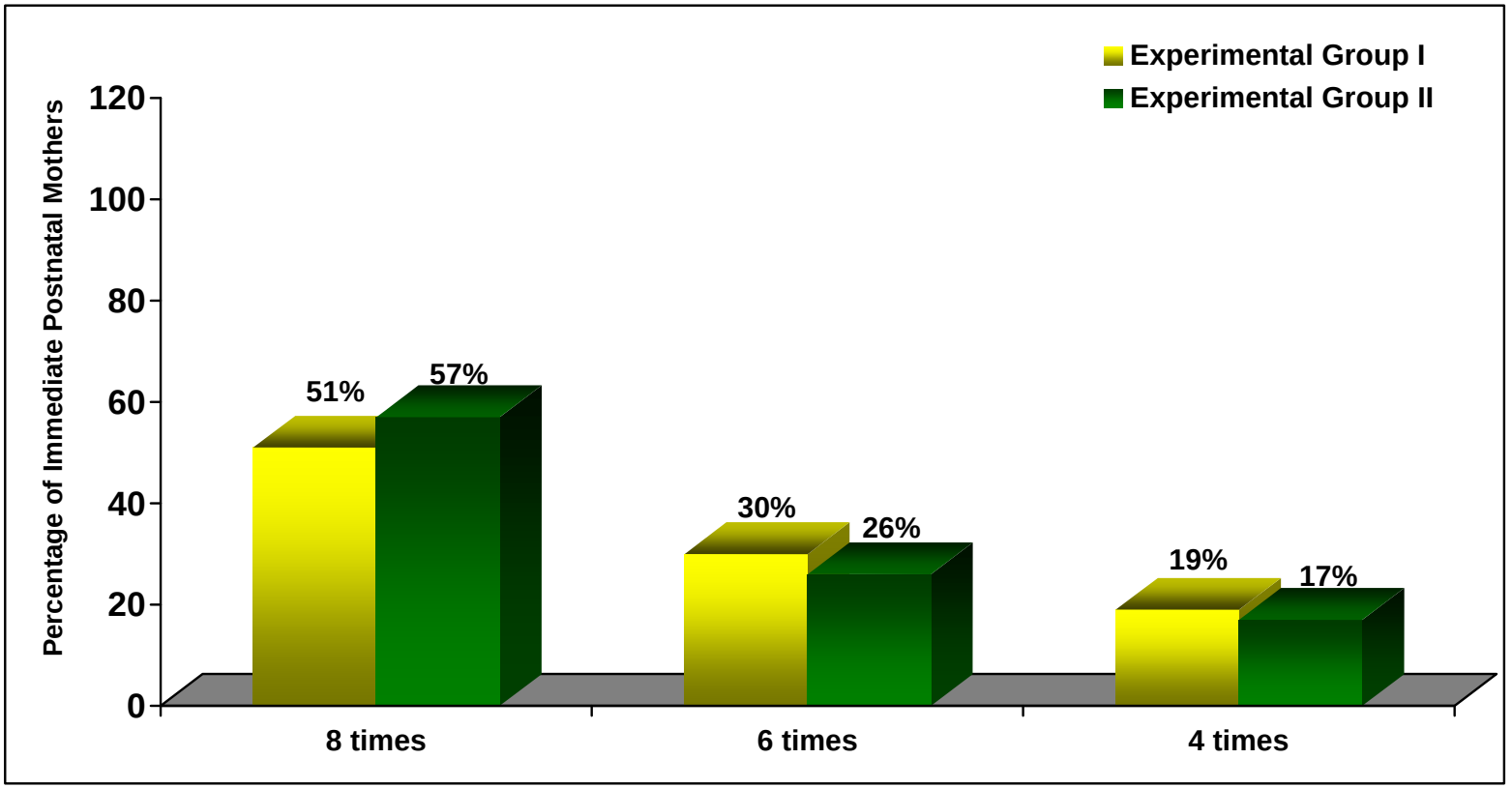


Fig : 4.1.7 Bar Diagram shows the frequency and percentage of Number of times breast feeding given per day among immediate postnatal mothers in experimental Group I and II

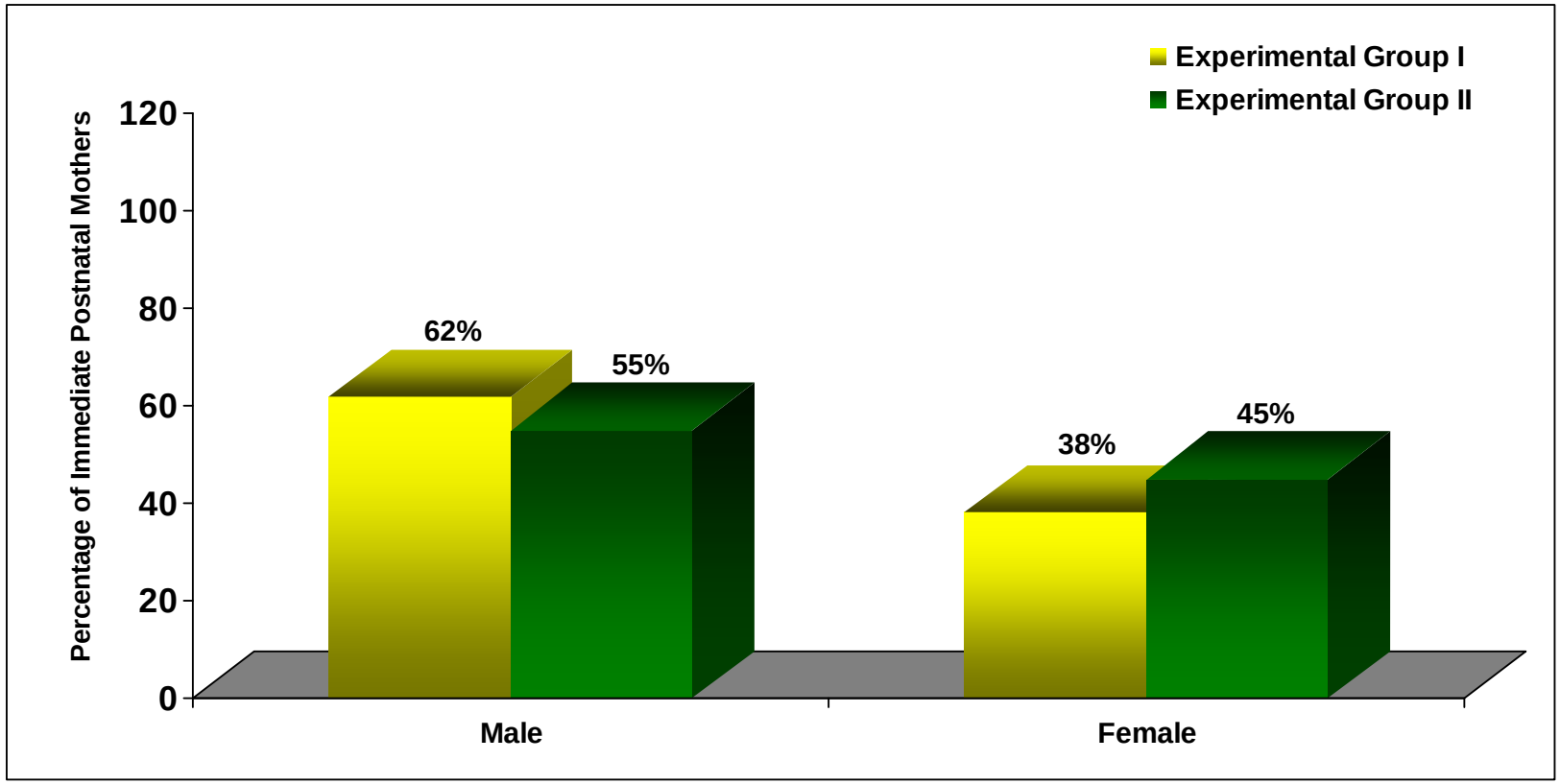


Fig : 4.1.8 Bar Diagram shows the frequency and percentage of Sex of the baby among immediate postnatal mothers in experimental Group I and II

SECTION 4.2: ASSESS THE ADEQUACY OF BREAST MILK SECRETION IN EXPERIMENTAL GROUP I OF IMMEDIATE POSTNATAL MOTHERS BEFORE AND AFTER ACUPRESSURE

Table 4.2.1 Frequency and percentage distribution of pre and post test scores of breast secretion among immediate postnatal mothers in experimental group I.

(N_1= 125)

Breast secretion	Pre test		Post test I		Post test II		Post test III	
	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)
Adequate Secretion	0	0	37	26	75	60	96	76
Moderate Secretion	90	72	88	74	50	40	29	24
Inadequate Secretion	35	28	0	0	0	0	0	0

The experimental group I during pre intervention out of 125 subjects majority 90 (72%) had moderate secretion, 35(28%) had inadequate secretion. In course of post intervention I 37(26%) had adequate secretion, 88(74%) had moderate secretion. In post intervention II 75(60%) had adequate secretion, 50(40%) had moderate secretion. In post intervention III majority 96(76%) had adequate secretion, 29(24%) had moderate secretion. (Table 4.2.1)

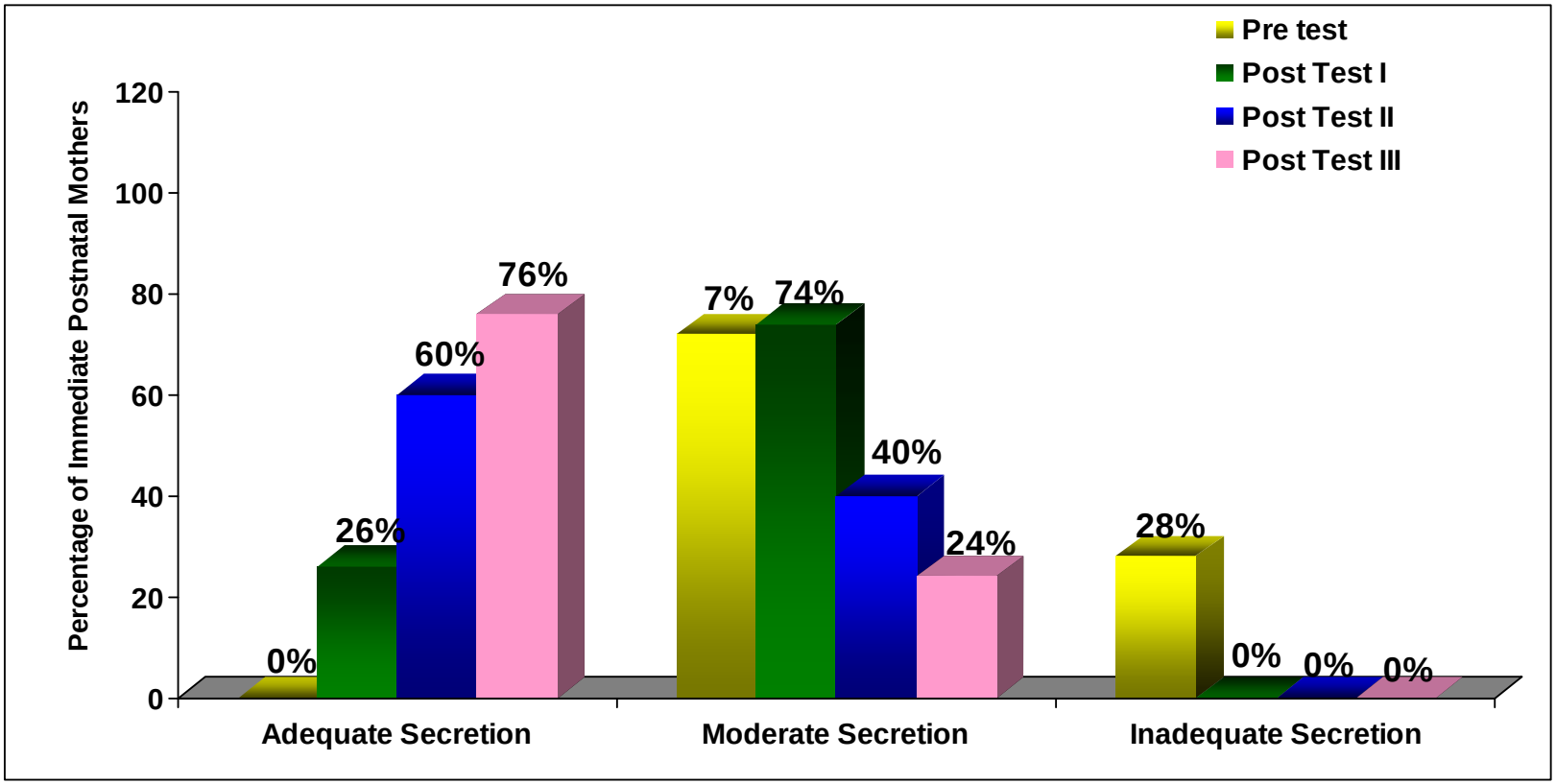


Fig : 4.1.9 Bar Diagram shows the frequency and percentage of pre and posttest scores of breast secretion among immediate postnatal mothers in experimental Group I

Table 4.2.2 Frequency and percentage distribution of pre and post test scores of breast feeding among immediate postnatal mothers in experimental group I.

(N_1= 125)

Breast feeding	Pre test		Post test I		Post test II		Post test III	
	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)
Adequate Feeding	0	0	0	0	65	52	90	72
Moderate Feeding	104	83	102	82	60	48	35	28
Inadequate Feeding	21	17	23	18	0	0	0	0

Experimental group I data suggested that breast feeding in the pretest 104 (83%) had moderate feeding, 21(17%) had inadequate feeding. In posttest I majority 102 (82%) had moderate feeding, 23 (18%) had inadequate feeding where as in posttest II 65(52%) had adequate feeding, 60(48%) had moderate feeding, In posttest III 90(72%) had adequate feeding, 35(28%) had moderate feeding. (Table 4.2.2).

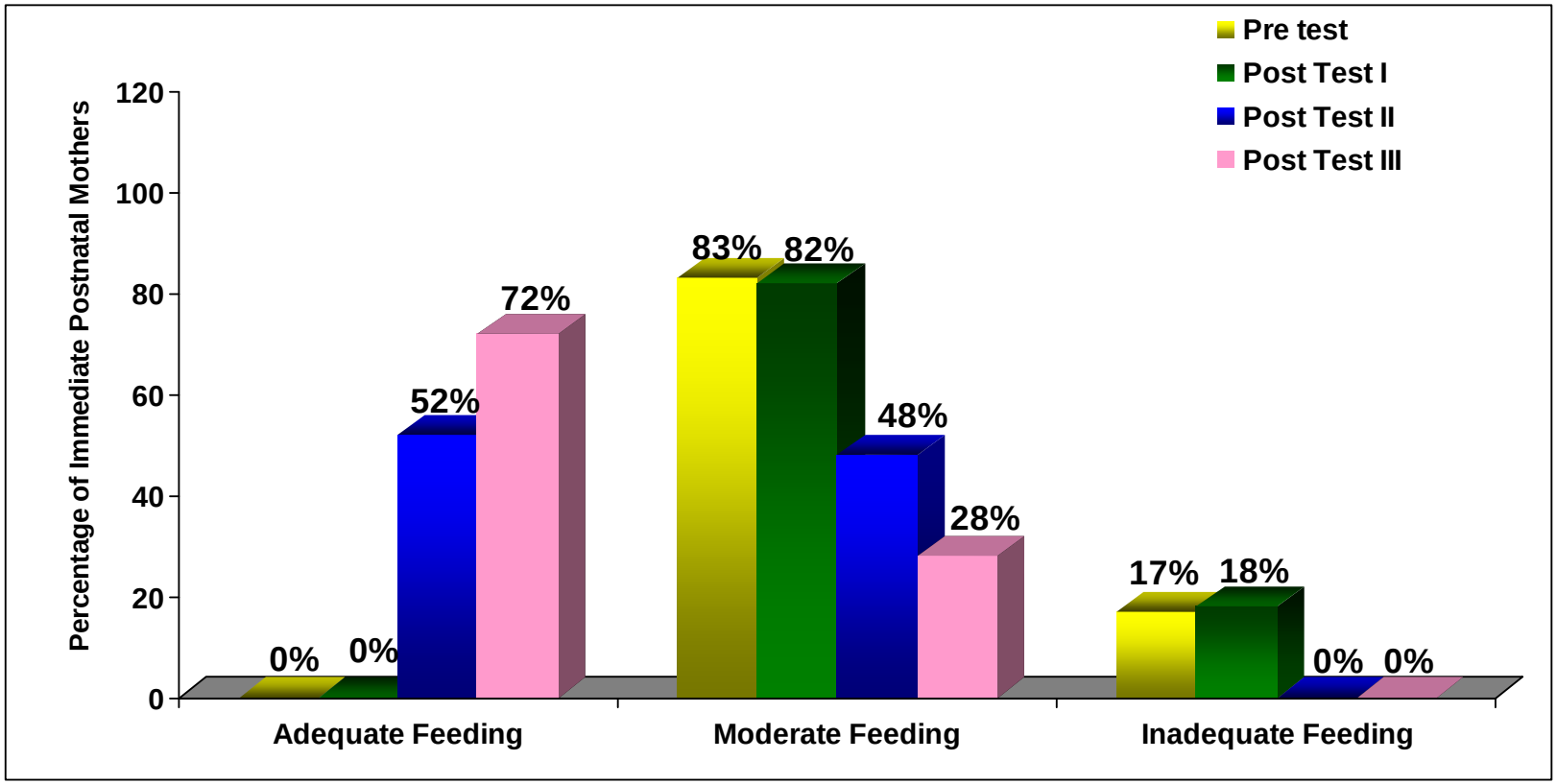


Fig : 4.1.10 Bar Diagram shows the frequency and percentage of pre and posttest scores of breast feeding among immediate postnatal mothers in experimental Group I

SECTION 4.3: ASSESS THE ADEQUACY OF LACTATION AMONG EXPERIMENTAL GROUP II OF IMMEDIATE POSTNATAL MOTHERS BEFORE AND AFTER REFLEXOLOGY

Table 4.3.1 Frequency and percentage distribution of pre and post test scores on breast milk secretion among immediate postnatal mothers in experimental group II.

(N_2= 125)

Breast secretion	Pre test		Post test I		Post test II		Post test III	
	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)
Adequate Secretion	0	0	34	27	75	60	85	68
Moderate Secretion	73	58	91	73	50	40	40	32
Inadequate Secretion	52	42	0	0	0	0	0	0

Experimental group II before intervention by the whole of 125 subjects 73 (58%) had moderate secretion and 52 (42%) had inadequate secretion. In the course of after intervention experimental group II illustrated 85 (68%) had adequate secretion, 40(32%) had moderate secretion in posttest III. In posttest II 75(60%) had adequate secretion and 50(40) had moderate secretion. In posttest I 34(27%) had adequate secretion and 91(73%) had moderate secretion. (Table 4.3.1)

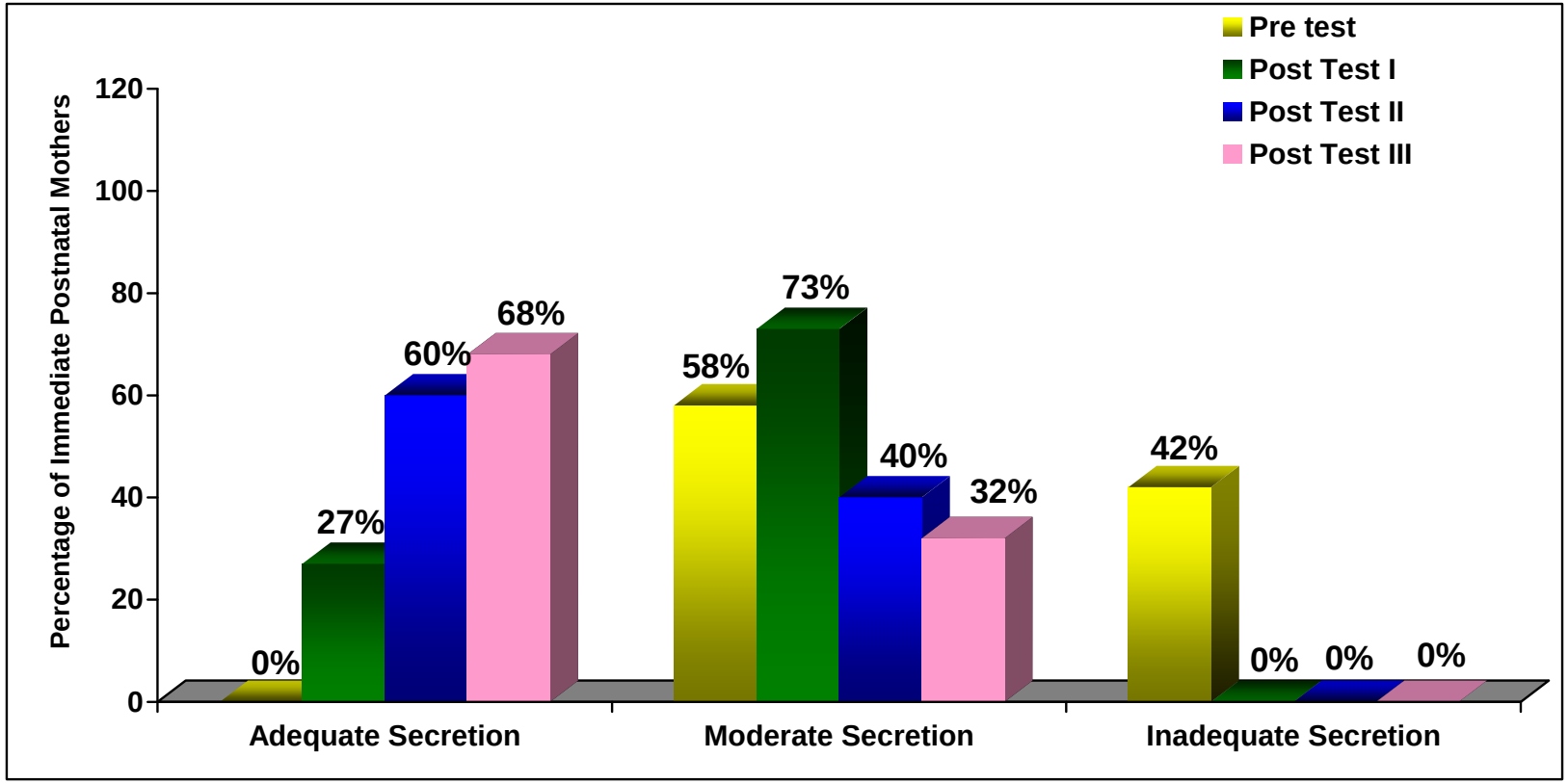


Fig : 4.1.11 Bar Diagram shows the frequency and percentage of pre and posttest scores of breast secretion among immediate postnatal mothers in experimental Group II

4.3.2 Frequency and percentage distribution of pre and post test scores of breast feeding among immediate postnatal mothers in experimental group II.

(N=125)

Breast feeding	Pre test		Post test I		Post test II		Post test III	
	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)	F (N)	Percentage (%)
Adequate Feeding	0	0	0	0	86	69	95	76
Moderate Feeding	104	83	113	90	39	31	30	24
Inadequate Feeding	21	17	12	10	0	0	0	0

Experimental group II data presented that during pre intervention by the whole of 125 participants in experimental group I marked that majority 104(83%) had moderate feeding and 21(17%) had inadequate feeding. Besides in post test intervention I 113(90%) had moderate feeding, 12(10%) had inadequate feeding. In post intervention II 86(69%) had adequate feeding and 39(31%) had moderate feeding where as in posttest III 95(76%) had adequate feeding and 30 (24) had moderate feeding.(Table4.3.2)

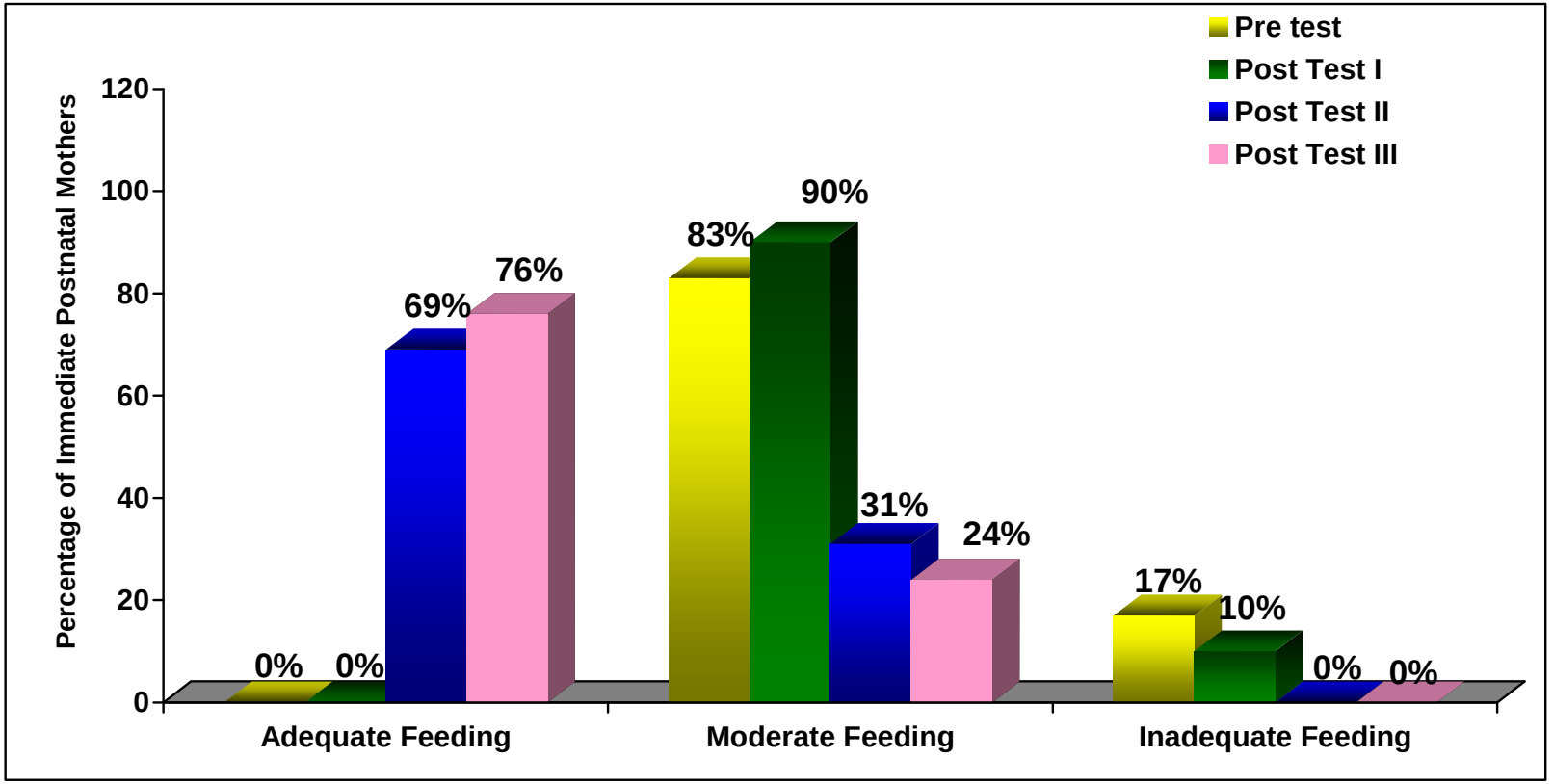


Fig : 4.1.12 Bar Diagram shows the frequency and percentage of pre and posttest scores of breast feeding among immediate postnatal mothers in experimental Group II

SECTION 4.4: DETERMINE THE EFFECTIVENESS OF ACUPRESSURE AND REFLEXOLOGY ON ADEQUACY OF LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN EXPERIMENTAL GROUP I AND II.

Table 4.4.1 Paired "t" test value of pre and post test scores of experimental group I.

(N=250)

Adequacy of lactation	Paired 't' test values			Level of significant (P)
	Pre and Post test 1	Pre and Post test 2	Pre and post test 3	
Breast secretion	7.276	9.183	15.728	**P < 0.05 Significant**
Breast feeding	7.421	10.23	14. 12	**P < 0.05 Significant**

Df= 124 Table value = 1.980 P<0.05 significant

Equating the paired 't' test value of breast secretion scores of posttest III (15.7), posttest II (9.1) and posttest I (7.2) gives distinct clinical significance ($p< 0.05$). In posttest III the paired't' value is (14.12) and posttest II (10.23), posttest III (7.4) is significant ($p< 0.05$) with experimental group I. (Table 4.4.1)

Table 4.4.2 Area wise comparison of mean, SD, and mean percentage of experimental group I pre and post test scores on adequacy of lactation.

Adequacy of lactation	Pre test			Post test I			Post test II			Post test III		
	M	SD	M %	M	SD	M %	M	SD	M %	M	SD	M %
Breast secretion	7.4	2.46	41	12.12	1.71	67	12.74	1.77	71	14.94	1.22	83
Breast feeding	8.2	1.67	46	13.98	1.90	78	15.08	1.82	84	15.76	1.10	88

Parallel comparison between mean, standard deviation and mean percentage concerning pretest breast secretion scores with experimental group I, gave the mean score with 7.4 ± 2.46 and mean percentage was 41%. Furthermore in post test I mean score with 12.12 ±1.7 and mean percentage was 67%. Whereas in posttest II mean score with 12.74±1.77 and mean percentage was 71% and in posttest III mean score 14.94 ±1.2 and mean percentage was 83%. Besides the pretest mean score with 8.2 ±1.6 and mean percentage was 46%. The posttest I mean score 13.98±1.9 and mean percentage was 78%. In posttest II mean score is 15.08±1.8 and mean percentage was 84%. In posttest III the mean score is 15.76 ±1.1 and mean percentage was 88% for breast feeding. The Conclusion shows there is significant difference between pretest and posttest on adequacy of lactation scores on acupressure was most significant, which means the acupressure is effective in promoting the breast secretion and breast feeding among immediate postnatal mothers. (Table 4.4.2)

Table 4.4.3 Paired 't' test value of pre and post test scores of experimental group II.

(N=125)

Adequacy of lactation	Paired 't' test values			Level of significant (P)
	Pre and Post test 1	Pre and Post test 2	Pre and post test 3	
Breast secretion	6.276	12.183	16.73	**P < 0.05 Significant**
Breast feeding	7.421	10.23	15.621	**P < 0.05 Significant**

Df= 124 Table value = 1.980 P<0.05 significant

In Compatible paired't' test for experimental group II value of breast secretion scores manifested distinct clinical significance ($p<0.05$) with posttest I (6.2), posttest II (12.18), posttest III (16.73). The value of breast feeding scores for posttest I (7.4), posttest II (10.23) and posttest III (15.6). The overall compatible paired't' test of adequacy of lactation scores showed distinct clinical significance ($p<0.05$) with experimental group II (Table 4.4.3)

Table 4.4.4 Area wise comparison of mean, SD, and mean percentage of experimental group II pre and post test on adequacy of lactation scores

(N=125)

Adequacy of lactation	Pre test			Post test I			Post test II			Post test III		
	M	SD	M %	M	SD	M %	M	SD	M %	M	SD	M %
Breast secretion	6.85	2.330	38	12.79	1.22	71	14.16	2.73	79	15.51	2.78	86
Breast feeding	8.096	2.612	45	10.592	1.86	59	12.904	2.19	72	14.84	2.08	82

The mean score of pretest and posttest on level of lactation in experimental group II revealed that the pretest mean of breast secretion was 6.8±2.33 which is 38%, posttest I 12.79±1.22 which is 71%, posttest III 14.16±2.73 which is 79% and posttest III 15.51±2.78 which is 86% where as in breast feeding mean pretest score 8.09±2.61 which is 45 %, posttest I 10.59±1.86 which is 59%, posttest II 12.90±2.19 which is 72% and posttest III 14.84±2.08 which is 82%. This shows that reflexology is effective in increasing breast secretion and breast feeding among immediate postnatal mothers and promoted lactation. (Table 4.4.4)

SECTION 4. 5: COMPARE THE EFFECTIVENESS OF ACUPRESSURE VS REFLEXOLOGY ON ADEQUACY OF LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN EXPERIMENTAL GROUP I AND II.

Table 4.5.1 Frequency and percentage distribution of post test scores on breast milk secretion among immediate postnatal mothers in experimental group I and II

(N = 250)

Breast secretion.	Experimental group I						Experimental group II					
	Post test I		Post test II		Post test III		Post test I		Post test II		Post test III	
	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %
Adeq. Sec.	37	26	75	60	96	76	34	27	75	60	85	68
Mod. Sec.	88	74	50	40	29	24	91	73	50	40	40	32
Inadeq. Sec.	0	0	0	0	0	0	0	0	0	0	0	0

In experimental group I, with respect to level of breast secretion of immediate postnatal mothers shows that 88 (74%) had moderate secretion, 37(26%) had adequate secretion in posttest I. In posttest II, majority 75(60%) had adequate secretion and 50(40%) had moderate secretion whereas in posttest III, 96(76%) had adequate secretion, 29(24%) had moderate secretion. In experimental group II, the level of breast secretion in posttest I, majority 91(73%) had moderate secretion, 34(27%) had adequate secretion, where as in posttest II, 75(60%) had adequate secretion, 50 (40%) had moderate secretion and posttest III, 45(36%) had moderate secretion, 85(68%) had adequate secretion. This shows that acupressure is effective in increasing breast milk secretion in immediate postnatal mothers.(Table. 4.5.1)

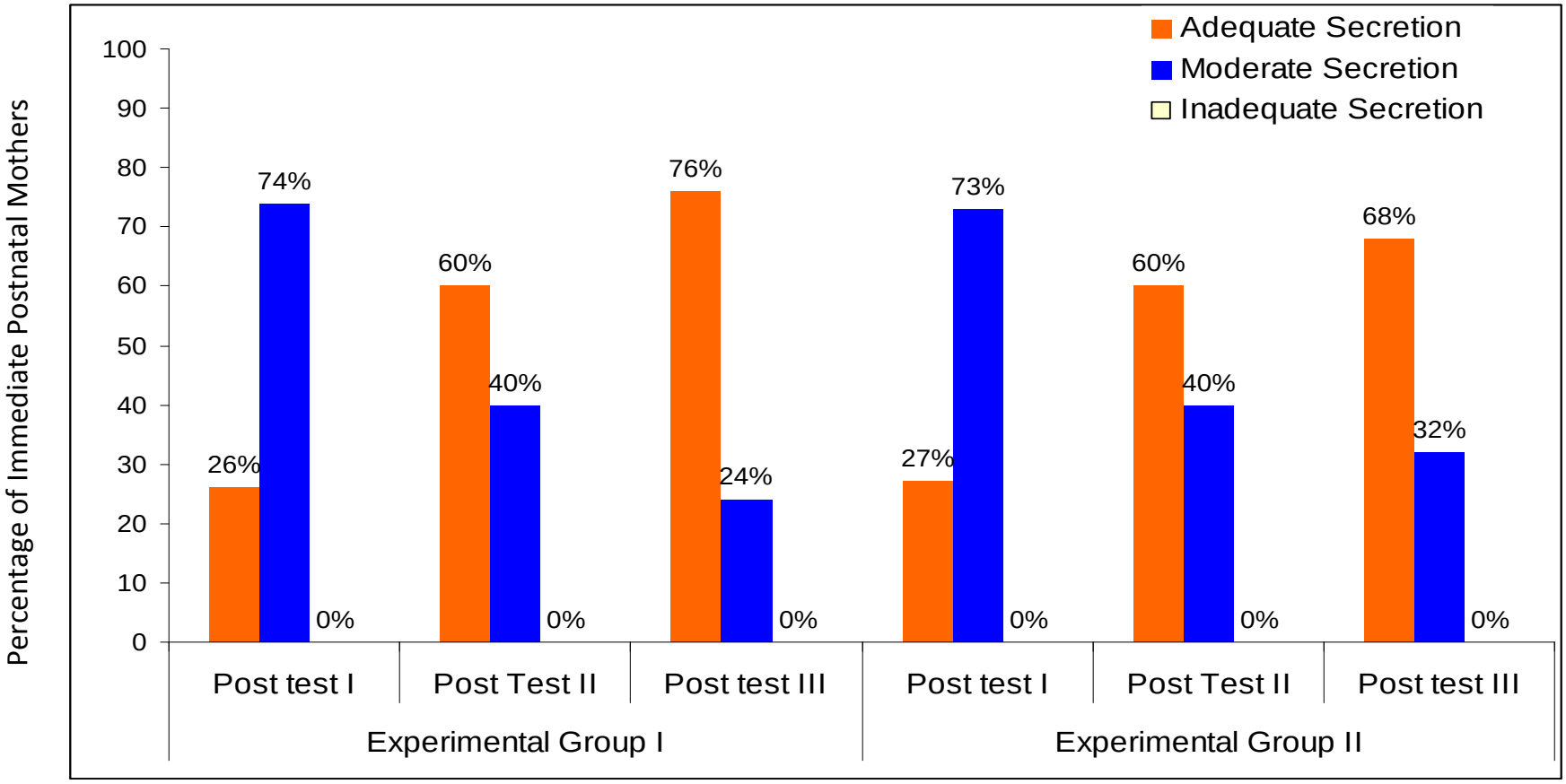


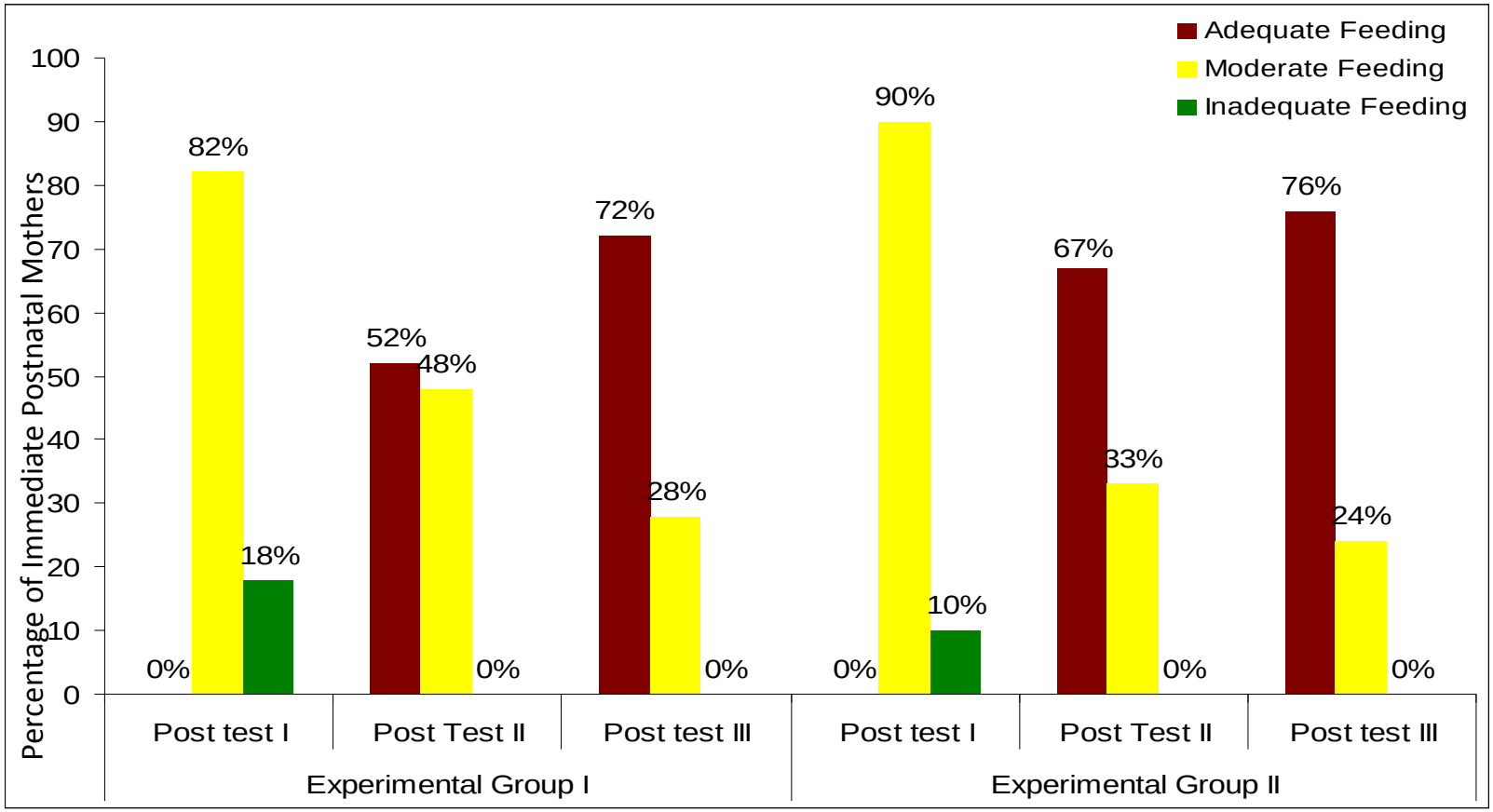
Fig : 4.1.13 Bar Diagram shows the frequency and percentage of post test scores on breast secretion among immediate postnatal mothers in experimental Group I & II

Table 4.5.2 Frequency and percentage distribution of post test scores on breast feeding among immediate postnatal mothers in experimental group I and II

(N = 250)

Breast Feeding	Experimental group I						Experimental group II					
	Post test I		Post test II		Post test III		Post test I		Post test II		Post test III	
	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %	F (N)	P %
Adequate Feeding	0	0	65	52	90	72	0	0	86	67	95	76
Mode Feeding	102	82	60	48	35	28	113	90	39	33	30	24
Inadeq. Feeding	23	18	0	0	0	0	12	10	0	0	0	0

With respect to breast feeding among immediate postnatal mothers in experimental group I, posttest score shows that majority 102(82%) had moderate feeding, 23(18%) had inadequate feeding, where as in post test II, 65(52%) had adequate feeding. In post test III, 90(72%) had adequate feeding. Among experimental group II in posttest I, 113(90%) had moderate feeding, 12(10%) had inadequate feeding. In posttest II, 39(33%) had moderate feeding, 86(67%) had adequate feeding, posttest III 30(24%) had moderate feeding, 95(76%) had adequate feeding. (Table 4.5.2).



Post Test Breast Feeding

Fig : 4.1.14 Bar Diagram shows the frequency and percentage of post test scores on breast feeding among immediate postnatal mothers in experimental Group I & II

Table 4.5.3 Unpaired‘t’ test value of post test scores of experimental group I and II.

(N=250)

Adequacy of lactation	Post test I	Post test II	Post test III	Level of significant (P)
Breast secretion	6.14	7.52	10.69	**P < 0.05 Significant**
Breast feeding	6.23	8.61	9.86	**P < 0.05 Significant**

Df =248 **Table Value = 2.828** **P < 0.05 Significant**

Unpaired‘t’ test was calculated to analyze the effect between posttest scores of experimental group I and II on breast secretion as well as breast feeding of immediate postnatal mothers. This shows that the unpaired‘t’ value of posttest I was 6.14, posttest II was 7.52, posttest III was 10.69. On breast feeding, the scores of posttest I was 6.25, posttest II was 8.61 and posttest III was 9.86 when compared to the table value (2.828) it was high. (Table 4.5.3)

Table 4.5.4 Area wise comparison of mean, SD, and mean percentage of experimental group I post test scores on adequacy of lactation scores

(N = 125)

Adequacy of lactation	Experimental group I								
	Post test I			Post test II			Post test III		
	Mean	SD	Mean %	Mean	SD	Mean %	Mean	SD	Mean %
Breast secretion	12.12	1.71	67	12.74	1.77	71	14.94	1.22	83
Breast feeding	13.98	1.90	78	15.08	1.8	84	15.76	1.1	88

Lateral analogy between mean, standard deviation and mean percentage, posttest adequacy of lactation scores with experimental group I and II, disclosed the mean score for posttest I was 12.2±1.7 which is 67 %, posttest II was 12.7±1.77 which is 71% and posttest III was 14.9±1.22 which is 83%. For breast feeding the posttest mean scores were posttest I was 13.98±1.9 which is 78%, Posttest II was 15.08±1.82 which is 84%, Posttest III was 15.76±1.1 which is 88%.(Table 4.5.4)

Table 4.5.5 Area wise comparison of mean, SD, and mean percentage of experimental group II post test scores on adequacy of lactation

(N = 125)

Adequacy of lactation	Experimental group II								
	Post test I			Post test II			Post test III		
	Mean	SD	Mean %	Mean	SD	Mean %	Mean	SD	Mean %
Breast secretion	12.79	1.2	71	14.16	2.7	79	15.51	2.78	86
Breast feeding	10.592	1.8	59	12.904	2.1	72	14.84	2.08	82

The mean scores for posttest breast secretion in experimental group II were posttest I 12.7±1.22 which is 71%, Posttest II 14.16 ±2.7 which is 79% and posttest III 15.51±2.78 which is 86%. For breast feeding posttest I mean score 10.5±1.8 which is 59%, Posttest II was 12.9±2.1 which is 72% and posttest III was 14.8±2.08 which is 82%. It shows reflexology is effective than acupressure in increasing the adequacy of lactation among immediate postnatal mothers. (Table 4.5.5)

SECTIONS 4.6 FIND OUT THE ASSOCIATION BETWEEN POST TEST SCORES ON ADEQUACY OF LACTATION AMONG EXPERIMENTAL GROUP I AND II OF IMMEDIATE POSTNATAL MOTHERS WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

Table 4.6.1 Association between experimental group I post test scores and demographic variables of immediate postnatal mothers.

(N =125)

Demographic variables	Breast secretion		Breast feeding	
	Chi square χ^2	Level of Significance	Chi square χ^2	Level of Significance
Age of the mother	4.515	NS	8.18	S
Education	13.653	S	8.774	NS
Occupation	1.446	NS	2.635	NS
Monthly income	1.522	NS	1.245	NS
Type of diet	0.543	NS	0.269	NS
Family support	7.081	S	13.378	S
Ante natal check up	3.346	NS	4.524	S
Gestational age	1.068	NS	4.139	NS
Initiation of breast feeding	2.193	NS	1.806	NS
Birth weight	6.253	S	15.418	S
Type of feed given	6.253	S	15.418	S
Number of times breast feeding given per day	3.283	NS	1.768	NS
Sex of the Baby	6.253	S	6.253	S

P < 0.05 S – Significant N.S – Not Significant

Chi-Square value reveals that there is no significant association between post test scores of experimental group I among immediate postnatal mothers, breast secretion and breast feeding when compared to age, occupation, monthly income, type of diet, antenatal check up, gestational age, initiation of breast feeding, number of times breast feeding given per day. ($P<0.05$) There is significant association between posttest score of experimental group I among immediate postnatal mothers when compared to age, education, family support, birth weight, sex of the baby and type of feed. (Table 4.6.1)

Table 4.6.2 Association between experimental group II post test scores and demographic variables of the immediate postnatal mothers

(N = 125)

Demographic variables	Breast secretion		Breast feeding	
	Chi square χ^2	Level of Significance	Chi square χ^2	Level of Significance
Age of the mother	2.790	NS	2.82	NS
Education	11.372	S	10.22	S
Occupation	3.542	NS	2. 15	NS
Monthly income	12.131	S	2.21	NS
Type of diet	2.288	NS	0.83	NS
Family support	11.819	S	10.17	S
Ante natal check up	3.104	NS	2.44	NS
Gestational age	3.796	NS	3.28	NS
Initiation of breast feeding	3.426	NS	2.08	NS
Birth weight	1.771	NS	3.31	NS
Type of feed given	1.771	NS	2.83	NS
Number of times breast feeding given per day	2.413	NS	0.72	NS
Sex of the Baby	2.413	NS	2.413	NS

P < 0.05 S – Significant N.S – Not Significant

Chi-Square value reveals that there is no significant association between post test scores of experimental group II among immediate postnatal mothers, breast secretion and breast feeding when compared to age, occupation, type of diet, antenatal check up, gestational age, initiation of breast feeding, number of times breast feeding given per day.($P>0.05$) There is significant association between posttest score of experimental group II among immediate postnatal mothers when compared to education, family support, and monthly income. (Table 4.6.2)

CHAPTER – V

DISCUSSION

CHAPTER – V

DISCUSSION

The present study was done to assess the effectiveness of acupressure and reflexology on lactation among immediate postnatal mothers at selected hospitals. Quasi experimental design was adopted for the study and samples were selected by using simple random sampling technique. The sample size was 250 immediate postnatal mothers admitted in C.S.I. Mission Hospital Neyyoor and Nagercoil. The adequacy of lactation was assessed by using breast assessment tool and breast feeding tool. The findings of the study had proved that there was significant increase in the adequacy of lactation among immediate postnatal mothers after acupressure and reflexology interventions.

The conceptual framework based on Roy's Adaptation Theory which was applied in the present study. The pre model for adequacy of lactation syndrome helped the researcher to introduce the promotion of health intervention through acupressure and reflexology. This theory supported the researcher in planning and executing the present study in a phased manner.

The findings are discussed objective wise and presented below:

Description of demographic variables of the immediate postnatal mothers.

In experimental group I and experimental group II

- Most (86%) immediate postnatal mothers were in the age group of 24 -29 years in group I and most (80%) immediate postnatal mothers were in the age group of 24 - 29 years in group II. These results agreed with another study which found that the age of postnatal mothers were between 20 – 30 years[102] and another study showed that the age of the mother were between 18 – 35 years.[44] These results agreed with another study, majority of the mothers were in the age group 18 – 35 years (91.7%)

- With respect to education of immediate postnatal mothers majority 83 (66%) and 79 (63%) were graduates, 20 (16%) and 30 (24%) were post graduates, 22 (18%) and 16 (13%) had higher secondary education in both experimental group I and II. Another study also found that most of the mothers in the study group were graduates. (36%).[103]
- In the current study 82(66%) and 93 (74%) were sedentary workers, 43(34%) in group I and 32(26%) were moderate workers in group II. This result coincides with the study that majority of the mothers were unemployed.[104] These results agreed with another study which found that in India most of the women 14 (46.7%) were house wife's.
- In the present study majority (67%) of the immediate postnatal mothers were having a monthly income between rupees 7001 -12000 in group I and in group II. (66%) were having monthly income more than Rs 12000. Another study also found that majority of the women 15(13%) had monthly income above Rs 10000, 13 (26%) had monthly income between 5000 – 10000 respectively.[105]
- Regarding the diet majority (67%) and (61%) were non vegetarian in group I and II. Another study showed that (83.3%) of immediate postnatal mothers were non vegetarian.[106] Another study result revealed that 25(83%0 of mothers were non vegetarian. One more study showed that majority of mothers 20(66.6%) were non vegetarians.
- Regarding the Antenatal check up majority by immediate postnatal mothers majority 102 (82%) and 114(91%) had regular antenatal check up both in group I and group II. This results agreed with another study which showed that 91(77.1%) had antenatal check up.[107]

- The present study found that immediate postnatal mothers 68% and 73% had good family support both in experimental group I and group II. This results coincides with another study which found that family support was moderate (M=3.43, SD =75). There was a significance high positive relationship between family support and quality and duration of exclusive breast feeding practice(r=0.9, P<0.01).[108]
- Majority of the immediate postnatal mothers the gestational age were 38 to 39 weeks (77%) and (58%) in group I and II. Another study showed that majority of immediate postnatal mothers belong to 38 weeks of gestation.[32]
- Most of the babies had birth weight between 2.5 – 3 kg (55%) in group I and 3.1 – 3.5 kg (51%) in group II. Another study showed that 2.5 – 3 kg (60%).[109]
- Regarding the sex majority of the babies were males (62%) and (55%) in group I and II whereas other study showed that majority of the babies were males. One more study showed that (68.3%) of babies were males.[109]
- The current study showed that the type of feed given by the mother was colostrum majority 125(100%) and 125(100%) gave colostrums as the first feed in group I and group II. This study result agreed with another study which showed 77(96.7%) gave colostrum as the first feed. Another study showed that only 35% of mothers gave colostrums, 65% gave prelacteal feed and 65% gave formula feed.[110]
- When referring to the number of times breast feed given most of the mothers 64(51%) and 71(57%) had given 8 times breast feed their babies in both groups. This study is congruent to another study which showed that breast feeding is given 8 times a day in which 6 times during day and 2 times during night which is (71.6%).[110]

The first objective was to assess the adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure

Frequency and percentage distribution of pre and post test scores of breast secretion and breast feeding in experimental group I among immediate postnatal mothers.

In the experimental group I during pre intervention of 125 samples, majority 90 (72%) had moderate secretion, 104(83%) had moderate feeding. In the course of post intervention, post test I 37(26%), post test II 75(60%) and post test III 96(76%) had adequate secretion whereas in the post test I 102(82%), post test II 65(52%) and post test III 90(72%) had adequate feeding. The findings of the present study are consistent with the findings of another study which observed that the intervention at acupoint Tuina to improve lactation among primi mothers in experimental group (28 cases) and (28 cases) in control group.. The acupoint Tuina showed that parturient had sufficient milk secretion in early postnatal mothers.[98]

The second objective was to assess the adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology

Frequency and percentage distribution of pre and post test scores of breast secretion and breast feeding among immediate postnatal mothers in experimental group II.

In the experimental group II before intervention the 125 samples 73 (58%) had moderate secretion in the pre test, 52(42%) had inadequate secretion, 104(83%) and 21(17%) had inadequate feeding. In post test I, 34(27%) and 91(73%) had moderate

secretion. In post test II, 75(60%) had adequate secretion, 50(40%) had moderate secretion whereas in post test III, 85(68%) had adequate secretion and 40(32%) had moderate secretion. In post test I, 113(90%) and 12(10%) had moderate and inadequate feeding, post test II, 86(69%) had adequate feeding and 39(31%) had moderate feeding. In post test III, 95(76%) and 30(24%) had adequate and moderate feeding. The findings of the study are congruent with reflexology therapy which increased milk volume after intervention among postnatal mothers in (88%) of the samples.[104]

The third objective was to compare the pretest and posttest scores on adequacy of lactation in experimental group I and II among immediate postnatal mothers.

Paired "t" test value of pre and post test scores of experimental group I

Equating the paired t test value of adequacy of lactation scores showed distinct clinical significance ($p<0.05$) with breast secretion pre test and post test III (15.7), breast feeding pre and post test III (14.12). The overall paired't' test value corresponds to adequacy of lactation scores evidenced distinct clinical significance ($p<0.05$). The current result agreed with another study observed that the paired't' value was highly significant with auricular point sticking pressure on post caesarean hypogalactia at $p<0.001$ level.[72]

Area wise comparison of mean, SD, and mean percentage of experimental group I pre and post test adequacy of lactation scores

Parallel comparison between mean, standard deviation and mean percentage concerning pretest breast secretion and breast feeding with experimental group I, displayed the mean score with 7.4 ± 2.46 and mean percentage was 41%. Furthermore

in post test III mean score with 14.94 ±1.22 and mean percentage was 83%.This finding is congruent with another study findings 9.5 ±7.7, 17.7±9.4 and 18±9.5 after intervention.(P<0.001). Breast feeding pre test mean and standard deviation were 8.2±1.67 which is 46%, post test I 13.98±1. 90 which is 78%, post test II 15.08±1.82 which is 84% and post test III 15.76 ±1.10 which is 88%. This study findings coincides with the result of another study which shows that the mean volume of milk before and after intervention was 9.5(7.7), 17.7(9.50 in the experimental group.[97]

Paired‘t’ test value of pre and post test scores of experimental group II.

Compatible paired t test value of adequacy of lactation scores manifested distinct clinical significance (p<0.05) with breast secretion scores of pre test and post test I (6.27), pre test and post test II (12.18), pre test and post test III (16.73). In breast feeding scores of pre test and post test I (7.42), pre test and post test II (10.23), pre test and post test III (15.62). The overall compatible paired‘t’ test of adequacy of lactation scores evidenced distinct clinical significance (p<0.05) with experimental group II The current results agreed another study which showed significant difference between the posttest mean score on lactation between experimental group and control group. The posttest mean score was 12.2 in the experimental group and 10.3 in the control group. This result concluded that reflexology was effective in promoting lactation among immediate postnatal mothers.[6]

Area wise comparison of mean, SD, and mean percentage of experimental group II pre and post test adequacy of lactation scores

Comparison between mean, standard deviation and mean percentage pretest adequacy of lactation scores with experimental group II, displayed the mean score of

breast secretion with6.85 ± 2.3 and mean percentage with 38%. In breast feeding the mean score was 8.09 ± 2.6 and mean percentage was 45%. In post test I it was 12.7±1.2 which is 71%, post test II it was 14.16 ±2.7 which is 79% and post test III 15.5±2. 59%. The current result agreed with another study which stated that skin to skin contact increased breast feeding among immediate postnatal mothers. The mean and standard deviation in intervention group was 53.42±8.57 and 49.85±5.50 in the control group.[111]

The fourth objective was to determine the effectiveness of acupressure Vs reflexology on adequacy of lactation among the immediate postnatal mothers in experimental group I and II

Frequency and percentage distribution of post test scores of adequacy of lactation among immediate postnatal mothers in experimental group I and II

In the experimental group I and II during the post intervention the samples reported adequate breast milk secretion and breast feeding. For experimental group I, 96(76%) immediate postnatal mothers reported adequate breast milk secretion and 90(72%) reported adequate feeding. In experimental group II, 85(68%) reported adequate breast milk secretion and 95(76%) had adequate feeding. Another study shows that when three groups were selected and one group was given acupressure, another group was given reflexology and third group was given routine care. The study result showed that acupressure and reflexology increased the milk volume and weight of the infant. This study concluded both acupressure and reflexology was effective on lactation.[112]

Unpaired‘t’ test value of post test scores of experimental group I and II.

Unpaired‘t’ test was done to analyze the effectiveness of acupressure and reflexology with post test scores of experimental group I and II s on areas of adequacy of lactation shows that the overall score of breast secretion was 10.69 when compared with the table value (2.828) was high. The overall score of breast feeding was 9.86 when compared to table value (2.828) was high. The result of this study agreed with the result of another study in which the computer unpaired 't' -test showed the value as (0.6), (0.77) and (2.1) on day one, day two and day three. The study results showed that there was significant improvement found in the mean score of number of urination, number of stools passed and duration of sleep in the intervention group.[86]

Area wise comparison of mean, SD, and mean percentage of experimental group I and II post test adequacy of lactation scores

Lateral analogy between mean, standard deviation and mean percentage posttest adequacy of lactation scores for experimental group I and II disclosed the mean score for breast secretion with post test I was 12.12 ± 1.71 and mean percentage was 67%. In the post test II for breast secretion was 12.74±1.71 and mean percentage was 71%. In the post test III, 14.94±1.2 and mean percentage was 83%. Furthermore in the experimental group II, mean score for breast feeding with post test I was 12.79 ± 1.2 and mean percentage was 71%. In the post test II it was 14.16±2.7 and mean percentage was 79%. In the post test III it was 15.51±2.78 and mean percentage was 86%. Besides for breast feeding post test I, score was 13.9 ± 1.9 and the mean percentage was 78%, post test II 15.08 ± 1.8 which is 84% and post test III 15.76±1.1

which is 88% in experimental group I where as in experimental group II posttest I 10.59±1.8 which is 59%, post test II 12.9 ± 2.1 which is 72% and post test III 14.84 ±2.08 which is 82%. Significant difference was observed between post test adequacy of lactation which shows that acupressure and reflexology is effective in promoting lactation. The finding of the study can be correlated with randomized control study on 276 postpartum mothers with hypo lactation to assess acupressure point SI 1 for treatment. This study shows acupressure increase breast milk secretion among immediate postnatal mothers than the control group. ($P \leq 0.01$).[96]

Hence, research hypothesis (RH_2) states that there is a significant difference between acupressure and reflexology on adequacy of lactation among immediate postnatal mothers in experimental group I and experimental group II was rejected.

The Null hypothesis (HO_2) states that there is no significant difference between acupressure and reflexology on adequacy of lactation among immediate postnatal mothers in experimental group I and II.

The fifth objective was to find out the association between post test score on adequacy of lactation among experimental group I and II of immediate postnatal mothers with their demographic variables

Association between experimental group I post test scores and demographic variables of the immediate postnatal mothers

Experimental group I revealed no association between posttest lactation adequacy for breast secretion scores and age of the mother **(**χ^2 =4.515) **,** occupation **(**χ^2 = 1.446) , monthly income **(**χ^2 = 1.522), type of diet **(**χ^2 = 0.54), antenatal check

up (χ^2 = 3.346), gestational age (χ^2 = 1.068), initiation of breast feeding (χ^2 = 2.193), number of times breast feeding given (χ^2 = 3.283) showed significant at (P<0.05).

Experimental group I showed association between posttest lactation adequacy of breast secretion scores and education of the mother (χ^2 = 13.653) , birth weight (χ^2 = 6.253), type of feed given (χ^2 = 6.2) and sex of the baby (χ^2 = 6.253) when compared showed significant at (p<0.05).

There is no association between breast feeding and selected demographic variables such as occupation (χ^2 = 2.63), monthly income(χ^2 = 1.24), type of diet (χ^2 = 0.26),gestational age (χ^2 = 4.13), initiation of breast feeding (χ^2 = 1.8), number of times breast feeding given per day (χ^2 = 1.76).

There is association between posttest lactation adequacy breast feeding scores and age of the mother (χ^2 = 8.18), education (χ^2 = 8.7), family support (χ^2 = 13.378), antenatal check up (χ^2 = 4.5), birth weight (χ^2 = 15.41), type of feed (χ^2 = 15.41) and sex of the baby (χ^2 = 6.25).

Another study found that there is no association between posttest scores of the immediate postnatal mothers and demographic variables such as education and breast feeding initiation, at P<0.05 level.[107]

Another study was concurrent with this study there is an association between initiation of breast feeding and education.[108]

Association between experimental group II post test scores and demographic variables of the immediate postnatal mothers

Experimental group II shows no association between posttest lactation adequacy breast secretion scores and age of the mother (χ^2 =2.79) **,** occupation (χ^2 = 3.54) , type of diet (χ^2 = 2.2), antenatal check up(χ^2 = 3.10), gestational age (χ^2 = 3.79), initiation of breast feeding (χ^2 = 3.4), birth weight(χ^2 = 1.7), type of feed (χ^2 = 1.77), number of times breast feed given (χ^2 = 2.4) and sex of the baby was (χ^2 = 2.4) not significant at ($p<0.05$).

There is association between posttest lactation adequacy, breast secretion scores and education of the mother (χ^2 = 11.372) ,monthly income (χ^2 = 12.13) and family support (χ^2 = 11.8) when compared showed significant at ($p<0.05$)

There is no association between breast feeding and selected demographic variables such as age of the mother ($\chi^{2\,=}$ 2.8), occupation ($\chi^{2\,=}$ 2.15), monthly income ($\chi^{2\,=}$ 2.21), type of diet ($\chi^{2\,=}$ 0.8), gestational age ($\chi^{2\,=}$ 3.2) , initiation of breast feeding (χ^2 = 2.08), birth weight (χ^2 = 3.3, type of feed given (χ^2 = 2.83) number of times breast feeding given per day ($\chi^{2\,=}$ 0.72) and sex of the baby (χ^2 = 2.4)

There is association between posttest lactation adequacy breast feeding scores and age of the mother (χ^2 = 8.18) , education (χ^2 = 8.7), antenatal check up (χ^2 = 4.52) , gestational age(χ^2 = 4.139), birth weight (χ^2 = 15.41), type of feed (χ^2 = 15.41) and sex of the baby (χ^2 = 6.25).

Another study finding showed association between post test scores of breast feeding and demographic variables such as maternal age, mothers education, occupation, monthly income and sex of the baby , at $P<0.05$ level.[110]

The above discussion clearly represents that there has been no statistically significant difference between the effectiveness of acupressure and reflexology on adequacy of lactation among immediate postnatal mothers.

This draws the conclusion for the study that acupressure and reflexology on adequacy of lactation can be used as an effective intervention in the immediate postnatal mothers to bring out the change in behavior, promotion of lactation and improve the breast feeding, raise the awareness regarding adequacy of lactation.

Hence research hypothesis (RH_3) states that there is a significant association between post test scores of breast secretion and breast feeding among experimental group I and II of immediate postnatal mothers with their demographic variables was partially accepted.

The conceptual frame work for the study was based on Roy's Adaptation model is an "open" system enabled the researcher to appreciate the overall research process, design her research, and analysis of research findings.

In this model, the researcher could bring adaptation in breast feeding and breast secretion through a several series of stages through an intervention strategy.

This chapter dealt with discussion based on objectives of the study, hypotheses, relevant consistent literature to support the study findings and utility of conceptual framework.

Next chapter will focused on summary, conclusion, implications, recommendations and Limitation.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

The aim of the present study was to assess the effectiveness of acupressure and reflexology on lactation among the immediate postnatal mothers at selected settings.

6.1 SUMMARY

Lactation adequacy is very important during the early postnatal period among postnatal mothers which can reduce the neonatal mortality in India. Lactation is an important physiological change in a postnatal mother to breast feed her baby. World Health Organization, American academy of pediatrics recommended exclusive breast feeding for first six months and initiation of breast feeding as early as possible to prevent and protect infants from infectious diseases and boost the immune system in the neonate. Changes in the social system such as westernization, urbanization has reduced the rate of exclusive breast feeding both in urban and rural areas. Most of the mothers want to breast feed the neonates, but the support and encouragement is needed for at least 3 months to continue exclusive breast feeding. Most of the significance is immediate postnatal mother more assistance for breast feeding initiation as well as maintaining lactation. This shows the need for Acupressure and Reflexology intervention to promote adequacy of lactation. In this way, the nurses are in the ideal position to provide Acupressure and Reflexology for postnatal mothers in clinical as well as in the community.

The problem selected for the present study was “A comparative study to assess the effectiveness of acupressure Vs reflexology on lactation among immediate postnatal mothers in selected hospitals at Kanyakumari District, Tamilnadu, India.”

The objectives of the study were

1. To assess the adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure.
2. To assess the adequacy of lactation among experimental group II of immediate postnatal mothers before and after reflexology.
3. To compare the pre and posttest scores on adequacy of lactation in experimental group I and II among immediate postnatal mothers.
4. To determine the effectiveness of acupressure Vs reflexology on adequacy of lactation between experimental group I and group II.
5. To find out the association between posttest score on adequacy of lactation among experimental group I and II of immediate postnatal mothers with their selected demographic variables.

The research hypotheses formulated for the present study were:

Level of significance at 0.05

RH1: There is a significant difference in adequacy of lactation among experimental group I of Immediate Postnatal Mothers before and after acupressure.

RH2: There is a significant difference in adequacy of lactation among experimental group II of Immediate Postnatal Mothers before and after reflexology.

RH3: There is a significant difference between acupressure and reflexology on lactation among Immediate Postnatal Mothers on experimental group I and experimental group II.

RH4: There is a significant association between post test scores and adequacy of lactation with selected demographic variables in group I and group II among immediate postnatal mothers.

The researcher formulated the following assumption for the study

1. Immediate postnatal mothers have difficulties in the first week of puerperium.
2. Acupressure and Reflexology on lactation has an impact on promoting milk secretion and relaxation.
3. Immediate postnatal mothers require complimentary therapy to maintain lactation for exclusive breast feeding.

The conceptual framework for the present study was based on Callistra Roy's adaptation theory which guides the investigator to provide the acupressure and reflexology on improving awareness regarding lactation among immediate postnatal mothers.

Quasi experimental design was adopted for the study. The independent variable was acupressure and reflexology and the dependent variable was adequacy of lactation among the immediate postnatal mothers. The study was conducted at C.S.I.Mission Hospitals, Kanyakumari, Tamilnadu.

A simple random samplig technique was adopted for the study. Sample size comprised of 250 immediate Postnatal mothers who were selected as a samples. The sample size was estimated by Power Analysis. Breast assessment and breast feeding tool was used to assess the adequacy of lactation before and after acupressure and

reflexology interventions among immediate postnatal mothers. The tools were validated by various experts. The pilot study revealed that the tools and intervention were reliable.

The immediate postnatal mothers selected for the study were administered acupressure in experimental group I and Reflexology for group II over a period of 3 times per day for three (3) days.

The investigator considered and followed the ethical principles preceding the investigation. The investigator adhered to the human rights, principles of beneficence, non maleficience, dignity and confidentiality.

Frequency and Percentage was used to analyze the demographic variables and adequacy of lactation. Mean, Standard deviation and Mean percentage was used to assess the Breast milk secretion, Breast feeding and adequacy of lactation before and after acupressure and reflexology. Paired't' test was used to compare the effectiveness of pretest and post scores on adequacy of lactation in experimental group I and II. Unpaired't' test was used to compare the post test scores of experimental group I and II. Chi square was used to find the association between post test scores of lactation among immediate postnatal mothers in experimental group I and II with their demographic variables.

The major findings of the study were

I. Findings related to the adequacy of lactation among experimental group I of immediate postnatal mothers before and after acupressure

- **In experimental group I**
  - In pre test majority (72%) of postnatal mothers had moderate secretion.

- In post test III majority (76%) of postnatal mothers had adequate secretion.
- In pre test majority (83%) had moderate feeding.
- In the posttest III (72%) had adequate feeding.

II. Findings related to the adequacy of lactation among experimental group II of immediate postnatal mothers before and after acupressure

❖ **In experimental group II**

- In pre test (58%) of immediate postnatal mothers had moderate secretion. .
- In post test III (68%) had adequate secretion.
- In the pre test (83%) had moderate feeding.
- In the post test III (76%) had adequate feeding.

III. Findings related to determine the effectiveness of acupressure and reflexology on lactation among experimental group I and group II of immediate postnatal mothers.

❖ **In experimental group I**

- Paired 't' test value in post test III was 15.72 in breast secretion, ($P < 0.05$, significant)
- Paired 't' value in post test III was 14.12 in breast feeding, ($P < 0.05$, significant)

- Pre test mean score was 7.4 ± 2.46, which is 41% for breast secretion
- Pre test mean score was 8.2 ± 1.67, which is 46% for breast feeding.
- Post test III mean score was 14.94 ± 1.22, which is 83% for breast secretion
- Post test III mean score was 15.76 ± 1.10, which is 88% for breast feeding.

❖ **In experimental group II**

- Paired 't' test in post test III was 16.73, in breast secretion ($P < 0.05$, significant)
- Paired 't' test in post test III was 15.62, in breast feeding ($P < 0.05$, significant)
- Pre test mean score was 6.85± 2.3, which is 38% in breast secretion.
- Pre test mean score was 8.09± 2.6, which is 45% in breast feeding..
- Post test III mean score was 15.5 ± 2.7, which is 80%, in breast secretion.
- Post test III mean score was 14.8 ± 2.0, which is 82%, in breast feeding.

IV. Findings related to compare the effectiveness of acupressure and reflexology on lactation among experimental group I and experimental group II

❖ The unpaired 't' test value was

Breast secretion posttest III 10.69 ($P < 0.05$, significant)

Breast feeding posttest III 9.86 ($P < 0.05$, significant)

- ❖ The posttest III mean score in experimental group I was

  Breast secretion posttest III mean score 14.94±1.22 which is 83%

  Breast secretion posttest III mean score 15.76±1.10 which is 88%

- ❖ The posttest III mean score in experimental group II was

  Breast secretion posttest III mean score 15.51±2.78 which is 86%

  Breast secretion posttest III mean score 14.84±2.08 which is 82%

- ❖ From this findings of the study shows that acupressure as well as reflexology is effective on lactation and promotion of breast feeding.

V. Findings related to the association between the post test scores on lactation among experimental group I and II of immediate postnatal mothers with their selected demographic variables

- ♦ Chi- square value reveals that there is an significant association between post test scores of breast secretion in experimental group I among immediate postnatal mothers when compared to education, family support, birth weight, type of feed and sex of the baby (P >0.005).posttest scores of breast feeding compared to education, family support, antenatal check up, birth weight, type of feed and sex of the baby has significant association (P >0.005).
- ♦ In experimental group II association was analyzed between posttest scores on breast secretion and breast feeding with selected demographic variables such as age, education, occupation, monthly income, type of diet, antenatal check up, gestational age, initiation of breast feeding, birth weight , type of feed, number

of times breast feed given and sex of the baby shows a significant association with breast secretion and education (Chi square = 11.37) , monthly income (chi Sq = 12.13) , family support (Chi Sq = 11.81). Posttest scores of breast feeing and selected demographic variables were associated with education (chi sq = 10.2) , and family support (chi sq = 10.1).

6.2 CONCLUSION

The conclusions were drawn on the basis of the findings of the study. The results were explained by using descriptive and inferential statistics.

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

- Acupressure and reflexology is an intervention in promoting adequacy of lactation as the pretest mean breast secretion score (7.4±2.46, which is 41%). Pretest mean score on breast feeding (8.2 ±1.67,which is 46%) was less than the posttest III mean score of breast secretion (14.94 ± 1.22, which is 83%). Posttest mean score on breast feeding (15.76±1.10, which is 88%). The calculated 't' value for breast secretion (t =15.72) and breast feeding ('t' = 14.12) was higher than than the table value (t 124 = 1.980, $p<0.05$).
- In experimental group II the pretest mean breast secretion score (6.85 ± 2.3, which is 38%) , pretest mean breast feeding score (8.09 ± 2.6, which is 45%) which is less than the post test III mean breast secretion score (15.5 ± 2.7, which is 80%). Posttest II mean breast feeding score (14.8 ± 2.0 which is 82%). The calculated't' value for breast secretion ('t' = 16.73) and breast feeding ('t' = 15.62) was higher than the table value ('t' 124 = 1.980, $p<0.05$).

- There was a significant increase in posttest adequacy of lactation score of immediate postnatal mothers in experimental group II than the posttest scores of experimental group I. The computed 't' value for breast secretion ('t' = 10.69) breast feeding ('t' = 9.86) ('t' 248 = 2.82 P< 0.05)
- There is a significant association between post test scores of breast secretion with breast secretion and demographic variables such as education, birth weight, type of feed and sex of the baby in experimental group I and II.
- There is significant association between post test breast feeding scores and demographic variables such as age, family support, antenatal check up, birth weight, type of feed, sex of the baby in experimental group I and II.

6.3 NURSING IMPLICATIONS

The investigator has devised the following implications that may be vital for the maternal health nurse, maternal health administrator, nurse educator and nursing researcher.

6.3.1 Maternity Nursing

Maternity nurse can train the local volunteers, community health personnel, family members of immediate postnatal mothers.

- Provide education on importance of breast milk secretion and breast feeding by using simple alternative therapies (Acupressure and Reflexology), continued monitoring and referral to specialist when help is needed.

- Help the postnatal mothers to identify the factors related to inadequate secretion of breast milk.
- Encourage the mother and involve the family to encourage exclusive breast feeding.
- Educating the postnatal mothers about the short term and long term benefits of breast feeding.
- Identifying and clarifying the doubts and problems faced by immediate postnatal mothers during breast feeding.
- The focus of attention should be to empower the community by participating and monitoring exclusive breast feeding.
- Acupressure and Reflexology to provide to family members regarding the awareness in lactation and management of breast feeding.

6.3.2 Nursing Administration

- Nursing administrator can organize educational programmee for immediate postnatal mothers and screen for lactation related problems in the community and primary health center.
- Educational program include skill training in breast feeding recognizing the benefits and improving the coping ability at all hospital and work place.
- The nurse administrator can conduct in-service education program for the health personnel in promotion of breast feeding among immediate postnatal mothers.
- Ensure and conduct work shops, conferences, seminars on non pharmacological methods to promote breast feeding.

- Providing appropriate protocols, trained man power and supplies should be undertaken by the nurse administrator and mobilize and provide funding for maternal and neonatal health program.

6.3.3 Nurse Educator

- Organize seminar, workshops, symposium, continuing nursing education program on the management of breast feeding, including the alternative/complimentary intervention in promotion of lactation.
- Select and organize the learning experience for students where handful of experience will be obtained in management of lactation in immediate postnatal mothers.
- Nurse educator can device a curriculum for training programme on acupressure and reflexology related to lactation helpful for the gross root workers, nurses, health care professional to tackle the breast feeding related problems at various setting.
- Nursing education should prepare the nurses with the potential for imparting health information effectively to the mothers and help them out in choosing suitable methods for improving lactation.
- A curriculum should be updated in relation to the changing society since it will help out the nursing students to upgrade their knowledge and skill according to that.
- Nursing curriculum should incorporate alternative and complementary therapies for lactation. So that students render skill and apply in the field of nursing service and will be able to take care of immediate postnatal mothers.

6.3.4 Nursing Practice

- Acupressure and reflexology is an alternative therapy which is gaining popularity and is finding more substantial place in health care. Holistic nursing regards and treats the mind, body and spirit of the client.
- Nurses use holistic nursing interventions such as acupressure and reflexology. Such interventions affect the whole person and are cost effective, economical, non invasive non pharmacological compliments to medical care.
- Acupressure and Reflexology is one of the sources can be adopted in patient care, which through this study has been proved to improve lactation among immediate postnatal mothers. There by increasing evidence based practice and this practice enhance the autonomous role of nursing intervention.

6.3.5 Nurse Researcher

- Strengthening research to identify future direction to monitor, evaluate the impact of programs, policies related to lactation and breast feeding.
- Implementation of evidence based approach in treatment of lactation as an effective strategy.
- The study findings can be utilized for secondary analysis and meta analysis to study about lactation related benefits.
- The nurse researcher should be aware about the existing health care system and the status of nursing profession. Thus it helps to improve their clinical knowledge, skill and attitude of the nurse. In this study, management of lactation is highlighted by the use of acupressure and reflexology, thus it makes a pleasant as well as effective, non-pharmacological and coeffective intervention for breast feeeding.

6.4 RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations have been made for the further study:

1. A comparative study can be done to assess the awareness regarding lactation and breast feeding among immediate postnatal mothers between rural and urban community.
2. The present study can be conducted as a longitudinal and follow up research of acupressure and reflexology on adequacy of lactation among immediate postnatal mothers in the rural communities.
3. A cross sectional study can be conducted to determine the effect of acupressure and reflexology to improve lactation of immediate postnatal mothers.
4. A similar study could be conducted to evaluate the effectiveness of other non-pharmacological measures for lactation.
5. Varied bio physiological parameters can be ruled and instituted with outcome variables for its objectivity
6. Nursing theory can be developed, constructed and tested on acupressure and reflexology applicable for the whole quantity of meta paradigm
7. Similar study can be replicated on large scale there by findings can be generalized for the target population
8. Qualitative approach can be initiated to generate hypothesis on acupressure and reflexology.

6.5 LIMITATIONS

1. The investigator had constraints in handling the mother and the baby during the study.
2. Factors affecting lactation would have been measured.
3. The investigator had constraints in administering the intervention to the mothers because of difficulty to understand.

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ANNEXURES

ANNEXURE - I

ETHICAL CLEARANCE CERTIFICATE

DCON

DHANVANTRI COLLEGE OF NURSING

Ganapathypuram
No.1, Ranganoor Road, Pallakkapalayam (PO).
Tiruchengode (Taluk), Namakkal District. Pin : 637 303.
✆ 93601 78202, 93601 78203, 93601 78204
Email : dhanvantriinstitutions@gmail.com Web : www.dhanvantriinstitutions.org

Ethical Committee Clearance Certificate

We, the Undersigned Chairman/Members of the Ethical Committee, functioning in ***Dhanvantri College of Nursing, Pallakkapalayam*** have studied the proposed research Subject/Project of "***A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE Vs REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT."*** a candidate ***Ms. ARZTA SOPHIA*** applying for thesis submission and hereby give the certificate of clearance of approval by this Ethical Committee held on it meeting on 25/05/2017 in the presence of its members and a copy of the minutes of the meeting is enclosed.

Station : Pallakkapalayam

Date : 25/05/2017

DHANVANTRI COLLEGE OF NURSING ★ PALLAKKAPALAYAM 687 303

Seal :

Signature of the Chairman on behalf of the Ethical Committee

Name of the Institution :
Dhanvantri College of Nursing, Pallakkapalayam

MINUTES OF THE MEETING OF THE INSTITUTION ETHICAL COMMITTEE HELD ON 25/05/2017 AT CONFERENCE HALL BY 10.30 AM

MEMBERS PRESENT

1. Chairperson	-	**Prof. Dr. N. Ganapathy**, M .B.B.S.,D.A.,M.D. F.C.C.P., Chairman, Dhanvantri Institute of Medical Education and Research, Erode.
2. Co-chairperson	-	**Mrs. P. Padmavathi**, MSc (N), (Ph.D) Principal, Dhanvantri College of Nursing, Pallakkapalayam, Namakkal District
3. Medical Scientist	-	1. **Dr. C. Susila,** Ph.D, Nursing Principal, Billroth College of Nursing, Chennai 2. **Dr. B. Tamilarasi, M.Sc., (N), Ph.D., (N) Principal,** Matha College of Nursing, Matha Nagar, Somangalam Road, Chennai – 600 069.
4. Clinicians from various institutes	-	1. **Dr. T.K. Swamy., M.S., M.ch., (Gastro) ,** Valli Hospital, Erode. 2. **Dr. D.K. Manoharan**, M.S., (Gen) M.ch., (cardiothoracic), F.C.C.P, V.K. Hospital, Erode. 3. **Dr. R. Gopinath**, M.D, D.N.B., (Cardio), Sri Athi Sathya Hospital, Erode.
5. Legal expert	-	**Mr. N.C. Ravikrishnan**, B.Com., B.L., Advocate Consultant, Erode .
6. Representative of non-governmental voluntary agency	-	**Mr. S.V. Mahadevan** President, Erode Idayam Narpani Iyakkam Trust, Erode
7. Philosopher	-	**Mr. K. Shanmugasundaram**, M.A, M.Ed., M. Phil, Maharaja College of Education, Erode.
8. Lay person from the community	-	**Mr. P.N. Muthuswamy,** President , Pallakkapalayam, Namakkal District.
9. Member Secretary	-	**Mrs. T. Jayadeepa**, MSc (N), Reader, Dhanvantri College of Nursing, Pallakkapalayam, Namakkal District.

The meeting was presided over by Dr. N. Ganapathy Chairman Dhanvantri College of Nursing.

Prof. P. Padmavathi, Principal, Dhanvantri College of Nursing welcomed the members of the meeting and then initiated the discussion of the meeting.

The following two proposals have been presented in the meeting for the ethical review.

Proposal No	Title	Name of the Investigator	Remarks
1.	A study to assess the effectiveness of multi interventional package on quality of life among breast cancer patients receiving chemotherapy drugs in selected oncology unit.	Ms. Geetha .M	APPROVED
2.	A comparative study to assess the effectiveness of Acupressure Vs Reflexology on lactation among immediate postnatal mothers in selected hospitals, Kanyakumari District.	Ms. Arzta Sophia	APPROVED

Their presentation have been reviewed and scrutinized effectively by the committee members and they have ethically approved.

PRINCIPAL

PRINCIPAL
Dhanvantri College of Nursing
Ganapathypuram,
No.1, Ranganoor Road,
Pallakkapalayam Po.,
NAMAKKAL (Dt)-637 303

ANNEXURE - II

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From,

Mrs. Arzba Sophia Msc(N),
Reader,
Christian college of Nursing,
Neyyoor.

To,

Dr. Reena MD. D.G.O,
obstetrics and Gynecology.
K.K.M.M
Neyyoor.

Respected Madam,

I kindly request your kind permission. to conduct my research in obstetrics and gynecology department (maternity ward) in our Hospital. The topic is" A comparative study to assess the effectiveness of Accupressure Vs reflexology on Lactation among immediate postnatal Mothers under Dr. M.G.R Medical University, Chennai. kindly do the needful and helps me in my studies.

Thanking you,

Yours Sincerely,
Arzba Sophia

Neyyoor,
13.8.13.

Permitted

ANNEXURE - II

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

From,

Mrs.Arzta Sophia,
IIyr Ph.D student,
Dhanvanthri College of nursing,
Erode.

To,

The Medical officer,
Kanyakumary Medical Mission,
C.S.I. Hospital,
Nagercoil.

Respected Sir/Madam,

Sub: Seeking Permission to conduct Pilot study and main study –Reg

I am Mrs.Arzta Sophia is a student of Dhanvanthri college of nursing ,has to submit a thesis to The Dr.M.G.R Medical University Chennai for the award of Ph.D In Nursing.

Title of the study;

A Comparative study to assess the effectiveness of Acupressure vs Reflexology on lactation among immediate postnatal mothers in selected hospitals ,Kanyakumary District.

In this regard I am in need of your esteemed help and guidance .I am interested in conducting this study in our esteemed Hospital . So I kindly request you to grant me permission to conduct the pilot study and main study in your esteemed institution.

Thanking you

Arzta Sophia

Yours sincerely

Date; 13.8.13,

Place; Nagercoil.

Copy to The Nursing Superintendent

Permitted.

ANNEXURE - II

ACUPRESSURE TRAINING CERTIFICATE

ATAMA

ACUPUNCTURE TRAINING CENTRE

(Approved by IGNOU, Indira Gandhi National Open University)

No.14, SPN Plaza, West Main Street, Pudukkottai - 622 001, TamilNadu.
Ph : 99438 32656, 96262 74327 www.acupunctureatama.com

Date 3/10/13

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mrs.ARZTA SOPHIA** has successfully completed three months training from **02.07.2013 to 30.09.2013** on Acupressure and Reflexology from this institution. The SI - I , SI - 3 , UB - 20 , SP - 18 acupoints and foot reflexology which she is using in her research **"A Comparative study to assess the effectiveness of acupressure vs Reflexology on Lactation among immediate postnatal mothers in selected Hospitals at KanyaKumari District"** is appropriate and it is approved by ATAMA.

Director 3/10/13

Prof. Dr.C. Nithyaanandam,
M.D.(Acu),B.Sc.(YN),H.H.A.,
Reg. No: 013132/04

ATAMA
ACUPUNCTURE TRAINING CENTRE
No. 14, S.P.N. PLAZA, WEST MAIN STREET,
PUDUKKOTTAI - 622 001. TAMIL NADU.
SOUTH INDIA.
99 43 83 26 56, 96 26 27 43 27.

ANNEXURE - III

LETTER GRANTING PERMISSION TO CONDUCT THE STUDY

KANYAKUMARI MEDICAL MISSION
CHURCH OF SOUTH INDIA (C. S. I.)
BRANCHES :
Marthandam, Kulasekharam, Nagercoil, Colachel, Karungal
Medical Superintendent :
Dr. S. RAJESH SATHYA, MBBS.,M.D.,DAA.,DNB.(Cardiology)

ESTD 1838

Railway Station : ERANIEL S.R.
Hospital : 04651-222222
Fax No. : 04651-222269
email : csimkkm@yahoo.co.in.
Headquarters:
NEYYOOR HOSPITAL
Neyyoor - 629 802
Kanyakumari District

1261/13

16.08.2013.

TO WHOM SOEVER IT MAY CONCERN

C.S.I. Kanyakumari Medical Mission, Neyyoor is a Tertiary care centre with 300 beds with all Speciality deparments. We have all the facilities to conduct this study on "A Comparative study to assess the effectiveness of Acupressure Vs reflexology on Lactation among immediate Postnatal Mothers".

Mrs.Arzia Sophia, M.Ss.(N) is permitted to do her research in the department of Opstetrics and Gynaecology of our institution.

Dr.S.Rajesh Sathya,MBBS.,MD.,DAA.,DNB(Cadio.)
Medical Superintendent.

KANYAKUMARI MEDICAL MISSION
C.S.I. HOSPITAL
NEYYOOR - 629 802.

KANYAKUMARI MEDICAL MISSION * NEYYOOR *

ANNEXURE - IV

RELATED RESEARCH WORK EXECUTED

EFFECTIVENESS OF FOOT REFLEXOLOGY ON LACTATION AMONG POSTNATAL MOTHERS IN SELECTED HOSPITALS AT KANYAKUMARI DISTRICT, TAMILNADU

Mrs. Arzta Sophia, Asso. Prof, Christian College of Nursing, Neyyoor,
Dr. (Mrs.) K.Menaka, Principal, Padmasree College of Nursing, Kancheepuram,
Mrs. Padmavathi, Principal, Dhanvantri College Of Nursing, Erode

Abstract

This study aims to evaluate the effectiveness of foot reflexology on lactation among postnatal mothers. A quantitative research approach, pre–experimental one group pre and post test only design was adopted for the study. 20 post natal mothers who fulfilled the inclusion criteria were selected for the study. Modified latches breast feeding assessment tool was used to assess the level of lactation among the post natal mothers. The results showed that reflexology had significant effect in promotion of lactation among postnatal mothers at $p < 0.05$ level

Key words: *Reflexology, lactation, postnatal mothers*

Introduction

In Indian culture mothers are considered as visible God, because they give birth to a life as well as take care of the baby by feeding their own milk. Mother's milk is one of the best sources of nutrition given to the baby during the first six months of life. It is a gift from God given to the mother to feed her baby and protect the baby from infectious diseases. Lactation is very important for successful breast feeding. Good lactation is established only when the mother is relaxed and free from pain and distractions. To promote this, reflexology which is used as a complimentary therapy can be used to relieve pain, promote circulation as well as opening the blocked ducts in the areola of the breast. Reflexology also helps to regain and maintain health that is lost due to stress from surgery.

Around 7.8 lakhs newborn die in the first 28 days. India has the highest number of newborn deaths in the world. For every 1000 children born in India, 41 infants do not live up to the first birthday. Our Honourable Prime Minister NarendraModi in his recent "Mann Ki Baat", sadly said these deaths could have been prevented. Experts in health, encourages breast feeding alone to bring down the number of infant deaths. Studies showed that only 29% of babies in urban India are breast fed within the first hour of birth. It is worst in rural areas, where only 21% are breast fed. Hence the researcher took up the study to assess the effectiveness of reflexology on lactation among the post natal mothers to benefit the newborn.

Statement of the Problem

A Study to assess the effectiveness of foot-reflexology on lactation among postnatal mothers in selected hospitals of Kanyakumari district.

Objectives

- To assess the level of lactation among postnatal mothers.
- To assess the effectiveness of foot-reflexology in promotion of lactation among postnatal mothers.
- To find out the association of level of lactation of the post natal mothers with their selected demographic variables.

Research hypothesis

RH_1: There is a significant difference in the pre and post test level of lactation among the post natal mothers at $p<0.05$ level.

RH_2: There is a significant association of level of lactation of the post natal mothers with their selected demographic variables at $p<0.05$ level.

Research Methodology

Quantitative research approach, pre experimental one group pre and post design was used for the study. 20 postnatal mothers were selected by simple random sampling technique. Demographic profile of the sample were age, education, occupation, monthly income, gestational age, initiation of breast feeding, antenatal check up and birth weight. Modified latches breast feeding assessment tool was used to assess the level of lactation among postnatal mothers.

The findings showed that 60% were in the age group of 24 - 29 years, 40% were graduated, 85% were sedentary workers, and 55% were in the income group of Rs 3000 - 6000/- per month, 75% of them were between 38 - 39 weeks of gestation, 65 % of the mothers initiated breast feeding after 4 hrs, and 85 % of the mothers had regular antenatal visit.

Results and Discussion

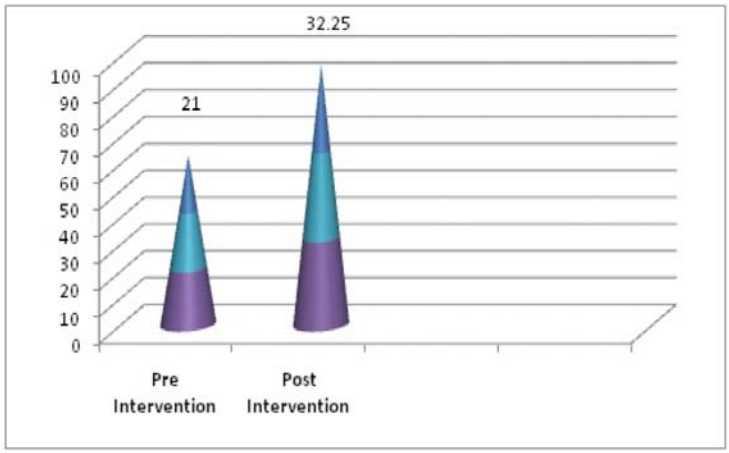
80% of postnatal mothers had moderate lactation, 20% of postnatal mothers had inadequate lactation in the pre-test and in the post-test, 85 % of them had adequate lactation and 15% had moderate lactation

Table 1: Comparison of Mean, SD, and Paired 't' test of lactation among the postnatal mothers.

S.No.	Intevention	N	Mean	SD	Paired t Value
1	Pre-test	20	21.00	1.62	19.67 P<0.05*
2	Post-test	20	32.25	1.26	

* Significance at $p<0.05$ level

Table 1 shows the Comparison of mean, and of pre and post test lactation scores. It is evident from the table that the post test mean score of lactation of 32.25 with SD 1.26, which is highest than the pre-test mean score 21.00, SD 1.62. The mean difference of pre and post test score was 11.25, at t=19.67, $p<0.05$ level.



Graph 1: Distribution of mean score of the pre and post level of lactation among post natal mothers in the graph

Association of level of lactation of the post natal mothers with their selected demographic variables.

There was a statistical significant association found between the post level of lactation of the post natal mothers with demographic variables gestational age (Calculated value 8.5 and tabulated value 3.84) at $p<0.05$ level, where as there is no significant association was found with the remaining variables.

Conclusion

The study assessed the effectiveness of foot-reflexology in promotion of lactation among postnatal mothers. The study concludes that reflexology increased the lactation among the primi postnatal mothers, which would benefit the baby and the mother as well. It is considered as a valuable human touch in Indian culture that promotes health and healing.

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RESEARCH ARTICLE

A Quasi Experimental Study to Evaluate the Effectiveness of Reflexlogy on Pain and Anxiety among Primi Postnatal Caesarean Mothers at Selected Hospital Kanyakumari District

Mrs. Arzta Sophia[1], Prof. P. Padmavathi[2], Dr. K. Menaka[3]
[1]Associate Professor, H.O.D of O.B.G. Department, Christian College of Nursing, Neyyoor.
[2]Principal, Dhanvanthri College of Nursing, Pallakkapalyam, Namakkal District.
[3]Principal, Padmasree College of Nursing, Kanchepurum.
*Corresponding Author Email:

ABSTRACT:
Title: Effectiveness of reflexology on pain and anxiety among primi post natal caesarean mothers at selected hospital Kanyakumari. **Introduction:** Caesarean is a surgical procedure done to save the life of the mother and the baby. Due to this mother experience pain and anxiety during the postnatal period which affects daily activities as well as comfort and well being. To relieve pain and anxiety non pharmacological methods can be used, such as reflexology. **Purpose:** To evaluate the effectiveness of reflexology on pain and anxiety among post natal caesarean mothers at selected hospital, kanyakumari District. **Method:** A quasi experimental pretest, post test control group design was adopted for this study. 60 primi postnatal caesarean mothers who met the inclusion criteria were selected using non probability (Purpose sampling technique) from C.S.I. hospital Neyyoor. Paired't' test was used to evaluate the effectiveness of reflexology. Chi square test was used to find out the association between pretest pain and anxiety with selected demographic variables. **Result:** in the pretest out of 60 primipostnatal mothers 30 in interventional group and 30 in the control group. 27(90%) had severe pain the interventional group 28((93%) had severe pain in the control group. In the post test 2 (7%) had severe pain, (1%) had moderate pain and 27 (90%) has mild pain. The't' value 9.539 was compared with tabulated value at the level of $p<0.001$ was significant. This showed that reflexology was effective in reducing pain among caesarean primi postnatal mothers. Regarding anxiety in the pretest 23 (76.6%) had severe anxiety, 7(23,3%) had moderate anxiety in the interventional group. In the control group 27(90%) had severe anxiety the 't' value 16.09 was compared with tabulated value at $p< 0.001$ was significant. **Conclusion:** The findings of the study concluded that reflexology was effective in reducing pain and anxiety among primipostnatal caesarean mothers.

KEYWORDS: Effectiveness, Reflexology, Pain, Anxiety, Primipostnatal, Caesarean Mothers.

INTRODUCTION:

Caesarean section is done which caused pain and anxiety to the mother. Pain is an unpleasant feeling which the mother has to undergo through the postnatal period, effective pain relief and reduction in anxiety will promote the comfort of the mother, promote health, less hospital stay and promotes the wellbeing of both the mother and the baby. Today apart from pharmacology non pharmacological measures are taken to reduce pain and anxiety. Many studies have shown that non

pharmacological measures like yoga, meditation, reflexology are inexpensive easy to administer and less side effects. Reflexology reduced both pain and anxiety .when pressure is applied to reflex points and zones in the feets and hands it triggers circulation and improves the physiological relaxation response in the body.

A blind clinical trial was conducted by Movarid Irani, Masoumehkordi, Fatemeh Tera, Hamid riza Bahrami, Kievan Shariati Nejad (2015) on the effect of foot massage on post caesarean pain and anxiety in Omalbania hospital. The samples were 80 pregnant women who have undergone elective caesarean section were selected by convenience sampling. The subjects were assigned randomly to 2 groups. Visual analog scale was used to assess the level of pain and anxiety. Foot massages were given on each foot and hand for 5 minutes and the post test were done immediately 60 and 90 minutes after intervention. The study results showed reduction in pain and anxiety among postnatal caesarean mothers.

Padmavathi P (2013) did a study on foot reflexology on pain among postnatal caesarean mothers. A quasi experimental non equivalent pretest and posttest design was adopted. The study was conducted in V. K Hospital and T.P.N. Hospital Erode, Tamilnadu, India. Samples were selected by non probability convenient sampling. 30 postnatal caesarean mothers who fulfilled the inclusion criteria were selected. Pretest was conducted using visual analog scale then intervention was given once a day for 5 days. On the 6^{th} day posttest was conducted. The findings imply foot reflexology was effective in reducing the post operative pain among post caesarean mothers.

OBJECTIVES:

- To assess the pretest and posttest level of pain among postnatal caesarean mothers.
- To assess the pretest and posttest level of anxiety among postnatal caesarean mothers.
- To evaluate the effectiveness of reflexology on pain and anxiety among postnatal caesarean mothers.
- To explore the association between selected demographic variables.

HYPOTHESIS:

H_1: There is a significant effectiveness of reflexology on pain and anxiety among postnatal caesarean mothers in intervetinal group than control

H_2: There is a significant association between pain and anxiety with selected demographic variables.

MATERIALS AND METHODS:

Research approach:

Quantitative approach was adopted for this study.

Research Design:

Quasi- experimental pretest posttest control group design.

Setting:

The study was conducted in C.S.I hospital Neyyoor.

Population:

The population for the present study is postnatal caesarean mothers at C.S.I. hospital Neyyoor.

Sample Size:

The sample comprised of 60postnatal mothers who fulfilled the inclusion criteria were selected (30 in control 30 in interventional group).

Sampling Technique:

Non probability purposive sampling techniques were used to select the samples.

Criteria for Sample Selection:

Inclusion Criteria:

- Postnatal mothers who has under gone caesarean section.
- Free from complications.
- Who have given consent to participate in this study.

Exclusion Criteria:

- Mothers with acute or chronic illness.
- Mothers with normal delivery
- Any other complications after surgery.

Description of the tool:

The instrument was classified into 2 parts.

Part I:

It consists of demographic variables of the postnatal caesarean mothers such as age, education, occupation, type of family, religion and support system.

Part II:

The data was collected through visual analog scale for pain, zung self rating anxiety scale was used to rate the anxiety of postnatal caesarean mothers. A score was given as 1, 2, 3, 4and negative statements were given reverse scoring .Through interview schedule the datas were collected.

Validity:

The content validity of the tool was obtained from research experts in the field of obstetrics and gynaecology.

Reliability of the tool:

Reliability of the tool was checked by split half method, reliability score for zung self anxiety scale was r = 0.9

Data collection procedure:
The study was conducted in C.S.I. hospital Neyyoor. The investigator introduced herself to the mother and developed a good rapport after collecting the demographic varaiables pretest was conducted on the 2nd day with the help of the tool. After the pretest, reflexology was given to the primi postnatal caesarean mothers in the interventional group for 20 minutes. 5 minutes in each foot and hands for 5 days . on the 6th day posttest was conducted by using the same tool. Based on the collected data effectiveness was found by comparing the pretest and posttest scores in the interventional and control group.

Score Interpretation:
Visual Analog Scale

0% - 0 – No Pain
(10%-30%) – 1-3 –Mild Pain
(40% -60%) – 4-6 – Moderate Pain
(70%-100%) – 7-10 – Severe Pain

Based on the information datas were classified as follows

Normal - 20-44
Mild anxiety/Moderate anxiety- 45-59
Severe Anxiety - 60-74

DATA ANALYSIS AND INTERPRETATION:
The frequency and percentage distribution of demographic variables of primi postnatal caesarean mothers (54%) were between 21-25 yrs, (64%) were graduates, (47%) were unemployed, (50%) had 5000 to 14000 income, (53%) were Christians, (75%) support system husband and family.

The pain score were assessed using visual analog scale in the pretest and posttest among 60 mothers in both groups. In the pretest 27(90%) had severe pain in the interventional group, 28(93%) had severe pain in the control group. In the posttest 2(7%) had severe pain, 1(3%) had moderate pain, 27(90%) had mild pain on the 6th postnatal day in the interventional group.

The anxiety score using zung self anxiety scale in the pretest 23(76.6%) had severe anxiety, 7 (23.3%) had moderate anxiety in the interventional group, 27(90%) had severe anxiety 3(10%) had moderate anxiety in the control group. In the posttest 1(3.3%) had moderate anxiety, 28(9.3%) had mild anxiety in the interventional group.

The mean standard deviation in the pretest pain 7.8 and 0.97 in the interventional group, 8.3 and 0.9 in the control group posttest mean and standard deviation 4.9 and 1.37 in the interventional group, 7.1 and0.9 in the control group. The calculated 't' value is 9.539 which is greater than the table value at 0.001. this shows that reflexology is effective in reducing pain among primi postnatal mothers.

The mean, standard deviation in the pretest anxiety 64.7and 3.3, 60.7 and 3.1 in the interventional and control group, posttest 49.97, 3.8 and 59.7, 2.9. interventional and control group the calculated 't; value is 16.09 which is significant at 0.001 level. Hence it shows that reflexology is effective in reducing anxiety among postnatal caesarean mothers. There was no association between pain, anxiety with selected demographic variables.

RESULTS AND DISCUSSION:
The mean postnatal caesarean pain score of interventional group before and after reflexology were 7.8 + 4.9 and 0.97+0.9. The mean reduction were 2.96+ 1.59. The mean anxiety score of postnatal caesarean mothers 64.73+3.3.

The mean reduction in anxiety was (10.73+1.59). The calculated 't' value were significant at the level of p< 0.001. So it has been concluded that reflexology was effective in reducing the pain and anxiety among postnatal caesarean mothers.There was no significant association between the demographic variables, pain and anxiety.

RECCOMENDATIONS:
Based on the study findings

- The same study can be replicated on a larger samples in difficult settings.
- A comparative study can be done between postnatal caesarean mothers in the rural and urban area.
- A descriptive study can be done on the coping mechanism and adaptation of pain and anxiety of postnatal caesarean mothers.
- A Comparative study can be done between primi and multi postnatal caesarean mothers.

CONCLUSION:
The present study findings concluded that there is a reduction in pain and anxiety in primipostnatal caesarean mothers in the interventional group than control group.

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ANNEXURE - V

CONTENT VALIDITY EXPERTS

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16. **Dr**.**J.G.DURESH, M.A., Ph.D.**
ASSOCIATE PROFESSOR AND HEAD
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Nagercoil.

ANNEXURE - VI

TAMIL EDITING CERTIFICATE

I hereby certify that I have validated the tool of Ms.Arzta Sophia, M.Sc Nursing, PhD student of maternity nursing studying in Danvantri college of Nursing, Erode, Namakal district, who is undertaking the dissertation work on "A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE VS REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT, TAMIL NADU".

Place : Nagercoil

Date : 22.05.2017

Signature of Expert

Name and Designation

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NAGERCOIL - 629 003.

ENGLISH TAMIL EDITING CERTIFICATE

I hereby certify that I have validated the tool of Ms.Arzta Sophia, M.Sc Nursing, PhD student of maternity nursing studying in Danvantri college of Nursing, Erode, Namakal district, who is undertaking the dissertation work on "A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE VS REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT, TAMIL NADU".

Place : Nagercoil

Date : 22.05.2017

Signature of Expert

Name and Designation

Dr. J. G. DURESH,
Associate Professor and Head,
Dept. of English and Research Centre,
Scott Christian College (Autonomous),
Nagercoil-3, Tamil Nadu.

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that I have gone through the dissertation titled "A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE VS REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT, TAMIL NADU", by Ms. Arzta Sophia. I have corrected the dissertation from the point of view of typological, punctuations and grammatical errors.

Place : Nagercoil

Date : 12.06.2017

Signature of Expert

Name and Designation

Dr. J. G. DURESH,
Associate Professor and Head,
Dept. of English and Research Centre,
Scott Christian College (Autonomous),
Nagercoil-3, Tamil Nadu.

ANNEXURE - VII

CONSENT FORM

I._____D/o./S/o_____

___agree to take part in the research Study, conducted by, PhD Scholar, Department of Research in Dhanvantri College of Nursing, entailed "**A COMPARATIVE STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE Vs REFLEXOLOGY ON LACTATION AMONG IMMEDIATE POSTNATAL MOTHERS IN SELECTED HOSPITALS, KANYAKUMARI DISTRICT, TAMILNADU.** I acknowledge that The research study has been explained to me and I understand that agreeing to participate in the research means that I am willing to:

- Provide information which is only the truth and to the best of my knowledge.
- Allow the research to have access to the medical records, Pertaining to the purpose of the analysis of the study.
- Allow to participate in the analysis program.

I have been informed about the purpose of my queries towards the research. I provide consent to the research to use the information given by me for educational purpose only. I understand that my participation is voluntary and can withdraw at any stage of research.

Signature of the Participant

Signature of the Investigator

Date:

Date:

Contact Address

ஒப்புதல் படிவம்

_____ ஆகிய நான் தமிழ்நாடு டாக்டர். எம்.ஜி.ஆர் மருத்துவ பல்கலைக் கழகம் சென்னையில் கீழ், செவிலியர் ஆராய்ச்சியாளர் செய்யும் ஆராய்ச்சியில் பங்கு பெற சம்மதிக்கின்றேன். "பிரசவத்திற்கு பின் உடலின் சில தொடு புள்ளிகள் மற்றும் பாதத்தில் அழுத்தம் கொடுத்து பால் சுரப்பதை ஊக்கப்படுத்துவதை ஒப்புமைபடுத்தி எந்த முறை சிறந்தது என்ற ஆய்வை மேற்கொள்கிறார். இந்த ஆய்வைப் பற்றி என்னிடம் விவரமாக எடுத்துரைத்தார் எனவே நான் என்னுடைய சொந்த விருப்பத்தின் படி இந்த ஆய்வில் கலந்து கொள்ள விரும்புகிறேன்.

- இதில் அடங்கிய எல்லா விவரங்களும் உண்மையாகவும் என்னுடைய அறிவுக்கு சிறந்ததாகவும் காணப்படுகிறது.
- இந்த ஆய்வுக்கு தேவையான என்னுடைய எல்லா ஆவணங்களையும் கொடுக்க அனுமதிக்கிறேன்.
- இந்த ஆய்வுக்கு பிறகு பிரித்து ஆராய்தலுக்கும் சம்மதிக்கிறேன்.
- இந்த ஆய்வின் நோக்கங்களையும், விவரங்களையும் குறித்து என்னிடம் எடுத்து கூறினாகள். நான் என்னுடைய ஒப்புதலை இந்த ஆய்வுக்காக செலுத்தவும் மட்டுமல்லாமல் இதின் நோக்கம் கல்விக்கு மட்டுமே பயன்படுத்தப்படும் எனவே நான் இந்த ஆய்வுக்கு என் சொந்த விருப்பததுடன் ஒப்புதல் கொடுக்கிறேன். யாரும் என்னை வற்புறுத்தவில்லை. எப்போதும் எந்த நேரத்திலும் இந்த ஆய்வில் இருந்து வெளியேரலாம் என்பதையும் தெரிந்து கொண்டேன்.

பங்குபெறுபவரின் கையொப்பம் செவிலியர் ஆராய்ச்சியாளரின் கையொப்பம்

விலாசம்:

நாள்

ANNEXURE VIII

புள்ளி விவர பட்டியல்

பிரிவு அ

1. **தாயின் வயது (வருடங்கள்)**

அ. 18-23 வரை ☐

ஆ. 24-29 வரை ☐

இ. 30-35 வரை ☐

2. **கல்வி நிலை**

அ. எழுதப்படிக்க தெரியாதவர் ☐

ஆ. ஆரம்பக் கல்வி ☐

இ. உயர்நிலைக் கல்வி ☐

ஈ. மேல்நிலைக் கல்வி ☐

உ. இளம்நிலைக் கல்வி ☐

ஊ. முதுநிலை பட்டப்படிப்பு ☐

3. **தொழில்**

அ. இலகுவான ☐

ஆ. மிதமான ☐

இ. கடினமான ☐

4. **மாதவருமானம்**

அ. 7000 கீழ் ☐

ஆ. 7001-12000 வரை ☐

இ. 12000 மேல் ☐

5. பிரசவத்தின் போது தாயின் கர்ப்பகாலம்

அ. 38-39 வாரங்கள் ☐

ஆ. 39.1-40 வாரங்கள் ☐

இ. 40.1-41 வாரங்கள் ☐

6. முதன் முதலில் தாய்ப்பால் கொடுக்கத் தொடங்கியது

அ. 30 நொடிகள் ☐

ஆ. 1 மணி பின் ☐

இ. 1 மணி நேரத்திற்கு மேல் ☐

7. கர்ப்பகால பரிசோதனை

அ. ஒழுங்காக ☐

ஆ. அவ்வப்போது ☐

8. பிறந்தபோது குழந்தையின் எடை

அ. 2.5 கி.கி ☐

ஆ. 3 கி.கி ☐

இ. < 3 கி.கி ☐

9. உணவு முறை

அ. சைவம் ☐

ஆ. அசைவம் ☐

10. முதலில் குழந்தைக்கு கொடுத்த உணவு

அ. தாய்பால்

ஆ. தண்ணீர்

இ. திரவ கலவை

11. குடும்ப ஆதரவு

அ. கணவர் மற்றும் குடும்பம்

ஆ. உறவினர்

இ. தாய்

ஈ. இவை அனைத்தும்

12. தாய்பால் கொடுத்த தடவைகள்

அ. 4 முறை

ஆ. 6 முறை

இ. 8 முறை

13. பாலினம்

அ. ஆண்

ஆ. பெண்

ANNEXURE VIII

Part-A: DEMOGRAPHIC VARIABLES Instructions:

Please fill yours response to all the items given below by putting a tick [✓] mark in the space provided in the bracket against the following items. There is no right or wrong answer. Kindly answer all the questions. The information given by you will be kept confidential.

Sample no:

1. Age of the mother
   a. 18 – 23 years
   b. 24 – 29 years
   c. 30 – 35 years

2. Education
   a. No formal education
   b. Primary education
   c. Secondary and higher education
   d. Under graduate
   e. Post graduate

3. Occupation
   a. Sedentary
   b. Moderate
   c. Heavy

4. Monthly income
   a. Rupees below 7000
   b. Rupees 7001 – 12,000
   c. Rupees more than 12000

5. Gestational age
   a. 38 - 39 weeks
   b. 39.1 – 40 weeks
   c. 40.1 – 41 weeks

6. Initiation of Breast feeding
    a. With in half an hour
    b. After half an hour
    c. More than one hour

7. Antenatal check up
    a. Regular
    b. Irregular

8. Birth Weight
    a. 2.5Kg
    b. 3 Kg
    c. .< 3 Kg

9. Type of diet
    a. Veg
    b. Non Veg

10. Type of feed given
    a. colostrum
    b. water
    c. formula feed

11. Family support
    a. supportive
    b. not supportive

12. Number of times breast feeding given/day
    a. 8 times
    b. 6 times
    c. 4 times

13. Sex of the baby
    a. male
    b. female

PART B :BREAST ASSESSMENT TOOL TO ASSES THE BREAST SECRETION AMONG IMMEDIATE POSTNATAL MOTHERS

		1	2	3
1	Breast	Breast engorged rock hard or large lumps	Filling breast becoming firms Small lumps	Breast soft Heavy
2	Nipple	Nipple cracked bleeding large blister (s) and or Bruise (s)	Nipples reddened small blister (s) and or bruise(s)	Nipples intact
3	Type	Inverted	Flat	Everted after Stimulation/Normal
4	Shape of Nipple After feed	Pinched creases or blanched white	Not round misshapen or change in colour	Same shape as when feed began or slightly elongated
5	Comfort	Severe Discomfort	Mild Moderate Discomfort	Nipples slightly tender
6.	Satisfaction	Not Satisfied	Partially Satisfied	Fully Satisfied

Scoring

13 – 18 - adequate secretion

7 – 12 – moderately adequate secretion

0 - 6 -- Inadequate secretion

PART B :BREAST FEEDING ASSESSMENT TOOL TO ASSES THE BREAST FEEDING AMONG THE NEW BORN BABY

	Score Value	1	2	3
1.	Colour of the baby, Alertness, Muscle tone	Yellow Lethargic Poor	Dry Sleepy Floopy	Normal Skin Colour Alert Good tone
2.	Audible Swallow	None	Few with stimulation	Spontaneous and intermittent
3.	Number of times urine passed	1 – 2	3 -4	Greater than 5
4.	Number of times motion passed	1-2	3-4	Greater than 5
5.	Duration of sleep (After Feeding) (in hours)	1	2	Greater than 2
6.	Satiation	Crying Fussy	Awake Rooting After feeding the baby	Awake for feeding, relaxes and falls asleep at breast

Scoring Key

13 – 18 = Adequate Feeding

7 – 12 = Moderate Feeding

0-6 = Inadequate Feeding

ANNEXURE - IX

INTERVENTION TOOL

GUIDELINES FOR IMPLEMENTATION OF INTERVENTION

ACUPRESSURE

Acupressure is a technique used in traditional Chinese medicine (TCM) that is quite similar to acupuncture. Instead of needles, instruments or fingers apply direct pressure on specific points of the body inorder to alleviate symptoms various organs or systems of the body.

MECHANISM OF ACTION

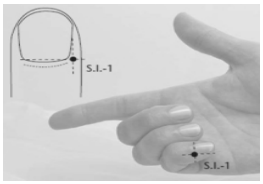
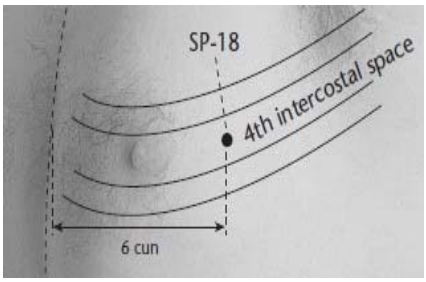
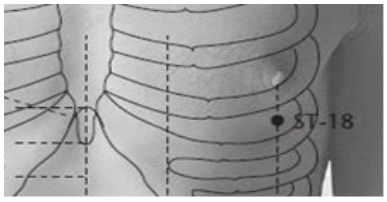
Acupressure restores health and balance to the body's channels of energy and to regulate opposing for us yin (negative energy) and yang (positive energy). Acupressure points that lie along meridians, or channels in our body. There are energy meridians through which there is flow of energy. There are 12 major meridians connected to specific body organs. It begins at our fingertips, connect to brain and other organs. When one meridian is blocked illness occurs.

PRINCIPLES

1. Application of pressure on certain points called acupoints to promote energy flow through the meridians.
2. These points are located on the back, chest, hands and legs.
3. Each points corresponds to each organ. It improves circulation, neurotransmitter and endorphin production and improves overall health and well being.
4. Applying pressure using thump and fingers and then relaxing.

PROCEDURE

Each treatment starts with the relaxation technique.

Acupressure Points and Location	Technique / Procedure
 • **Shaozi (SI 1)** This point is located 1 cun posterior to the corner of the nail on the ulnar side of the little finger.	• The immediate postnatal mothers was made to lie down comfortably. The investigator gave acupressure to the alternate fingers at the Shaozi (SI 1) for 6 seconds and release for 2 seconds with out pressure.
 • **Tianxi (SP 18)** This point is located at the centre of the 4th intercotal space 6 cun from the midline above the nipple.	• Acupressure was given on Tianxi (SP 18) on each breast for 6 seconds and released for 2 seconds with out pressure. This was continued for 5 minutes on each point.
 • **Rugen (ST 18)** This point is located between the 6th intercostal space below the nipple I cun below ST 17.	• The investigator gave pressure on Rugen (ST 18) for 6 seconds and release for 2 seconds with out pressure. This was continued for 5 minutes on each point. • The total duration of intervention is 30 minutes (10 minutes on each hand and breast) 3 times for 3 days.

REFLEXOLOGY

It is an ancient healing process based on the principle that there are reflex areas on the feet which corresponds to every part, organ and gland.

MECHANISM OF ACTION

Pressure applied to the specific areas in the feet and the palm send signals to the peripheral nervous systems and then enters the central nervous system where the brain release the message to the internal organ and glands in order to make adjustments such as getting more nutrients and oxygen into the cells.

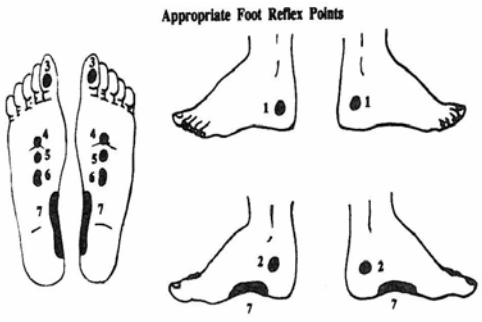
PRINCIPLES

1. There are 10 energy zones from head to toe.
2. Five zones are located in each side of the body ending in each foot. All organs and body systems lie along one of more of this reflex zone.
3. The feet are the perfect mini map of reflecting the whole body.

PROCEDURE

Develop a good rapport with the patients. Explain the purpose and procedure. Each section starts with a relaxation technique.

Reflex points	Technique/ Procedure
	• The immediate postnatal mothers was made to lie down comfortably in supine position
	• Relaxation exercises – massage the foot all over slowly and gently twist the spine area on the foot. **(1 minute for each foot)**
	• Thumb walking up and down on the spine **(2 minute for each foot)**

	• Stimulate the meridian points such as • Ovary • Uterus • Pituitary gland and endocrine system • Solar plexus • Adrenal gland • Kidney • Sympathetic nervous system (**1 minute for each point, 7 minutes/foot**). Total duration of treatment was 15 minutes/foot (total treatment duration 30 minutes three times a day)

AFTER CARE

Allow the mother to relax for 5 to 10 minutes after the intervention.

ANNEXURE - X

PHOTOS

Investigator explaning about the procedure

Investigator administering acupressure

Investigator explaning about Reflexology

Investigator administering Reflexology

Breast Feeding Assessment

ANNEXURE - XI

ANTI PLAGIARISM WEB REPORT

URKUND

Urkund Analysis Result

Analysed Document: Arzta Sophia P.h.D. Thesis.pdf (D29480068)
Submitted: 2017-06-23 13:17:00
Submitted By: arztasophia@gmail.com
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https://www.ncbi.nlm.nih.gov/pubmed/20886792
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