

**EFFECTIVENESS OF ALMOND OIL MASSAGE ON  
BREAST MILK SECRETION AMONG POSTNATAL  
MOTHERS IN SREE MOOKAMBIKA MEDICAL COLLEGE  
HOSPITAL AT KULASEKHARAM, KANYAKUMARI  
DISTRICT.**



**A DISSERTATION SUBMITTED TO THE TAMILNADU  
DR.M.G.R. MEDICAL UNIVERSITY CHENNAI, IN  
PARTIAL FULFILMENT FOR THE DEGREE OF  
MASTER OF SCIENCE IN NURSING  
OCTOBER 2015**

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**Internal Examiner**

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## **BONAFIDE CERTIFICATE**

This is to certify that the dissertation entitled “**A study to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital at Kulasekharam in kanyakumari District**” is a bonafide research work done by **Mrs. R. L. Anusha** **II year MSc (N)**, Sree Mookambika College of Nursing, Kulasekharam under the guidance of **Prof. Dr. Mrs. T. C. Suguna , M.Sc(N), M.A, Ph.D , HOD , Obstetrics and Gynecological Nursing** in partial fulfillment of the requirements for the Degree of Master of Science in Nursing under Tamilnadu Dr. M.G.R Medical University.

**Principal**

Place : Kulasekharam

Sree Mookambika College of Nursing,

Date : 10-8-2015

Kulasekharam.

## **CERTIFICATE**

This is to certify that the dissertation entitled “**A study to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital at Kulasekharam in Kanyakumari District**” is a bonafide research work done by **Mrs. R. L. Anusha** **II year MSc (N)**, Sree Mookambika College of Nursing, Kulasekharam under the guidance of **Prof. Dr. Mrs. T. C . Suguna , M.Sc(N), M.A(Sociology) Ph.D HOD, Obstetrics and Gynecological Nursing** in partial fulfillment of the requirements for the Degree of Master of Science in Nursing under Tamilnadu Dr. M.G.R Medical University.

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## **DECLARATION**

I hereby declare that the present dissertation titled “**A study to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers at Kulasekharam in Kanyakumari District**” the outcome of the original research undertaken and carried out by me under the guidance of **Prof. Dr.Mrs.T .C. Suguna, M.Sc(N), M.A(Sociology), Ph.D** Sree Mookambika College of Nursing, Kulasekharam. I also declare that the material of this has not formed in anyway, the basis for the award of any degree or diploma in this university or any universities.

Place: Kulasekharam

**Mrs. R.L. Anusha**

Date: 10-8-2015

II year MSc(N)

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## ACKNOWLEDGEMENT

As I have approached to the successful completion of the study, I am extremely happy to recall many persons, to whom I am indebted for their contribution in various ways directly and indirectly. I offer my sincere thanks to all those who have helped me in this endeavor.

I owe my success to the **God Almighty** for having given me strength and courage to overcome the difficulties and complete this dissertation successfully.

It's my honor to thank our Chairman **Dr. Velayuthan Nair M.S.**, and Director **Dr. Rema.V.Nair M.D., D.G.O** for their encouragement and support for the successful completion of the study.

I express my deep sense of gratitude and heartfelt thanks to **Prof.Mrs. Santhi Latha M.Sc. (N), MA, Phd(N)** Principal of our college, who devoted her valuable hours in solving our doubts and providing meticulous attention and skillful guidance in various stages of study.

My special thanks to **Prof.Dr.T.C.Suguna M.Sc. (N), MA (socio) PhdHOD** of Obstetric and Gynecology Sree Mookambika College of Nursing for rendering valuable guidance, suggestion and direction to complete this study.

I am deeply obliged to Mrs. **Mary Sunitha MSc (N)**, Assistant professor, **Mrs. PrabhaM.Sc. (N)**, Assistant professor, **Mrs. Manil JollyM.Sc.(N)**, **Mrs. Joscelin SheebaM.Sc.(N)**, Assistant professor, **Mrs. Sabitha Anto M.Sc.(N)** Assistant professor in Obstetrics an Gynecological Nursing departmentand all the faculty members of Sree Mookambika College of Nursing for their motivation, encouragement and immense support given throughout the dissertation work.

I express my sincere thanks to **Prof. Mr. Kumar B.Sc, MA, MPS**, Bio statistic Department, Sree Mookambika Institute of Medical Science for his valuable suggestion and correction in time.

I am thankful to the **Library staff** of Sree Mookambika College of Nursing for their support.

My special thanks to all the postnatal mothers who were participated in the study and for their valuable time and sincere co-operation, without which the study would have been impossible.

I express my sincere thanks to the experts who contributed their valuable time and effort toward validating the tool for the study.

I extend my heart full thanks to all my beloved **classmates and seniors** for their direct & indirect support concern and help to make this attempt an interesting one.

I am very thankful to **Mr. Satheesh Kumar, Good Morning Xerox**, Kulashekaram who helped me to bring this study in a printed form.

It is too difficult to make such effort a success without the unlimited support and encouragement from my father **Mr. Raveendran**, mother **Mrs. Thankalatha**, my husband **Mr. Prasanth . MPT**, my beloved daughters **Shanon Prasanth and Sharon Prasanth** and my sister **Miss. Ancy .R.L. MBBS.**

Finally the investigator thanks all those who inspired to undertake this topic confidently and full fill this dissertation in time.

**INVESTIGATOR**

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## Abstract

Mothers milk plays an important role in newborn's growth and development. The benefits of breast feeding are numerous both for the mothers and their infants. Promotion of breast feeding is one among the goals of World Health Organization. Despite all the conducted activities a high number of mothers feed their infants with formulas due to their inadequacy of breast milk. Almond oil massage is a type of herbal traditional medicine which increases mother's milk by increasing the secretion of prolactin hormone. The main objective of the study was to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers. The research design selected for the study was pretest-posttest quasi experimental control group design. A purposive sampling techniques was followed to obtain a sample of 60 postnatal mother (30 postnatal mothers in experimental group and 30 postnatal mothers in a control group). Pre test was done for both group by using breast milk adequacy checklist. Almond oil massage was given only to the experimental group at the interval of 6 hours a day (3times a day) for 3 days. The post test was done daily for both group. This study reveals that after administration of almond oil massage there was an increase in amount of breast milk secretion in experimental group (90%) compared to the control group (80%). A mean difference was  $18.2 \pm 1.38$  was highly significant ( $t=77.7$ ,  $df=58$  and  $p<0.05$ ). The study also reveals that there is significant association found between order of pregnancy and amount of breast milk secretion. The conclusion of the study shows that almond oil massage was found to be an effective alternative therapy in increasing breast milk secretion.

Key words: almond oil massage, postnatal mother, breast milk secretion

# **CHAPTER I**

## **Introduction**

“Breast Feeding is a mother’s gift to herself, her baby and the earth”

- Pamela. K. Wiggins.

## **Background Of The Study**

Breast milk is produced by a human Female and fed to infants by breast feeding. The breast milk is very healthy and full of nutrition, it provides the primary source of nutrition for newborns before they are able to digest more diverse food. The breast milk also contains balanced nutrients that are require for brain development, growth and a healthy immune systems that act against viruses, bacteria and parasites since an infant’s immune system is not fully developed until age of 2 years, human milk provides a distinct advantages over formula.

Breast milk is the milk produced by a lactating Female. Breast Feeding should commence as soon as possible after giving birth and every 1 to 3 hours per 24 hours (8-12 times / 24 hours) Babies should be breast fed exclusively for the 6 months and on the situation of the mother and child (Adele Pilleteri ,1999).

Breast milk has important ingredients that are not found in any infant formula, to build baby’s immune system. Breast milk changes from feed to feed to suit each baby’s unique needs, making the perfect food to promote healthy growth and development. Breast milk is more easily digested than infant formula. Breastfed Babies are rarely constipated and are less likely to get diarrhoea. Breast milk has no waste products and leaves no carbon foot print.

Breast fed babies are low risk of gastrointestinal illness, allergies, asthma, Diabetes, obesity, some childhood cancer, Respiratory tract infection, Urinary Tract infection, SIDS (cot death)

The uniqueness and precious nature of breast milk is enhanced by the fact that it is asset given by nature and has no price. The vital components for the infants in tropical countries are breast feeding and avoidance of infections as we know so many advantages of breast feeding it is easily digestable , protecting against infections. It is readily available , it contains lactoferin which hinders growth of E-coli. In studies shown that 80% of infants growing healthy who receiving breast feeds (Semin pennato,1979).

Many new mothers do not always experience the instantly in – mother – love emotions. Bonding is gradually unfolding experience that can take hours, days, week or even months to develop. Bonding makes parents to shower their baby with love and affection and to protect and nourish the little one.

A study has discovered that the action of a baby sucking actually changes how the mother's brain behaves. This results in a massive rush of the 'love hormone' oxytocin in women's brain. The release of the chemical in massive surges enhance a mothers feeling of trust, love and affection (Berkeley C. ,2011).

The benefits of breast feeding for the health and well being of the mother and baby are well documented WHO recommends early initiation of breast feeding. A recent trial has shown that early initiation of breast feeding could reduce neonatal mortality by 22%. In developing countries alone early initiation of breast feeding could save as many as 1.45 million lives each year by reducing deaths mainly due to diarrhoeal disorders and lower respiratory tract infection in children (Betty.R.S ,1998)

In South Asia 24-26% of babies born in Bangladesh, India and Pakistan are breast feeding with in first hour of birth, whereas the corresponding rate of Srilanka 75% (Cunningham., Leveno., Bloom & Spong ,2010 )

So many studies gave information about the use of herbs and essentials mainly almond oil in many diseases. Also almond oil helps to promote milk secretions. Almond oil contains rich concentration of Oleic and liolenic essential fatty acids. Most of the studies were done on almond oil on promotion of breast milk secretions studies found that massaging with almond oil helps in promotion of breast milk secretions. Studies found that massaging with almond oil three times a day gives good results on promotion of breast milk (R.L. Bergmann ,1996).

Almonds and cashews are believed to boost breast milk production. Studies proved consuming almond oil during lactation it promote milk secretions as helps in synthesis of vitamin B also helps in emulsification of globules. As almond oil contains fatty acids, proteins, calcium and liolenic acids. It also contains Protein 6g, Iron 1.2g, Calcium 70 mg, dietary fiber 3.3g, Potassium 206 mg, Vitamin E 7.3 mg, Magnesium 78 mg and Phosphorous 134 mg (Davis.V ,2008).

### **Need For The Study**

Breast milk is a complete food for the infant. The nutritional profile of breast milk in terms of calories, vitamins, and minerals is the best for the infant as it has the perfect proportion of them all. From antibodies which protect an infant at birth, to the exclusive nutrients in mothers' milk which prevent a number of childhood diseases, provide adequate growth and development and steddiness ,the benefits of breastfeeding are incalculable. The benefits of breast feeding are numerous both for the mothers and their infants. Breast feeding is associated with lower incidence of

breast cancer before menopause , ovarian cancer , type 2 diabetes , MI and metabolic syndrome in mothers. The advantages of breast feeding are a reduction in incidence of diseases such as respiratory and gastro intestinal diseases and a positive effect on IQ for the infants .The uniqueness and precious nature of breast milk is enhanced by the fact that it is an asset given by nature and has no price. There is no need to worry about infection or temperature or freshness.

Breast feeding is a natural human activity. To have the full benefit of breastfeeding , the WHO recommended exclusive breastfeeding for atleast six months of life and supplemented breastfeeding for atleast one year. Global incidence shows that optimal breastfeeding is the most important child survival intervention and the earlier the baby is breastfed, within the first hour of birth, the better. Only 25 percent of mothers in country initiate breastfeeding within the first hour after birth, whereas in Rajasthan is 14 percent, while in Bihar and Uttar Pradesh is 4 and 7 percent. The Government of India and international organizations recommend that infants be fed only breast milk for the first six months of life, with no other foods or fluids added, not even water.

The percentage of neonatal deaths could be prevented by initiating breast feeding in the first hour of life was 41.3 percent. This is equivalent to preventing 22.3 percent of all neonatal deaths Similarly, initiating breastfeeding on the first day could have saved 30.2 percent of neonatal deaths from days 2 ( Fifer WP. Moon CM, 2010).

A mother's milk supply may diminish temporarily if she's not feeding her baby often enough because of nipple pain, a lethargic nurser, or a poor latch-on technique. An illness or birth control pills that contain estrogen can also affect milk production.

For a few women, a biological or physical condition such as a hormonal disorder or breast surgery causes their milk supply to be low.

For infants, not being breastfed is associated with an increased incidence of infectious morbidity, as well as elevated risks of childhood obesity, type 1 and type 2 diabetes, leukemia, and sudden infant death syndrome. For mothers, failure to breastfeed is associated with an increased incidence of premenopausal breast cancer, ovarian cancer, retained gestational weight gain, type 2 diabetes, myocardial infarction, and the metabolic syndrome. Obstetricians are uniquely positioned to counsel mothers about the health impact of breastfeeding and to ensure that mothers and infants receive appropriate, evidence-based care, starting at birth ([Alison Stuebe](#), MD, 2009).

Bottle feeding has a lot of disadvantages over breast feeding. Bottle feeding should be avoided as much as possible. The disadvantages of bottle feed cannot be overlooked as baby deprived from the immense benefits of breast feeding. Babies who are bottle fed using formula milk are more likely to develop illness such as diarrhoea or a chest, ear or urine infection. There is also an increased risk of premature babies who are bottle fed developing a rare but serious condition called Necrotising enterocolitis (NEC) where the intestines are damaged due to infection and a poor blood supply when making formula milk it is possible to get the mixture wrong and make it too strong, too weak or too hot. Bottle fed babies were found to have an increased risk of obesity until 6 years of age. Bottle feed using formula milk can be expensive.

In 2013, the rate of breastfeeding at early postpartum was 75.0 % at 6 month of age was 43.0% and at 12 month was 22.2%. apparently, more than 50% of mother

failed to breastfeed their baby adequately and thus face a risk of lactation failure due to stress, fatigue, anxiety infounded fears and also anaesthesia, strong sedation, prolong labour, surgical intervention, placenta retention etc (Edmond KM et al , 2013).

Promotion of breast feeding is one among the goals of World Health Organization. Many mothers have been followed to achieve this goals such as establishment of children - friendly hospital and conducting breast feeding education for the mothers. Despite all the conducted activities a high number of mothers feed their infants with formulas due to their inadequacy of breast milk.

Almond oil massage is a type of herbal traditional medicine which increases mother's milk by increasing the secretion of prolactin hormone (MitraSavabi Esfahani et al, 2015).

Almond oil massage over breast with the goal of improving the health and promotion relaxation and clears the ducts in turn can promote lactation in breastfeeding mothers. And its ability to induce a relaxed state in the body have been found to assist postpartum mothers with milk production.

Sui-Lan-Li,'s (2013) found that mothers given almond oil breast massage after birth were able to breastfeed more quickly and with more satisfaction. In addition, almond oil massage helped avoid use of drugs in lactation that may be harmful to the baby and cause adverse side effects in the mother. Other studies (Barbara & Kevinkunz ,2011 and Zhang.Jie, 2011) show that the supply of milk is greater in women who received almond oil massage after birth.

Massaging the breast with 2ml of almond oil during postnatal period (3 times a daily) for 3-5 days induced highly significant increase ( $P < 0.05$ ) in prolactin levels and this effect was associated with a significant increase in milk production. (Ahmed, Mona Elemam Mohammed, 2005)

Hence the investigator strongly felt the need to do study on effect of almond oil massage on breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital, Kulasekharam.

### **Statement Of The Problem**

A study to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital, Kulasekharam.

### **Objectives Of The Study**

1. To assess the breast milk secretion among postnatal mothers.
2. To assess the effect of almond oil massage on breast milk secretion among postnatal mothers.
3. To findout the association between effectiveness of almond oil massage on breast milk secretion with selected demographic variables such as Age, Education, Food habits ,type of family ,order of pregnancy, type of nipple, type of anesthesia , postnatal day and frequency of breast feeding.

## Hypothesis

H<sub>1</sub> : There is a significant increase in post test breast milk adequacy score in the experimental group after administration of almond oil massage than in control group.

H<sub>2</sub> : There is a significant association between amount of breast milk secretion and selected demographic variables such as age, education, food habits and type of family. The obstetric variables are order of pregnancy, type of nipple, type of anesthesia, postnatal day and frequency of breast feeding.

## Operational Definitions :

**1. Assess :** In this study, assess refers to analyze the amount of breast milk secretion after administration of almond oil massage among postnatal mothers by using breast milk adequacy checklist.

**2. Effectiveness :** In this study effectiveness refers to increase in promotion of breast milk secretion among postnatal mothers after administration of almond oil massage.

**3. Almond oil:** In this study almond oil refers to nut oil extracted from almonds which is rich in vitamins and proteins.

**4 . Almond oil masage:** In this study almond oil massage refers to application of 2ml of almond oil over each breast and massaging the breast for a period of 5 minutes with firm pressure of gentle stroke with in a circular motion from chest wall towards the nipple.

**5. Postnatal mothers:** Women who belongs to the postnatal period are called postnatal mothers . Postnatal period refers to a period begins immediately after the birth of a baby and extending for about six weeks.

**6. Breast milk:** In this study breast milk refers to the milk produced by a woman after delivery and this is given to the babies by breast feeding .

#### **Variables :**

**Independent variable:** Independent variable is a stimulus or activity that is manipulated or varied by the researcher to create the effect on the dependent variable. In this study the independent variable indicates the Almond oil massage over breast for a period of 3 days.

**Dependent variable :** Dependent variable is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain. In this study the dependent variable indicates the promotion of breast milk secretion.

**Demographic variables :** The characteristics and attributes of the study subjects are considered as demographic variables . The demographic variables are Age, Education, Food habits And Type of family.

**Obstetric Variables :** The obstetric variables are Order of pregnancy, Type of nipple, Type of anesthesia , Postnatal day and Frequency of breast feeding.

#### **Assumptions :**

- Almond oil is one of the complementary therapy used to promote breast milk secretion.

- Almond oil massage (2ml) over breast clears the ducts thus improves breast milk secretion. Almond oil massage improves the health and promotes relaxation.
- Almond oil massage helps in emulsification of globules.
- Almond oil are found to have no side effects when compared with other pharmacological treatment

### **Delimitation**

1. Study is delimited to the postnatal mothers who had undergone LSCS in Sree Mookambika Medical College Hospital in Kulasekharam.
2. Study is delimited only for one month period during data collection.

### **Criteria For Sample Selection**

#### **Inclusion Criteria :**

- Postnatal mothers who had undergone LSCS (3<sup>rd</sup> post operative day).
- Postnatal mothers giving breast feeding to their babies.
- Postnatal mother who can speak Tamil, Malayalam and English
- Postnatal mothers who are willing to participate in the study.

#### **Exclusion Criteria :**

- Postnatal mothers who delivered IUGR, low birth weight, preterm, sick babies and babies with congenital abnormalities

- Postnatal mothers who had undergone normal vaginal delivery.
- Postnatal mothers who are having breast abscess.
- Postnatal mothers who are having postpartum blues, depression and psychosis.
- Postnatal mothers who are having infectious disease like TB, chicken pox and HIV.

### **Ethical Consideration:**

The research proposal was approved by the college dissertation committee of Sree Mookambika College of Nursing. The permission to conduct the study was obtained from the Chairman and Director of the institution. Oral consent was also obtained from each study subject included in the study. Subjects were asserted that privacy and confidentiality would be maintained.

### **Conceptual Framework:**

The conceptual framework of this study is based upon Sister Callista Roy's Adaptation model which has five components – person, goal of nursing, health, environment and nursing activities.

**Person:** Roy defined person, the recipient of nursing care, as a living complex adaptive system with internal process (the cognator and regulator) acting to maintain adaptation in four adaptive modes (physiological mode, self concept, role function and interdependence).

**Goal:** Goal of nursing in this model is to promote adaptation in four adaptive modes and thereby milk secretion is improved among postnatal mothers.

**Health:** Health has been defined as a state and process of well being and becoming an integrated whole process.

**Environment:** Roy defined environment as all conditions circumstances and influences that surround and effect the development of the behaviour of a person.

**Nursing Activity:** According to Roy nursing process has 6 steps – assessment of behaviour, assessment of stimuli, nursing diagnosis, goal setting, intervention and evaluation . In this study all the activities of the researcher are considered as nursing activities.

This model consists of 4 levels.

1. Adaptation level
2. The control process
3. Effector
4. Output

### **1. Adaptation level ( input)**

The adaptation level is the stimuli from the external environment and the internal environment including the formation from the cognator and the regulator.

The input consists of 3 stimuli

- a) Focal stimuli
- b) Contextual stimuli
- c) Residual stimuli

**a) Focal stimuli :** The stimuli immediately confronting the person and the one to whom the patient (person) must make an adaptation response to the investigator and almond oil massage . In this study the focal stimuli is the postnatal mothers who had undergone LSCS.

**b) Contextual stimuli:** Contextual stimuli are the stimuli present in the situation or surrounding the event, that contribute to the effect of focal stimulus. In this study ,selected demographic variables such as age, education, food habits , type of family and obstetric variables type of anesthesia, type of nipple, order of pregnancy, postnatal day and frequency of breast feeding.

**c) Residual stimuli:** Residual stimuli are those general vague antiguos factors that may be affecting a person, but their influence cannot be immediately associated or validated. These stimuli are not under the preview of the present study. The residual stimuli includes beliefs and attitude.

## **2. The control process:**

The Roy'sadaptation model describes coping as the use of behaviour in response to stimuli. According to her coping mechanism are of two types. Regulators and cognators.

**Regulator:** Regulator is a subsystem coping mechanism which responds automatically through neural chemical and endocrine process.

**Cognator:** Cognator is a subsystem coping mechanism which responds through complex processes of perception and information processing, learning, judgement and emotion.

In this study “almond oil massage ” is considered as regulator coping mechanism. It is assumed that providing almond oil massage over breast to the postnatal mothers will help to improve the breast milk secretion.

### **3.Effector:**

Adaptive modes or effectors are the classification of ways of coping that manifests regulator and cognator activities. The adaptive modes are psychological, self concept , role function and independence modes.

In this study the effect of almond oil massage was considered to be manifested in the physiological mode though regulator coping mechanism and other adaptive modes such as the self concept mode ( almond oil massage over breast needed to increase breast milk secretion), role performance( massaging with almond oil over breast) and independence mode were beliefs and gives human values to nurse.

### **4. Output:**

Output of a person as a system is the behaviour of the person. Output behaviour can be both internal or external . These behaviour may be observed, measured or subjectively reported.

In this study the increased amount of breast milk secretion among the postnatal mothers after the implementation of almond oil massage was considered as output in adaptive response and amount of breast milk secretion remains the same is considered as an maladaptive response.

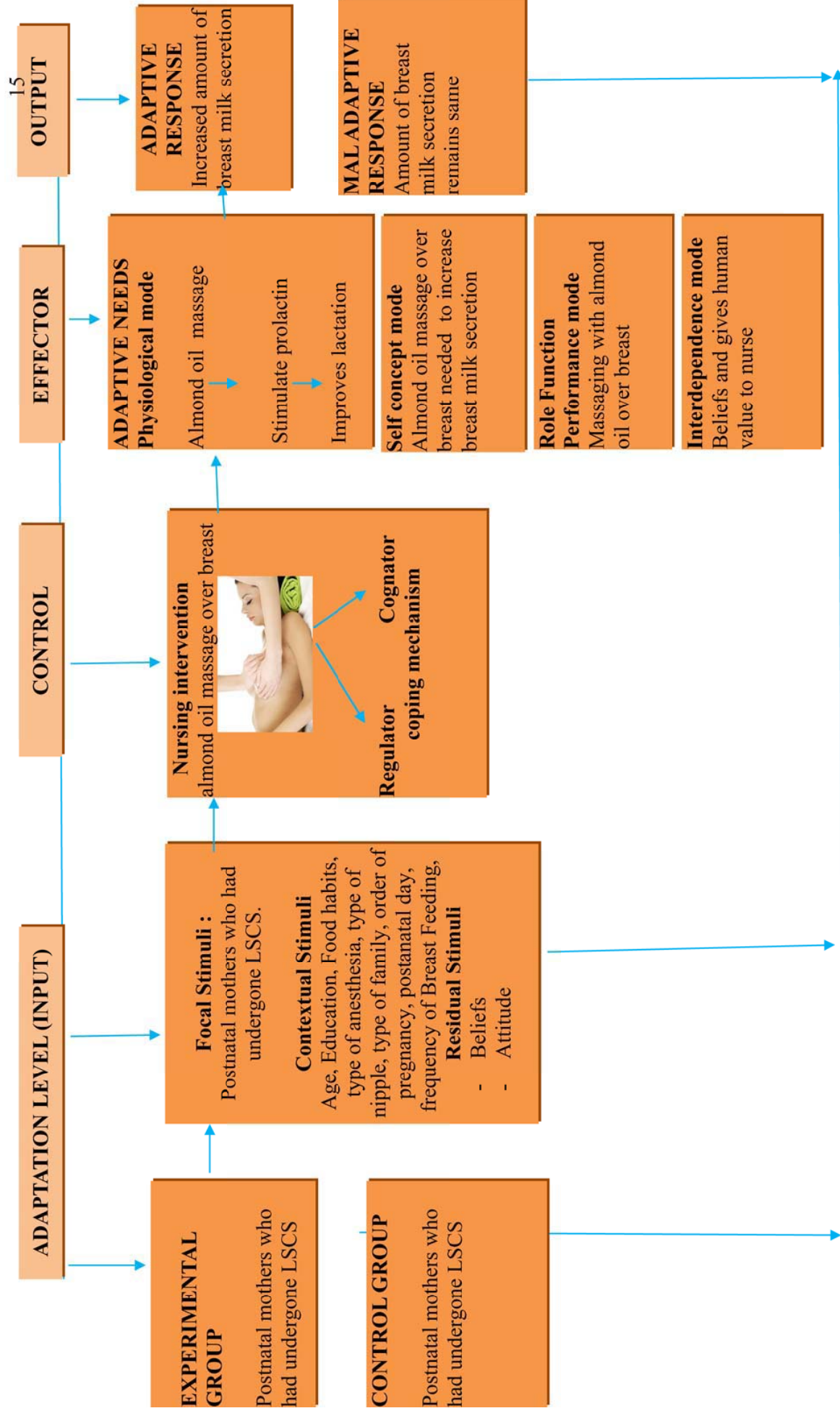


Figure 1 : Conceptual Framework Based On Sr. Callista Roy's Adaptation Model

## CHAPTER II

### Review Of Literature

A thorough literature review provides the foundation upon which to base the new knowledge (Polit and Hungler). A researcher analyses existing knowledge before dealing with a new area of study while conducting a study when making judgements about application of new knowledge in nursing practice.

Review of literature was reviewed and organized under the following

1. Studies related to problems in breast feeding.
2. Studies related to effect of almond oil in promotion of breast milk secretion.
3. Studies related to almond oil benefits.

#### **Studies Related To Problems In Breast Feeding :**

Susana .L.Matias , Laurie .A. Nommsen et al (2010) , Peru conducted a study to determine the incidence and risk factors for early lactation problems among the mothers in Lima, Peru. The study consisted of 171 Primiparous mothers who gave birth to healthy , single term infants at a government hospital in a peri urban area of Lima. Data were collected on day 1 and day 3. Breast feeding behavior was evaluated using breast feeding assessment tool .The result showed delayed onset of lactation incidence at 17% and was associated with caesarean section. The study concluded that early lactation problems may be influenced by the mode of delivery.

Amir, L.H., (2012) compared the rates of mastitis in primiparous women receiving public hospital care (standard or birth centre) and care in a co-located private hospital. A randomized controlled trial [RCT] and a survey have been combined. 1193 women completed the 6 months telephone interview. Breastfeeding

rates at 6 months were 77% in Family Birth Center, 63% in France Perry House and 53% in ABFAB. 17% (n = 206) of women experienced mastitis. Family Birth Centre and Frances Perry House women were more likely to develop mastitis (23% and 24%) than women in ABFAB (15%); adjusted odds ratio (Adj OR) ~1.9. Most episodes occurred in the first 4 weeks postpartum: 53% (194/365). Nipple damage was also associated with mastitis (Ad OR 1.7, 95% CI, 1.14, 2.56). No association was found between breastfeeding duration and mastitis. The author concluded that the prevention and improved management of nipple damage could potentially reduce the risk of lactating women developing mastitis.

Amarsena and Madarsinghe (2013) conducted a study to find the breast and nipple abnormalities among the primigravidae mothers and their effects on lactation. A total of 976 primigravidae mothers were recruited and 725 (74.3%) completed the end point of study, 788 (80.8%) had normal breast and 188(19.2%) had detectable abnormality. Breast surgery (10), flat nipple / retracted nipple (92), asymmetry / hypo plastic breast (86), correctable abnormality took a mean of 4 weeks to get corrected with standard treatment.

Taylor, J.S., (2013) National Survey of Family Growth (NSFG) to analyze the breastfeeding behaviors of a national probability sample of 6733 first-time US mothers, aged 15 to 44 years and primary reason for not breastfeeding. Most commonly, women did not breastfeed because they "preferred to bottle feed" (66.3%). The most common reason for stopping breastfeeding was that the child was "old enough to wean" (35.7%), although 15%, 34%, 54%, and 78% of those women had stopped breastfeeding by 3, 6, 9, and 12 months, respectively. "Physical or medical problem" was reported by 14.9% of women who did not breastfeed and 26.9% of

women who had stopped breastfeeding, make it the second most common reason for not breastfeeding in each group. There were significant differences across racial and ethnic groups Conclusion: Additional studies are needed to better understand why women "prefer to bottle feed", especially black women. Increasingly effective programs and policies to promote breastfeeding will logically follow. Since physical and medical problems are such common reasons both for never breastfeeding and for stopping breastfeeding, individual healthcare providers can have a significant impact on breastfeeding rates and duration.

Huges (2014) noted mastitis is a common condition occurring upto 90% of lactating women. If mastitis is not treated a breast abscess may develop. This is simply a pus filled hollow space that may appear on the surface of the skin or inside the breast. Visibly the breast looks red and swollen and feels hot to the touch.

Anand (2013) conducted a study to assess the crucial period of success or failure of breastfeeding and the study recommended that the first two weeks after delivery are crucial for success or failure for lactation. During this period mothers were likely to develop engorgement, sore nipples due to poor positioning of the baby, due to their lack of skill and knowledge.

Marandi A, Afazli HM, Hossaini AF. (2013) conducted a study to detect the reasons for early weaning among mothers in Teheran. In 3.1% of cases the mother had not breastfed her newborn at all. Of the mothers who breastfed, only 38% exclusively breast fed while the remaining 62% supplemented their breast milk with formula due to some breast problems.

Dewey K.G.(2013) University of California , USA conducted a study to examine the association between lactation and maternal stress. Study have shown that

an acute physical or mental stress can impair the milk ejection reflex by reducing the release of oxytocin during a feed. It is indicated that birth maternal and fetal stress during labour and delivery are associated with delayed onset of lactation. Hence the conclusion drawn from the study is that the mothers who experience high level of stress during and after child birth should receive additional lactation guidance during the first week of postpartum period.

Grajeda .R.Perez –Escamilla .R(2012) University of Connecticut, USA examined prospectively the association between the stress during labour and delivery and the onset of lactation in a cohort of urban Guatemalan woman. Healthy women (n=136) were assigned as study participants during the first stage of labour in the labour unit of a societal security hospital. Women provided salivary samples of cortisol determination and at the same time women were asked to respond to a 17 item psychosocial stress and anxiety questionnaire. Primiparous women had higher antepartum and early postpartum cortisol levels that were twice as higher as those among multiparous women ( $p<0.05$ ). The result showed that multiparous women (n=77) irrespective of mode of delivery had an earlier onset of lactation ( $p<0.05$ ) than primiparous who underwent emergency caesarean section deliveries (n=11). Thus the study revealed that stress during labour or delivery is likely to be a significant risk factor for delayed onset of lactation in urban Guatemala.

Ahluwalia I. B, Morrow .b. Hise . J (2010) conducted a study to examine the breast feeding cessation in USA. Data were obtained over 2 years from the pregnancy risk assessment and monitoring system and determine the percentage of women who began breast feeding and continued it for less than one week , one to four weeks and less than four weeks and their reasons for not initiating or stopping breast feeding.

The results found out that 32% of women did not initiate breast feeding, 4% started and stopped within the first week ,13% stopped within the first week and 51% continued for >4 weeks. The results showed that the reason for cessation was inadequate milk supply and infant difficulties. Therefore the study concluded that breast feeding support is needed to women after delivery.

Donnha .J.Chapman ,Rafel Perez-Escamilla (2007) USA conducted a study to identify the risk factors for delayed onset of lactation. The objective of the study was to identify infant feeding ,socio-economic , demographic and delivery related factors that affect women's self reported timing of the onset of lactation .Data were collected from 192 women after they gave birth to a healthy term singleton. Subjects were interviewed in person on day 1 postpartum and then surveyed daily over telephone regarding infant feeding method , breast symptoms and the perception of whether the onset of lactation include ethnicity ,body build, mode of delivery, infant birth weight and hence the conclusion was that the women who were at risk for delayed onset of lactation needed additional breast feeding support during first week postpartum.

Delgio et al (2008)'s study was conducted to determine the prevalence rate of lactation failure in postnatal mother. 519 mothers had attended in the study. Analysis of the data revealed that at the time of the 1st visit to the clinic, 65.9% mothers had already started supplementary top feeds and the commonest reason encountered was mother's own assessment of inadequate milk seen in 73.6% mothers. Mother and infant evaluation revealed no complications with 86.5% mothers and with 54.5% babies. Local breast problems were detected in 19.3% mothers. Faulty positioning was observed in 47.2% patients. The study concluded that psychological support to mothers was the most important form of therapy given.

Donnha .J. Chapan ,Rafel Perez –Escamilla (2007) USA conducted a study to identify the risk factors for delayed onset of lactation. The objective of the study was to identify infant feeding socio-economic, demographic variables and delivery related factors that affect women's self reported timing of the onset of lactation. Data were collected from 192 women after they gave birth to a healthy term singleton. Subjects were interviewed in person on day 1 postpartum and then surveyed daily over telephone regarding infant feeding method, breast symptoms and the perception of whether the onset of lactation include ethnicity, body build, mode of delivery, infant birth weight and hence the conclusion was that the women who were at risk for delayed onset of lactation needed additional breast feeding support during first week postpartum.

A study was conducted by the Sammapoilous (2006) to investigate the effects of elective primary and elective repeat caesarean deliveries on lactation. Deliveries were classified as vaginal, elective caesarean (primary and repeat) or emergency caesarean. A total of 2296 (24.7%) infants born by caesarean section (CS), 816 of which (35.5%) classified as primary elective CS and 796 (34.7%) as repeat elective CS, were studied. Moreover, 30.2% of the elective CS deliveries took place before 39 weeks. 6.9% of the vaginal delivery mothers, 8.3% of the emergency CS mothers, 18.6% of the elective CS mothers, 23.3% of the primary CS mothers and 13.9% of the repeat CS mothers were using infant formula feeding. The study concluded that these findings provide information about the risks of breastfeeding failure connected to elective CS delivery, particularly if primary and scheduled before 39 weeks of gestation.

#### **Studies Related To Effect Of Almond Oil In Breast Milk Secretion:**

Sui-Lan-Li (2013) China Preventive Medical Association Beijing conducted a study to investigate the galactagogue effect of almond oil massage over breast among postnatal mothers. A study consisted of two groups of postnatal mothers, the experimental group comprises 117 mothers and control group about 100 mothers. 100 mothers were without almond oil massage within 72 hours after delivery and 17 were given almond oil massage from 3<sup>rd</sup> to 5<sup>th</sup> day at interval of 6 hours. No treatment was given to a group of 100 postnatal mothers. The study revealed that in the treatment group lactation was initiated in 43-47 hours (+12.39 hours) and in the control group it was 66-97 hours (+28.16) in 72 hours satisfactory milk secretion was documented in 98% and 67% respectively in two groups. The conclusion drawn is that almond oil massage over breast helps to avoid use of drugs in lactation that may be harmful to the baby.

Barbara and Kevinkunz (2011) American Academy of Herbs USA conducted a study on postnatal mothers. Studies included 100 mothers and 50 were taken as the experimental group and 50 were taken as the control group. Breast massage with almond oil is given thrice for one day among the experimental group. Result showed that the mothers received almond oil massage initiated lactation in 40.17 hours and in comparison to the control group average of 61.97 hours. The study concluded that the almond oil massage would help to initiate early lactation among postnatal mothers.

Zhang.Jie. (2011) Research institute China conducted a study to investigate effect of almond oil massage in treating hypogalactia. The study consisted of 10 postnatal mothers who were suffering from hypogalactia. Almond oil massage was given for the subjects after the delivery at an interval of 6 hours for 3 days. After the session there was enough milk to feed the infant.

MitraSavabiEsfahani et al (2015) Isfahan University of Medical Science and ShahidBeheshti University of Medical Science conducted a study to investigate the effect of almond oil massage on milk volume of breastfeeding mothers. The study consisted of 60 postnatal mothers with complaints of hypogalactia. The breast milk is assessed by using questionnaire. Almond oil massage was given for 3 days with the interval of 6 hours. The results showed that the volumes of milk before posttest in experimental group 3550(667.34) and control group 3534 (616.115) after intervention. The mean volume of milk secretion was more in experimental group compared to the control group ( $p < 0.001$ ). The conclusion drawn as application of almond oil as a method of alternative medicine to increase breast feeding.

Dr. Jagruti Ramdas Damse et al(2014) conducted a study to assess the effect of antenatal stimulation of breast and breast milk. Data were obtained to all the women completed 37 weeks of gestation. Here the patient was taught to do almond oil massage with the fingerpads for about 5 minutes and it is continued till 3 days after delivery but the posttest was observed after delivery every day. The result showed in case group is 94% had initiation of breast milk secretion within 4 days whereas in control group 84% of patients had breast milk secretion after 4 days.

Isabella Neri et al (2011) University of Turin conducted a study to assess the effect of almond oil treatment as breast feeding support. Postnatal mothers with inadequate breast milk secretion ( $n = 90$ ). Two groups were selected. One is almond oil massage group and one is observation group. Almond oil massage was given for a period of 3 days. The results observed in almond oil group is 51.2% and in observation group is 48.8%. There was significantly lower breast milk secretion in observation group than the almond oil massage group ( $p < 0.003$ ).

Ahmed, Mona Elemam(2013) conducted a study to determine the chemical composition of almond oil and to evaluate its effect on prolactin and milk production in lactating Sudanese mothers. The herbal galactogogues were used in Sudanese postnatal mothers (n=20). The results showed that there was significant increase ( $p < 0.05$ ) in prolactin level and body weight gain in all treated females compared with the control group.

### **Studies Related To Almond Oil Benefits:**

Chalmers, B. (2014) was conducted a study to assess the effect of almond oil consumption in parturient women. Two groups of new mothers were followed for satisfactory lactation. A treated group of 100 was given one tea spoon of almond oil mixed with milk at 3 times a day within 30 hours after delivery and 17 were given one tea spoon of almond oil mixed with milk from 30 to 120 hours a for 3 times a day. No treatment was given to a group of 100 women. In the treatment group, lactation was initiated in 43.47 hours (+12.39 hours). In the control group it was 66.97 hours (+28.16 hours). In 72 hours satisfactory lactation was documented in 98% and 67% respectively in the two groups. The study concluded that consumption of almond oil was found helpful to avoid use of drugs in lactation that may be harmful to the baby.

Diannae.A.Hyson (2012) California study conducted on to whole almond VS almond oil composition using randomized cross over traits designs, 22 normolipemic men and women replaced half of their habitual fat (14% of 29% energy) with either whole almond oil for a 6 week periods . Compliance ascertained by monitoring dietary intake via by weekly 5 days food records return of empty almond product package and weekly meeting with a registered dietitian. Fat replacement with either

whole almond and almond oil resulted in 64% increase in percentage of energy , whereas HDL cholesterol increase 6%. They concluded that whole almond and almond oil does not differ in their beneficial effects.

Sweet (2013) investigated a study to identify an appropriate methodology to investigate the impact of almond oil massage in healthcare settings. 30 participants underwent either almond oil massage or no treatment (control), in a cross-over experimental design. Self reported anxiety, cardiovascular parameters (BP and pulse rate) and insufficient milk supply were assessed before and after almond oil massage .Almond oil massage had a powerful anxiety-reduction effect ('state';  $P<0.001$ ) but no significant effect on underlying anxiety ('trait'), cardiovascular parameters decreased ( $P<0.001$ ), increased in lactation following almond oil massage . The study concluded that almond oil massage reduced 'state' anxiety and cardiovascular activity within healthy individuals, consistent with stress-reduction and increased the milk supply.

Sylvia yada et al (2013) conducted a study to assess the natural variability in nutrient composition among and within commercially important California almond varieties was investigated in a multi-year study. Seven major almond varieties (Butte, Carmel, Fritz, Mission, Monterey, Nonpareil and Sonora) were collected over three separate harvests and from various orchards in the north, central and south growing regions in California. Comprehensive nutritional analysis (20 macronutrients and micronutrients, 3 phytosterols) of 39 almond samples was carried out by accredited commercial laboratories. The macronutrient and micronutrient profiles obtained were notably similar for all the almond varieties in this study. The three-year mean contents of protein, total lipid, fatty acids (saturated, monounsaturated and polyunsaturated)

and dietary fiber for these major varieties varied by no more than 1.2-fold. For individual nutrients, statistically significant variety, year and/or growing region effects were observed, which contributed to the natural variability in nutrient composition of the California almonds among and within varieties. Harvest year had a highly significant effect ( $P < 0.01$ ) on the contents of total lipid, monounsaturated fatty acids and dietary fiber. Growing region had a significant effect ( $P < 0.05$ ) on the content of ash and all minerals tested.

[J Cosmet Dermatol](#) (2012) carried out a study to assess the effect of pre-treatment of almond oil on ultraviolet B-induced cutaneous photoaging in middle age women. Ultraviolet (UV) radiation has been implicated in photoaging and various types of skin carcinomas. Although the human skin has evolved several defense mechanisms to survive the insults of actinic damage like keratinization, melanin pigmentation, etc., it is still subjected to the harmful effects of sunlight. In this study, the role of almond oil in reducing the degradative changes induced in skin upon exposure to UV radiation was investigated. Women of middle age are divided in four groups of 20 animals. Group I was the control group. Group II was negative control, which received almond oil treatment alone. Group III was exposed to UV radiation only and Group IV received both UV treatment and almond oil treatment. Visible skin grading assessed the changes based on a rating scale, biochemical tests (glutathione estimation and lipid peroxidation), and histopathologic studies. Upon exposure of mice to UV radiation, it was found that pronounced visible skin changes were seen after 12 weeks of exposure. The results of the biochemical tests, glutathione estimation, and lipid peroxidation showed that almond oil reduced the effect of UV light-induced photoaging on the skin. Histopathologic studies also indicated a photoprotective effect of almond oil on the skin after UV exposure. It was concluded

that topical almond oil is capable of preventing the structural damage caused by UV irradiation and it was also found useful in decelerating the photoaging process.

Ahmad Z (2012) conducted a study to assess the uses and properties of almond oil. Almond oil [*Oleum amygdalae*] has long been used in complementary medicine circles for its numerous health benefits. Although no conclusive scientific data exists currently, almonds and almond oil have many properties including anti-inflammatory, immunity-boosting and anti-hepatotoxicity effects. Further, associations between almond oil and improved bowel transit have been made, which consequently reduces irritable bowel syndrome symptoms. Further, some studies show a reduced incidence of colonic cancer. Moreover, cardiovascular benefits have also been identified with almond oil elevating the levels of so-called 'good cholesterol', high-density lipoproteins (HDL), whilst it reduces low-density lipoproteins (LDL). Historically, almond oil had been used in Ancient Chinese, Ayurvedic and Greco-Persian schools of Medicine to treat dry skin conditions such as psoriasis and eczema. Further, it is through anecdotal evidence and clinical experiences that almond oil seemingly reduces hypertrophic scarring post-operatively, smoothes and rejuvenates skin. Almond oil has emollient and sclerosant properties and, therefore, has been used to improve complexion and skin tone. Further studies looking into the use of almond oil post-operatively for the reduction of scarring are suggested.

Salam et al (2011) conducted a study to assess the effect of almond oil in newborn care. Application of emollients is a widespread traditional newborn care practice in many low and middle-income countries (LMICs) and may have the potential to decrease infection and consequent mortality in preterm neonates. We included seven

studies and one unpublished trial in this review. Topical emollient therapy significantly reduced neonatal mortality by 27% (RR: 0.73, 95% CI: 0.56, 0.94) and hospital acquired infection by 50% (RR: 0.50, 95% CI: 0.36, 0.71). There were significant increases in weight (g) (MD: 98.04, 95% CI: 42.64, 153.45) and weight gain (g/kg/day) (MD: 1.57, 95% CI: 0.79, 2.36), whereas the impacts were non-significant for length and head circumference. Emollient therapy is associated with improved weight gain, reduced risk of infection and associated newborn mortality in preterm neonates and is a potentially promising intervention for use in low resource settings.

[Theodora Psaltopoulou](#) et al (2010), conducted a study to assess the almond oil intake is inversely related to cancer prevalence: a systematic review and a meta-analysis of 13800 patients and 23340 controls in 19 observational studies. Dietary fat, both in terms of quantity and quality, has been implicated to cancer development, either positively or negatively. The aim of this work was to evaluate whether almond oil or monounsaturated fat intake was associated with the development of cancer. In total 38 studies were initially allocated; of them 19 case-control studies were finally studied (13800 cancer patients and 23340 controls were included). Random effects meta-analysis was applied in order to evaluate the research hypothesis. It was found that compared with the lowest, the highest category of almond oil consumption was associated with lower odds of having any type of cancer (log odds ratio = -0.41, 95%CI -0.53, -0.29, Cohran's  $Q = 47.52$ ,  $p = 0.0002$ ,  $I-sq = 62\%$ ); the latter was irrespective of the country of origin (Mediterranean or non-Mediterranean). Moreover, almond oil consumption was associated with lower odds of developing breast cancer (logOR = -0.45 95%CI -0.78 to -0.12), and a cancer of the digestive system (logOR = -0.36 95%CI -0.50 to -0.21), compared with the lowest intake. The

strength and consistency of the findings states a hypothesis about the protective role of almond oil intake on cancer risk. However, it is still unclear whether almond oil's monounsaturated fatty acid content or its antioxidant components are responsible for its beneficial effects.

Guasch-Ferré et al.(2010) conducted a study to assess the effect of almond oil intake and risk of cardiovascular disease and mortality rate . It is unknown whether individuals at high cardiovascular risk sustain a benefit in cardiovascular disease from increased almond oil consumption. The aim was to assess the association between total almond oil intake, its varieties (extra virgin and common almond oil) and the risk of cardiovascular disease and mortality in a Mediterranean population at high cardiovascular risk. We included 7,216 men and women at high cardiovascular risk, aged 55 to 80 years, from the PREvención con DietaMEDiterránea (PREDIMED) study, a multicenter, randomized, controlled, clinical trial. Participants were randomized to one of three interventions: Mediterranean Diets supplemented with nuts or extra-virgin almond oil, or a control low-fat diet. The present analysis was conducted as an observational prospective cohort study. The median follow-up was 4.8 years. Cardiovascular disease (stroke, myocardial infarction and cardiovascular death) and mortality were ascertained by medical records and National Death Index. Almond oil consumption was evaluated with validated food frequency questionnaires. Multivariate Cox proportional hazards and generalized estimating equations were used to assess the association between baseline and yearly repeated measurements of almond oil intake, cardiovascular disease and mortality. During follow-up, 277 cardiovascular events and 323 deaths occurred. Participants in the highest energy-adjusted tertile of baseline total almond oil and extra-virgin almond oil consumption had 35% (HR: 0.65; 95% CI: 0.47 to 0.89) and 39% (HR: 0.61; 95% CI:

0.44 to 0.85) cardiovascular disease risk reduction, respectively, compared to the reference. Higher baseline total almond oil consumption was associated with 48% (HR: 0.52; 95% CI: 0.29 to 0.93) reduced risk of cardiovascular mortality. For each 10 g/d increase in extra-almond oil consumption, cardiovascular disease and mortality risk decreased by 10% and 7%, respectively. No significant associations were found for cancer and all-cause mortality. The associations between cardiovascular events and extra virgin almond oil intake were significant in the Mediterranean diet intervention groups and not in the control group. Almond oil consumption, specifically the extra-virgin variety, is associated with reduced risks of cardiovascular disease and mortality individuals at high cardiovascular risk.

## **CHAPTER III**

### **Methodology**

Research methodology is a systematic way of solving problem. This chapter depicts the description and various steps adapted to collect and organize data for the present study. The study was intended to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers.

The research methodology includes research approach, research design, setting, population, sampling technique, selection criteria, data collection tool, description of tool, the procedure for data collection and plan for data analyses.

### **Research Approach**

Research process is an orderly way of dealing with the research problem, where variables are generally studied in numerical form. Research approach used in this study was quantitative evaluative research approach.

### **Research Design**

Research design used in this study was quasi experimental ie two group pretest , posttest design

The research design is diagrammatically represented as below.

E	O1	X	O2
C	O1		O2

E - Experimental group

C - Control group

O1- Pretest to assess the breast milk secretion

X - Intervention (almond oil massage over breast)

O2- Post test to assess the effectiveness of almond oil massage

### **Setting Of The Study**

The study was conducted in the postnatal ward of Sree Mookambika Medical College Hospital, Kulasekharam. It is located 30km away from Nagercoil town. This is a 650 bedded multispeciality hospital with good infrastructure. Total number of inpatient per day for obstetrics is about 8 and the number of outpatient per day is approximately 70. The normal vaginal delivery conducted is 6 per day and LSCS is 2 per day. Postnatal ward is spacious and well equipped.

### **Variables:**

- **Independent variables** : Almond oil massage over breast
- **Dependent variables** : Breast milk secretion
- **Demographic variables** : Age, education, food habits, type of family
- **Obstetric variables** : order of pregnancy, type of nipple, type of anesthesia, postnatal day, and frequency of breast feeding

### **Population:**

**Target population:** Postnatal mothers in Sree Mookambika Medical College Hospital, Kulasekharam.

**Accessible population:** Postnatal mothers who undergone LSCS satisfied the inclusion criteria

**Sample:** Postnatal mothers who had undergone LSCS and satisfied the inclusion criteria

**Sample size:** The sample size consist of 60 samples of postnatal mothers(30 in experimental group and 30 in control group) who had undergone LSCS.

**Sampling technique:** Samples were selected based on purposive sampling technique.

#### **Sample Selection Criteria**

Samples were selected based on the following inclusion and exclusion criteria.

##### **Inclusion criteria**

- Postnatal mothers who had undergone LSCS (3rd post operative day)
- Postnatal mothers giving breast feeding to their babies.
- Postnatal mother who can speak Tamil, Malayalam and English
- Postnatal mothers who are willing to participate in the study.

##### **Exclusion criteria**

- Postnatal mothers who delivered IUGR, low birth weight, preterm , sick babies and babies with congenital abnormalities
- Postnatal mothers who had undergone normal vaginal delivery.
- Postnatal mothers who are having breast abscess.
- Postnatal mothers who are having postpartum blues, depression and psychosis.
- Postnatal mothers who are having infectious disease like TB, chicken pox and HIV

#### **Data Collection Tool**

The data collection tool used for the study were

1. Demographic variables
2. Breast milk adequacy checklist

#### **Description of the tool**

**Section –A -Demographic variables-** This consists of 2 parts.

Part –A deals with demographic data such as age , education, food habits and type of family.

Part- B- This deals with obstetric variables such as order of pregnancy, type of nipple, type of anesthesia , postnatal day and frequency of feeding.

### **Section-B -Breast Milk Adequacy Checklist**

It consists of 20 questions regarding breast milk secretion. The checklist also has 2 response column. One is ‘Yes’ ,the another one is ‘No’. For ‘Yes’, 1 mark was awarded and for ‘No’ , zero mark was awarded. (Refer Appendix F)

Classification of scores:

Adequate breast milk secretion : 14-20

Moderate breast milk secretion : 7-13

Inadequate breast milk secretion : 1-6

### **Validity and reliability**

Content validity of tool was established on the basis of the opinion of five experts that is from One Obstetrician and four Obstetrics and Gynecology nursing personnel. The necessary suggestion and modification was incorporates in the final preparation of tool.

### **Reliability**

The reliability of the tool was identified by test –retest method using spearman rank correlation formula. The r-value is 1.00. Hence, the tool was reliable.

### **Pilot Study**

In order to find out the feasibility of the study a pilot study was conducted in Sree Mookambika Medical College Hospital with 6 samples (3 in experimental group and 3 in control group). Pilot study was conducted for a period for 1 week. Six patients who fulfilled the selection criteria were selected and the purpose of the study was explained to the subjects and ensured the confidentiality of their response.

The pilot study helped in testing the reliability , feasibility and practicability of the tool and the designed methodology .The tool was assessed among the study population and was found clear. pretest was done for both group within 72 hours after delivery using the breast milk adequacy checklist , almond oil massage was administered to the experimental group. Then posttest was done for both the group at the same day with the same tool.

Since the adequacy of the tool was established through the pilot study, final study was conducted without any change in the tool or technique.

### **Data Collection Procedure:**

Data collection was conducted from 4-5-2015 to 4-6- 2015. The study subjects were selected by purposive sampling technique obtained their willingness to participate in the study and there were both experimental group and control group. The purpose of the study was explained in detail to the selected subjects and the confidentiality of their responses was ensured . Both groups were pretested within 72 hours after delivery using the breast milk adequacy checklist .

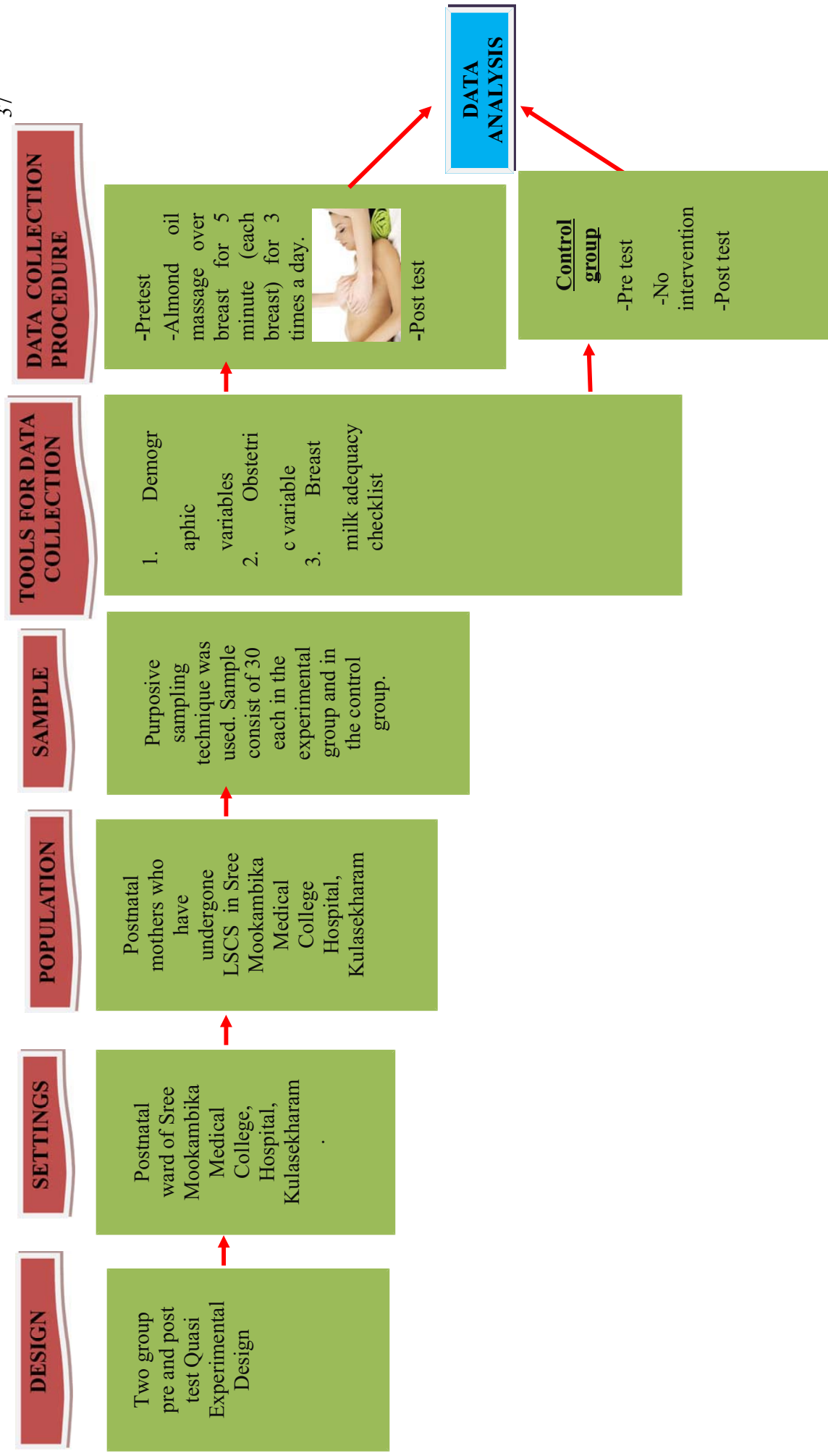
After pretesting, the experimental group alone was given 2ml almond oil massage over breasts for 3 days. The procedure was explained to the patient. Exposed

the breast. Applied 2ml almond oil over both breasts. Applied some oil on the nipple, massaged the breast with firm pressure of gentle stroke within circular motion. Massage was given for 5 minutes over each breast (10 minutes for two breasts) at an interval of 6 hours [(8am-2pm -8pm) 3 times a day]. Then both breasts were cleaned with warm water. posttest was done for experimental group at the same day with the breast milk adequacy checklist.

On the other hand in the control group pretest was done within 72 hours after delivery and posttest was done daily with the breast milk adequacy checklist for a period of 3 days without any intervention.

### **Plan For Data Analysis**

The statistical methods using for analysis were descriptive statistics such as frequency, percentage, mean, standard deviation and the effectiveness of almond oil massage was analyzed by using 't' test. The association between variables was analysed by using chi-square test.



*Figure 2 : Schematic Representation Of Research Design*

## **CHAPTER IV**

### **Data Analysis and Interpretation**

This chapter deals with the description of statistical analysis and interpretation of data. Analysis and interpretation of data is the most important phase of the research process which involves the computation of certain measures along with searching for patterns of relationships that exists among data groups. Here collected data are analyzed and interpreted of data includes compilation, editing, coding, classification and presentation of data.

The purpose of analyzing the data collected in a study is to describe the data in meaningful terms as the data collected does not answer the research questions or test research hypothesis. The data used is to be systematically analyzed so that trends and patterns of relationship can be detected.

The study subjects were analyzed in terms of percentages, mean and standard deviation. The statistics were interpreted by the test of significant namely unpaired t and chi-square test.

The collected data was organized, tabulated, summarized and analysed based on the objectives and hypothesis by using descriptive and inferential statistical method.

#### **Presentation of Data**

The data analyzed are presented under the following section

**Section-A** This section deals with the distribution of the study subjects based on their demographic variables.

**Section-B** This section deals with assessment of breast milk secretion among postnatal mothers.

**Section-C** This section deals with the post test scores of breast milk secretion per days among the postnatal mothers.

**Section – D** This section deals with the comparison of pretest and post test scores between experimental group and control group.

**Section –E** This section deals with Effect of almond oil massage on breast milk secretion.

**Section-F** This section deals with association between demographic variables and the amount of milk secretion among postnatal mothers.

### Section : A Demographic Variables

This section deals with the distribution of the study subjects based on their demographic Variables such as age, education, food habits, type of family, order of pregnancy, type of anesthesia , type of nipple, postnatal day and frequency of breast feeding.

Table 1

Frequency and percentage distribution of demographic variables (N=60)

Sl. No	Demographic variables	Experimental Group		Control Group	
		f	%	f	%
1.	Age in years				
	(a) 18 – 23	7	23.4	8	27
	(b) 24 – 29	14	46.6	13	43.8
	(c) 30 – 35	9	30	9	30
2.	Education				
	(a) Literate	18	60	21	70
	(b) Illiterate	12	40	9	30
3.	Food habits				
	(a) Vegetarian	3	10	3	10
	(b) Non – Vegetarian	27	90	27	90
4.	Types of anesthesia				
	(a) Spinal	28	93.3	29	96.6
	(b) General	2	6.66	1	3.33
5.	Type of nipple				
	(a) Normal	20	66	19	63
	(b) Flat	6	20	7	23
	(c) Inverted	4	14	4	14

6.	Type of family				
	(a) Nuclear family	15	50	14	47
	(b) Joint family	15	50	16	53
7.	Order of pregnancy				
	(a) Prime mother	17	56	18	60
	(b) Multi mother	13	44	12	40
8.	Postnatal day				
	(a) Third day	4	46.6	17	56.6
	(b) Fourth day	10	33.3	10	33.3
	(c) Fifth day	6	20	3	10
9.	Frequency of breast feeding				
	(a) 3-4 times	9	30	7	24.3
	(b) 5-6 times	18	60	21	70
	(c) 7-8 times	3	10	2	6.66

Note-The above table shows that for age in experimental group 14(46.6%) were in age group of 24-29 years 9(30%) were in age group of 30-35 years, 7(23.4%) were in age group of 18-23 years and in control group 13(43.8%) were in age group 24-29 years, 9(30%) were in age group 18-23 years. According to education in experimental group 18(60%) were illiterate, 12(40%) were literate and in control group 21 (70%) were literate 9(30%) were illiterate. In food habits 3(10%) were vegetarian, 27(90%) were non – vegetarian and in control group 3(10%) were vegetarian and 27 (90%) were non – vegetarian.

With regards to type of anesthesia in experimental group 28(93.3%) were undergone spinal anesthesia and 2(6.66%) were undergone general anesthesia. In control group 29 (96.6%) were undergone spinal anesthesia and 1(3.33%) were

undergone general anesthesia. About types of nipple in experimental group 20(66%) were had normal nipple 16(20%) were had flat nipple 4(14%) were had inverted nipple and in control group 19(63%) were had normal nipple 7(23%) were had flat nipple 4(14%) were had inverted nipple. In type of family in experimental group 15 (50%) were in nuclear family and 15 (50%) were in joint family and in control group 14(47%) were in nuclear family and 16(53%) were in joint family

In order of pregnancy in experimental group 17(56%) were primi mother 13(44%) were multimothers. In control group 12(40%) were multimothers 18(60%) were primi mothers. On the other hand in postnatal day in experimental group 14(46.6%) were in 3<sup>rd</sup> postnatal day 10 (30.3%) were in 4<sup>th</sup> postnatal day 6(20%) were in 5<sup>th</sup> postnatal day. In control group 17(56.6%) were in 3<sup>rd</sup> postnatal day 10(34%) were in 4<sup>th</sup> postnatal day and 3 (10%) were in 5<sup>th</sup> postnatal day.

In frequency of breast feeding in experimental group 9(30%) were breast feeding for 3-4 times a day, 18 (60%) were breast feeding for 5-6 times a day and 3(10%) were breast feeding for 7-8 times a day. In control group 7(23.3%) were breast feeding for 3-4 times a day 21(70%) were breast feeding for 5-6 times a day and 2 (6.66%) were breast feeding for 7-8 times a day.

The above findings are presented as bar diagrams from figure 3 to figure 11.

Distribution of samples according to the age is represented as bar diagram figure 3.

Distribution of samples according to the education is represented as bar diagram figure 4.

Distribution of samples according to the food habits is represented as bar diagram figure 5.

Distribution of samples according to the type of anesthesia is represented as bar diagram figure 6.

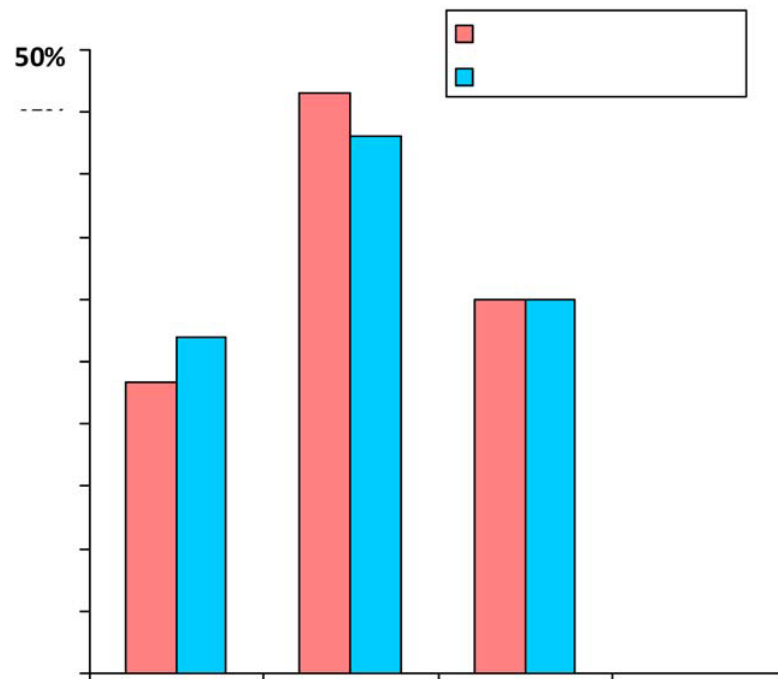
Distribution of samples according to the type of nipple size is represented as bar diagram figure 7.

Distribution of samples according to types of family is represented as bar diagram figure 8.

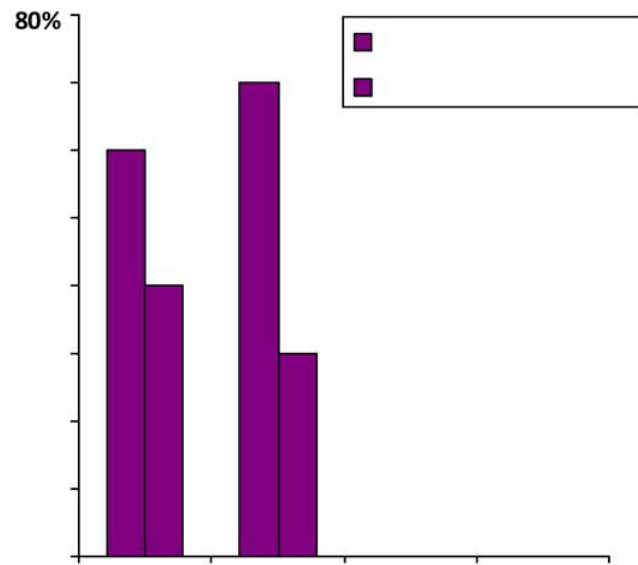
Distribution of samples according to order of pregnancy is represented as bar diagram figure 9.

Distribution of samples according to postnatal day is represented as bar diagram figure 10.

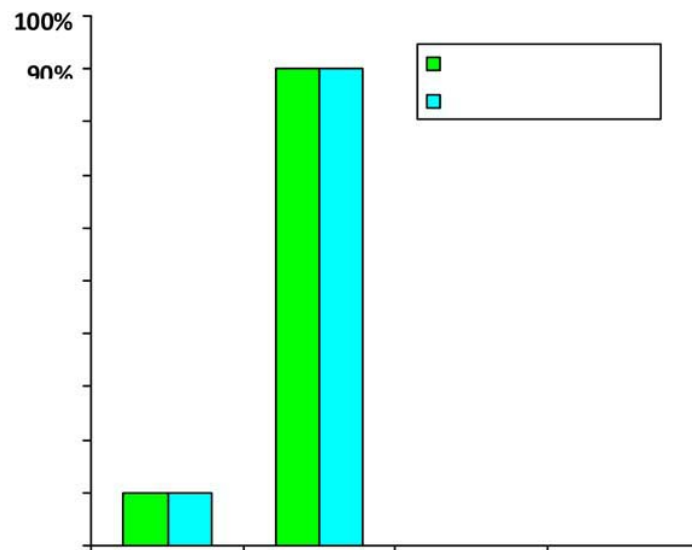
Distribution of samples according to frequency of Breast feeding is represented as bar diagram figure 11.



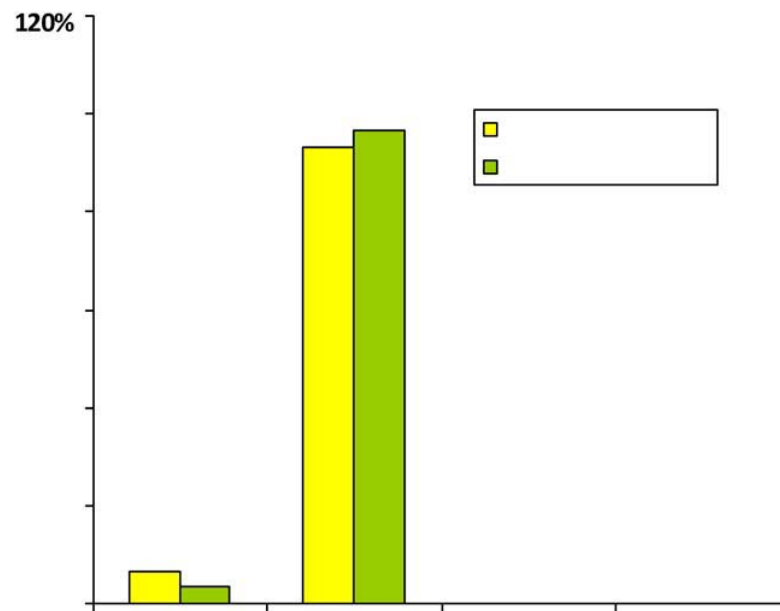
**Figure 3 . Distribution of Sample According to the Age**



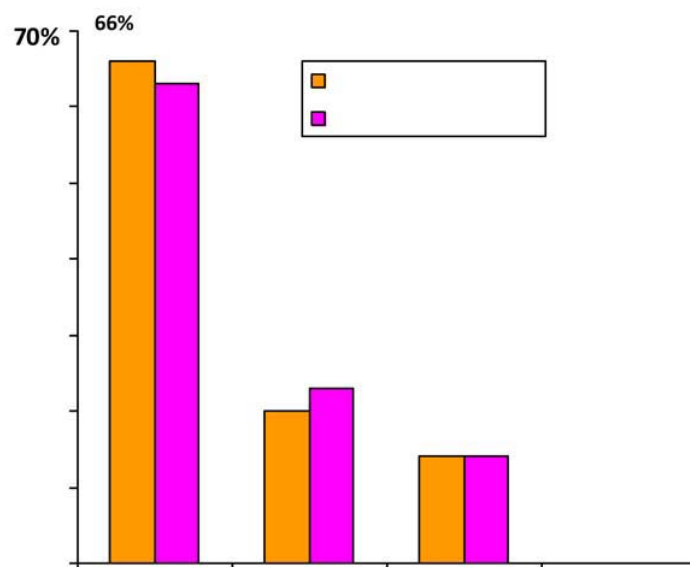
**Figure 4 . Distribution of Sample According to the education**



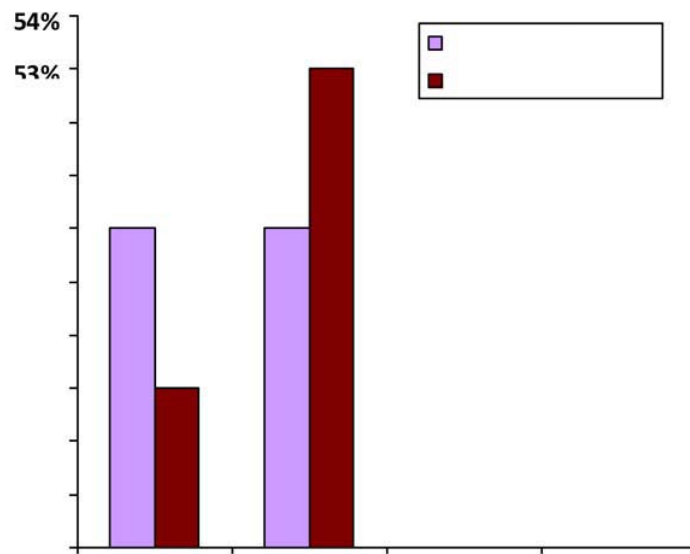
**Figure 5 . Distribution of samples according to Food Habits**



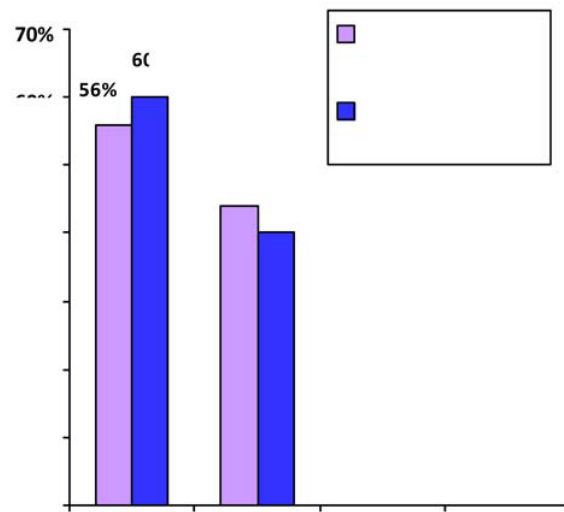
**Figure 6 . Distribution of samples according to Type of Anesthesia**



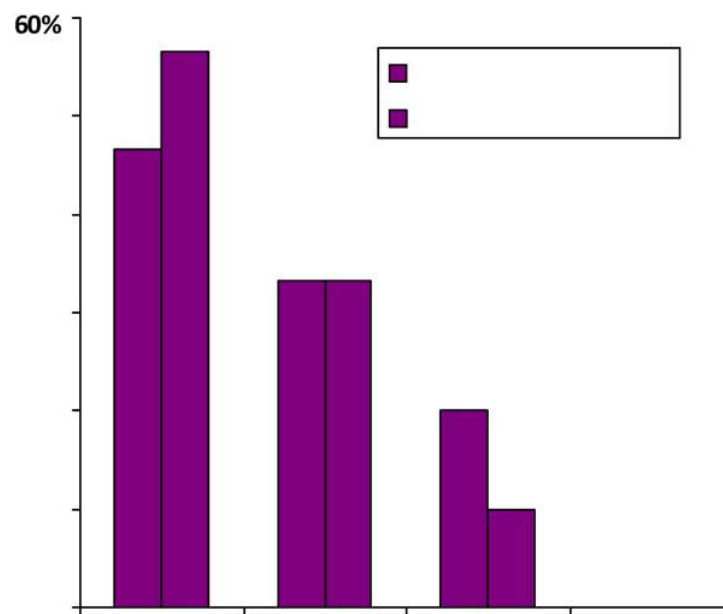
**Figure 7. Distribution of Sample According to the type of Nipple**



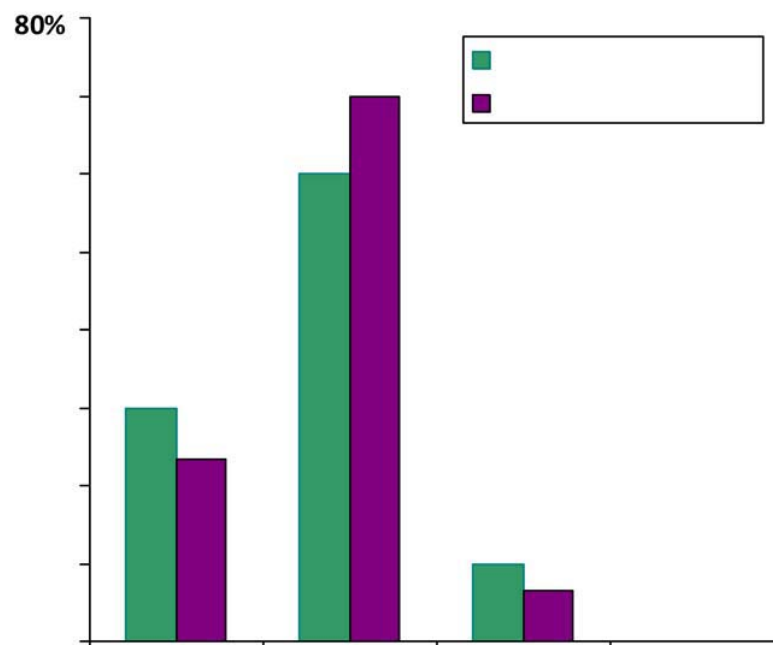
**Figure 8 . Distribution of Sample According to Type of Family**



**Figure 9 . Distribution of Sample According to Order of Pregnancy**



**Figure 10.** Distribution of Sample According to Postnatal Day



**Figure 11.** Distribution of Sample According to Frequency of Breast Feeding

### Section :B Assessment Of Breast Milk Secretion Among Postnatal Mothers.

This section deals with the assessment of breast milk secretion among postnatal mothers.

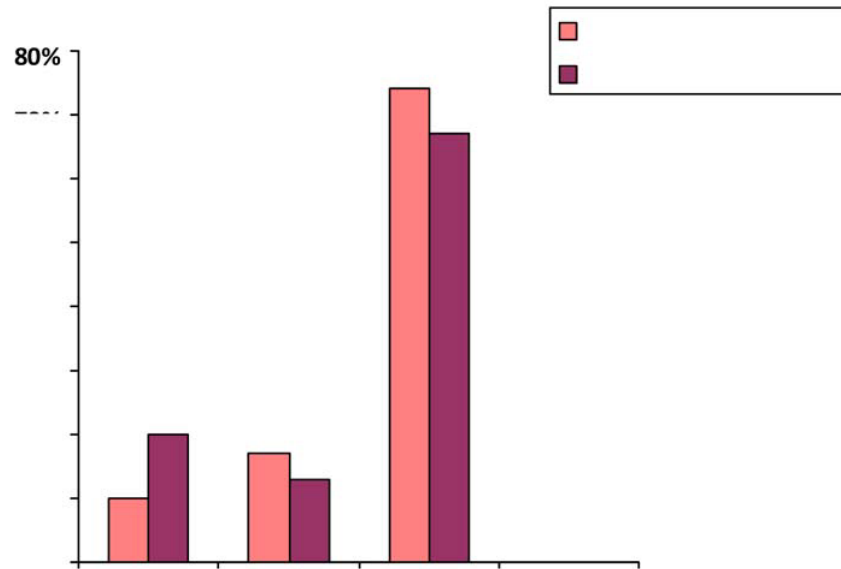
Table 2

Assessment of breast milk secretion among postnatal mothers. (N = 60)

Group	Adequate breast milk secretion		Moderate breast milk secretion		Inadequate breast milk secretion	
	f	%	f	%	f	%
Experimental	3	10	5	17	22	74
Control	6	20	4	13	20	67

Note-The above table shows that in experimental group there was 10% of postnatal mothers had adequate breast milk secretion ,17% had moderate breast milk secretion and 74% had inadequate breast milk secretion. In control group 20% of postnatal mothers had adequate breast milk secretion, 13% had moderate breast milk secretion and 67% had inadequate breast milk secretion.

The above findings are represented in bar diagram figure 12.



**Figure 12 . Amount of breast milk secretion**

**Section :C Assessment Of Post Test Scores Of Breast Milk Secretion Per Days Among Postnatal Mothers.**

This section deals with the post test scores of breast milk secretion per days among the postnatal mothers.

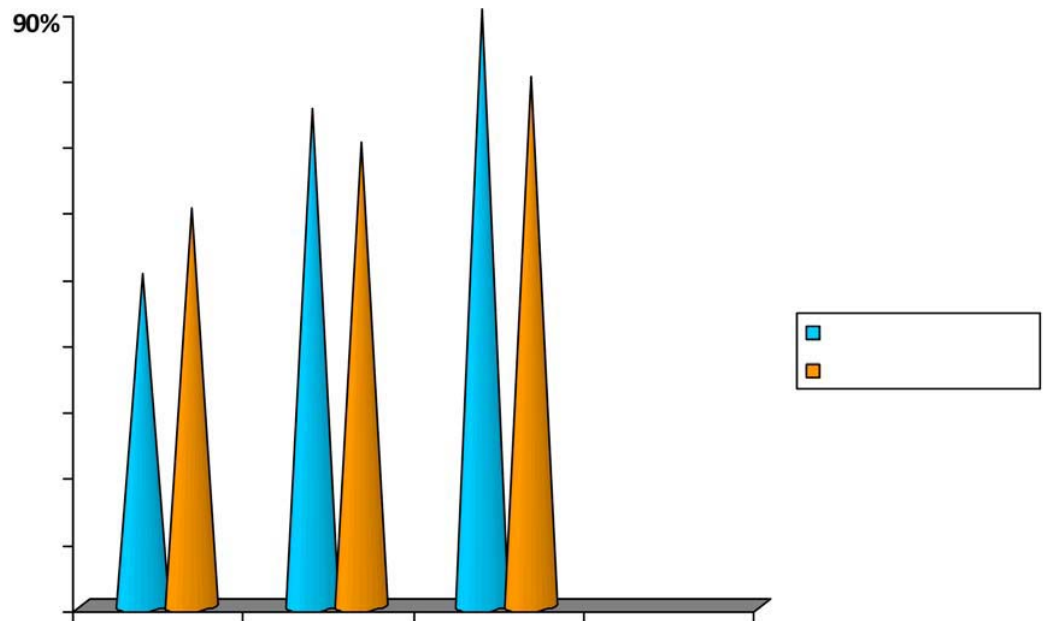
Table 3

Frequency and Percentage distribution of samples according to post test score of breast milk secretion per days among postnatal mothers. ( N = 60)

Group	Day 1		Day 2		Day 3	
	f	%	f	%	f	%
Experimental Group	10	50	15	75	18	90
Control group	12	60	14	70	16	80

Note- The above table shows that in experimental group, there was 50% increase in breast milk secretion in day 1 ,75% increase in breast milk secretion in day 2 and 90% increase in breast milk secretion in day 3. In control group there was 60% increase in breast milk secretion in day 1 , 70% increase in breast milk secretion in day2 and 80% increase in breast milk secretion in day 3.

. The above findings are presented in bar diagram figure 13



**Figure 13 . Post test scores of Breast milk secretion in days among postnatal mother**

#### **Section : D Comparison Of Pretest And Post Test Scores Between**

##### **Experimental Group And Control Group**

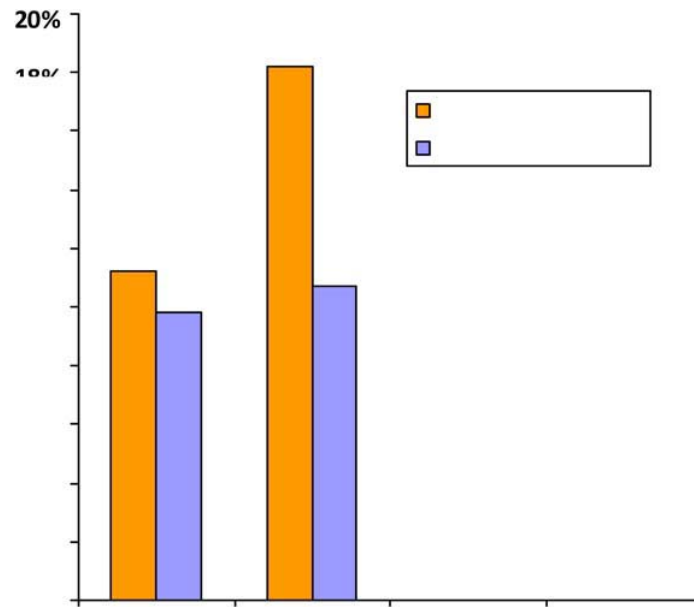
This section deals with the comparison of pretest and post test scores between experimental group and control group.

Table 4  
Comparison of pre test and post test scores between experimental group and control group.  
(N=60)

Sl. No.	Group	Pre test score		Post test score	
		Mean	SD	Mean	SD
1.	Experimental	11.2	1.8	18.2	1.38
2.	Control	9.8	1.3	10.7	3.82

Note- The above table shows that in experimental group the pretest mean score is 11.2 and the SD is 1.8 , the posttest mean score is 18.2 and SD is 1.38. In control group the pretest mean score is 9.8 and SD is 1.3 , the post test mean score is 10.7 and SD is 3.82 .

The above findings are represented as a bar diagram in figure 14



**Figure 14 . Comparison of pre test and post test scores between experimental group and control group.**

### Section : E      Effect Of Almond Oil Massage

This section deals with Effect of almond oil massage on breast milk secretion.

Table 5

Effect of almond Oil massage on breast milk secretion

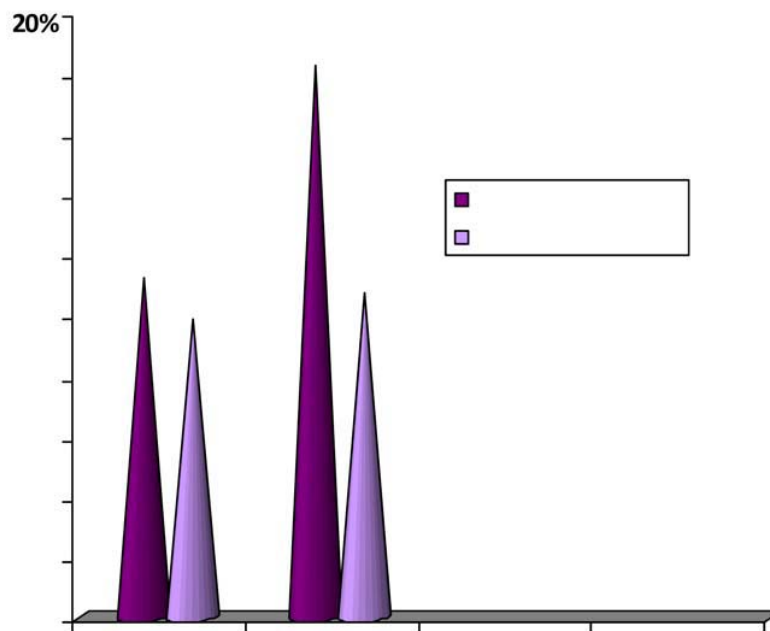
( N = 60)

Group	Pre test		Post test mean		Mean difference	SD	t	df	Table value
	mean score		score						
	Mean	SD	Mean	SD					
Experimental group	11.2	1.8	18.2	1.38	7	0.42	77.7	58	2.04
Control group	9.8	1.3	10.7	3.82	0.9	2.52	*		

\* Significance at  $p < 0.05$

Note- The above table shows that the pre test mean score in experimental group is 11.2 and SD is 1.8 , the post test mean score is 18.2 and SD is 1.38 . In control group the pre test mean score is 9.8 and SD is 1.3, the post est mean score is 10.7 and SD is 3.82. The mean difference in experimental group is 7 and SD is 0.42 and in control group the pre and post test mean difference is 0.9 and SD is 2.52 ,  $t=77.7, df= 58$  and table value is 2.04.

The above findings are represented as a bar diagram in figure. 15



*Figure 15 . Effect of almond Oil massage in promotion of breast milk secretion.*

**Section : F Association Between Demographic Variables And Amount Of Breast  
Milk Secretion**

This section deals with the association between demographic variables and amount of breast milk secretion such as age, education, food habits, type of family, order of pregnancy, type of anesthesia, type of nipple, postnatal day and frequency of breast feeding.

Table 6

Association between demographic variables and amount of breast milk secretion

(N=60)

Sl. No.	Demographic Variables	Adequate		Moderate		Inadequate	
		f	%	f	%	f	%
1.	Age						
	(a) 18 – 23 years	3	6	8	16	4	8
	(b) 24 – 29 years	10	20	13	26	4	8
	(c) 30 – 35 years	8	16	8	16	2	4
		$\chi^2=0.97, df-2, p>0.05$					
2.	Education						
	(a) Literate	12	24	18	36	9	18
	(b) Illiterate	8	16	10	20	3	6
		$\chi^2=0.77, df-1, p>0.05$					

## 3. Food habits

(a) Vegetarian	2	4	2	4	2	4
(b) Non- Vegetarian	25	50	19	38	10	20

$$\chi^2=1, \text{ df-1, } p>0.05$$

## 4. Types of family

(a) Nuclear Family	13	26	10	20	6	12
(b) Joint Family	16	32	10	20	5	10

$$\chi^2=0.06, \text{ df-1, } p>0.05$$

## Order of pregnancy

5. (a) Primi mother	13	26	19	38	3	6
(b) Multi mother	10	20	10	20	5	10

$$\chi^2=9.51*, \text{ df-1, } p<0.05$$

## Type of anesthesia

6. (a) Spinal	20	40	20	40	17	34
(b) General	1	2	1	2	1	2

$$\chi^2=1.22, \text{ df-1, } p>0.05$$

## 7. Type of nipple

(a) Normal	20	40	10	20	9	18
(b) Flat	5	10	6	12	2	4
(c) Inverted	4	8	2	4	2	4

$$\chi^2=0.17, \text{ df-2, } p>0.05$$

## 8. Postnatal day

(a) Third day	17	34	20	40	4	8
(b) Fourth day	8	16	6	12	2	4
(c) Fifth day	1	2	1	2	1	2

$$\chi^2=1.22, \text{ df-2, } p>0.05$$

## 9. Frequency of breast feeding

(a) 3-4 times	9	18	5	10	2	4
(b) 5-6 times	16	32	20	40	3	6
(c) 7-8 times	1	2	2	4	2	4

$$\chi^2=0.88, \text{ df-2, } p>0.05$$


---

\* Significance at  $p<0.05$

Note- The above table shows that there is association between order of pregnancy and amount of breast milk secretion . Hence there is no association found between age, education, food habits, type of family, type of Anesthesia, type of nipple, Postnatal day, frequency of breast feeding and amount of breast milk secretion.

## CHAPTER V

## **Results and Discussion**

This chapter gives a brief account of the presents study including result and discussion compared with some of the relevant studies done in different settings.

The present study was under taken to assess the effectiveness of almond oil massage of breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital , Kulasekharam. Quasi experimental design was adopted with two group pre and post design for the study. The amount of breast milk secretion was assessed by checklist for breast milk adequacy. The result and discussion of the study are based on the findings obtained from the statistical analysis.

### **Objective of The Study**

1. To assess the breast milk secretion among postnatal mothers.
2. To assess the effect of almond oil massage on breast milk secretion among postnatal mothers.
3. To findout the association between effectiveness of almond oil on breast milk secretions with selected demographic variables such as age, education, food habits, type of family and the obstetrics variables are types of anesthesia, type of nipple, order of pregnancy, postnatal day and frequency of breast feeding.

### **Distribution of Selected Characteristics of Study Subjects**

The demographic variables of samples were the age, education, food habits, type of family and the obstetrics variables are types of anesthesia, type of nipple, order of pregnancy, postnatal day and frequency of breast feeding.

The study findings reveal that in the experimental group 23.4% of the samples were in the age group between 18-23years , 46.6% of the samples were in the age group between 24-29 years , 30% of the samples were in the age group between 30-35 years and in the control group 27% were in the age group between 18-23 years , 43.8% were in the age group between 24-29 years and 30% were in the age group of 30-35 years. The percentage distribution based on education reveals that in the experimental group 60% of the samples were literate and 40% were illiterate ,in the control group 70% of the samples were literate and 22% of the samples belongs were illiterate. Among the sample in experimental group 10%of the subjects were vegetarian and 90% were non-vegetarian , in control group 90% were non-vegetarian

Among the total sample in the experimental group 93.3% of the subjects were undergone spinal anesthesia and 96.6% were undergone spinal anesthesia in control group. 66% of samples had normal nipple in experimental group and 63% of the samples in the control group had normal nipple. While considering the type of family 50% in the experimental group were living in joint family and 53% in the control group were living in joint family..

Among the total samples in the experimental group 56% were primi mothers and 60% in the control group were primi mothers.In the experimental group 46.6% of postnatal mothers were in third postnatal day , 56.6% of postnatal mothers in control group were in third postnatal day. Among the samples in experimental group 60% of

postnatal mothers were giving breast feed for 5-6 times a day and in control group 70% postnatal mothers were giving breast feed for 5-6 times a day.

The study findings of the 60 sample were discussed based on the objectives of the study.

**The first objective of the study was to assess the breast milk secretion among postnatal mothers.** This study reveals that out 60 postnatal mothers .The inadequate breast milk secretion in experimental group is 74% and in control group is 67% . The milk secretion adequate on the 3<sup>rd</sup> postnatal day is 90%.

The study finding was congruent with the study conducted by Dr. Jagruti Ramdas Damse et al (2014). The study findings shows that 84% postnatal mothers had increased breast milk secretion after 4<sup>th</sup> day.

**The second objective of the study was to assess the effect of almond oil massage on breast milk secretion among postnatal mothers .** This study reveals that among the selected 60 samples, in experimental group 10% had adequate breast milk secretion, 17% moderate breast milk secretion, 74% had inadequate breast milk secretion and in control group 20% had adequate breast milk secretion ,13% had moderate breast milk secretion and 67% had inadequate breast milk secretion.

This study reveals that after administration of almond oil massage there was an increase in amount of breast milk secretion in experimental group (90%) compared to the control group (80%). A mean difference is  $18.2 \pm 1.38$  was highly significant ( $t=77.7$ ,  $df=58$  and  $p<0.05$ ). The study also reveals that there is significant association found between order of pregnancy and amount of breast milk secretion.

The study finding was congruent with the study conducted by Sui-Lan-Li (2013). The study revealed that the in 72 hours satisfactory milk secretion was documented in 98% and 67% respectively in two groups.

**The third objective of the study was to find out the association between effectiveness of almond oil on breast milk secretion with selected demographic variables** such as age, education ,food habits, type of anesthesia,type of nipple, type of family, order of pregnancy, postnatal day and frequency of breast feeding.

This study findings reveals that there is significant association between amount of breast milk secretion and order of pregnancy. There is no association found between age, education, food habits , type of family, type of nipple, type of anaesthesia, postnatal day and frequency of breast feeding.

The study finding was congruent with the study conducted by Mitra Savabi Esfahani et al (2015) . The study findings shows that the age group of postnatal mothers were 24 years and 83% had undergone cesarean section.

The study finding was congruent with the study conducted by Zhang.Jie (2011). The study findings shows that almond oil massage was given for the subjects after the delivery at an interval of 6 hours for 3 days .

The study finding was congruent with the study conducted by Susana .L.Matias , Laurie .A. Nommsen et al (2010). The result showed delayed onset of lactation incidence at 17% in cesarean delivery.

This study findings are not consistent with the study conducted by Donnha .J. Chapman et al (2013) . The study findings shows that there is association between mode of delivery and onset of lactation.

## **CHAPTER VI**

### **Summary, Conclusion, Implications, Limitations and Recommendations**

This chapter gives a brief account of the presents study along with the summary of the findings, conclusions, limitations of the study, implications, recommendations and of the study.

#### **Summary**

Breast milk is produced by a human female and fed to infants by breast feeding. The breast milk is very healthy and full of nutrition, it provides the primary source of nutrition for newborns before they are able to digest more diverse food. The breast milk also contains balanced nutrients that are require for brain development, growth and a healthy immune system that act against viruses, bacteria, and parasites, since an infant's immune system is not fully developed until age of 2 yrs., human milk provides a distinct advantages over formula.

WHO estimates that 1.5 million infant lives could be saved each year through increased breast feeding. One -fifth of neonatal deaths could be prevented by early initiation of exclusive breast feeding. (Breast feeding within the first hour). Most mothers want to breast feed their baby, but they just don't know how to do it. Mostly new mothers do not realize breast feeding is a learned art that requires practice and patience. Optimal learning should take place before the baby enters the world, not a week or two after the delivery.

In this contest the present study attempt to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mother in Sree Mookambika Medical College Hospital, Kulasekharm, Kanyakumari District.

The present study approach was quantitative approach. The research design was quasi experimental pre test post test design.

The study was conducted in Sree Mookambika Medical College Hospital at Kulasekaram in kanyakumari district. The findings of the study revealed that the study was feasible and practicable.

The researcher adopted a quantitative evaluative approach with pre and post test design. The study was done on Sree Mookambika Medical College Hospital at kulasekaram. Total number of inpatient per day for obstetrics is about 8 and the number of outpatient per month is approximately 70. Postnatal ward is spacious and well equipped.

Pretest was estimated by using the breast milk adeequacy checklist .60 postnatal mothers had inadequate breast milk secretion, out of that 30 were selected in experimental group, 30 were selected in control group by using purposive sampling technique for this study. All the subjects in experimental group within 72 hours after delivery were massaged with 2 ml almond oil over breast for a period of 3 days , each breast is massaged for 5 minutes in a circular motion with the interval of 6 hours[ (8am-2pm-8pm)3 times a day] .At the same day post test was conducted among the sample by using breast milk adequacy checklist ,every day the posttest was also done for the control group without intervention . The collected data were analyzed based on descriptive an inferential statistics.

## **Objective of the Study**

1. To assess the breast milk secretion among postnatal mothers.
2. To assess the effect of almond oil on breast milk secretions among postnatal mothers.
3. To findout the association between effectiveness of almond oil on breast milk secretions with selected demographic variables.

## **Hypothesis**

H<sub>1</sub> : There is a significant increase in post test breast milk adequacy score in the experimental group after administration of almond oil massage than in control group.

H<sub>2</sub>: There is a significant association between amount of breast milk secretion and selected demographic variables such as Age, Education, Food habits and type of family. The obstetric variables are order of pregnancy, type of nipple, type of anesthesia , postnatal day and frequency of breast feeding.

## **Major Findings**

This study reveals that after administration of almond oil massage there was an increase in amount of breast milk secretion in experimental group (90%) compared to the control group (80%). A mean difference is  $18.2 \pm 1.38$  was highly significant ( $t=77.7$ ,  $df=58$  and  $p<0.05$ ). Hence there is significant association found between order of pregnancy and amount of breast milk secretion

## **Conclusion**

The conclusion drawn from the findings of the are as follows:

1. Almond oil massage(2ml) over breast are found to be an effective nursing intervention in promoting breast milk secretion.
2. Almond oil are found to have no side effects when compared with other pharmacological treatment.
3. Samples satisfaction is very much higher in this intervention.
4. The findings of the study enlighten the fact that almond oil can be used as a cost effective nursing intervention in promoting the breast milk secretion.

## **Nursing Implication**

The findings of the study reveal the implication on nursing practice, nursing education, nursing research and nursing administration.

## **Nursing Administration**

1. The result of the study encourages the nurse administrator to conduct .In service education programs on various types of non-pharmacological treatment in promoting the breast milk secretion.
2. This helps the nurse administrator to develop and provide an effective non-pharmacological measures for promotion of breast milk secretion.

3. Nurse administrators can create awareness among nurses that 2 ml almond oil massage over breast is a very good cost-effective nursing intervention to promote breast milk secretion.

### **Nursing Education**

This study can motivate student nurse to explore new strategies for effective promotion of breast milk secretion in postnatal mothers.

1. This research report can be kept in library for reference of nursing personnel and other health care professionals.
2. The nurse educator can take independent decision based on principles of health care.
3. Nurse educator can train and encourage the student nurses to implement almond oil massage over breast as a non-pharmacological management.

### **Nursing practice**

1. Almond oil massage is a safe and better modality which bring a higher level of satisfaction among postnatal mothers.
2. This intervention could bring benefits to the postnatal mothers who are having inadequate breast milk secretion.
3. It also brings a short term effect and higher level of promotion of breast milk secretion, thus the samples feels better and can avoid complication.

### **Nursing Research**

The nursing implication of the study lies in the scope for expanding the quality of nursing service. In this area of evidence based practice, publication of these studies will take nursing to a new horizon.

1. Nurse researcher can do various studies related to effectiveness of almond oil massage for promoting breast milk among postnatal mothers.
2. A experiential study can be done to determine the effectiveness of almond oil with other intervention.
3. Similar study can be conducted on a large sample so it could be generalized.

### **Limitation**

1. The sample size of postnatal mothers were 60 and hence generalization is not possible.
2. The data collection period was only 1 month.
3. Extraneous variables are controlled to some extent only.

### **Recommendations**

1. The study may be replicated with randomization in selection of a large sample.
2. Nurse researcher can do studies related to other type of alternative therapies in promoting breast milk secretion.
3. A study can be conducted by including more number of variables and at different geographic locations.

4. The study can be conducted to compare the amount of breast milk secretion among postnatal mothers in experimental group and control group in Sree Mookambika Medical College Hospital.

## APPENDIX-A



# SREE MOOKAMBIKA COLLEGE OF NURSING

(Approved by the Government of Tamil Nadu & Recognised by Indian Nursing Council,  
New Delhi, Tamil Nadu state Nurses & Midwives Council, Chennai.)  
Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM,  
KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161.  
Phone : 04651 - 280743, 280866, 280742, 280745

## ETHICAL COMMITTEE CLEARANCE

To

Date : .....

Lr. No. 11.01.2014

Mrs. Anusha .R.L.

I Yr. M.Sc (N),

Sree Mookambika College of Nursing,

Kulasekharam.

**Ref : Research Topic:** A Study to assess the effectiveness of almond oil massage on breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital, Kulasekharam at Kanyakumari District.

**Sub :** Approval of the above reference study and its related documents

**Dear Anusha R.L.**

Ethics committee of Sree Mookambika College of Nursing , Kulasekharam reviewed and discussed the study proposal documents submitted by you related to the conduct of the above referenced study and its meeting held on 11.01.2014

The Following ethical committee Members were present at the meeting held on 11.01.2014

NAME	PROFESSION	POSITION IN THE COMMITTEE
Prof. Mrs. Shanthi Letha	Nursing	Chair Person
Dr. Kani Raj Peter	Medical	Basic Medical Scientist
Dr. T.C. Suguna	Nursing	Clinicians
Adv. Mohanan	Legal	Legal Expert
Prof. Mrs. Ajitha Rethnam	Nursing	Member Secretary
Dr. Preetha P.Nair	Management	Philosopher
Mr. Natarajan	Social	Medical Social Worker
Mrs. Latha	Lay Person	Community Person

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

Regards,

Mrs. SANTHI LETHA PhD (N)

Date : 11.01.2014

Ethics Committee – Chairperson,

Place : Kulasekharam.

Sree Mookambika College of Nursing,

V.P.M. Complex, Padanilam, Kulasekharam.

## APPENDIX-B



# SREE MOOKAMBIKA COLLEGE OF NURSING

PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM,

KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161.

Phone : 04651 - 280745, 280742, 278250

(Approved by Govt. of The Tamil Nadu & Recognised by Indian Nursing Council, New Delhi)

Date :

Lr. No :

## LETTER SEEKING EXPERT OPINION FOR TOOL VALIDITY

Date :

To

Madam / Sir

Sub : M.Sc Nursing Programme – dissertation – Validation of study tool request –reg:

Ms/Mrs. **Anusha .R.L.**, a bonafide if II Year M.Sc Nursing student of Sree Mookambika College of Nursing is approaching you to obtain validation of study tool pertaining to her dissertation in practical fulfillment of the requirement for the degree of Master of Science in Nursing. The selected topics is **A study to assess the effectiveness of almond oil in promotion of breast milk secretion among postnatal mothers in Sree Mookambika Medical College Hospital, Kulasekharam.** In this regard I request you to kindly extent possible technical guidance and support for successful completion of dissertation.

I enclosed here with a check list for your evaluation.

Thanking You

Yours Sincerely

**PRINCIPAL**

**Sree Mookambika College of Nursing  
Kulasekharam-629 161**

**APPENDIX-C****LIST OF EXPERTS FOR TOOL VALIDATION**

- 1. Dr. Rema.V.Nair M.D., D.G.O**  
Director,  
Sree Mookambika Institute of Medical Science,  
Kulasekharam .
- 2. Prof. Dr.Mrs.T.C.Suguna M.Sc. (N), MA (socio) Ph.D**  
HOD, Obstetrics and Gynecological Nursing  
Sree Mookambika College of Nursing,  
Kulasekharam.
- 3. Prof. Mrs. Kumutha M.Sc. (N),**  
Vice-Principal,  
C.S.I. Eliza Caldwell College Of Nursing  
Idayangudi.
- 4. Mrs. Tarsis Henita. H. J. M.Sc. (N),**  
Associate Professor,  
C.S.I. College Of Nursing,  
Karakonam, Trivandrum.
- 5. Mrs. Arzta Sophia M.Sc. (N)**  
Reader,  
Christian college of Nursing, Neyyoor.

**APPENDIX-D**  
**EVALUATION TOOL CHECK LIST**

Name of the expert :

Designation :

College :

Respected Madam / Sir,

Kindly go through the content and place the right (✓) marks against the check list in the following columns ranking from relevant to non-relevant. Where ever there is a need for modification, kindly give your opinion in the remarks column.

**SECTION A**  
**DEMOGRAPHIC VARIABLES**

<b>Item no.</b>	<b>Relevant</b>	<b>Needs modification</b>	<b>Not Relevant</b>	<b>Remarks</b>

**SECTION B**

## BREAST MILK ADEQUACY CHECK LIST

[illegible]

**APPENDIX E**  
**Section A**  
**DEMOGRAPHIC VARIABLES**

1. Age of the mother
  - (a) 18-23 years
  - (b) 24-29 years
  - (c) 30-35 years
2. Education
  - (a) Literate
  - (b) Illiterate
3. Food habits
  - (a) Vegetarian
  - (b) Non-vegetarian
4. Type of family
  - (a) Nuclear family
  - (b) Joint family
5. Order of pregnancy
  - (a) Primi mother
  - (b) Multi mother
6. Type of nipple
  - (a) Normal
  - (b) Flat
  - (c) inverted
7. Type of Anesthesia
  - (a) Spinal
  - (b) General

8. Postnatal day
  - (a) Third day
  - (b) Fourth day
  - (c) Fifth day
9. Frequency of breast feeding
  - (a) 3-4 times
  - (b) 5-6 times
  - (c) 7-8 times

## SECTION B

### CHECK LIST FOR BREAST MILK ADEQUACY

Name of the Mother :

Post Operative Day :

S.No.	Observation	Yes	No
	New Born		
1.	Latches correctly and sucks continuously		
2.	Heard audible swallowing sound during feeding		
3.	Appears relaxed during feeding and satisfied after feeding		
4.	Have awake, alert, calm time between feeding		
5.	Does the newborn take breast feed more than 8 times a day		
6.	Falls asleep after feed and does not cry frequently		
7.	Has good muscle tone and healthy skin		
8.	Urinate more than 6 times in 24 hours		
9.	Has normal bowel movement (3 – 6 times in 24 hour)		
10.	Does the newborn spit up milk while burping		
	<b>Mother</b>		
11.	Are the nipples erect in position		
12.	Breast are full before a feeding and soft after feeding		
13.	Does the milk dribbles from the opposite breast when giving feed through one breast		

14.	Does the mother feel pressure in the other breast while giving feed through one breast		
15.	Are the breast vein dilated		
16.	Does the mother feel tightness in the breast		
17.	Does the milk secretion occur whenever the mother think about feeding her newborn		
18.	Does the milk secretion occurs when the newborn cries		
19.	Do you feel satisfaction after each feed		
20.	Do you give breast feed more than 8 times a day.		

**Scoring Key :**

Yes -1

No – 0

Adequate breast milk secretion      14 – 20

Moderate breast milk secretion      7 – 13

Inadequate breast milk secretion      1- 6

©¬Ü : A

**Rô«u ŃV Ĩ±l× ®YWeLs**

**A±®l× :**

CkR ©¬®p EeLpûPV ŃVĨ±l× ®YWeLs Ĩ±jR úLs® Es[Õ.  
C§p N¬ ApXÕ RYß Gu\ T§ûX RVÜ ùNnÕ N¬Vô] Ĩ±ûV (✓)  
EeLpđĭ ùTôÚkÕm T§p CPÜm.

1. Rô«u YVÕ

(A) 18-23 YVÕ YûW (B) 24-29 YVÕ YûW

(C) 30-35 YVÕ YûW

2. Lp® Rĭ§

(A) T¥dLôRYWô (B) T¥jRYWô

3. EQÜ TZdL YZdLeLs

(A) ûNY EQÜ YûLLs (B) AûNY EQÜ YûLLs

4. ĨÓmTj§u YûLLs

(A) AÔd ĨÓmTm (B) áhÓd ĨÓmTm (C) ®vjR¬dLlThP ĨÓmTm

## ©¬Ü : B

## Rô«u Ltlt LôX ®YWeLs

A±®lx :

CkR ©¬®p EeLpûPV LtltTLôX ®YWeLs Ĩ±jR úLs® Es[Ö, N¬ ApXÖ RYß Gu\ TşûX RVÜ ùNnÖ N¬Vô] Ĩ±ûV () EeLpdĩ ùTôÚkÖm Tşp CPÜm.

5. LolT Y¬ûN

(A) ØRp LÚÜt\ Rôn (B) TXØû\ LÚÜt\ Rôn

6. GkR®RUô] UVdL “ûX ùLôÓdLlThÓs[Ö

(A) EPpØÝYÖUôL ùLôÓdLlThPÖ

(B) ØÖĬ RiÓYPm êXm ùLôÓdLlThPÖ

(C) G©¥ÜWp êXm ùLôÓdLlThPÖ

7. UôoTLd Lôm× GkR YûLVô] A[Ü

(A) NôRôWQUôL (B) RhûPVôL (C) Es CÝjR

“ûX«p

8. ©\kR ©u Es[ Sôs

(A) êuß (B) SôuĬ (C) IkÖ

9. A¥dL¥ RônlTôp Ĩ¥jRp

(A) 3 - 4 Øû\ (B) 5 - -6 Øû\ (C) 7 - 8 Øû\

## ©¬Ů : C

**A±®l× :**

TôRôm GiùQn UôoTLj§p RP® AÝjRm ùLôÓlTRtĩ Øu Tôp  
 ÑWdĩm A[ûY Etß úSôdĩTYo N¬TôojÕ N¬Vô] Ĩ±ûV CÓRp Rô«u  
 Rô«u ùTVô :

AßûY £jhûN«u Sôs :

úTô§V A[Ů RônTôp N¬Tôol× Th¥Vp

<b>Y. Gi</b>	<b>LY²dĩm Øû\</b>	<b>Bm</b>	<b>CpûX</b>
	<b>İZkûR</b>		
1.	Uôo×d LômuT N¬VôL ©¥jÕ ùRôPof£VôL TôuX E±gÑRp		
2.	RônTôp Ĩydĩm úTôÕ NjRm úLhPp		
3.	RônTôp Ĩ¥jRp Utßm Ĩ¥jR ©u NôRWQUôL §Úl§VûPRp		
4.	RônTôp Ĩydĩm úTôÕ İZkûR AûU§VôLŮm, ®¬l×QoŮPàm, Li ®¬jÕdùLôiÓm CÚjRp		
5.	A¥dL¥ RônTôp Ĩ¥jRp (JÚ Sôu[dĩ 8 Øû\)		
6.	RônTôp Ĩ¥jR ©u çeİRp Utßm A¥dL¥ AZôUp CÚjRp		
7.	SpX RûN YÝ Utßm BúWôd;VUô] úRôp CÚjRp		
8.	JÚ Sôu[dĩ BßØû\dĩ úUp £ßço L¬jRp		
9.	JÚ Sôu[dĩ êuß ApXÕ Bß Øû\ UXm L¬jRp		
10.	İZkûR HlTm Cóm úTôÕ Ĩ¥jR TôuX LdĩRp		
	<b>Rôn</b>		
11.	RônTôp ùLôÓlTRtĩ Øu UôoTLm L]m CÚjRp. RônTôp ùLôÓjR ©\İ Uôo× TgÑ úTôp BİRp		
12.	UôoTL Lôm× EVojsV ²ûX«p CÚjRp		
13.	Uôo©p CÚkÕ A§LT¥Vô] Tôp Y¥Rp		

14.	RônlTôp ùLôÓdĭm úTôÕ AÓjR Uôo©p AÝjRm HtTÓRp		
15.	UôoTL SWm×Ls RẂjR ``ûX«p LôQlTÓRp		
16.	Rô«u UôoTLm CßjV ``ûX«p LôQlTÓRp		
17.	ĬZkûRûV ``û]dĭm úTôÕ RônlTôp ÑWjRp		
18.	ĬZkûR AÝmúTôÕ RônlTôp ÑWjRp		
19.	RônlTôp ùLôÓjR ©u §Úl§VûPRp		
20.	ĬZkûRdĭ 8 Øû\ RônlTôp ùLôÓRp		

$A^{-1} \times Y^u W :$        $B_m - 1$        $C_p u X - 0$

úTô§V A[®p RônlTôp ÑWjRp = 14-20

<sup>a</sup>RUô] A[®p RônlTôp ÑWjRp = 7-13

úTô§V A[®p RônlTôp ÑWjRp = 1-6

## APPENDIX-F

### PROCEDURE ON BREAST MASSAGE WITH ALMOND OIL

#### PREPARATORY PHASE

- Select the mother
- Set the article article in a tray
  - Almond oil in a container
  - Measuring cup      - to measure the oil
  - Jug with warm water - to clean the breast after massage

- Small towel in a bowl – to wipe the breast
- Observation checklist sheet – to record the observation
- Pen –to write



## PROCEDURE

- ❖ Explain the procedure to the client
- ❖ Expose the area need to be massaged
- ❖ Take 2 ml of Almond oil in the palm of the hand of investigator
- ❖ Apply this oil all over both the breasts
- ❖ First massage the left breast with firm pressure of gentle stroke with in circular motion from the chest wall towards the nipple
- ❖ Apply some oil on the nipple and do not massage the nipple

- ❖ Massage each breast for 5 minutes
- ❖ Clean the breast and nipple with the help of the warm wet cloth or towel before feeding the baby
- ❖ Massage the breasts 3 times a day with the interval of 6 hours (8-2-8) for one day



#### **AFTER THE PROCEDURE**

Mother was instructed to feed the baby ; an observation was made using the breast milk adequacy checklist .The mother and baby were made comfortable . No oil massage to the mothers of control group.

