EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON THE LEVEL OF PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK AMONG MOTHERS OF HOSPITALIZED NEONATE IN SELECTED HOSPITALS, CHENNAI

DISSERTATION SUBMITTED TO

THE TAMIL NADU DR. M.G.R.MEDICAL UNIVERSITY

CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE IN NURSING

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Abstract

Effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

Aim and Objective: To assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.
Methodology: A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at Kanchi Kamakoti Child Trust Hospital and Sundaram Medical Foundation, Chennai. Mothers of hospitalized neonate on expressed breast milk who satisfied the inclusion criteria were selected as samples using purposive sampling technique. Selected nursing intervention of the study included warm compress, video assisted teaching on breast massage followed by demonstration of breast massage, visual stimulation technique. The pre and post test level of pain, anxiety and quantity was assessed using Numerical rating scale, Modified Hamilton anxiety scale and Calibrated container respectively in experimental and control group. ***Results:*** The findings of the study revealed that the unpaired 't' test values on level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group was t= 8.250, t=6.455 and t= 11.947 respectively ,which was significant at $p<0.001$ level in experimental group. The correlation of post test level of pain and anxiety with quantity of expressed breast milk showed (r=-0.082 and r=-0.564) a moderate negative correlation at $p<0.01$ level. ***Conclusion:*** The study result concluded that the selected nursing intervention had significant effect in reducing the level of pain and anxiety and improving the quantity of expressed breast milk.
Key words: *selected nursing intervention, pain, anxiety, quantity of expressed breast milk, warm compress, breast massage, visual stimulation technique.*

INTRODUCTION

Expressing breast milk enables a woman to feed her baby with the substance which provides optimal nutrition at same rate as in breast milk even though she is separated from the baby**.** Expressing breast milk refers to the act of expressing the milk from the breast by manually or using breast pump.

Expressing breast milk may be difficult and disheartening experience faced by the mother but still expression of breast milk often need to be sustained over a prolonged period of time till the new born is in neonatal units. It becomes increasingly hard for the mother to sustain milk production in the absence of direct feeding from the breast, often resulting in poor weight gain and growth of newborn. Mother's motivation towards

expressing breast milk in neonatal units is lacking because of maternal stress, stressful environment and the lack of skills in expressing milk for their vulnerable neonate which result in inconsistent and ineffective care.

Objective

To assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

METHODOLOGY

Research Design: Quasi experimental non equivalent control group design.

Variables:

Independent variable

The Independent variable is selected nursing intervention.

Dependent variable

Level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonates.

Setting: Kanchi Kamakoti child Trust Hospital, Nungambakam and Sundaram Medical Foundation, Anna nagar.

Population:

Target population - Mothers of hospitalized neonate on expressed breast milk.

Accessible population - Mothers of hospitalized neonate on expressed breast milk at Kanchi Kamakoti Child Trust Hospital and Sundaram Medical Foundation.

Sampling - The mothers of hospitalized neonate on expressed breast milk who fulfills the inclusion criteria were selected by using purposive sampling technique.

Intervention

The selected nursing intervention included

A) Warm compress: Warm compress was given before expressing breast milk. A kettle of water at temperature of 104^{o}F was poured into the bowl.

- First step- clean the nipple with wet gauze piece to remove the crust over the nipple.
- The next step- dip and squeeze the sponge cloth, place it over the breast such that it covers the whole breast for 3to5 minutes.

Warm compress was to reduce pain and improve the quantity of milk expressed.

B) Video assisted teaching on breast massage followed by demonstration of **Breast massage** for 1minute to each breast before expressing breast milk.

- First step - support the breast with one hand and with another hand massage the areola by providing a soft and smooth circular motion with middle and index fingers.
- Second step- gently massage the breast using pad of fingers with kneading-like motion [lifting and pressing movement] in clockwise direction and then in anti-clockwise direction.

Breast massage is to increase blood supply to lymphatic vessels and milk ejection reflex.

C) Visual stimulation technique: Mother was made to wash hand, wear a sterile gown and sit in front of their neonate's incubator and express breast milk until the full breast is emptied by seeing their neonate, as presence of newborn induces milk let down reflex.

Measurement and tool

The pre and post test level of pain, anxiety and quantity while expressing breast milk was assessed using numerical rating scale, modified Hamilton anxiety scale and Calibrated container with the capacity of 125 ml respectively.

RESULTS

The findings of the study revealed that the overall pre and post test level of pain, anxiety and quantity while expressing breast milk in experimental group was that 15(50%) had moderate level of pain in pretest and 15(50%) of them had mild pain in post test;18 (60%) had severe anxiety in pretest and 16 (53.33%) of them had mild anxiety in post test; 25(83.33%) mothers expressed 1to 10 ml of breast milk in pretest and 21 (70%) of them expressed 21 to 30 ml of breast milk in post test. The unpaired 't' test value of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group was compared and it was t= 8.250, t=6.455 and t= 11.947 respectively, which was significant at $p<0.001$ level in experimental group. The correlation of post test level of pain and anxiety with quantity of expressed breast milk showed (r=-0.802 and r=-0.564) a moderate negative correlation at $p<0.01$ level. The result showed that the selected nursing intervention had significant effect in reducing the level of pain, anxiety and improving the quantity while expressing breast milk.

DISCUSSION

There was a significant reduction in the level of pain, anxiety and improvement in the level of quantity while expressing breast milk in the post test after administration of selected nursing intervention. Thus the selected nursing intervention which included warm compress, video- assisted teaching on breast massage followed by demonstration of breast massage, visual stimulation technique was effective in minimizing the pain, anxiety and improve the quantity while expressing breast milk among mothers of hospitalized neonate.

IMPLICATIONS

The midwives have a vital role to work with lactating mothers to build their confidence, knowledge, understanding and decision-making in relation to their feeding choices. The research based practice is a hall mark of professional nursing. The nursing intervention was implemented to the mothers of hospitalized neonate while expressing breast milk and to maintain lactation and meet the demand of newborn in NICU in KKCTH and SMF.

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LIST OF ABBREVIATIONS

HOD	-	Head of the Department
ICCR	-	International Centre for Collaborative Research
IERD	-	Institutional Ethics Review Board
KKCTH	-	Kanchi Kamakoti Child Trust Hospital
SMF	-	Sundaram Medical Foundation
EBM	-	Expressed Breast Milk
WHO	-	World Health Organization
NICU	-	Neonatal Intensive Care Unit

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INTRODUCTION

Breast milk is said to be liquid gold which is rich in nutrients, antibodies and easy to digest, where as formula feed is an artificial substance made up of sugar, oils and protein such as cow's milk, soy or whey. It does not contain antibodies, digestive enzymes, or immunoglobulin so the newborns are more prone to respiratory illnesses, ear infections and diarrhea. Newborns on formula feeding instead of breast milk miss out the intense physical bond that allows them to develop a sense of trust in the world. Hence breast milk is essential in maintaining the nutrition of newborn.

The WHO recommends exclusive breastfeeding for six months and continued breastfeeding for a minimum of two years. The WHO has ranked the possible breast milk feeding options as: direct breastfeeding at the mother's breast, mother's fresh expressed breast milk, and mother's expressed breast milk previously refrigerated or frozen. Mothers who have to be away from their babies for other reasons may wish to express breast milk in order to maintain exclusive breast-milk feeding while the baby is below 6 months, or to continue to give optimal nutrition to their child after that time such as: when the neonate is born with low birth weight or is otherwise ill in the neonatal period and unable to breast feed, or even when the newborn is on tube feeding. The ultimate goal of milk expression is to help the mother, breastfeed her baby by getting her baby back to the breast(**The World Health Organization 2013)**.

A newborn has three demands such as warmth in the arms of mother, food from breast, security in the knowledge of their presence and the breastfeeding satisfies all, but when there is a need of physical separation between the mother and new born they deeply mourn for the loss of their breastfeeding relationship . The only way to establish bonding with their newborn is by expressing the breast milk and feeding their new born and it is the only help the mothers can do for their baby in such situation.Expressing breast milk refers to the act of expressing the milk from the breast by manually or using a breast pump. Expressing human milk enables a woman to feed her babywith the substance which provides optimal nutrition at same rate as in breast milk even though she is separated from the baby**.**

Mother had to express breast milk in order to establish, maintain lactation and provide milk to their critically ill newborn.The delayed initiations of breast milk expression have an adverse effect on lactation outcome.Mothers struggled to expresses their breast milk supply as they experience the feeling ofanxiety, frustration and pain which interferes with mother-newborn relationshipand contribute to inadequate level of breast milk production. It not only impairs the neonate's ability to access breast milk but also burden the mother to abandon their effort.

1.1 BACKGROUND OF THE STUDY

Globally more than one in 10 newborn gets admitted in neonatal intensive care unit with various complication and life time disabilities. 60% of NICU admission occur every year in south Asia with the highest numbers include India, Brazil andUnited States of America. In Canadian countries the prevalence of NICU admissions was 1.2 per 1000 live births. The rate of NICU admission in Netherland 5.58 per 1000 live birth. In Tamil Nadu 43 per 1000 live birth gets admitted in neonatal intensive care unit.(**National Center for Chronic Disease Prevention and Health Promotion 2013).**

The common cause of NICU admissions are neonatal jaundice (54%), prematurity(13%), birth asphyxia (12%), neonatal infections(6%) and meconium aspiration syndrome (4%), respiratory distress syndrome (5%), hypoglycemia (2%), multiple congenital malformation (0.5%), hypothermia (0.5%), Intrauterine growth retardation (0.5%), surgical condition (2%) and require exclusive expressed breast milk**.(National prenatal epidemiological unit, 2012).**

In Indiaapproximately one quarter of breastfeeding mothers expressesmilk for various reasons out of which 68% of the mothers express breast milk for their neonates in hospital, 43% of mother express on a regular schedule until the neonate is in intensive care unit and 25% express occasionally in hospital. The percentage of mothers expressing breast milk decreased with increasing newborn age**. (Food and Drug Administration, Center for Food Safety and Applied Nutrition,2013).**

Several factors influenceexpressing breast milk in neonatal units.Expressing milkcan be difficult and disheartening experience faced by the mother but stillexpression of breast milk often need to be sustained over a prolongedperiod of time till the new

born is in neonatal units. It becomes increasingly hard for the mother to sustain milk production in the absence of direct feeding from the breast, often resulting in poor weight gain and growth. Mother's motivation towards expressing breast milk in neonatal units is lacking becauseof maternal stress, stressful environment and the lack of skillsto feed their vulnerable neonatewhich result in inconsistent and ineffective care.**(Health Technology Assessment,2010)**.

To optimize the frequency and quantity of human milk feeding for premature and sick neonate in NICU, the best practices are conceptualized into four aspects of care that is encouraging the mother to express breast milk for her new born, expert lactation support for mothers by staff in the NICU, prioritizing the initiation, establishment, and maintenance of maternal milk volume, and managing problems while expressing breast milk. Rapid identification and resolution is necessary for the mothers who experience milk volume problem, intense stress, fatigue, and pain while breast milk expression. Regular and effective milk removal with warm compress and breast massage increase the mean maternal milk volume to approximately 600–625 ml/day by the end of the first week after delivery. Professional staff nurse encouragement and support is necessary tostrengthen maternalconfidence and ability of expressing breast milk in the NICU. **(National Institute of Public Health,2010)**

The mothers of newborn admitted to neonatal units need to be encouraged and guided to start milk expression as early as possible in order to stimulate lactation. Milk expression should always be preceded by careful hand washing, selection of calm place and gentle massage on all quadrants of breast which is fundamental to milk letdown. Massage with stimulation of breast tissue and nipple has additional effect on milk production. Manual milk expression is demonstrated to mothers of postnatal period.**(Maternal and Infant Health Program,2009)**

1.2 SIGNIFICANCE AND NEED FOR STUDY

All mothers of preterm and sick term neonate in a neonatal intensive care environment should be supported to express breast milk for their newborn. Stress, anxiety and pain inhibit milk ejection affecting both immediate milk yield and subsequent milk production.The aim of expressing is for the mother to establish a good milk production in the beginning for the long-term needs of her newborn. To facilitate

and improve the let-down reflex, establishing a calm environment, gentle breast massage, applying warm compress, performing relaxation technique will increase milk flow while breast milk expression.(**Newborn Services Clinical Guideline2012).**

Rebecca Hampton. MD (2012) conducted anexperimental study to assess the quantity of milk production by the mothers of premature neonates among 32 healthy women in early postnatal period who delivered at 28 to 30 weeksgestation.The milk volume, duration and frequency of milk expression per day and level of pain while expression were evaluated. The study was conducted in two phases, in the first phase warm compress ranged between 43°C and 46°C was given and was replaced frequently after 1–2 min. This process was continued for 20 min before breast milk expression. The second phase includes 30 mothers who were given only instruction. The result showed that mean maternal daily milk volume was 342 ml/kg/day, indicating 90% more milk available than control group. The study concluded that there is marked pain reduction and increase in maternal milk volume after a warm compress.

Becker GE (2011) conducted an experimental study to assess the effectiveness of visual stimulation technique on maternal anxiety while expressing milk among 71 mothers who were exclusively expressing breast milk to their neonates. The participants of experimental group were given visual stimulation technique while expressing breast milk and the level of anxiety was measured by modified Taylors anxiety scale. The study concluded that there was 85% reduction in the level of anxiety among mothers who received visual stimulation technique.

Peter E. Hartmann (2011) conducted a true experimental study to assess theeffect of Warm compress on pain while Breast Milk Pumping among 25 mothers on EBM at neonatal unit. A standard temperature of warm compress at 39°C was used in this study and the level of pain is measured by visual analog scale. The study concluded that effective use of warm compress resulted in decrease in the level of pain by 80% and increase in the total milk yield per expression The study concluded that warm compress have a significant effect on the level of pain and milk yield per expression.

Parson N, Tucker J (2011) conducted an experimental study to assess theeffectiveness of breast massage while hand expression for the mothers of term neonates on EBM. 68 mother of early postnatal period were randomly selected to express the breast milk for 15 min with and without breast massage. The result showed that the median volume of expressed milk (range) was 0-5ml for hand expressing without breast massage and0-40 ml for hand expressing with breast massage mothers. Mothers assigned to hand expression with breast massage were more likely to produce 96.1% breast milk more than the mothers assigned to hand expressing without breast massage.

Judith B. Wilde (2009) conducted a experimental study onIncreasing Breast Milk Production for Premature new born with visual stimulation techniques. 60 mothers of preterm neonate was selected for the study.The study stated that many women whose premature infants are hospitalized in a newborn intensive care unit choose to express breast milk for their babies. Yet anxiety, fatigue, and emotional stress are powerful inhibitors of lactation. To facilitate the breast-feeding experience, intervention mothers were given a 20-minute of visual stimulation techniques. At a single follow-up expression of milk at the hospital approximately one week after enrollment, they expressed 63% more breast milk than a randomized group of control mothers.

Simkin et al.,(2009) conducted a qualitative study on the challenges of extended postpartum recovery for NICU mothers. Study explains admitting a newborn in intensive care unit (NICU) is a frightening, stressful and confusing time for any parent. Unfortunately many NICU mothers are not afforded to bonding opportunity as the stabilization of newborn's health is always the priority. The primary lactation challenge for mothers is decreased "let-down'' reflex due to the stress, related to newborn requiring NICU care and the physical separation of mother and neonate. This poses a threat to mother's milk production by decreasing the stimulation that the mother receives from the nursing neonate. Mothers are able to express more breast milk while receiving sensory stimulation such as seeing, hearing, smelling or touching their babies.

The nurse researcher experiences during the clinical posting at NICU gave an opportunity to communicate with mothers who are expressing breast milk.The frequent complaint by the mothers regarding pain and anxiety while expressing breast milk and the question regarding quantity of milk expressed kindled the investigator as mothers

expressing breast milk for their neonate in NICU was not treated as a priority by many of the hospital staffand the mother's face difficultieslikestress, fatigue, and pain in expressing breast milk for their hospitalized neonate. So the researcher felt that thenursing intervention is necessaryto facilitate maternal comfort and establish milk production for the mothers while expressing breast milkin hospital for their neonate.

1.3 STATEMENT OF THE PROBLEM

A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in selected hospitals, Chennai.

1.4 OBJECTIVES

1. To assess and compare the pre and post-test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.
2. To assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate
3. To correlate the post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.
4. To associate the selected demographic variable with mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonates in experimental and control group.

1.5 OPERATIONAL DEFINITION

Effectiveness

It refers to the outcome of selected nursing interventions on level of pain, anxiety and the quantity while expressing breast milk which was assessed using numerical rating scale, modified Hamilton's Anxiety Scale and calibrated container respectively.

Selected Nursing Intervention

It refers to the nursing care given by the investigator to reduce the level of pain, anxiety and to facilitate the amount of milk expressed which includes

For pain and quantity

- Warm compress at 104^{o}F for3 to 5 minutes to each breastbefore expressing breast milk
- Video assisted teaching on breast massage followed by demonstration of Breast massage for 1minute to each breast before expressing breast milk

For anxiety and quantity

- Visual stimulation technique- Expressing breast milk by seeing their neonate.

Pain

It refers to an unpleasant sensation experienced by the mother while expressing breast milk which was assessed by numerical rating scale.

Anxiety

It refers to a sense of worry or fear while expressing breast milk which was assessed by modified Hamilton anxiety scale.

Quantity of Expressed Breast Milk

It refers to the amount of milkexpressed manually by the mother which wasmeasured using a calibrated container with the capacity of 125ml.

1.6 ASSUMPTIONS

1. Pain and anxiety may have an influence on the quantity of milk expressed
2. Selected nursing intervention may reduce the level of pain and anxiety which may improve the quantity of milk expressed.

1.7 NULL HYPOTHESES

NH_1: There is no significant difference between the pre and post-test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group at level of $p<0.05$

NH_2: There is no significant relationship between the post-test level of pain and anxiety with quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group at the level of $p<0.05$.

NH_3: There is no significant association of selected demographic variable with mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group at the level of $p<0.05$.

1.8 DELIMITATION

The study is delimited to a period of 4 weeks.

1.9 CONCEPTUAL FRAMEWORK

A conceptual framework or a model is made up of concepts, which are the mental images of the phenomenon. It provides the guidelines to proceed to attain the objectives of the study based on a theory. It is a schematic representation of the steps, activities and outcomes of the study.

The investigator adapted **WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY** as a basis for the conceptual framework, which was aimed to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals.

Ernestine Wiedenbach's enrolled in the John Hopkins School of nursing and wrote Family Centered Maternity Nursing and developed the helping art of clinical nursing perspective theory in 1964. According to this theory, the practice of nursing comprises a wide variety of services, each directed towards the attainment of one its three components.

STEP – 1: IDENTIFYING THE NEED FOR HELP

The Nurse midwives perceive the patient behavior as consistent or inconsistent with the nurse's concept of comfort or capability. In identifying the need the nurse midwives perceives nurse's ability to care for the mothers while expressing breast milk in hospital.

There are two components in identifying the need for help.

a) General Information:

This comprises of collection of demographic variables and pre test level of pain anxiety and quantity while expressing breast milk.

b) The Central Purpose:

Central purpose refers to what the investigator want to accomplish. Here the central purpose was to reducing the level of pain, anxiety and increase the quantity of expressed breast milk among mothers of hospitalized neonate.

STEP – II: MINISTERING THE NEEDED HELP

The Nurse formulates a plan for meeting the patient's need for help based on available resources.

a) Prescription

It refers to the plan of care, the nature of action that will fulfill the central purpose. Here, the prescription was the selected nursing intervention which includesdemonstration of warm compress and breast massage reduces the level of pain and increase the quantity of expressed breast milk. The visual stimulation technique reduces the level of anxiety and increases the quantity of expressed breast milk.

b) Ministering (intervention)

In this study the investigator utilizes the following intervention for

Pain and quantity

A) Warm compress: Warm compress was given before expressing breast milk. A kettle of water at temperature of 104^{o}F was poured into the bowl.

- First step- clean the nipple with wet gauze piece to remove the crust over the nipple.
- The next step- dip and squeeze the sponge cloth, place it over the breast such that it covers the whole breast for 3to5 minutes.

Warm compress was to reduce pain and improve the quantity of milk expressed.

B) Video assisted teaching on breast massage followed by demonstration of **Breast massage** for 1minute to each breast before expressing breast milk.

- First step - support the breast with one hand and with another hand massage the areola by providing a soft and smooth circular motion with middle and index fingers.
- Second step- gently massage the breast using pad of fingers with kneading-like motion [lifting and pressing movement] in clockwise direction and then in anti-clockwise direction.

Breast massage is to increase blood supply to lymphatic vessels and milk ejection reflex.

Anxiety and quantity

C) Visual stimulation technique: Mother was made to wash hand, wear a sterile gown and sit in front of their neonate's incubator and express breast milk until the full breast is emptied by seeing their neonate, as presence of newborn induces milk let down reflex.

c) Realities

The realities are the immediate situation that influences the fulfillment of the central purposes. Nurse midwivesshould consider the realities of the situation in which she has to provide nursing care. Wiedenbach's defines the realities as:

1. The Agent:

Refers to a person who is providing care to the delegates characterized by personal attribute, problems, commitment and competence in nursing. Here it was the nurse investigator, who directed all action/prescription towards the central purpose.

2. The Recipient:

It refers tothe patient who is characterized by the personal attributes, problems, capacities, aspirations and ability to cope with the concern or problems being experienced. Here it was the mothers of hospitalized neonate on expressed breast milk in Kanchi Kamakoti Child Trust Hospital and Sundaram Medical Foundation, who received the nurse investigator's action/prescription.

3. The Goal:

It refers to the outcome the nurse wishes to achieve. Here it was to reduce the level of pain, anxiety and increase the quantity of expressed breast milk.

4. The Means:

Comprises the activities and devices through which the agent attains the goal. The means include skills, techniques, procedures and devices that may be used to facilitate nursing practice. Here it was the selected nursing intervention which includes warm compress for 3-5 minutes, breast massage one minute to each breast with video assisted teaching on breast massage and visual stimulation technique to reduce the level of pain, anxiety and increase the quantity of expressed breast milk.

5. The Framework:

Refers to the facilities in which nursing is practiced. Here it was the

- Kanchi Kamakoti child trust hospital-200 bedded hospital with 35 beds in NICU which was considered as experimental group.
- Sundaram Medical Foundation- 300 bedded Hospital with 15 beds in NICU which was considered as control group.

STEP – III: VALIDATING THE NEEDED HELP WAS MET

It is validating the needed help was delivered in achieving the central purpose. This step involves the post test assessment after ministering the help and the comparison/analysis to infer the outcome. This approach there by enables the researcher to make suitable decision and recommended action to continue, drop or modify the nursing action. Here it is the comparison of experimental and control group among mothers of hospitalized neonate on expressed breast milk.

The expected outcome of selected nursing intervention was classified into level of pain, anxiety and quantity by the researcher, where the level of pain comprises of no pain, mild pain, moderate pain and severe pain.While the level of anxiety comprises of mild level of anxiety, moderate level of anxiety, severe anxiety and panic.while the quantity comprises of 1-10 ml, 11-20 ml ,21 -30 ml and 31 -40 ml of expressed breast milk.

The mothers who had reduction in the level ofpain, anxiety and increase in the quantity of expressed breast milk were enhanced by nursing intervention. While mothers who had no reduction in the level of pain, anxiety and no increase in quantity of expressed breast milk were reinforced.

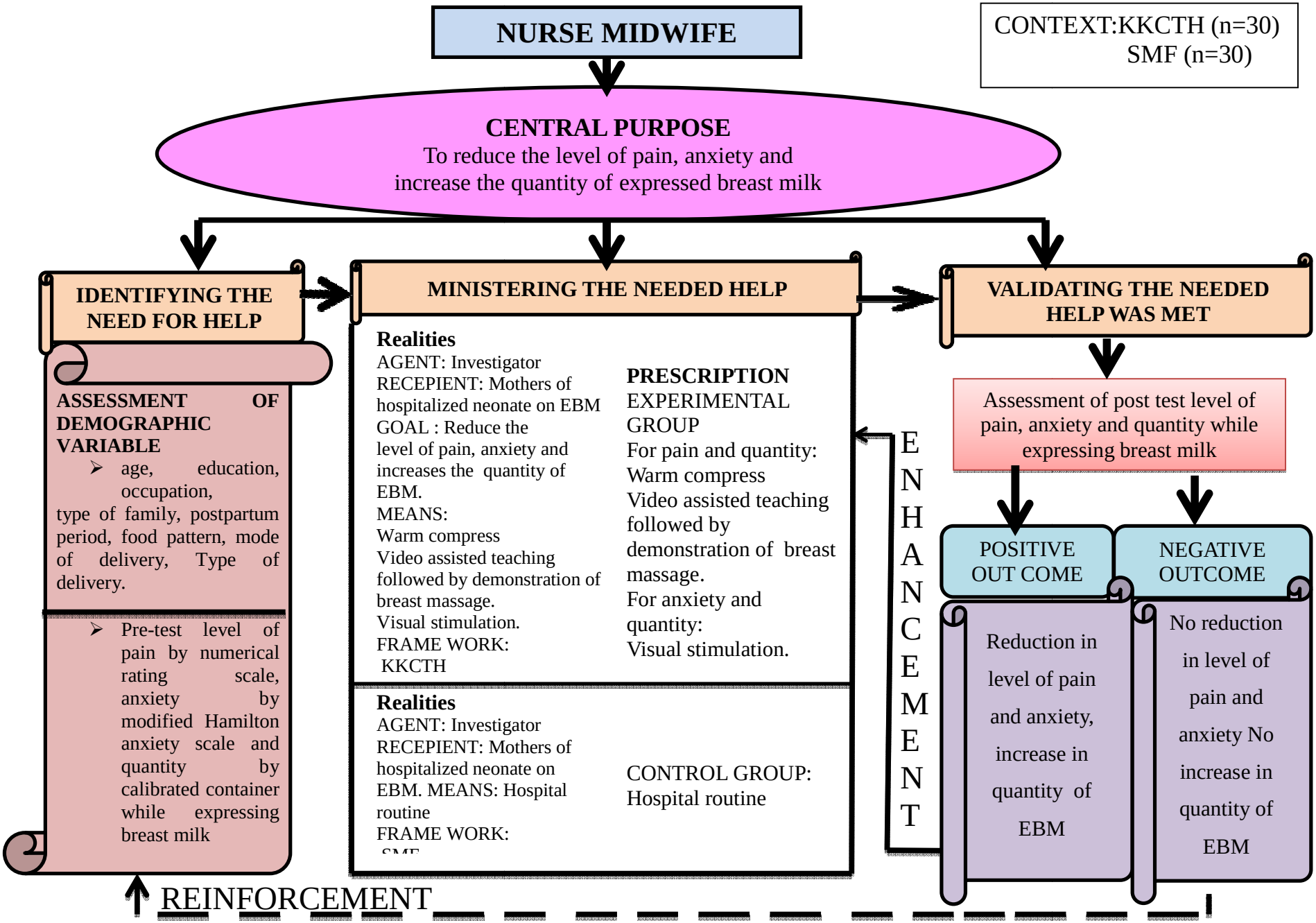

Fig 1.9.1: CONCEPTUAL FRAMEWORK BASED ON WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY

1.10 OUTLINE OF THE REPORT

Chapter 1 : Dealt with introduction, background of the study, need for the study, statement of the problem, objectives, operational definitions, assumptions, null hypotheses, delimitation and conceptual framework.

Chapter 2 : Contains the scientific review of literature related to the present study.

Chapter 3 : Presents the methodology of the study and plan for data analysis.

Chapter 4 : Focuses on data analysis and interpretation.

Chapter 5 : Enumerates the discussion and findings of the study.

Chapter 6 : Consist ofsummary, conclusion, implications, recommendations and limitations of the study.

The study report ends with selected Reference and Appendices.

REVIEW OF LITERATURE

Review of literature entails systematic identification, selection and critical analysis of scholarly publication, unpublished scholarly print materials, audiovisual materials and personal communication to the problem of interest. Hence the investigator intended to review the literature available regarding pain, anxiety and quantity of breast milk expression using both research and non research material.

SECTION 2.1 : Scientific reviews related to pain, anxiety and quantity while expressing breast milk.

SECTION 2.2 : Scientific reviews related to effectiveness of selected nursing intervention on the level of pain, anxiety and quantity of milk expressed.

SECTION 2.1: SCIENTIFIC REVIEWS RELATED TO PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK.

Kenneth J. Gruber (2013) conducted a descriptive study to assess the impact of maternal anxiety on neonatal intake of human milk among 115 mothers participated in NICU. Maternal anxiety was measured using the State-Trait Anxiety Inventory (STAI), which was administered to mothers before and after milk expression for every 2 weeks. The result showed that the maternal anxiety trait scores were inversely correlated with total milk expression (r =-0.13; P =.01) suggesting that mothers who are prone to be anxious have more difficulty in maintaining lactation.

Demilade A. Adedinsewo, Alison S. Fleming, Meir Steiner (2013) conducted a descriptive study to associate mothers anxiety with outcome of milk let-down reflex at St.Josphe's maternal and child health hospital among 255 mothers who delivered at 34 to 40 weeks of gestations. Modified Hamilton Anxiety Scale (HAM-A) was used to associate with initiation and continuation of expressing breast milk. The result showed that a single point increase in HAM-A scores was associated with an 11% reduction of milk let down reflex. Hence the study concluded that mother's anxiety interferes with the milk production.

Janice M. Morse (2011) conducted a qualitative study using grounded theory on the emotional experience of breast milk expression. Observation on 61 successful lactating mothers who express breasts milk was taken as samples. Data's was gathered by Open-ended interactive interviews. The study revealed that mothers perceived the feeling of stress, anxiety and pain that interfered with let-down reflex when expressing breast milk. Mothers were encouraged to ventilate their feelings and allowed to express breast milk near their neonate. At the end of the study those mothers had a relaxed attitude towards expressing milk and obtained increased in their confidence in expressing breast milk.

Sisk P, Quandt S (2010) conducted a qualitative study among 32 EBM mothers to evaluate the barriers in Breast Milk Expression among Mothers of critically ill newborn in NICU at Sara Lee Center for Women's Health and Forsyth Medical Center. In-depth semi-structured interview scheduled lasted for 60-90 minute. The result revealed that 59% of mothers experienced Pain, 72% of them experienced mental challenges including frustration, anxiety as the barriers for expressing breast milk. The study concluded that nursing intervention and encouragement to the mothers during breast milk expression is necessary.

Elizabeth. H (2008) conducted a quasi experimental study among 36 mothers on EBM to assess the influence of pain and anxiety on the amount of milk expressed by the mothers on EBM at Holy Cross and Latter-day Saints hospitals at utter Pradesh. Taylor Manifest Anxiety Scale, numerical rating scale were the tool used in the study. The result showed that there was a negative correlation between pain and anxiety with amount of expressed breast milk (t=-4.95 p= 0.01and t= - 12.47, p= 0.05 respectively) indicating that the pain and anxiety has negative influence on amount of milk expressed.

SECTION 2.2: SCIENTIFIC REVIEWS RELATED TO EFFECTIVENESS OF SELECTED NURSING INTERVENTION ON THE LEVEL OF PAIN, ANXIETY AND QUANTITY OF MILK EXPRESSED.

Helen Smith Nicholas D. Embleton (2013) conducted a quasi experimental study on Improving expressed breast milk (EBM) provision in the neonatal unit among 115 mothers. The challenges associated with maternal anxiety and a practical difficulty with expression was assessed using Hamilton's anxiety scale, visual analog scale and

messbecher. The intervention includes lactation counseling, breast massage, warm compress, visual stimulation technique. The result showed that there was a increase from 45% to 90% expressed breast milk provision after intervention.

Alice Callahan (2012) conducted a true experimental study to assess the effectiveness of relaxation technique on improving the breast milk production in mothers of critically ill newborn admitted in NICU among 162 mothers of (average 32 weeks). The relaxation technique includes musical therapy and visual stimulation technique was given till 14 days and the quantity of milk expressed is measured. The result showed that mothers receiving visual stimulation technique produced 100 to 200 ml more than the other group with calculated p value 0.001 which showed high significant. The study concluded that visual stimulation technique enhances the milk production than musical therapy.

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Higman W, et al., (2012) conducted a descriptive study to assess the effectiveness of neonatal unit intervention protocol on mothers practicing breast milk expression among 100 nursing mothers at Coventry and Warwickshire Hospitals, England. Intervention protocol (include warm compress of breast, breast massage, visual stimulation technique, kangaroo care) before expressing breast milk is measured by numerical rating scale, Beck Anxiety Inventory and calculating the amount of milk expressed. The study result concluded that 90 to 98% of nursing mothers who were expressing breast milk in neonatal unit were benefited from the intervention protocol.

Egemen Korel (2012) conducted an experimental study to assess the effectiveness of Warm compress on the amount of Breast milk Production among Thirty-nine mothers whose neonate had been admitted to the neonatal intensive care unit. A warm compress for 1 minute at 46 degree Celsius was applied before 20 minutes of expressing breast milk and both breasts were sucked by an electrical breast pump for 15 minutes. The amount of breast milk after each procedure was recorded. The amount of breast milk that was obtained from warmed breasts was significantly higher (maximum 47.02±23.01 ml versus 33.15±19.98 ml) .The study concluded that Warm compress increases the amount of breast milk thus facilitating the nutrition and recovery in the neonatal intensive care unit.

Lockwood C Guest (2012), conducted an quasi experimental study to assess the effect of Warm compresses versus pain during Breast milk expression among 73 mothers with the aim of reducing the pain while expressing breast milk. The intensity of pain was measured with visual analogue scale (VAS) for seven days. All groups experienced the highest pain intensity. The intervention include warm compress of 40 degree Celsius and breast massaged before expressing breast milk. The result showed 80% reduction of pain in experimental group. Hence the study concluded that warm compress reduces the pain while breast milk expression.

Mervt (2012) conducted a quasi experimental study to assess the pre test and post test level of pain score on expressing breast milk among 60 mothers of newborn at Ismailia general hospital and port-said general hospital, Ismailia city. Warm compress of $38^{o} – 40^{o}$ Celsius for 2-3 minutes and breast massage before and simultaneous on breast milk expression was given. The level of pain was assessed using visual analog scale. The result revealed that there was high significant improvement at ($p < 0.001$) in the pain scales in pre and post intervention. The study concluded that warm compress and breast massage reduces the level of pain while expressing breast milk.

FlahermanVJ, Gay B, Scott C, Avins A, Lee K.A (2011) conducted a true experimental study to compare the breast massage with the amount of breast milk while expressing breast milk among 68 mothers of newborn in well baby nursery and neonatal intensive unit. The median volume of expressed milk (range) was 0-40 ml for mothers who received breast massage. The result showed that the mothers in the experimental group produce (96.1%) of milk in comparison to the control group. Hence the study concluded that breast massage improves the volume of breast milk.

Storr et al., (2011) conducted a true experimental study among 25 nursing mothers to assess the effectiveness of breast massage and warm compress on maternal comfort while expressing breast milk in neonatal unit. The warm compress was given 20 minutes before expressing breast milk and breast massage while expressing breast milk. The level of pain was measured using numerical rating scale. The result indicated that there was decrease in tenderness and engorgement on breast massage and warm compress.

Williams A.F et al., (2010) conducted a quasi experimental study to promote the volume of breast milk expression for neonates in NICU among 48 mothers at St. George's Children's Hospital, London. The interventions include breast massage and visual stimulation technique for six day before milk expression. The finding showed that there was a mean increase in the volume of breast milk (78.71to 85.68 ml) per expression. The study concluded that breast massage and visual stimulation technique improves the quantity of milk expressed.

La Shawna Heflin et al., (2010) conducted a pre experimental study to assess the effectiveness of visual stimulation technique on the challenges faced by mothers in expressing breast milk among 90 mothers who exclusively expresses their breast milk at hospitals, Brazil. The visual stimulation technique was executed while expressing breast milk for a period of one week and the level of anxiety and quantity was measured using modified Taylors anxiety scale and breast milk storage bag. The result revealed that there was a decrease in the level of anxiety by 85% and increases in the mean volume of expressed breast milk by 90%. Hence the study concluded that visual stimulation technique is effective in reducing the challenges while expressing breast milk.

Jamsine Pacheco (2010) conducted a true experimental study to evaluate the effect of breast massage on breast milk expression among 38 mothers of hospitalized new born in Keio hospital, Tokyo. Breast massage was done in each breast for one minute before expressing breast milk and the quantity of milk expressed was measured. The result showed that the mean value of breast milk expressed in experimental and control group was 50.40 ± 11.2 ml and 38.49 ± 13.4 ml($P < 0.01$) respectively. The study concluded that breast massage increases the volume of milk expressed.

Morman et al., (2010) conducted an experimental study to assess the effectiveness of breast massage on the volume of breast-milk expressed among 36 lactating mothers expressing breast milk to their newborn in neonatal unit. One breast was taken as experimental group and utilizing the other breast as a control. The breast massage was repeated for 5 days for one breast and no intervention was carried out in opposite breast. The result showed that the mean volume of milk pumped from the massaged breast was 4.8 ml greater than from the non-massaged breast. The study concluded that breast massage increases the volume of breast milk.

Stutte and Hensley (2010) conducted a true experimental study to evaluate the effect of Breast Massage on pain and milk ejection reflex among 51 mothers on EBM at neonatal unit. The breast massage was given to each breast before expressing breast milk for four weeks. The level of pain is measured using visual analog scale. The result revealed that newborns in the breast-massage group gained weight of 10.33 gm/ day more than newborn in the non-massage group. The mothers in the experimental group reported no pain. The study concluded that breast massage before expressing breast milk reduces the pain and improves the milk ejection reflex.

Amy Edmunds, Claire Nevill (2009) conducted a quasi experimental study among 118 mothers on lactation management during breast milk expression for the mothers in neonatal unit at Gloucester hospital of child care. The lactation management was given for 15 minutes which include lactation counseling, warm compress and visual stimulation technique. The volume of breast milk expressed was measured following the intervention which revealed that there was 90 to 95% increase in the total volume of milk expressed. The study concluded that lactation management has a positive effect on breast milk expression.

Morton J (2009) conducted a quasi experimental study among 80 mothers to assess the effectiveness of handy technique on breast milk production among mothers of newborn in NICU. The handy technique include warm compress at 40^{o} Celsius, breast massage with simultaneous breast pumping. The volume of milk expressed was measured. The study concluded that increased milk production resulted from effective breast massage and warm compress.

Elizabeth H (2008) conducted an true experimental study to assess the maternal anxiety and Breast milk expression among 32 mothers who initiated breast milk expression for their hospitalized newborn. Modified Taylor Manifest Anxiety Scale was used to evaluate the degrees of anxiety. The mothers were encouraged with verbal support and witness the newborn while expressing breast milk. The intervention was carried out for 7-10 days. The mean anxiety scores for the experimental group was 13.66 and control group was 19.11. The results indicated that there was a significant difference in anxiety levels between the two groups. Hence the study concluded that visualization of newborn reduces the anxiety while expressing breast milk.

Turan.T, Başbakkal. Z, Ozbek .S (2008) conducted a experimental study to assess the Effect of nursing interventions on mothers anxiety when expressing breast milk among 80 mothers in neonatal intensive care unit at Hopkins hospital, Turkey. Nursing intervention include visual stimulation technique. The level of anxiety was measured by STRIAT anxiety scale before and after intervention. The result showed that the mean anxiety score was found to be statistically significant ($t = 4.05$, $p < 0.05$). It determined that the anxiety scores for the mothers in the experimental group were lower than control group. Hence the study concluded that visual stimulation technique reduces the level of anxiety.

RESEARCH METHODOLOGY

This chapter describes the methodology adopted in this study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai.

This phase of the study included selecting a research design, variables, setting of the study, population and sample size, sampling technique, development and description of the tool, content validity, pilot study and reliability of the tool, data collection procedure and plan for data analysis.

3.1 RESEARCH APPROACH

The research approach used in this study was quantitative research approach.

3.2 RESEARCH DESIGN

Quasi experimental, Non-equivalent control group design was adopted for this study. The researcher conducted the study in two settings one as experimental group and the other as control group. The aim of the study is to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate using Purposive sampling technique.

GROUP	PRE-TEST (O_1)	INTERVENTION (X)	POST-TEST (O_2) At the end of fourth day
Experimental Group n=30	Assessment of pre test level of pain, anxiety and quantity of expressed breast milk by using numerical rating scale, modified Hamilton anxiety scale and Calibrated container respectively	**On the next day of pretest** The intervention includes – **Before expressing breast milk** • Warm compress for 3 – 5 min. • Video assisted teaching on breast massage followed by demonstration of breast massage for 1 min to each breast and. **While expressing breast milk** • Visual stimulation technique-seeing the neonate	Assessment of post test level of pain, anxiety and quantity of expressed breast milk by using numerical rating scale, modified Hamilton anxiety scale and Calibrated container respectively.
Control Group n=30	Assessment of pre test level of pain, anxiety and quantity of expressed breast milk by using numerical rating scale, modified Hamilton anxiety scale and Calibrated container respectively	Follow hospital routine	Assessment of post test level of pain, anxiety and quantity of expressed breast milk by using numerical rating scale, modified Hamilton anxiety scale and Calibrated container respectively.

3.3 VARIABLES

3.3.1 Independent Variable

The Independent variable was selected nursing intervention.

3.3.2 Dependent Variable

The dependent variables were level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

3.3.3 Extraneous Variable

Age, education, parity, sex of the baby, family support, food pattern, postpartum period, mode of delivery, type of delivery, source of information.

3.4 SETTING OF THE STUDY

The study was conducted at Kanchi Kamakoti child trust hospital is 200 bedded hospital which has 35 beds in NICU and includes level I, II and III. The setting was considered as experimental group. Sundaram Medical Foundation is a 300 bedded Hospital which has 15 beds in NICU which includes level I, II and III. The setting was considered as control group.

3.5 POPULATION

3.5.1 Target Population:

Mothers of hospitalized neonate on expressed breast milk.

3.5.2Accessible Population:

Mothers of hospitalized neonate on expressed breast milk at Sundaram Medical Foundation and Kanchi Kamakoti child trust hospital.

3.6 SAMPLE

The mothers of hospitalized neonate on expressed breast milk who fulfills the inclusion criteria were the samples for this study.

3.7 SAMPLE SIZE

A sample of 60 mothers of hospitalized neonate on expressed breast milk from 2 settings who fulfilled the sample selection criteria were selected for the study

Kanchi Kamakoti Child Trust Hospital– 30 (Experimental group)

Sundaram Medical Foundation - 30 (Control group)

3.8 CRITERIA FOR SAMPLE SELECTION

3.8.1 Inclusion Criteria.

1. Mothers of hospitalized neonate on expressed breast milk.
2. Mothers who are willing to participate.
3. Mothers who can understand Tamil or English

3.8.2 Exclusion Criteria

1. Mothers who were sick during the post natal period
2. Mothers who had mastitis, cracked or inverted nipple.
3. Mothers who were in lactation stimulation medication.

3.9 SAMPLING TECHNIQUE

The researcher adopted purposive sampling technique for the study.

3.9 DEVELOPMENT AND DESCRIPTION OF TOOL

After an extensive review of literature, discussion with the experts and with the investigators personal and professional experience, the investigator developed a modified Hamilton anxiety scale which was used to assess the level of anxiety, numerical rating scale was used to assess the level of pain and calibrated container was used to assess the quantity of milk expressed.

The tool constructed in this study was divided into 2 parts

Part A: Data collection tool.

Part B: Intervention tool

3.9.1 PART A: DATA COLLECTION TOOL

It consists of 4 sections

SECTION A: Demographic variables

Demographic variables includes Age, education, parity, sex of the baby, family support, food pattern, postpartum period, mode of delivery, type of delivery, source of information

SECTION B: Tool to assess the level of pain while expressing breast milk

Numerical rating scale was used to assess the level of pain

SCORE	LEVEL OF PAIN
0	No pain
1-3	Mild pain
4-6	Moderate pain
7-10	Sever pain

SECTION-C: Tool to assess the level of anxiety while expressing breast milk

Modified Hamilton anxiety scale was used to assess the level of anxiety

SCORING:

SCORE	LEVEL OF ANXIETY
≤ 25	Mild anxiety
26-50	Moderate anxiety
51-75	Severe anxiety
76-100	Panic

SECTION D: Tool to assess the quantity of milk expressed

Calibrated container (125 ml) was used to assess the quantity of milk expressed

3.9.2PART B: INTERVENTION TOOL

The intervention tool consists of warm compress, breast massage with video assisted teaching on breast massage, visual stimulation technique.

For pain and quantity

Warm compress: Warm compress was given before expressing breast milk. A kettle of water at temperature of 104^{o}F was poured into the bowl.

- First step- clean the nipple with wet gauze piece to remove the crust over the nipple.
- The next step- dip and squeeze the sponge cloth, place it over the breast such that it covers the whole breast for 3to5 minutes.

Warm compress was to reduce pain and improve the quantity of milk expressed.

Video assisted teaching on breast massage followed by demonstration of **Breast massage** for 1minute to each breast before expressing breast milk.

- First step - support the breast with one hand and with another hand massage the areola by providing a soft and smooth circular motion with middle and index fingers.

- Second step- gently massage the breast using pad of fingers with kneading-like motion [lifting and pressing movement] in clockwise direction and then in anti-clockwise direction.

Breast massage is to increase blood supply to lymphatic vessels and milk ejection reflex.

For Anxiety and quantity

Visual stimulation technique: Mother was made to wash hand, wear a sterile gown and sit in front of their neonate's incubator and express breast milk until the full breast is emptied by seeing their neonate, as presence of newborn induces milk let down reflex.

3.10 CONTENT VALIDITY

The content validity of the data collection and intervention tool was ascertained from the expert's opinion in the following field of expertise.

- Obstetrics and gynecologist – 2
- Nursing experts – 3

Modifications were made as per the expert's suggestions and incorporated in the tool. Experts suggested to maintain pair matching in selection of samples to maintain homogeneity, however as the setting were non equivalent, homogeneity in age, parity, food pattern, postpartum period mode of delivery, type of delivery and previous source of information were maintained.

3.11 ETHICAL CONSIDERATION.

The research study was approved by **Institutional Ethics Review Board (IERD)** held on December – 2012 by **International Centre For Collaborative Research (ICCR),** Omayal Achi College of Nursing.

The ethical principles followed in the study were

BENEFICIENCE

The investigator followed the fundamental ethical principle of beneficence by adhering to

a. The Right to freedom from harm and discomfort

The study was beneficial for the participants as it enhanced the quantity of breast milk and reduced the level of pain, anxiety among mothers of hospitalized neonate on expressed breast milk.

b. The Right to protection from exploitation

The investigator explained the procedure and nature of the study to the participants and ensured that none of the participants in both experimental and control group would be exploited or denied fair treatment.

A. RESPECT FOR HUMAN DIGNITY

The investigator followed the second ethical principle of respect for human dignity. It includes the right to self determination and the right to self disclosure.

a. The Right to self determination

The investigator gave full freedom to the participants to decide voluntarily whether to participate in the study or to withdraw from the study and the right to ask questions

b. The Right to full disclosure

The researcher has fully described the nature of the study, the person's right to refuse participation and the researcher's responsibilities based on which both oral and written informed consent was obtained from the participants.

B. JUSTICE

The researcher adhered to the third ethical principle of justice, it includes participants right to fair treatment and right to privacy.

a. Right to fair treatment

The researcher selected the study participants based on the research requirements. The investigator followed hospital routine for control group, during the period of data collection and explained about the intervention tool to the hospitalized mothers on expressed breast milk in the control group after the completion of posttest.

b. Right to privacy

The researcher maintained the study participant's privacy throughout the study.

C. CONFIDENTIALITY

The researcher maintained confidentiality of the data provided by the study participants.

3.12 RELIABILITY OF THE TOOL

The reliability of the tool to assess the level of pain, anxiety and quantity while expressing breast milk was elicited by inter-rater method, where 5 mothers of hospitalized neonate on expressed breast milk were selected and numerical rating scale, modified Hamilton anxiety scale, calibrated container was administered to the same subjects. The reliability score was 'r' =0.9, which showed positive correlation that indicated the tool was reliable.

The 'r' value of numerical rating scale, modified Hamilton anxiety scale, calibrated container showed that the tool was reliable for implementing in the main study.

3.13 PILOT STUDY

Pilot study is the trial run for the main study. The refined tool was used for pilot study to test feasibility and practicability.

After getting ethical committee clearance from International Center for Collaborative Research, the pilot study was conducted at Vijaya Health Centre, Vadapalani and Sir Ivan Stedeford hospital, Chennai, in the month of march 2013 (21st to 28th) for a period of 1 week, after getting formal permission from Principal, Omayal Achi College of Nursing and the Managing Director, Vijaya Health Centre and Sir Ivan Stedeford hospital.

The investigator conducted the pilot study by selecting 10 mothers of hospitalized neonate on expressed breast milk (5 in experimental and 5 in control group) who fulfilled the sample selection criteria by purposive sampling technique.

The investigator gave brief introduction about self and purpose of the study to the mothers of hospitalized neonate on expressed breast milk. The mothers who are selected according to inclusive criteria are made to sit in mothers room and the pretest level of pain, anxiety and quantity of expressed breast milk was assessed using numerical rating scale, modified Hamilton anxiety scale and by calibrated container .

On the next day, pre-test level of pain, anxiety and quantity was assessed to the same group, following the pretest the intervention of warm compress for 3-5 minutes, video assisted teaching of breast massage for one minute. Both the intervention took for about 5 to 7 minutes, followed by visual stimulation technique while expressing breast milk till the mother expresses full breast. The mothers were advised to practice the intervention before every milk expression. The post test level of pain, anxiety and quantity of expressed breast milk was assessed.

On the fourth day, only the post-test level of pain, anxiety and quantity was assessed using numerical rating scale, modified Hamilton anxiety scale and by calibrated container to the same group. Per day 3 to 5 mothers were taken for the study and three observations was made. 5 samples was completed in 4 days, thus experimental group was completed in 4 days. For control group same data collection procedure was executed without intervention and hospital routine was followed and completed in 3 days.

The result of the pilot study revealed the feasibility and practicability of the study after which the plan for actual study was made.

The analysis of the data and the result of the pilot study gave the evidence that the selected nursing intervention and the tool was reliable, feasible and practicable to implement in the main study.

3.14 PROCEDURE FOR DATA COLLECTION

A formal permission was obtained from Principal, Omayal Achi College of Nursing and ethical clearance was obtained from the International Centre for Collaborative Research and written permission obtained from the Human Resource Manager and Nursing Superintendent and the Director of Kanchi Kamakoti Child Trust and Sundaram Medical Foundation, Chennai.

The investigator selected 60 samples, who fulfilled sample selection criteria using purposive sampling technique. Among the 60 samples, 30 samples were in the experimental group (Kanchi Kamakoti Child Trust) and 30 samples were in the control group (Sundaram Medical Foundation). The data collection for the study was collected within the period of 4 week.

The investigator gave brief introduction about self and purpose of the study to mothers of hospitalized neonate on expressed breast milk. The informed consent and confidentiality certificate from mother and investigator was assured to prevent post-test bias. After obtaining verbal and written informed consent for willingness to participate in the study. The mothers who are selected according to inclusive criteria are made to sit in mothers room and the pretest level of pain, anxiety and quantity of expressed breast milk was assessed using numerical rating scale, modified Hamilton anxiety scale and by calibrated container .

On the next day, pre-test level of pain, anxiety and quantity was assessed to the same group, following the pretest the intervention of warm compress for 3-5 minutes, video assisted teaching of breast massage for one minute. Both the intervention took for about 5 to 7 minutes, followed by visual stimulation technique while expressing breast milk till the mother expresses full breast. The mothers were advised to practice the intervention before every milk expression. The post test level of pain, anxiety and quantity of expressed breast milk was assessed.

On the fourth day, only the post-test level of pain, anxiety and quantity was assessed using numerical rating scale, modified Hamilton anxiety scale and by calibrated container to the same group. Per day 8 to 10 mothers were taken for the study and three observations was made. 30 samples was completed in 3 weeks, thus experimental group was completed in 3 weeks. For control group same data collection procedure was executed without intervention and hospital routine was followed and completed in 2 weeks.

Assessment of level of pain, anxiety and quantity while expressing breast milk in experimental and control group.

Day	Experimental group	Control group
Day 1	Established rapport Obtained informed consent Assessed demographic variables Assessed pre-test level of pain, anxiety and quantity.	Established rapport Obtained informed consent Assessed demographic variables Assessed pre-test level of pain, anxiety and quantity.
Day 2 and 3	Established rapport Assessed pre-test level of pain, anxiety and quantity while expressing breast milk. Followed by intervention: Warm compress 3-5 minutes Video assisted teaching on breast massage followed by demonstration on breast massage for 1 minute to each breast. Visual stimulation technique. Assessed post-test level of pain, anxiety and quantity while expressing breast milk.	Established rapport Assessed pre-test level of pain, anxiety and quantity. while expressing breast milk. Followed by Hospital routine of instruction to breast massage Assessed post-test level of pain, anxiety and quantity while expressing breast milk.
Day 4	Assessed post-test level of pain, anxiety and quantity while expressing breast milk.	Assessed post-test level of pain, anxiety and quantity while expressing breast milk.

3.15 PLAN FOR DATA ANALYSIS

Data collected was analyzed by using both descriptive and inferential statistics

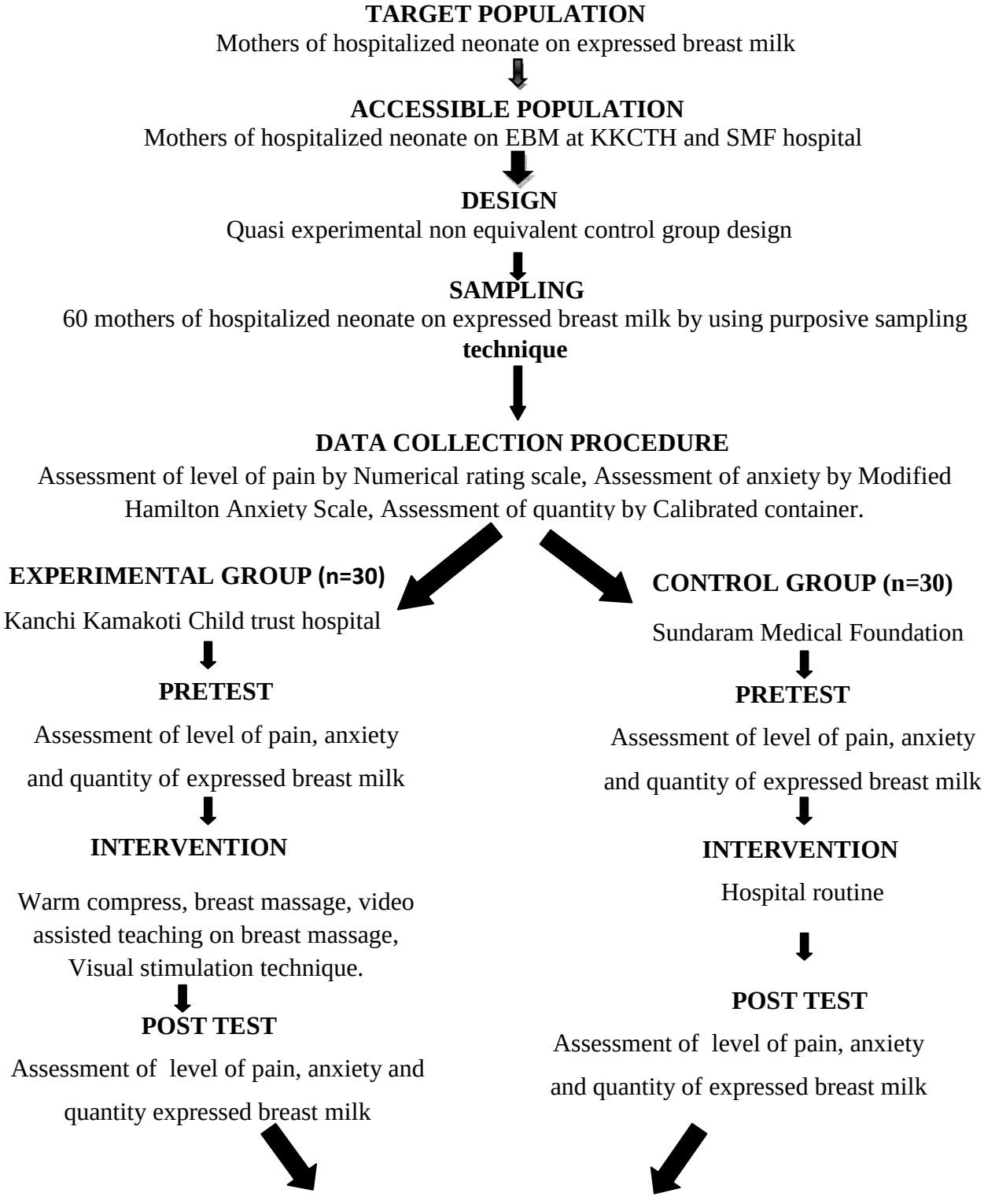
3.15.1 Descriptive Statistics

1. Frequency and percentage distribution to analyze demographic variables of mothers with hospitalized neonate.
2. Mean and standard deviation was used to assess the pre and post test level of pain, anxiety and the quantity while expressing breast milk among mothers of hospitalized neonate.

3.15.2 Inferential Statistics

1. Paired ‘t’ test was used to compare the pre and post test level of pain, anxiety and quantity while expressing breast milk in experimental and control group.
2. Unpaired ‘t’ test was used to compare the pre and post test level of pain, anxiety and quantity while expressing breast milk between experimental and control group.
3. Karl Pearson Correlation Coefficient ‘r’ was used to correlate the post test level of pain and anxiety with quantity of expressed breast milk.
4. One way ANOVA used to associate the mean differed level of pain, anxiety and quantity with selected demographic variables in experimental and control.

SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of data collected from 60 mothers of hospitalized neonate on expressed breast milk at Kanchi Kamakoti Child Trust Hospital and Sundaram Medical Foundation to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

The data collected for the study was organized, tabulated and analyzed according to the objectives. The findings based on descriptive and inferential statistical analysis were presented under the following sections.

ORGANIZATION OF DATA

Section 4.1 : Description of the demographic variables of mothers expressing breast milk to their hospitalized neonate in the experimental and control group.

Section 4.2 : Assessment of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.

Section 4.3 : Effectiveness of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.

Section 4.4 : Correlation of post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.

Section 4.5 : Association between mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate with selected demographic variables in the experimental and control group.

SECTION 4.1: DESCRIPTION OF THE DEMOGRAPHIC VARIABLES OF MOTHERS EXPRESSING BREAST MILK TO THEIR HOSPITALIZED NEONATE IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.1.1 : Frequency and percentage distribution of demographic variables with respect to age, education, number of postnatal days.

N=60

S.NO.	Demographic Variables	Experimental Group n=30		Control Group n=30	
		No.	%	No.	%
1.	**Age in years**				
	20 - 25	11	36.67	11	36.67
	26 – 30	13	43.33	13	43.33
	>30	6	20.00	6	20.00
2.	**Educational status**				
	Secondary education	9	30.00	6	20.00
	Higher secondary education	8	26.67	10	33.33
	Graduate and above	13	43.33	14	46.67
3.	**Number of postnatal days**				
	Immediate	3	10.00	3	10.00
	Early postnatal	16	53.33	16	53.33
	Remote postnatal	11	36.67	11	36.67
4.	**Parity**				
	Primi	13	43.33	13	43.33
	Multi	14	46.67	14	46.67
	Grand multi	3	10.00	3	10.00

Table 4.1.1 shows the frequency and percentage distribution of demographic variables with respect to age, education and number of postnatal days.

With regard to age, 13 (43.33%) mothers were between 26-30 years in experimental and control group, 13 (43.33%) of them were graduate and above in experimental group and in control group, 14 (46.67%) of them were graduate and above. In relation to number of postnatal days 15 (50%) of them were in early post natal period, 14 (46.67%) of them were multi gravid in experimental group and control group.

Table 4.1.2: Frequency and percentage distribution of demographic variables with respect to parity, food pattern, family support, sex of baby, source of information.

N=60

S.NO.	Demographic Variables	Experimental Group n=30		Control Group n=30	
		No.	%	No.	%
1.	**Food pattern of mother**				
	Vegetarian	15	50.00	15	50.00
	Non-vegetarian	15	50.00	15	50.00
2.	**Family support**				
	Husband	14	46.67	14	46.67
	Mother	13	40.00	13	40.00
	No	4	13.33	4	13.33
3.	**Sex of baby**				
	Boy	16	53.33	16	53.33
	Girl	14	46.67	14	46.67
4.	**Mode of delivery**				
	Normal Vaginal Delivery	9	30	9	30
	Lower Segment Cesarean Section	16	53.33	16	53.33
	Operative Vaginal Delivery	5	16.67	5	16.67
5.	**Type of delivery**				
	Full term delivery	24	80	24	80
	Preterm delivery	6	20	6	20
6.	**Source of information**				
	Yes	10	33.33	10	33.33
	No	20	66.67	20	66.67
	If yes then,				
	Health news	1	3.33	2	6.67
	Articles	3	10.00	2	6.67
	Friends and relatives	4	13.33	4	13.33
	Internet	2	6.67	2	6.67

Table 4.1.2: Shows the frequency and percentage distribution of demographic variables with respect to parity, food pattern, family support, sex of baby, source of intervention.

With regard to mother's food pattern 15(50%) were vegetarian, 14(46.67%) of them had husbands support, 16(53.33%) of them delivered boy baby, 16(53.33%) delivered through lower segment caesarean section, 24(80%) undergone full term delivery in experimental and control group and 20(66.67%) of them had no source of information in both experimental and control group. Table 4.1.1 and 4.1.2 reveals that matching is maintained in sample selection.

SECTION 4.2 : ASSESSMENT OF PRE AND POST TEST LEVEL OF PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK AMONG MOTHERS OF HOSPITALIZED NEONATE IN EXPERIMENTAL AND CONTROL GROUP.

Table 4.2.1 : Frequency and percentage distribution of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in experimental group.

n=30

Pain	No Pain (0)		Mild (1 – 3)		Moderate (4 – 6)		Severe (7 – 10)	
	No.	%	No.	%	No.	%	No.	%
Pre test	-	-	1	3.33	15	50.0	14	46.67
Post test	13	43.33	15	50.0	2	6.67	-	-

Table 4.2.1 shows the frequency and percentage distribution of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in experimental group.

With regard to level of pain while expressing breast milk in experimental group 15(50%) of them had moderate level of pain, 14(46.67%) had severe pain and 1(3.33%) had mild pain in pretest. In post test 15(50%) of them had mild pain, 13(43.33%) had no pain and 2(6.67%) had moderate pain.

Table 4.2.2: Frequency and percentage distribution of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in control group.

n=30

Pain	Mild (1 – 3)		Moderate (4 – 6)		Severe (7 – 10)	
	No.	%	No.	%	No.	%
Pretest	3	10.0	18	60.0	9	30.0
Post test	1	3.33	8	26.67	21	70.0

Table 4.2.2 shows frequency and percentage distribution of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in control group.

With regard to level of pain while expressing breast milk in control group 18(60%) had moderate level of pain, 9(30%) had severe pain, 3(10%) had mild pain in pretest and in post test 21(70%) had severe pain, 8(26.67%) had moderate pain and 1(3.33%) had mild pain.

Table 4.2.3: Frequency and percentage distribution of pre and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in experimental group.

n=30

Anxiety	Mild (≤25)		Moderate (26 – 50)		Severe (51 – 75)		Panic (76 – 100)	
	No.	%	No.	%	No.	%	No.	%
Pretest	-	-	11	36.67	18	60.0	1	3.33
Post test	16	53.33	14	46.67	-	-	-	-

Table 4.2.3 shows the frequency and percentage distribution of pretest and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in experimental group.

With regard to pretest level of anxiety while expressing breast milk in experimental group 18(60%) of them had severe anxiety, 11(36.67%) had moderate pain, 1(3.33%) was panic whereas in post test 16(53.33%) of them had mild anxiety and 14(46.67%) had moderate anxiety.

Table 4.2.4: Frequency and percentage distribution of pre and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in control group.

n=30

Anxiety	Mild (≤25)		Moderate (26 – 50)		Severe (51 – 75)		Panic (76 – 100)	
	No.	%	No.	%	No.	%	No.	%
Pretest	2	6.67	16	53.33	12	40.0	-	-
Post test	-	-	9	30.0	21	70.0	-	-

Table 4.2.4 shows the frequency and percentage distribution of pre and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in control group.

With regard to pre test level of anxiety while expressing breast milk in control group revealed that 16(53.33%) of them had moderate anxiety, 12(40%) had severe anxiety, 2(6.67%) had mild anxiety and in post test 21(70%) of them had severe anxiety and 9(30%) had moderate anxiety.

Table 4.2.5: Frequency and percentage distribution of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in experimental group

n=30

Quantity	1-10 (ml)		11-20 (ml)		21-30 (ml)		31-40 (ml)	
	No.	%	No.	%	No.	%	No.	%
Pre test	25	83.33	5	16.67	-	-	-	-
Post test	-	-	5	16.67	21	70	4	13.33

Table 4.2.5 shows the frequency and percentage distribution of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in experimental group.

With regard to pre test level of quantity while expressing breast milk in experimental group 25(83.33%) of them expressed 1to 10 ml of breast milk, 5(16.67%) of them expressed 11 to 20 ml of breast milk whereas in post test 21(70%) of them expressed 21 to 30 ml of breast milk, 5(16.67%) of them expressed 11 to 20 ml of breast milk, 4(13.33%) of them expressed 31 to 40 ml of breast milk.

Table 4.2.6: Frequency and percentage distribution of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in control group.

n=30

Quantity	1-10 (ml)		11-20 (ml)		21-30 (ml)		31-40 (ml)	
	No.	%	No.	%	No.	%	No.	%
Pre test	21	70	9	30	-	-	-	-
Post test	25	83.33	5	16.67	-	-	-	-

Table 4.2.6 shows the frequency and percentage distribution of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in control group.

With regard to pre test level of quantity while expressing breast milk in control group 21(70%) of mothers expressed 1to 10 ml of breast milk, 9(30%) of them expressed 11to 20 ml of breast milk and in post test 25(83.33%) of them expressed 1 to 10 ml of breast milk, 5(16.67%) of them expressed 11 to 20 ml of breast milk.

Table 4.2.1 to 4.2.6 revealed that the selected nursing intervention was effective in reducing the level of pain, anxiety and quantity while expressing breast milk in experimental group whereas the level of pain, anxiety and quantity increases day by day since no intervention was carried out in control group.

SECTION 4.3: EFFECTIVENESS OF PRE AND POST TEST LEVEL OF PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK AMONG MOTHERS OF HOSPITALIZED NEONATE IN EXPERIMENTAL AND CONTROL GROUP.

Table 4.3.1 : Comparison of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental group.

n=30

	Pre test		Post test		Paired 't' Value
	Mean	**S.D**	**Mean**	**S.D**	
Pain	4.77	1.59	2.13	1.41	t= 16.089*** (S)
Anxiety	43.97	11.58	33.57	10.23	t= 17.675*** (S)
Quantity	11.93	4.20	17.77	4.16	t= 30.337*** (S)

***p<0.001, S – Significant

Table 4.3.1 shows the comparison of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental group.

When comparing the pre and post test level of pain in experimental group, the pretest mean value was 4.77 with standard deviation of 1.59 and the post test mean value was 2.13 with standard deviation of 1.41.The calculated 't' value was 16.089, which was greater than the table value and this indicates that there was a statistically high significant difference at the level of p<0.001.

When comparing to pre and post test level of anxiety in experimental group, the pretest mean value was 43.97 with standard deviation of 11.58 and the post test mean value was 33.57 with standard deviation of 10.23.The calculated 't' value was 17.675,

which was greater than the table value and this indicates that there was statistically high significant difference at the level of $p<0.001$.

When comparing the pre and post test level of quantity in experimental group, the pre test mean value was 11.93 with standard deviation of 4.20 and the post test mean value was 17.77 with standard deviation of 4.16. The calculated ‘t’ value was 30.337 which was greater than the table value and this indicates that there was statistically high significant difference at the level of $p<0.001$.

Table 4.3.2: Comparison of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in control group.

n =30

	Pre test		Post test		Paired 't' Value
	Mean	**S.D**	**Mean**	**S.D**	
Pain	6.07	1.53	6.23	1.50	t= -1.980 (N.S)
Anxiety	53.57	9.87	50.77	10.41	t = 4.946 (N.S)
Quantity	6.80	3.65	5.07	3.03	t = 4.264 (N.S)

N. S – Not Significant

Table 4.3.2 shows the comparison of pre and post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in control group.

When comparing the pre and post test level of pain in control group, the pretest mean value was 6.07 with standard deviation of 1.53 and the post test mean value was 6.23 with standard deviation of 1.50.The calculated 't' value was -1.980 which indicated that there was statistically no significant difference in the pre and post test level of pain.

When comparing the pre and post test level of anxiety in control group, the pretest mean value was 53.57 with standard deviation of 9.87 and the post test mean value was 50.77 with standard deviation of 10.41.The calculated 't' value was 4.946 which indicated that there was statistically no significant difference in the pre and post test level of anxiety.

When comparing the pre and post test level of quantity in control group, the pretest mean value was 6.80 with standard deviation of 3.65 and the post test mean value was 5.07 with standard deviation of 3.03.The calculated ‘t’ value was 4.264 which indicated that there was statistically no significant difference in the pre and post test level of quantity.

Table 4.3.1 and 4.3.2 inferred that the selected nursing intervention in experimental group had reduced the level of pain, anxiety and increased the quantity of expressed breast milk when compared with control group.

Table 4.3.3: Comparison of pretest level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group.

N=60

Pretest	Experimental		Control		Unpaired 't' Value
	Mean	S.D	Mean	S.D	
Pain	4.77	1.59	6.07	1.53	t= 1.690 (N.S)
Anxiety	43.97	11.58	50.17	10.82	t = 1.938 (N.S)
Quantity	12.43	4.70	6.80	3.65	t = 1.899 (N.S)

N. S –Not Significant

Table 4.3.3 shows the comparison of pretest level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group.

When comparing the pre test level of pain between experimental and control group, in experimental group the pretest mean value was 4.77 with standard deviation of 1.59 and in the control group the pretest mean value was 6.07 with standard deviation of 1.53.The calculated 't' value was 1.690 which was lesser than the table value and this indicates that there was statistically no significant difference in the pre test level of pain between experimental and control group.

When comparing the pre test level of anxiety between experimental and control group, in experimental group the pretest mean value was 43.97 with standard deviation of 11.58 and in control group the pretest mean value was 50.17 with standard deviation of 10.82.The calculated 't' value was 1.938 which was lesser than the table value and this indicates that there was statistically no significant difference in the pre test level of anxiety between experimental and control group.

When comparing the pre test level of quantity between experimental and control group, in experimental group the pretest mean value was 11.93 with standard deviation of 4.20 and in control group the pretest mean value was 6.80 with standard deviation of 3.65.The calculated ‘t’ value was 1.899 which was lesser than the table value and this indicates that there was statistically no significant difference in the pre test level of quantity between experimental and control group.

Table 4.3.4: Comparison of post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group.

N=60

Post Test	Experimental		Control		Unpaired 't' Value
	Mean	S.D	Mean	S.D	
Pain	2.13	1.41	6.23	1.50	t= 8.250*** (S)
Anxiety	33.57	10.23	50.77	10.41	t = 6.455*** (S)
Quantity	17.77	4.16	5.07	3.03	t = 11.947*** (S)

***p<0.001, S – Significant

Table 4.3.4 shows the comparison of post test level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group.

When comparing the post test level of pain between experimental and control group, in experimental group the post test mean value was 2.13 with standard deviation of 1.41 and in the control group the post test mean value was 6.23 with standard deviation of 1.50.The calculated 't' value was 8.250 which was greater than the table value and this indicates that there was statistically high significant difference at the level of p<0.001between experimental and control group.

When comparing the post test level of anxiety between experimental and control group, in experimental group the post test mean value was 33.57 with standard deviation of 10.23 and in control group the post test mean value was 50.77 with standard deviation of 10.41.The calculated 't' value was 6.455 which was greater than the table value and

this indicates that there was statistically high significant difference at the level of $p<0.001$ between experimental and control group.

When comparing the post test level of quantity between experimental and control group, in experimental group the post test mean value was 17.77 with standard deviation of 4.16 and in control group the post test mean value was 5.07 with standard deviation of 3.03.The calculated ‘t’ value was 11.947 which was greater than the table value and this indicates that there was statistically high significant difference at the level of $p<0.001$ between experimental and control group.

Table 4.3.3 and 4.3.4 illustrates the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk and the result inferred that the nursing intervention was effective in reducing the level of pain and anxiety while expressing breast milk and improved the quantity of breast milk expressed.

SECTION 4.4: CORRELATION OF POST TEST LEVEL OF PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK AMONG MOTHERS OF HOSPITALIZED NEONATE IN EXPERIMENTAL AND CONTROL GROUP.

Table 4.4.1 : Correlation of post test level of pain with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in experimental group.

n=30

Variables	Mean	S.D	'r' Value
Pain	2.13	1.41	r = -0.802**
Quantity	17.77	4.16	(S)

**p<0.01, S – Significant

Table 4.4.1 shows the correlation of post test level of pain with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in experimental group.

With regard to the level of pain in experimental group, the post test mean pain score was 2.13 with the standard deviation of 1.41 and post test mean quantity of milk expressed was 17.77 with the standard deviation of 4.16. The calculated 'r' value was -0.802 which shows that there was moderate negative correlation of pain with quantity of milk expressed which was statistically significant at p< 0.01 level.

While correlating the post test mean score of pain with quantity of expressed breast milk in experimental group, it showed moderate negative correlation. Hence the result inferred that as the pain decreases the quantity of milk expressed increases.

Table 4.4.2: Correlation of post test level of anxiety with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in experimental group.

n=30

Variables	Mean	S.D	'r' Value
Anxiety	33.57	10.23	r = -0.564**
Quantity	17.77	4.16	(S)

**p<0.01, S – Significant

Table 4.4.2 shows the correlation of post test level of anxiety with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in experimental group.

With regard to the level of anxiety in experimental group, the post test mean anxiety score was 33.57 with the standard deviation of 10.23 and post test mean quantity of expressed milk was 17.77 with the standard deviation of 4.16. The calculated 'r' value was -0.564 which shows that there was moderate negative correlation of anxiety with quantity of milk expressed which was statistically significant at $p< 0.01$ level.

While correlating the post test mean score of anxiety with quantity of expressed breast milk in experimental group, it showed moderate negative correlation. Hence the result inferred that as the anxiety decreases the quantity of milk expressed increases.

Table 4.4.3: Correlation of post test level of pain with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in control group.

n=30

Variables	Mean	S.D	'r' Value
Pain	6.23	1.50	r = -0.190
Quantity	5.07	3.03	(N.S)

N.S – Not Significant

Table 4.4.3 shows the correlation of post test level of pain with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in control group.

With regard to the level of pain in control group, the post test mean pain score was 6.23 with the standard deviation of 1.50 and post test mean quantity of milk expressed was 5.07 with standard deviation of 3.03. The calculated 'r' value was -0.190 which shows that there was no correlation of pain with quantity of breast milk expressed.

While correlating the post test mean score of pain with quantity of expressed breast milk in control group, the result inferred that as the pain increases the quantity of milk expressed decreases.

Table 4.4.4: Correlation of post test level of anxiety with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in control group.

n=30

Variables	Mean	S.D	'r' Value
Anxiety	50.77	10.41	r = -3.51 (N.S)
Quantity	5.07	3.03	

N. S –Not Significant

Table 4.4.4 shows the correlation of post test level of anxiety with quantity of breast milk while expressing breast milk among mothers of hospitalized neonate in control group.

With regard to the level of anxiety in the control group, the post test mean anxiety score was 50.77 with standard deviation of 10.41 and mean quantity of milk expressed was 5.07 with standard deviation of 3.03. The calculated 'r' value was -3.51 which shows that there was no correlation of anxiety with the quantity of breast milk expressed.

While correlating the post test mean score of anxiety with quantity of expressed breast milk in control group, the result inferred that as the anxiety increases the quantity of milk expressed decreases.

SECTION 4.5: ASSOCIATION OF SELECTED DEMOGRAPHIC VARIABLES WITH MEAN DIFFERED LEVEL OF PAIN, ANXIETY AND QUANTITY WHILE EXPRESSING BREAST MILK AMONG MOTHERS OF HOSPITALIZED NEONATE IN THE EXPERIMENTAL AND CONTROL GROUP.

Section 4.5.1: Association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the experimental group.

n=30

Demographic Variables	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Age in years							F = 1.284 p = 0.293 (N.S)
20 - 25	4.61	1.76	3.16	1.57	1.46	0.52	
26 - 30	4.60	1.50	2.90	1.29	1.70	0.67	
Above 30	5.28	1.49	3.43	1.39	1.86	0.38	
Educational status							F = 0.691 p = 0.510 (N.S)
Secondary education	5.33	1.87	3.78	1.79	1.55	0.53	
Higher secondary education	4.75	1.58	3.25	1.28	1.50	0.53	
Graduate and above	4.38	1.39	2.61	1.04	1.77	0.59	

Table 4.5.1 infers the association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the experimental group.

The findings revealed that the mean difference in the level of pain while expressing breast milk among mothers of hospitalized neonate in experimental group had no statistically significant association with selected demographic variable such as age, educational status, number of postnatal days, parity, food pattern, family support, sex of baby, mode of delivery, type of delivery and source of intervention respectively.

Table 4.5.2: Association of selected demographic variables with mean differed level of anxiety while expressing breast milk among mothers of hospitalized neonate in the experimental group.

n=30

Demographic Variables	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Sex of baby							t = 2.466* (S)
Boy	47.38	9.80	35.46	9.39	11.92	2.90	
Girl	41.35	12.42	32.11	10.87	9.23	3.03	

*p<0.05, S-significant

Table 4.5.2 shows the association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the experimental group.

The findings revealed that there was statistically low significant association of mean differed level of anxiety with the sex of the baby at p<0.05 in the experimental group.

However, other demographic variables did not have any significant association.

Table 4.5.3: Association of selected demographic variables with mean differed level of quantity while expressing breast milk among mothers of hospitalized neonate in the experimental group.

n=30

Demographic Variables	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Food pattern of mother							t = 2.443* (S)
Vegetarian	7.33	3.87	6.47	3.18	0.87	0.83	
Non-vegetarian	6.27	3.47	6.00	3.44	0.27	0.46	

*p<0.05, S – Significant

Table 4.5.3 shows the association of selected demographic variables with mean differed level of quantity while expressing breast milk among mothers of hospitalized neonate in the experimental group.

The findings revealed that there was statistically low significant association of mean differed level of quantity of expressed breast milk with food pattern at p<0.05 in experimental group.

However, other demographic variables did not have any significant association.

Section 4.5.4: Association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the control group.

n=30

Demographic Variables	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Age in years							F = 1.898 p = 0.169 (N.S)
20 - 25	6.23	1.36	6.38	1.39	-0.15	0.55	
26 - 30	6.10	1.52	6.10	1.52	0.00	0.00	
Above 30	5.71	1.98	6.14	1.86	-0.43	0.53	
Educational status							F = 2.563 p = 0.096 (N.S)
Secondary education	6.33	1.73	6.67	1.66	-0.33	0.50	
Higher secondary education	6.50	1.19	6.37	1.19	0.12	0.35	
Graduate and above	5.61	1.56	5.85	1.57	-0.23	0.44	

Table 4.5.4 shows the association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the control group.

The findings revealed that the mean difference in the level of pain while expressing breast milk among mothers of hospitalized neonate in control group had no statistically significant association with selected demographic variable such as age, educational status, number of postnatal days, parity, food pattern, family support, sex of baby, mode of delivery, type of delivery and source of intervention respectively.

Table 4.5.5: Association of selected demographic variables with mean differed level of anxiety while expressing breast milk among mothers of hospitalized neonate in the control group.

n=30

Demographic Variable	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Sex of baby							t = 2.466* (S)
Boy	47.38	9.80	35.46	9.39	11.92	2.90	
Girl	41.35	12.42	32.11	10.87	9.23	3.03	

*p<0.05, S – Significant.

Table 4.5.3 shows the association of selected demographic variables with mean differed level of pain while expressing breast milk among mothers of hospitalized neonate in the control group.

The finding revealed that there was statistically low significant association of mean differed level of anxiety with sex of the baby at p<0.05 in control group.

However, other demographic variables did not have any significant association.

Table 4.5.6: Association of selected demographic variables with mean differed level of quantity while expressing breast milk among mothers of hospitalized neonate in the control group.

n=30

Demographic Variables	Pretest		Post Test		Mean Diff.		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	
Food pattern of mother							t = 2.443* (S)
Vegetarian	7.33	3.87	6.47	3.18	0.87	0.83	
Non-vegetarian	6.27	3.47	6.00	3.44	0.27	0.46	

*p<0.05, S – Significant

Table 4.5.4 shows the association of selected demographic variables with mean differed level of quantity while expressing breast milk among mothers of hospitalized neonate in the control group.

The finding revealed that there was statistically low significant association of mean differed level of quantity of expressed breast milk with food pattern of at p<0.05 in control group.

However, other demographic variables did not have any significant association.

Table 4.5.1 -4.5.4 illustrates the association of selected demographic variables with mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate and the result inferred that there is an association between mothers food pattern with the quantity of expressed breast milk and sex of the baby with anxiety while expressing breast milk in experimental and control group

DISCUSSION

The study was conducted to evaluate the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

This chapter deals with the discussion on the findings of the study interpreted from the statistical analysis. The findings are discussed in relation to the objectives of the study, related literature and null hypothesis specified in this study.

Description of the demographic variables of lactating mothers expressing breast milk to their hospitalized neonate in experimental and control group

With regard to age, 13(43.33%) of mothers were between 26-30 years in experimental and control group, 13(43.33%) of them were graduate and above in experimental group and in control group 14(46.67%) of them were graduate and above. In relation to number of postnatal days 15(50%) of them were in early post natal period, 14(46.67%) of them were multi gravida in experimental group and control group. With regard to mother's food pattern 15(50%) were vegetarian, 14(46.67%) of them had husbands support, 16(53.33%) of them delivered boy baby, 16(53.33%) delivered through lower segment caesarean section, 24(80%) undergone full term delivery in experimental and control group and 20(66.67%) of them had no source of information in both experimental and control group.

5.1 The first objective was to assess and compare the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate.

The analysis in the Table 4.2.1 and 4.2.2 showed the pre test level of pain while expressing breast milk in experimental group where 15(50%) had moderate pain,14(46.67%) had severe pain and 1(3.33%) had mild pain. In control group 18(60%) had moderate pain, 9(30%) had severe pain and 3(10%) of mothers had mild pain.

The analysis in the Table 4.2.1 and 4.2.2 showed the post test level of pain while expressing breast milk in experimental group 15(50%) had mild pain,13(43.33%) had no pain and 2(3.33%) had moderate pain. In control group 21(70%) had severe pain, 8(26.67%) had moderate pain and 1(3.33%) of mothers had mild pain.

The analysis in the Table 4.2.3 and 4.2.4 showed the pretest level of anxiety while expressing breast milk in experimental group 18(60%) had severe anxiety,11(36.67%) had moderate anxiety and 1(33.33%) was panic. In control group 16(53.33%) had moderate anxiety, 12(40%) had severe anxiety and 2(6.67%) of mothers had mild anxiety.

The analysis in the Table 4.2.3 and 4.2.4 showed the post test level of anxiety while expressing breast milk in experimental group 14(46.67%) had moderate anxiety, 16(53.33%) had mild anxiety. In control group 21(70%) had severe anxiety and 9(30%) had moderate anxiety.

The analysis in the Table 4.2.5 and 4.2.6 showed the pre test level of quantity while expressing breast milk in experimental group 25(83.33%) expressed 1-10 ml of breast milk and 5(16.67%) expressed 11-20 ml of breast milk. In control group 21(70%) expressed 1-10ml of breast milk and 9(30%) expressed 11-20 ml of breast milk.

The above data was consistent with a true experimental study conducted by **Jones .E (2009)** to assess the volume of breast milk expressed in relation to the pain and anxiety level of mothers in Neonatal intensive care unit at North Staffordshire Hospital NHS Trust. Data were collected from 60 mothers. Study result revealed that 50% of mothers had severe pain while expressing breast milk and 72% of mothers had moderate anxiety score and the mean volume of milk pumped per expression by 75% of them was 4.5 ounce reduced compared to experimental group.

The above data was consistent with a qualitative study conducted by **Sisk P, Quandt S (2010)** conducted a qualitative study among 32 EBM mothers to evaluate the barriers in breast milk expression among mothers of critically ill newborn in NICU at Sara Lee Center for Women's Health and Forsyth Medical Center. In-depth semi-structured interview scheduled lasted for 60-90 minute. The result revealed that 59% of

mothers experienced Pain, 72% of them experienced mental challenges including frustration, anxiety as the barriers for expressing breast milk.

The Table 4.3.1 showed the comparison of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in experimental group, the mean pretest value was 4.77 with the standard deviation of 1.59 and the mean post test value was 2.13 with standard deviation of 1.41.The calculated ‘t’ value was 16.089 which was greater than the table value and this indicated that there was statistically high significant difference at the level of $p<0.001$.

The Table 4.3.2 showed the comparison of pre and post test level of pain while expressing breast milk among mothers of hospitalized neonate in control group, the mean pretest value was 6.07 with the standard deviation of 1.53 and the mean post test value was 6.23 with standard deviation of 1.50.The calculated ‘t’ value was -1.98 which was lesser than the table value and this indicated that there was statistically no significant difference.

The Table 4.3.1 showed the comparison of pre and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in experimental group, the mean pretest value was 43.97 with standard deviation of 11.58 and the mean post test value was 33.57 with standard deviation of 10.23.The calculated ‘t’ value was 17.675 which was greater than the table value and this indicated that there was statistically high significant difference at the level of $p<0.001$.

The Table no.4.3.2 showed the comparison of pre and post test level of anxiety while expressing breast milk among mothers of hospitalized neonate in control group, the mean pretest value was 53.57 with standard deviation of 9.87 and the mean post test value was 50.77with the standard deviation of 10.41.The calculated ‘t’ value was 4.946 which was lesser than the table value and this indicates that there was statistically no significant difference.

The Table 4.3.1 showed the comparison of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in experimental group, the mean pretest value was 11.93 with the standard deviation of 4.20 and the

mean post test value was 17.77 with standard deviation of 4.16.The calculated ‘t’ value was 30.337 which was greater than the table value and this indicated that there was statistically high significant difference at the level of p<0.001.

The Table 4.3.2 showed the comparison of pre and post test level of quantity while expressing breast milk among mothers of hospitalized neonate in control group, the mean pretest value was 6.80 with the standard deviation of 3.65and the mean post test value was 5.07 with standard deviation of 3.03.The calculated ‘t’ value was 4.264 which was lesser than the table value and this indicated that there was statistically no significant difference.

The study was consistent with quantitative study conducted by **Katherine R. Shealy, Ruowei L(2011)** to assess the challenges of expressing breast milk in NICU. 115 lactating mothers were selected as samples, the mothers in the experimental group were given lactation support in managing problems while expressing breast milk. The pretest mean value was 27.07 with the standard deviation of 5.10 and the post test mean value was 38.08 with standard deviation of 2.10. The calculated ‘t’ value was 16.016 which was statistically significant at p< 0.01 level. The study concluded that regular milk removal with effective intervention had reduced the level of pain and anxiety by 80% and increased the maternal milk volume to 600-625 ml/day.

5.2 The second objective was to compare the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate between experimental and control group.

The analysis in Table 4.3.3 and 4.3.4 showed the comparison of pre and post test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate between experimental and control group.

On comparing the pre test level of pain between experimental and control group, the experimental group mean value was 4.77 with standard deviation of 1.59 and the control group the mean value was 6.07 with standard deviation of 1.53.The calculated ‘t’ value was 1.690 which was lesser than the table value and this indicated that there was statistically no significant difference between experimental and control group.

On comparing the post test level of pain between experimental and control group, in experimental group the post test mean value was 2.13 with standard deviation of 1.41 and in the control group the post test mean value was 6.23 with standard deviation of 1.50.The calculated ‘t’ value was 8.250 which was greater than the table value and this indicated that there was statistically high significant difference at the level of $p<0.001$ between experimental and control group.

On comparing the pretest level of anxiety between experimental and control group, the experimental group mean value was 43.97 with standard deviation of 11.58 and the control group mean value was 50.17 with the standard deviation of 10.82.The calculated ‘t’ value was 1.938 which was lesser than the table value and this indicated that there was statistically no significant difference between experimental and control group.

On comparing the post test level of anxiety between experimental and control group, the experimental group mean value was 33.57 with standard deviation of 10.23 and the control group mean value was 50.77 with the standard deviation of 10.41.The calculated ‘t’ value was 6.455 which was greater than the table value and this indicated that there was statistically high significant difference at the level of $p<0.001$ between experimental and control group.

On comparing the pretest level of quantity between experimental and control group, the experimental group mean value was 12.43 with the standard deviation of 4.70 and the control group mean value was 6.80 with standard deviation of 3.65.The calculated ‘t’ value was 1.899 which was lesser than the table value and this indicates that there was statistically no significant difference between experimental and control group.

On comparing the post test level of quantity between experimental and control group, the experimental group mean value was 17.77 with the standard deviation of 4.16 and the control group mean value was 5.07 with standard deviation of 3.03.The calculated ‘t’ value was 11.947 which was greater than the table value and this indicated that there was statistically high significant difference at the level of $p<0.001$ between experimental and control group.

The above finding were consistent with the study conducted a experimental study by **Beverly Rossman. P,Amanda L. (2010)** to compare the breast milk expression to their sick neonates in hospital among 36 mothers who where in NICU and ward. The mothers who have admitted their neonate in ward is taken as experimental group, with regular investigation the level of pain, anxiety and volume of milk expressed per feeding was assessed and compared. The result showed that the level of pain and anxiety score is 60% low compared to control group and the significant increase in the volume of milk expressed to 80% compared to control group.

The above finding was consistent with the quasi experimental study conducted by **Helen Smith Nicholas D. Embleton (2013)** on improving expressed breast milk (EBM) provision in the neonatal unit among 115 mothers. The challenges associated with maternal anxiety and practical difficulties with expression were assessed using Hamilton's anxiety scale, visual analog scale and messbecher. The intervention includes lactation counseling, breast massage, warm compress, visual stimulation technique. The result showed that there was a increase from 45% to 90% expressed breast milk provision after intervention.

Hence the null hypotheses (NH_1) stated earlier that **"There is no significant difference between the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate between experimental and control group at level of $p<0.05$"** was **rejected.**

The core concept of Wiedenbach's Helping Art of Clinical Nursing Theory was the basis for the conceptual framework in this study. The investigator perceived the need of implementing the selected nursing intervention to the mothers of hospitalized neonate on expressed breast milk. The intervention which includes breast massage, video-assisted teaching on breast massage followed by demonstration on breast massage and visual stimulation technique reduces the level of pain, anxiety and increases the quantity of expressed breast milk.

The mothers of hospitalized neonate on expressed breast milk were the recipient in this study, the investigator identified the need by assessing the pre test level of pain,

anxiety and quantity while expressing breast milk and prescribed the selected nursing intervention to minister the need of the mother. The goal was to reduce the level of pain, anxiety and increase the quantity of expressed breast milk through the means of warm compress to the breast at 104^{o} degree Fahrenheit for 3-5 minutes to each breast before expressing breast milk, video-assisted teaching on breast massage followed by demonstration on breast massage for one minute before expressing breast milk and visual stimulation technique while expressing breast milk. The investigator validated the need by assessing the post test level of pain, anxiety and quantity which revealed that there was reduction in the level of pain, anxiety and increase in the quantity of expressed breast milk in majority of the mothers who express breast milk for their hospitalized neonate. Thus proving that the selected nursing intervention was effective in reducing the level of pain, anxiety and increasing the quantity while expressing breast milk.

5.3 The third objective was to correlate the post test level of pain and anxiety with quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.

The analysis in Table 4.4.1 and 4.4.3 showed the correlation of post test level of pain with quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.

The analysis in the Table 4.4.1 revealed that in experimental group, the post test mean pain score was 2.13 with the standard deviation of 1.41 and post test mean quantity score of milk expressed was 17.77 with the standard deviation of 4.16. The calculated 'r' value was -0.802 which shows that there was moderate negative correlation between pain with quantity of milk expressed.

The analysis in the Table 4.4.3 revealed that in control group, the post test mean pain score was 6.23 with the standard deviation of 1.50 and post test mean quantity score of milk expressed was 5.07 with the standard deviation of 3.03. The calculated 'r' value was -0.190 which shows no correlation between pain with quantity of milk expressed.

The analysis in Table 4.4.2 and 4.4.4 showed the correlation of post test level of anxiety with quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.

The analysis in the Table 4.4.2 revealed that in experimental group, the post test mean anxiety score was 33.57 with the standard deviation of 10.23 and post test mean quantity score of milk expressed was 17.77 with the standard deviation of 4.16.The calculated 'r' value was -0.564 which shows that there was moderate negative correlation between anxiety with quantity of milk expressed.

The analysis in the Table 4.4.3 revealed that in control group, the post test mean anxiety score was 50.77 with the standard deviation of 10.41 and post test mean quantity score of milk expressed was 5.07 with the standard deviation of 3.03. The calculated 'r' value was -3.51 which shows no correlation between anxiety with quantity of milk expressed.

The above findings were supported by an experimental study by **Alison S. Fleming (2013)** to evaluate the effect of visual stimulation technique on maternal anxiety with total milk expressed in NICU. The total of 80 samples selected randomly and data was collected by State-Trait Anxiety Inventory (STAI) scale. The correlation of state-trait anxiety inventory score with total milk expressed revealed r= -0.83,p=0.01 which indicates maternal anxiety was inversely correlated with total milk expressed. The study concluded that visual stimulation technique increases the production of breast milk.

The above findings were consistent with a quasi-experimental study conducted by **Lockwood C (2012)** to evaluate the effect of Warm water compresses versus pain and quantity of breast milk expression.73 primiparous breastfeeding women were selected by randomized controlled trials (RCTs) method. The intensity of pain was measured with visual analogue scale (VAS) on days one to seven. All groups experienced the highest pain intensity. The intervention includes instruction in control group and warm water compress of 40 degree Celsius and breast massaged was carried out in experimental group. The result showed 80% reduction of pain and improvement in quantity of expressed breast milk among experimental group.

Hence the null hypotheses **(NH_2)** stated earlier that **"there is no significant relationship between the post-test level of pain and anxiety with quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group at the level of $p<0.05$ was rejected"**

5.4 The fourth objective was to associate the selected demographic variable with mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group.

The analysis in Table 5.5.1 and Table 4.5.4 revealed that the association between the demographic variables and pain score while expressing breast milk among mothers of hospitalized showed that there was no statistically significant association with selected demographic variable in experimental and control group.

The analysis in Table 4.5.2 and table no.4.5.5 revealed that the association between the demographic variables and anxiety score while expressing breast milk among mothers of hospitalized showed that there was low statistically significant with sex of the baby at the level of $p<0.05$ in experimental and control group.

The analysis in Table 4.5.3 and Table 4.5.6 revealed that the association between the demographic variables and quantity score while expressing breast milk among mothers of hospitalized showed that there was low statistically significant with mothers food pattern at the level of $p<0.05$ in experimental and control group.

The above data are consistent with the findings of an experimental study conducted by **Vasilaki K (2010)** to assess the factors associated with maternal anxiety in breast milk expression among 35 mothers who express breast milk in NICU. The state-trait inventory was administered to screen symptoms of anxiety. The study result revealed that major factor was the sex of the baby 82.9% associated with maternal anxiety while breast milk expression.

Hence the null hypotheses **(NH_3)** stated earlier that **"There is no significant association of selected demographic variable with mean differed level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental and control group"** was accepted for the above two variables at the level of $p<0.05$ and rejected for other demographic variables.

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATION AND LIMITATION

This chapter presents the summary, conclusion, implications, recommendations and limitation of the study.

6.1 SUMMARY

Breast milk is widely accepted as a best method to provide all essential nutrients and immunological factors to the newborn. Breast milk secretion is a normal physiological process and it is a natural ideal food for newborn. The nutrients in breast milk are ideally balanced and more easily absorbed than other foods. When a neonate is in NICU, its mother's own breast milk is valuable for growth and prevention of infection. Therefore it's important to maintain lactation by expression until the baby is able to be breastfed.

To the neonates in neonatal intensive care unit, attention being focused on the quality of survival through nutritional management. The mothers are increasingly being encouraged to express breast milk in order to improve the health status of newborn. However it is widely acknowledge that those mothers, experience maternal anxiety and practical difficulty with expression due to pain that adversely affects the milk production and breast milk expression to their hospitalized neonate.

The research shows that, breast milk production and its quantity is being affected by maternal anxiety and pain while expressing breast milk to their hospitalized neonate. Studies shows that breast massage, warm compress and visual stimulation technique has a effect in enhancing the quantity of breast milk production and thereby reducing the maternal anxiety and pain while expressing breast milk.

The purpose of the study was to assess the effectiveness of selected nursing intervention on level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

6.1.1 The objectives of the study were

1. To assess and compare the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.
2. To assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.
3. To correlate the post test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate in experimental and control group.
4. To associate the mean differed level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate with demographic variable in experimental and control group.

6.1.2 The study was based on the assumption that

1. Pain and anxiety while expressing breast milk may have an influence in the quantity of milk expressed among mothers of hospitalized neonate.
2. Selected nursing intervention may reduce the level of pain and anxiety which may improve the quantity of milk expressed among mothers of hospitalized neonate.

6.1.3 The null hypotheses formulated were

NH_1: There is no significant difference between the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate between experimental and control group at level of $p<0.001$.

NH_2: There is no significant relationship between the pre and post-test level of pain, anxiety and quantity of expressed breast milk among mothers of hospitalized neonate between experimental and control group at the level of $p<0.001$.

NH_3: There is no significant association between mean differed level of pain, anxiety and quantity of expressed breast milk with selected demographic variables among mothers of hospitalized neonate in experimental and control group at the level of $p<0.001$.

The investigator has done an in depth review of literature which included both theoretical and empirical related studies and statistics which provided a strong foundation for the study, including the basis for the conceptual framework and formation of the tool and to select the research methodology, namely one group pre test - post test within subjects design which was found to be suitable for the study.

The conceptual framework for the study was based on **WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY** which provided a comprehensive framework for evaluating the effectiveness of the nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

The content validity of the data collection tool and the intervention tool was obtained from 2 Medical experts and 3 nursing experts in the field of Obstetrics and Gynaecology.

The reliability of the knowledge tool was determined by inter-rater method to assess the reliability for pain, anxiety and quantity of breast milk and the feasibility of the study was analyzed by conducting a pilot study at Vijaya health centre, Vadapalani and Sir Ivan Stedeford Hospital, Ambattur. The study finding determined the high reliability of the tool.

The main study was conducted at Sundaram medical foundation, Anna nagar and Kanchi Kamakoti child trust hospital, Nungambakam. Purposive sampling technique was used and the sample size for the study was 60 lactating mothers who fulfilled the sample selection criteria and ethical aspects were maintained throughout the study.

Refined tools were used for data collection. Data collected were analyzed and interpreted based on the objectives and null hypotheses using descriptive and inferential statistics. The findings revealed that there was a significant difference in the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate after administration of nursing intervention.

6.1.4 The major findings of the study revealed that

When comparing the pre and post test level of pain, anxiety and quantity in experimental group t = 16.089, t= 17.675 and t = 30.337 which was significant at $p < 0.001$ level. The findings revealed that there was a high statistical difference in the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in experimental group.

When comparing the pre and post test level of pain, anxiety and quantity in control group t = -1.980, t= 4.946 and t = 4.264 which was significant at $p < 0.001$ level in experimental group. The findings revealed that there was a statistically no significant difference in the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate in control group.

When comparing the post test level of pain, anxiety and quantity while expressing breast milk between experimental and control group t = 8.250, t= 6.455 and t = 11.947 which was significant at $p < 0.001$ level. The findings revealed that there was a high statistical difference in the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate between experimental and control group.

The correlation of mean differed level of pain score with quantity of expressed breast milk 'r'= -0.802.The findings revealed that there was moderate negative correlation between the mean differed pain score with quantity of expressed breast milk score at the level of $p<0.01$.

The correlation of mean differed anxiety score with quantity of expressed breast milk 'r'= -0.564 which revealed that there was moderate negative correlation between the mean differed anxiety score with quantity of expressed breast milk score at the level of $p<0.01$.

The analysis also revealed that there was a significant association between the mean differed anxiety score with gender of the baby at $p < 0.05$ level and mean differed quantity score with mothers food pattern at $p < 0.05$ level.

6.2 CONCLUSION

The present study assessed the effectiveness of selected nursing intervention on level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate.

The study findings concluded that there was a significant difference in the level of pain, anxiety and quantity while expressing breast milk after administration of the selected nursing intervention which included breast massage, warm compress and visual stimulation technique and this proved to be an effective method to improve the quantity of expressed breast milk and reduce the pain and anxiety while expressing breast milk. The study also concluded that as the pain and anxiety decreases the quantity of breast milk expressed increases thus revealed the impact of the psychological status of the mother in expressing breast milk.

6.3 NURSING IMPLICATIONS

The investigator has drawn the following implications from the study, which is of vital concern in the field of Nursing practice, Nursing Administration, Nursing Education and Nursing Research.

6.3.1 Nursing Practice

The midwives have a vital role to work with lactating mothers to build their confident, knowledge, understanding and decision-making in relation to their feeding choices.

This can be facilitated by motivating the nurse midwives to:

- Implement the nursing intervention on breast milk expression and maintain lactation and to meet the demand of newborn in NICU.
- Utilize the findings of the study to plan regular and periodic health education sessions for lactating mothers in hospitals whose newborn cannot latch on.
- Possess professional responsibilities in educating baby friendly hospital initiation that encompass teaching, demonstration, counseling and clinical roles.

6.3.2 Nursing Education

- Nursing curriculum should include the difficulties of mothers in breast milk expression.
- Conduct seminars, workshops and conferences for students regarding the recent advancement in feeding techniques & management in order to provide up to date information to enhance their knowledge.

6.3.3 Nursing Administration

The nurse administrator within the community or society should:

- Conduct CNE based on issues and management related to Breast feeding and need of human milk expression.
- Incorporate the findings of the study to plan training programme for health personnel to implement the nursing intervention while expressing breast milk in NICU.
- Attend training programmes on preparation of programmed learning modules, study guides, independent intervention activities for breast milk expression among lactating mothers**.**

6.3.4 Nursing Research

As a nurse researcher

- Disseminate the findings of the study through conferences, seminars and by publishing in journals and websites.
- Promote more research in intervention to be carried out while breast milk expression.
- Utilize evidence and research findings in planning, implementing and evaluating services of the hospitals.
- Expand the research to larger population.

6.4 LIMITATIONS

1. Researcher found difficulty in getting in permission in NICU.
2. Researcher found difficulty in getting Indian reviews related to nursing intervention on breast milk expression.

6.5 RECOMMENDATIONS

The investigator recommended the Administrator of the study settings of Sundaram Medical Foundation and Kanchi Kamakoti Child Trust Hospitals to incorporate these interventions while expressing breast milk in NICU.

The study recommends the following for future research:

1. A comparative study to assess the quantity of milk expressed between mothers of preterm and full term hospitalized neonates can be conducted.
2. An experimental study to assess the effectiveness of selected nursing intervention on the composition and volume of breast milk can be conducted.
3. A qualitative study on experience of women in expressing breast milk in NICU can be conducted.

6.6 PLAN FOR RESEARCH DISSEMINATION

The research findings will be disseminated in national and international conference conducted at various institutions and also will publish in Indian Journal of Midwifery.

6.7 PLAN FOR RESEARCH UTILIZATION

Research finding will be incorporated in NICU of KKCTH and SMF

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APPENDIX – C

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

From

Ms.Jerlin Shiny.D
M. Sc (N) II year,
Omayal Achi College of Nursing,
puzhal, Chennai – 600 066

To

Respected Madam / Sir,

Sub: Requisition for expert opinion on suggestion for content validity of the tool

I am **Ms.Jerlin Shiny.D** doing my M.Sc Nursing II year specializing in Obstetrics and Gynaeclogical Nursing at Omayal Achi College of Nursing. As a part of my research project to be submitted to the Tamilnadu Dr.M.G.R University and in partial fulfillment of the University requirement for the award of M.Sc (N) degree, I am conducting **"A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai".**

I have enclosed my data collection tool and intervention tool for your expert guidance and validation. Kindly do the needful.

Thanking you,

Yours Faithfully,

(Jerlin Shiny.D)

Enclosures:

1. Research proposal
2. Data collection tool
3. Intervention tool
4. Content validity form
5. Certificate for content validity

LIST OF EXPERTS FOR CONTENT VALIDITY

MEDICAL EXPERTS:

1. **Dr. Mrs.Hidayatunnissa MBBS, DNB (O &G)**
   HOD-Obstetrics and gynecology,
   Sir Ivan Stedeford Hospital,
   Ambattur, Chennai- 600 053.

2. **Dr.Mrs.Sucharitha MBBS, DNB (O&G)**
   Obstetrician and Gynecologist,
   Sir Ivan Stedeford Hospital,
   Ambattur, Chennai – 600 053.

NURSING EXPERTS:

1. **Mrs.Sathyalatha**
   Professor,
   Obstetric and Gynecological Nursing,
   Balaji College of Nursing,
   Chennai.

2. **Mrs. Rosaline Rachel**
   Professor cum Principal,
   Obstetric and Gynecological Nursing,
   Indira College of Nursing,
   Pandur – 631 203.

3. **Mrs. Nalini**
   Professor,
   Obstetric and Gynecological Nursing,
   Sri Ramachandra College of Nursing,
   Chennai

4. Gayathri Priya

Professor,

Obstetric and Gynecological Nursing,

Sri Ramachandra College of Nursing,

Chennai

5. Ms.R.Kannamma, MA., M.Phil.,

Dept.of Psychiatry,

Southern Railway Head Quarters Hospital,

Perambur, Chennai-600 023

APPENDIX – D

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work **"A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai",** done by **Ms. Jerlin Shiny.D** M.Sc.(Nursing) II year student of Omayal Achi College of Nursing, Chennai, is edited for English language appropriateness by _____.

Seal with Date **Signature**

APPENDIX – E

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work ‘‘**“A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai”,** done by **Ms. Jerlin Shiny. D.** M.Sc (Nursing) II year student of Omayal Achi College of Nursing, Chennai, is edited for Tamil language appropriateness by _____.

Seal with Date **Signature**

APPENDIX – F

INFORMED CONSENT REQUISITION FORM

Good morning,

I **Ms. Jerlin Shiny.D** Msc. (Nursing) II year student from Omayal Achi College of Nursing, Chennai, conducting **"A quasi experimental study to assess the effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai"** as a partial fulfillment of the requirement for the degree of M.Sc. Nursing under the Tamil Nadu Dr. M.G.R. Medical University.

I assure you that information provided by you will be kept confidential. So, I request you to kindly cooperate with me and participate in this study by giving your frank and honest responses to the questions being asked.

Thank You

ஒப்புதல் படிவம்

வணக்கம்,

ஜெர்லின் ஷைனி.தே ஆகிய நான் புழலில் உள்ள உமையாள் ஆச்சி செவிலியர் கல்லூரியில் முதுகலை பட்டப்படிப்பு பயின்று வருகின்றேன். என் படிப்பின் ஒரு பகுதியாக தங்கள் பிறந்த குழந்தைகளை திவிர சிகிச்சை பிரிவில் அனுமதித்து இருக்கும் தாய்மார்கள் தங்கள் தாய்பாலை வேளியேற்றும் போது உள்ள வலி, மனப்பாங்கு மற்றும் அளவை கண்டறி கேள்விகளை வடிவமைத்துள்ளேன்.

தயவு செய்து நீங்கள் என்னுடன் ஒத்துழைக்குமாறு வேண்டிக் கொள்கிறேன். நான் உங்களிடம் இருந்து பெற்ற தகவல்களை எக்காரணத்தைக் கொண்டும் வெளியிட மாட்டேன் என்று உறுதி அளிக்கிறேன்.

நன்றி!

INFORMED WRITTEN CONSENT FORM

I understand that I am being asked to participate in a research study conducted by **Ms.Jerlin Shiny.D** Msc (N) student of Omayal Achi College of Nursing. This research study will assess the **"effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai".**

If I agree to participate in the study, I will be interviewed. The interview may be recorded and will take place in privacy. No identifying information will be included when the interview is transcribed. I understand that there are no risks associated with this study.

I realize that the knowledge gained from this study may help either me or other people in the future. I realize that my participation in this study is entirely voluntary, and I may withdraw from the study at any time I wish. If I decide to discontinue my participation in this study, I will continue to be treated in the usual and customary fashion.

I understand that all study data will be kept confidential. However, this information may be used in nursing publication or presentations. If I need to, I can contact **Ms.Jerlin Shiny.D.** M.Sc.(N) II year student of Omayal Achi College of Nursing, #45 Ambattur road, Puzhal, Chennai at any time during the study.

The study has been explained to me. I have read and understood this consent form, all of my questions have been answered, and I agree to participate. I understand that I will be given a copy of this signed consent form.

---------- ----------

Signature of Participant Date:

---------- ----------

Signature of Investigator Date:

உமையாள் ஆச்சி செவிலியர் கல்லூரி, சென்னை-66.
முன் அறிவிப்பு ஒப்பந்த படிவம்

உமையாள் ஆச்சி செவிலியர் கல்லூரியின் சார்பில் செல்வி.ஜெர்லின் ஷைனி.தே முதுநிலை இரண்டாம் ஆண்டு மாணவி நடத்தும் இந்த ஆய்வில் என்னை பங்கேற்க கேட்டுக் கொண்டதை நான் ஏற்றுக்கொள்கிறேன்.

இந்த ஆராய்ச்சியின் மூலம் தங்கள் பிறந்த குழந்தைகளை திவிர சிகிச்சை பிரிவில் அனுமதித்து இருக்கும் தாய்மார்கள், தங்கள் தாய்பாலை வேளியேற்றும் போது உள்ள வலி, மனப்பாங்கு மற்றும் அளவை கண்டறிந்து அதற்க்கேற்ப செவிலிய சிகிச்சைகள் செயல்படுத்தப்படும்.

இந்த ஆய்வுக்கு நான் ஒப்புக் கொண்டால் அதனைத் தொடர்ந்து உள்ள நேர்முக உரையாடலில் பங்கேற்க வேண்டும் என்பதை நான் அறிவேன். என்னிடம் நடத்தும் நேர்முக உரையாடல் அனைத்தும் பதிவு செய்யப்பட்டு பாதுகாக்கப்படும் என்பதை நான் அறிவேன். என்னைப் பற்றிய சேகரித்த சுய தகவல்கள் அனைத்தும் வெளியிடப்படாமல் ஆய்வு மேற்கொள்ளப்படும் என்பதை நான் அறிவேன்.

இந்த ஆய்வின் மூலமாக எனக்கு எந்த பாதிப்பும் இல்லை என்பதை அறிந்து கொண்டேன்.

எதிர்காலத்தில் இந்த ஆய்வின் முடிவுகள் எனக்கோ அல்லது பிற மக்களுக்கோ பயன்படும் என்பதை நான் அறிவேன்.

நான் எவரின்/யாருடைய கட்டாயத்தின் பெயரிலோ அல்லது வற்புறுத்தலின் பெயரிலோ ஆய்வில் பங்கு கொள்ளவில்லை என்பதையும், தேவைப்பட்டால் நான் ஆய்விலிருந்து

விலகிக்கொள்ளவும் எனக்கு முழு உரிமை உண்டு என்பதையும் அறிவேன். அவ்வாறு ஆய்விலிருந்து விலகிக் கொள்ளும்பட்டத்திலும் எப்போதும் பிறரைப் போலவே நடத்தப்படுவேன் என்பதை அறிவேன்.

என்னைப் பற்றிய அனைத்து தகவல்களும் இரகசியமாக பாதுகாக்கப்படும் என்பதை அறிவேன். தேவைப்படும்போது ஆய்வின் முடிவுகள் செவிலியர் சார்ந்த பத்திரிகைகளிலும், கருத்தரங்குகளிலும் வெளியிட முழு சம்மதம் அளிக்கிறேன். தேவைப்படும்போது எப்போது வேண்டுமானாலும் ஆய்வில் பங்குக்கொள்ள சம்மதம் அளிக்கிறேன்.

இந்த ஆய்வினைப் பற்றிய சந்தேகங்களைத் தெளிவுபடுத்திக் கொள்ள உமையாள் ஆச்சி செவிலியர் கல்லூரி, புழலில் முதுநிலை இரண்டாம் ஆண்டு பயிலும் மாணவி செல்வி.ஜெர்லின் ஷைனி.தே வை எப்போது வேண்டுமானாலும் தொடர்பு கொள்ளலாம் என்பதை அறிவேன்.

இந்த ஆய்வினை பற்றிய முழு விளக்கமும் எனக்கு அளிக்கப்பட்டிருக்கிறது. அதனை நான் முற்றிலுமாக புரிந்துக்கொண்டு ஆய்வில் பங்குக்கொள்ள சம்மதம் அளிக்கிறேன்.

பங்குகொள்பவரின் கையொப்பம் **தேதி:**

ஆராய்ச்சியாளரின் கையொப்பம் **தேதி:**

POST-TEST CONFIDENTIALITY CERTIFICATE

I understand that I am being asked to participate in a research study conducted by **Ms. Jerlin Shiny.D** Msc (N) student of Omayal Achi College of Nursing. This research study will assess the **"effectiveness of selected nursing intervention on the level of pain, anxiety and quantity while expressing breast milk among mothers of hospitalized neonate at selected hospitals, Chennai".**

I agree to participate in the study and the study has been explained to me. I understand that this is an interventional study and I realize the importance of keeping the study to be confidential. I assure that the methods to execute the intervention and the benefits received from the intervention will be kept confidential and will not be shared to other participants till the research is complete.

---------- ----------

Signature of Participant Date:

---------- ----------

Signature of Investigator Date:

APPENDIX – G

Section A: Demographic data

Read the following item carefully and complete them by placing tick mark at right option.

1. Age of mother
    a) Less than 20years
    b) 20-25 years
    c) 26- 30 years
    d) Above 30 years

2. Educational status
    a) Non literate
    b) Primary education.
    c) Secondary education.
    d) Higher secondary education.
    e) Graduate and above.

3. Postpartum period.
    a) Immediate [within 24 hrs after delivery]
    b) Early postnatal [upto 7 days]
    c) Remote postnatal [upto 6 wks]

4. Parity
    a) Primi
    b) Multi
    c) Grand multi.

5. Food pattern of mother
    a) Vegetarian
    b) Non-Vegetarian.

6. Family support

a) Yes (specify)

b) No.

7. From whom

a) Husband

b) Mother

c) Others

8. Sex of baby

a) Male.

b) Female.

9. Mode of delivery

a) Normal Vaginal Delivery

b) Lower Segment Cesarean Section

c) Operative Vaginal Delivery

10. Type of delivery

a) Full term delivery

b) Preterm delivery

11. Source of information regarding intervention while breast milk expression.

a) Yes (specify)

b) No

12. From whom

a) Health News

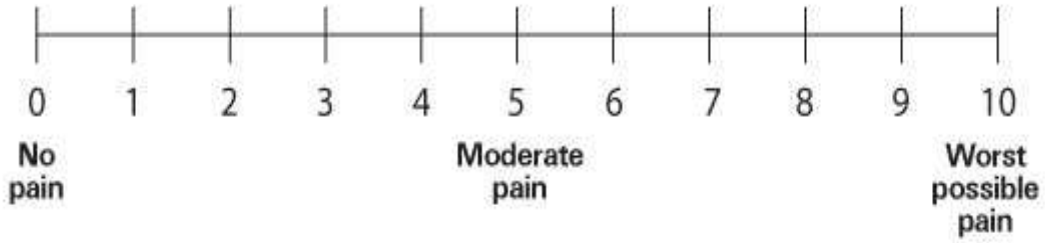
b) Article

c) Friends and relatives

d) Internet

SECTION-B: Numerical rating scale to assess the level of pain while expressing breast milk

0-10 Numerical rating scale



Description:

0 - No pain

1 - Very mild

2 - Discomfort

3 - Tolerable

4 - Distressing

5 - Very distressing

6 - Intense pain

7 - very intense pain

8 - utterly horrible

9 - Unbearable excruciating

10- Unimaginable unspeakable pain.

SCORE	LEVEL OF PAIN
O	No pain
1-3	Mild Pain
4-6	Moderate Pain
7-10	Sever Pain

SECTION-C: Modified Hamilton anxiety scale to assess the level of anxiety while expressing breast milk

S.No.	Description	No 0	Mild 1	Moderate 2	Severe 3	Very severe 4
1	Mother feels anxious while expressing breast milk.					
2	Mother feels worried while expressing breast milk.					
3	Mother feels irritable while expressing breast milk.					
4	Mother feels tensed while expressing breast milk.					
5	Mother cries easily while expressing breast milk.					
6	Mother feels restless while expressing breast milk.					
7	Mother fears that she is being left alone while expressing breast milk.					
8	Mother fears about baby's condition while expressing breast milk.					
9	Mother feels fear of pain while expressing breast milk.					
10	Mother feels difficult to concentrate while expressing breast milk.					
11	Mother lost interest in expressing breast milk.					
12	Mother has feeling of weakness while expressing breast milk.					
13	Mother sighs while expressing breast milk.					
14	Mother has goose flush while expressing breast milk.					

S.No.	Description	No 0	Mild 1	Moderate 2	Severe 3	Very severe 4
15	Mother feels giddiness while expressing breast milk.					
16	Mother shows strained face while expressing breast milk.					
17	Mother feels anticipation of worst while expressing breast milk.					
18	Mother feels shy while expressing breast milk					
19	Mother has furrowed brow while expressing breast milk.					
20	Mother feels fatigue while expressing breast milk.					

SCORING:

SCORE	LEVEL OF ANXIETY
Less than or equal to 25	Mild anxiety
26 – 50	Moderate anxiety
51 – 75	Severe anxiety
76 – 100	Panic

OBSERVATION SCHEDULE

S.No	Pre-test			observation						Post-test		
	Day 1			Day 2			Day 3			Day 4		
	Pain	Anxiety	Quantity	Pain	Anxiety	Quantity	Pain	Anxiety	quantity	Pain	anxiety	Quantity
1.												
2.												
3.												
	AVERAGE OF PRETEST									AVERAGE OF POST TEST		
MEAN DIFFERENCE----------												

பகுதி-அ

தனிநபர் விவரம்

1. வயது (வருடங்களில்)
   அ) <20
   ஆ) 20 - 25
   இ) 26 - 30
   ஈ) >30

2. கல்வித்தகுதி
   அ) படிப்பறிவில்லாதவர்
   ஆ) ஆரம்பக் கல்வி தகுதி
   இ) நடுநிலைக் கல்வி படிப்பு
   ஈ) உயர்நிலைப் படிப்பு
   உ) பட்டப்படிப்பு

3. பேறுகால நாட்கள்
   அ) உடனடி பேறுகாலம் [24-கு மனி நேரத்துகுள்]
   ஆ) ஆரம்ப பேறுகாலம் [7 நாட்கலுக்குள்]
   இ) தொலை பேறுகாலம் [6-வாரத்துகுள்]

4. பிரசவத்தின் எண்ணிக்கை
   அ) முதல் குழந்தை
   ஆ) இரண்டாம் குழந்தை
   இ) மூன்றாவது குழந்தை

5. தாயின் உணவு முறை
   அ) சைவம்
   ஆ) அசைவம்

6. குடும்ப ஆதரவு

அ) ஆம்

ஆ)இல்லை

7. ஆம் என்றால் யாறை குறிக்கும்

அ) கணவர்

ஆ) தாய்

இ) வேறு

8.குழந்தையின் பாலினம்

அ) ஆண்

ஆ) பெண்

9. பிரசவத்தின் தன்மை

அ) சுகப்பிரசவம்

ஆ)அறுவை சிகிசை

இ) ஆயுத பிரசவம்

10. பிரசவத்தின் வகை

அ) நிறைமாத பிரசவம்

ஆ) குறைமாத பிரசவம்

11. தாய்பால் வேளியேற்றும் போது உள்ள செவிலிய சிகிச்சைகளை குறித்து ஏற்கனவே உங்களுக்குத் தெரியுமா

அ) ஆம்

ஆ) இல்லை

12. ஆம் என்றால் எங்கிறுந்து

அ) சுகதார செய்தி

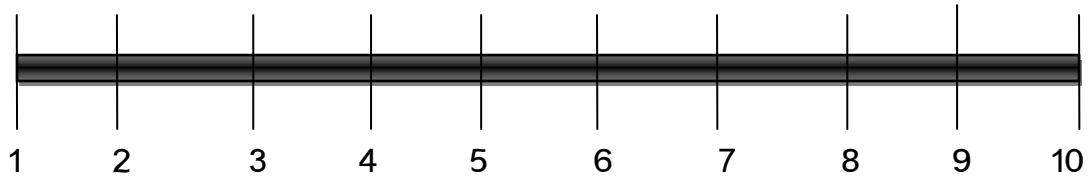
ஆ) கட்டுரை

இ) நண்பர்கள் மற்றும் சுற்றத்தார்

ஈ)இணையதளம்

பகுதி -ஆ

வலி மதிப்பீடு அளவுகோல் (0-10)



வலி இல்லை — மிதமான வலி — மோசமான வலி

விளக்கம்:

1. சிறிதளவில் வலி.
2. அசௌகரியமான வலி.
3. தாங்கக்கூடிய வலி.
4. கவலையேற்படுத்தக்கூடிய வலி.
5. மிகவும் கவலையேற்படுத்தக்கூடிய வலி.
6. கடுமையான வலி.
7. மிகவும் கடுமையான வலி.
8. முலுவதும்பயங்கரமான வலி.
9. பொறுத்துக்கொள்ளயியலாத வலி.
10. சொற்களால் விளக்க முடியாத வலி.

மதிப்பிடு:

எல்லை	**வலி தரவரிசை**
0	வலி இல்லை
1-3	இலேசான வலி
4-6	மிதமான வலி
7-10	மோசமான வலி

பகுதி-இ

சுயமாக கட்டமைக்கப்பட்ட ஹமில்டன் மனப்பாங்கை கண்டறியும் அளவை

வ.எண்.	கேள்விகள்	0	1	2	3	4
1	தாய்ப்பாலை வெளியேற்றும் போது பதற்ற உள்ளது.					
2	தாய்ப்பால் வெளியேற்றும் போது வருத்தமாக உள்ளது.					
3	தாய்ப்பால் வெளியேற்றும் போது எரிச்சலாக உள்ளது					
4	தாய்ப்பால் வெளியேற்றும் போது விறைப்பாக உள்ளது.					
5	தாய்பால் வெளியேற்றும் போது அழுகை உள்ளது					
6	தாய்ப்பால் வெளியேற்றும் போது அமைதியற்று உள்ளது.					
7	தாய்ப்பால் வெளியேற்றும் போது தனியாக விடப்பட்டதாக உள்ளது.					
8	தாய்ப்பால் வெளியேற்றும் போது குழந்தையின் நிலையை பற்றிய பயம் உள்ளது.					
9	தாய்ப்பால் வெளியேற்றும் போது வலியை பற்றிய பயம் உள்ளது					
10	தாய்ப்பால் வெளியேற்றும் போது மனதை ஒருமைப்படுத்த கடினமாக உள்ளது.					
11	தாய்ப்பால் வெளியேற்றும் போது ஆர்வமற்ற நிலை உள்ளது.					
12	தாய்ப்பால் வெளியேற்றும் போது உடல் பலவீனமாக உள்ளது.					

வ.எண்.	கேள்விகள்	0	1	2	3	4
13	தாய்ப்பால் வெளியேற்றும் போது பெருமூச்சு விடுதல்.					
14	தாய்ப்பால் வெளியேற்றும் போது உடல் சிலிர்க்கிறது.					
15	தாய்ப்பால் வெளியேற்றும் போது தலைச்சுற்றல் உண்டாகிறது.					
16	தாய்ப்பால் வெளியேற்றும் போது வெறுப்பான தோற்றத்துடன் உள்ளனர்.					
17	தாய்ப்பால் வெளியேற்றும் போது தீமையை எதிர் நோக்கி வருந்துகிறார்.					
18	தாய்ப்பால் வெளியேற்றுவதில் வெட்கப்படுகிறார்.					
19	தாய்ப்பால் வெளியேற்றும் போது நெற்றி சுருக்குதல்.					
20	தாய்ப்பால் வெளியேற்றும் போது சோர்வாக உள்ளது.					

0- கவலை இல்லை

1- கவலை

2-விசாரம்

3- வியகூலம்

4- பெரும் அச்சம்

மதிப்பிடு:

எல்லை	மனப்பாங்கின் தரவரிசை
≤ 25	கவலை
26 – 50	விசாரம்
51 – 75	வியாகவ்ாலம்
76 - 100	பெரும் அச்சம்

APPENDIX-H

PLAGIARISM REPORT

Hyperlink:	**http://plagiarism-detector.com**
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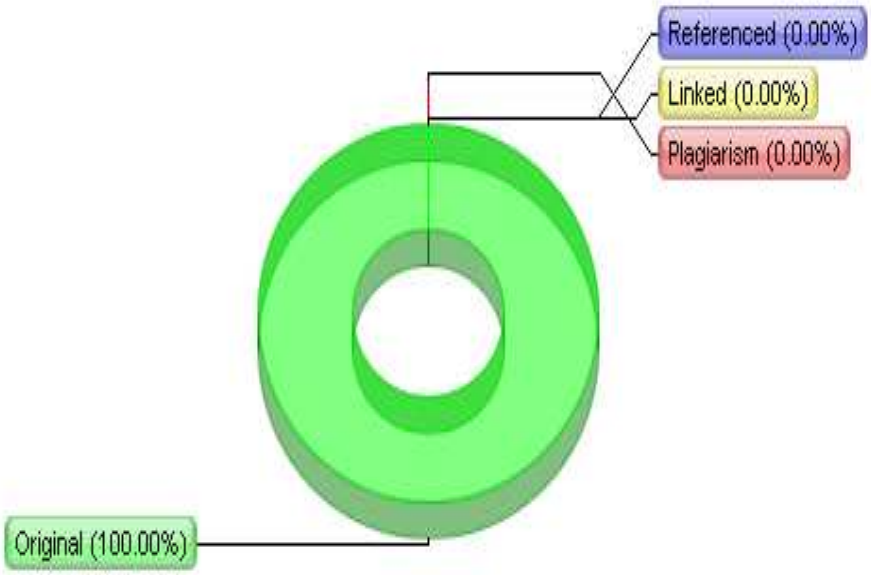

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Signature of the candidate

Signature of the principal

APPENDIX – I

CODING FOR DEMOGRAPHIC VARIABLES

Demographic variable	CODE
1. Age of mother	
a) Less than 20years	1
b) 20-25 years	2
c) 26- 30 years	3
d) Above 30 years	4
2. Educational status	
a) Non literate	1
b) Primary education.	2
c) Secondary education.	3
d) Higher secondary education.	4
e) Graduate and above	5
3. Postpartum period.	
a) Immediate [within 24 hrs after delivery]	1
b) Early postnatal [upto 7 days]	2
c) Remote postnatal [upto 6 wks]	3
4. Parity	
a) Primi	1
b) Multi	2
c) Grand multi.	3
5. Food pattern of mother	
a) Vegetarian	1
b) Non-Vegetarian.	2

6. Family support

a) No 1

b) Yes (specify). 2

7. From whom

a) Husband 1

b) Mother 2

c) Others 3

8. Gender of baby

a) Male. 1

b) Female. 2

9. Mode of delivery

a) Normal Vaginal Delivery 1

b) Lower Segment Caesarean Section 2

c) Operative Vaginal Delivery 3

10. Type of delivery

a) Full term delivery 1

b) Preterm delivery 2

11. Source of information regarding intervention while breast milk expression.

a) No 1

b) Yes (specify) 2

12. From whom

a) Health News 1

b) Article 2

c) Friends and relatives 3

d) Internet 4

APPENDIX – J

STEPS IN INTERVENTION TOOL

STEPS	PROCEDURE	RATIONALE
STEP I	**Warm Compress** Expose the breast to be warm compressed	
STEP II	Clean the nipple with wet gauze piece.	To remove the crust over the nipple
STEP III	Check the temperature of water in kettle to be 104^0F and pour the water into the bowl. Place the sponge cloth inside the bowl.	To provide effective warm compress and avoid over heat to the breast
Step IV	Squeeze the sponge cloth into the bowl[the first squeeze in bowl and from next into kidney tray].Place the sponge cloth over the breast such that it covers the whole breast	To avoid contamination of water. Warm compress cove all the four quadrant of breast.
STEP V	Place the sponge cloth for 3to5 minutes before expressing breast milk.	To relieve pain, congestion and increase the blood circulation to breast.
STEP I	**Breast massage** Massage the nipple and areole with two fingers (index and middle finger) by providing a soft and smooth motion.	To increase blood to lymphatic vessels.
STEP II	Gently massage the breast with kneading-like motion [lifting and pressing movement] using the pad of fingers. Massage the breast in anti-clockwise direction, covering all four quadrants of breast.	To increase blood to lymphatic vessels and stimulate the letdown reflex while expressing breast milk.
STEP I	**Visual Stimulation Technique** Mother is made to wash hand, wear a sterile gown.	To prevent cross-infection.

STEPS	PROCEDURE	RATIONALE
STEP II	Mother is made to sit in front of neonates warmer comfortably and provided with calibrated container.	To collect the milk expressed in a calibrated container.
STEP III	Mother is allowed express the breast milk by seeing neonate.	To stimulate milk ejection reflex.

APPENDIX – K

DISSERTATION EXECUTION PLAN-GANTT CHART

S.NO	ACADEMIC CALENDER MONTHS	MAY 2012 to APRIL 2013												MAY 2013 to APRIL 2014											
		M	J	JU	A	S	O	N	D	J	F	M	A	M	J	JU	A	S	O	N	D	J	F	M	A
A	**Conceptual phase**																								
1	Problem identification																								
2	Literature review																								
3	Clinical fieldwork																								
4	Theoretical framework																								
5	Hypothesis formulation																								
B	**Design & planning phase**																								
6	Research design																								
7	Intervention protocol																								
8	Population specification																								
9	Sampling plan																								
10	Data collection plan																								
11	Ethics procedure																								
12	Finalization of plans																								
C	**Empirical phase**																								
13	Data collection																								
14	Data preparation																								
D	**Analytical phase**																								
15	Data analysis																								
16	Interpretation of results																								
E	**Dissemination phase**																								
17	Presentation or report																								
18	Utilization of findings																								
	Calendar months	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4