A STUDY TO ASSESS THE EFFECTIVENESS OF VACUUM BOTTLE EXTRACTION AMONG POSTNATAL MOTHERS WITH BREAST ENGORGEMENT IN SELECTED HOSPITALS AT KANYAKUMARI DISTRICT TAMIL NADU

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING TO THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI.

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Internal Examiner	**External Examiner**

APRIL 2011

A STUDY TO ASSESS THE EFFECTIVENESS OF VACUUM BOTTLE EXTRACTION AMONG POSTNATAL MOTHERS WITH BREAST ENGORGEMENT IN SELECTED HOSPITALS AT KANYAKUMARI DISTRICT

A DISSERTATION SUBMITTED TO THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF REQUIRMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

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DECLARATION

I, the Investigator, II year M.Sc Nursing student of Christian College Of Nursing, Neyyoor do hereby declare that this dissertation titled **"a study to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at kanyakumari district",** has not been submitted by me, for the award of any degree, diploma, title or recognition before.

INVESTIGATOR

CERTIFICATE

Certified that the thesis entitled **"a study to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at Kanyakumari district",** is a Bonafide work by **Mrs. Athullya R.S.** II year M.sc .Nursing in partial fulfillment of the requirements for the degree of Master of Science in Nursing.

Date: **Signature of the Principal**

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ABSTRACT

A study to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at KanyaKumari district, was conducted in partial fulfillment of the requirement for the degree of Master of Science in Nursing, Christian College of Nursing, Neyyoor, which is affiliated to Dr. M.G.R. University, Chennai during the year 2009-2011.

THE OBJECTIVES OF THE STUDY WERE:

- To assess the level of breast engorgement among postnatal mothers before vacuum bottle extraction.
- To determine the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement.
- To associate the level of pain before application of vacuum bottle with selected demographic variables such as age, education, religion ,type of family, parity, type of delivery and frequency of feeding.

- To associate the level of breast engorgement before application of vacuum bottle with selected demographic variables such as age, education, religion ,type of family, parity, type of delivery and frequency of feeding.

A quasi-experimental one group pre -test and post- test design were used for this study. The conceptual framework used for this study was based on Callista Roy's adaptation model. The samples were selected by convenience sampling. The samples for the study were 30 postnatal mothers.

The tool used for the data collection comprised of 3 sections

- Demographic variables
- Visual analog pain scale
- Breast engorgement check list

The content validity and pilot study were done to find out the feasibility of the study. Data collections were done for 6 weeks.

Based on objectives and hypothesis, the collected data were analyzed by using both descriptive and inferential statistics.

MAJOR FINDINGS OF THE STUDY:

- Among 30 samples, 43.3% (13) of them were in the age group of 20-24 years.
- In the present study the majority of samples, 73.3 %(22) belong to nuclear family.
- This study denotes majority of samples, 73.3% (22) were Primi Para mothers.

- In the association between the level of pain and selected demographic variables such as age, education, religion, type of family & frequency of feeding have no significant association.
- In the association between the level of Pain and selected Demographic, variables such as parity and type of delivery have significant association.
- In the association between the level of breast engorgement and selected demographic variables such as age, education, religion, type of family, type of Delivery and frequency of feeding has no significant association.
- There was a significant association between parity and level of breast engorgement.

COMPARISON OF GROUP BEFORE AND AFTER VACUUM BOTTLE EXTRACTION:

- The difference of Pre and Post test breast engorgement mean sore was 4.5 and the differences was statistically significant (paired 't' = 21.468, d.f=29,$p<0.01$)
- The difference of Pre and Post test pain mean score was 3.6 and the difference was statistically significant (paired't' = 26.492, d.f=29,$p<0.01$).

RECOMMENDATIONS:

The previous reviews and the present study indicate the vacuum bottle extraction was the best option to reduce the breast engorgement since it has no side effects and non-invasive. Therefore, this study strongly recommended using vacuum bottle extraction to reduce breast engorgement among postnatal mothers.

- A comparative study may be done between effectiveness of Vacuum bottle extraction and other pharmacological methods.
- A comparative study may be done between effectiveness of Vacuum bottle extraction and other non-pharmacological methods.
- Similar studies may be conducted in the early postnatal period.
- Similar study may be conducted with a larger population.

CONCLUSION:

As for this research is concerned, the interventional study proved that there was a significant reduction of pain and breast engorgement among postnatal mothers. The difference of pre and post test breast engorgement's means score was 4.5. The differences was statistically significant **(paired't' = 21.468 & p<0.01)**. The pain mean sore was 3.6 between pre and post test. The difference was statistically highly significant **(t=26.492, p<0.01)**. Therefore the vacuum bottle extraction is very effective form of non pharmacological intervention to relieve pain and breast engorgement among post natal mothers as it is non invasive and no side effects. The findings of the present study agree with the findings of the previous clinical study, regarding vacuum bottle extraction.

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CHAPTER - I

INTRODUCTION

“Breast milk is better than any udder milk”

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

-pramela k.wiggins

Breastfeeding is a unique experience, which should be valued and supported by both maternity and neonatal care givers. Parent may see the task of feeding their baby as the center of their relationship with the new family member.

Breastfeeding, or lactation, is the natural way in which the mother of a newborn can feed her child instead of relying on cow's milk or artificial formula preparations. A woman's breasts are ideally suited for the task of feeding a baby, and provides many benefits to both mother and baby.

The American Academy of Pediatricians and the National Association of Paedriatic Nurses Associates and Practitioners recommend breast-feeding as much as possible during the baby’s first year. Breast milk is extremely nutritious and contains carbohydrates, proteins, and fats essential for a baby’s health. Breast milk also contains antibodies that help prevent infections and allergies.

Studies have shown that breast-feeding may help protect against infant ear infections, allergies, diarrhea, eczema, bacterial meningitis, and other serious illnesses. Research has also shown that breast-feeding reduces infant anemia (iron deficiency in the blood) and stomach or intestinal infections.

Breast-feeding also offers benefits to nursing mothers. Breast-feeding releases hormones, which cause the uterus to shrink after delivery, and decreases bleeding. Mothers who breast-feed typically have an easier time losing weight after pregnancy.

According to the American academy of paediatrics, breast-feeding also, helps build a woman's bone mineral density and helps prevent osteoporosis after menopause.

All breast-feeding mothers develop some degree of engorgement, which is not an infectious process

The problem of breast engorgement is usually caused by giving pre lacteal feeds, early removal from the breast, bottle feeding and other restrictions to feeding. (Gupta et al 2001)

Engorgement is the physiologic condition characterized by the painful swelling of the breasts associated with the sudden increase in milk volume, lymphatic and vascular congestion, and interstitial oedema during the first two weeks following birth.

Breast engorgement is caused by insufficient breastfeeding and/or blocked milk ducts. Breast pain that interferes with successful breastfeeding leads to abandonment of exclusive breastfeeding (Woolridge, 2006).

When the breasts switch from colostrum to mature milk, some feeling of fullness, swelling, and discomfort are normal. However, when breasts become engorged, they are more prone to infections, and therefore, preventive measures should be taken to avoid and reduce engorgement.

Breast engorgement is usually caused by an imbalance between milk supply and infant demand. This condition is a common reason that mothers stop breast-feeding sooner than they had planned Overfilled breasts can easily become very swollen and painful, leading to severe engorgement. Common causes of severe engorgement are Waiting too long to begin breast-feeding your newborn., Not feeding often enough., Small feedings that do not empty the breast well, Babies who are fed formula or water are less likely to breast-feed well.

Breast engorgement is characterized by swelling, heat, hardness of breast tissue, breast skin tightness, nipple edematous, flatness of nipples, discomfort and pain.

Severe breast engorgement can cause a slight fever and tender lymph nodes in the armpits. Without treatment, severe engorgement can lead to blocked milk ducts and breast infection (mastitis).

Hard breasts can be softened by applying heat, massaging them gently, and using your hands to remove (express) a small amount of milk from both breasts

The most often stated reason for cessation of breastfeeding in the first two weeks postpartum is pain. Breast engorgement is a painful problem that can lead to premature weaning. Breast pain during breastfeeding is a common problem that interferes with successful breastfeeding leading to exclusive abandonment of breastfeeding.

Over the years, numerous strategies for the treatment of this problem have been employed such as kangaroo care, fluid limitation, binding the breasts or wearing a tight brassiere, hot and cold compresses, and application of cabbage leaves, Gentle massage, hand expression or minimal use of a breast pump .Breast engorgement occurs in 72% to 85% women in India.

Dr. Ruth Lawrence defines engorgement as "The swelling and distention of the breasts, usually in the early days of initiation of lactation, due to vascular dilation as well as the arrival of the early milk. Commonly engorgement occurs within 3 to 6 days after delivery. Not to be confused with breast engorgement can occur any time during lactation, when milk is transferred from the breast.

Dr. Wight suggests that the use of manual expression or an electric pump can help establish milk flow and maintain good milk supply. Even brief pumping can soften the breast to make if earlier for an infant to attach approximately and extract further milk.

*A*ccording to humenick and hill (1994) warm showers, moist compress, manual expression, manual pumping and a supportive bra reduced engorgement

Riordan and Auerbach recommend that only pumps that provide intermittent vacuum at minimum pressure should be used to relieve engorgement. They further suggest pumping the breast to relieve engorgement should also be limited to a maximum duration of 10 minutes to avoid traumatizing the distended breast tissue.

The degree of engorgement usually lessens with each child. First-time mothers often suffer more from engorgement than women who are nursing their

second or third child, because the time it takes for the mature milk to "come in" seems to shorten with each child.

If breast-feeding on demand has not prevented painful engorgement and the breasts are so full and hard that the baby cannot latch on properly, it is okay to express enough milk by hand to ease discomfort and allow the baby to suckle

NEED FOR THE STUDY

Engorgement has been defined as “The swelling and distention of the breasts, usually in the early days of initiation of location caused by vascular dilation as well as the arrival of the early milk. The concept put forward by Newton and Newton in 1951 suggested that alveolar distention from milk then led to compression of surroundings ducts, which subsequently led to secondary vascular and lymphatic compression.

Breast engorgement is swelling of the breasts. It is a common condition in moms who breastfeed. It usually happens during the first week after delivery when her milk gland tissue begins to function. The swelling can stop the milk from flowing. This can make it hard for the infant to latch. Milk supply can decrease when it is not emptied from the breast. If engorgement goes untreated, the mother is as risk for an infection in her breasts called mastitis.

Engorgement symptoms occur most commonly between day 3 and 5 with more than two thirds of women with tenderness on day 5 but some as late as days 9 -10. Two thirds of women experiences atleast moderate symptoms.

Dr. Wight suggests that the use of manual expression or an electric pump can help establish milk flow and maintain good milk supply. Even brief pumping

can soften the breast to make if earlier for an infant to attach approximately and extract further milk.

Adequate management of engorgement is important for successful long-term lactation (Stamp & Casanova, 2006; Cooke, Sheehan, & Schmeid, 2003). Although experiencing engorgement may be temporarily uncomfortable for mothers, it appears to be associated with a decrease in the likelihood of early weaning

The recommended treatment for engorgement is to breastfeed every one to three hours or pumps every three hours for 15 minutes. If the baby has trouble latching, hand express or pump for two to three minutes before feeding

Breastfeed often for as long as the baby wants and avoid feeding the baby formula. If the baby is not feeding at the breast, pump every three hours even at night.

Riordan and Auerbach recommend that only pumps that provide intermittent vacuum at minimum pressure should be used to relieve engorgement. They further suggest pumping the breast to relieve engorgement should also be limited to a maximum duration of 10 minutes to avoid traumatizing the distended breast tissues.

During the clinical training period in Nagercoil mission hospital, the researcher encountered many mothers suffering from breast engorgement .so the researcher showed interest to study the effectiveness of management of breast engorgement using vacuum bottle as a readily available management instead of using breast pump, which is an expensive management.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at KanyaKumari district.

OBJECTIVES

- To assess the level of breast engorgement among postnatal mothers before vacuum bottle extraction.
- To determine the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement
- To associate the level of pain before application of vacuum bottle with selected demographic variables such as age, education, religion ,type of family, parity, type of delivery and frequency of feeding
- To associate the level of breast engorgement before application of vacuum bottle with selected effectiveness of vacuum bottle extraction with selected demographic variables such as age, education, religion , type of family, parity, type of delivery and frequency of feeding.

HYPOTHESES

- There will be a significant reduction of breast engorgement among postnatal mothers after application of vacuum bottle.
- There will be a significant reduction of pain among postnatal mothers after application of vacuum bottle.

OPERATIONAL DEFINITIONS

- **ASSESS**

To estimate the level of breast engorgement before and after application of vacuum bottle.

- **EFFECTIVENESS OF VACCUM BOTTLE EXTRACTION**

It is the process of milk extraction with the help of vacuum bottle which is prepared by having the warm water inside the bottle for 3 minutes and then pouring it out followed by keeping it for 3 seconds before applying to the breast

- **BREAST ENGORGEMENT**

A painful breast characterized by swelling, firm, prominent veins, flattened nipple, nipple edematous, stretched skin and warm as measured by breast engorgement check list.

- **POST NATAL MOTHER**

A women within 3-7 days after her delivery which may either normal or L.S.C.S

ASSUMPTIONS

- There may be a decrease in breast engorgement after application of vacuum bottle.
- Postnatal mothers with breast engorgement receiving vacuum bottle extraction will experience less pain

LIMITATIONS

The Study is limited to

- Postnatal mothers from 3rd postnatal day
- Mothers who are willing to participate

- ❖ Mother without any infection in the breast
- ❖ Mother without receiving lactation suppressants

PROJECTED OUTCOME

The Findings of the Study would help nurse to understand the importance of vacuum bottle extraction to reduce breast engorgement

CHAPTER - II

REVIEW OF LITERATURE

Review of literature is an important step in the development of research process. It involves the systematic identification ,location and survey of written material that contain valid information on research problems .reviewing literature is important in broadening the understanding and insight for necessary development of a conceptual content in which a problem fits.

Review of literature is a critical summary of a research on a topic of interest generally prepared to put a research problem in context or to identify gaps and weakness.

STUDIES RELATED TO BREAST ENGORGEMENT

Chiu et al (2010) explored that *Gua-Sha* therapy may be used as an effective technique in the management of breast engorgement. By using *Gua-Sha* therapy, nurses can handle breast engorgement problems more effectively in primary care and hence help patients both physically and psychologically

Ruba et al (2009) conducted a study on "effectiveness of cabbage leaves application to relieve breast engorgement" the results showed that the application of cabbage leaves relieved the breast engorgement and promoted the mother and baby a sense of wellbeing.

Emmanu (2005) conducted a study on "effectiveness of vaccum bottle extraction in the treatment of breast engorgement "This study suggests that application of vaccum bottle significantly reduced breast engorgement and pain.

Shanthi margoschis et al (2005) done a study on **"**A comparison of manual expression of breast milk *vs.* Warm bottle application in the management of breast engorgement" This study, suggests that both the methods were effective in reducing the breast engorgement as well as the pain expressed by the mother. On comparing both methods it was found that mothers in Group 2 where breast milk was expressed using a bottle had significant reduction of breast engorgement (p value<0.01)than the mothers in group 1 who had a compress application and manual of milk. Pain was significantly reduced in mothers belonging to Group 1 than mothers in Group 2.

Smriti Arora et al (2005) done a study on **"**A comparison of cabbage leaves *vs* hot and cold compresses in the treatment of breast engorgement" This study suggests that Cold cabbage leaves as well as alternate hot and cold compresses both can be used in the treatment of breast engorgement. Hot and cold compresses are more effective in decreasing pain than cold cabbage leaves in relieving pain due to breast engorgement.

Nikodem et al (2004) Revealed that the greater breastfeeding success in the experimental group may have been due to some beneficial effect of cabbage leaf application, or may have been secondary to reassurance and improved confidence and self-esteem in these mothers

Yvonne Meserve (2004) conducted a study on "Management of postpartum breast engorgement in non breastfeeding women by mechanical extraction of milk "This study suggests that mechanical removal of milk is an effective way to increase the comfort and decrease the symptoms of engorgement in women who do not breastfeed their infants.

Krishnan et al (2002) conducted study on "warm bottle methods for the relief of breast engorgement" This study suggests that warm bottle method proved significantly better in relieving breast engorgement.

Vinod K. Paul et al (1996) in their study, "A comparison of manual milk expression *vs* the pumping method in the treatment of breast engorgement" This study suggests that the pump expression was preferred by the mothers on day 4 & 5, while the manual expression was the preference on days 8 & 9. The use of breast pump is more efficient than the manual system of expression of breast milk

among mothers whose infants are not directly breast-fed. It is recommended that in case the mothers prefer to use the manual method, let them express as much milk as possible by this method initially, and then follow it up with a short period of pumping to ensure complete evacuation of breasts.

Riordan and Auerbach (1993) conducted a study on "effectiveness electric pumps in the treatment of breast engorgement" This study recommend that only electric pumps that provide intermittent vacuum at minimum pressure should be used to relieve engorgement.

Health and nutrition (1992) Reported through the study, that whitlestone breast expresser was effective in removing milk from engorged breasts and there by reduced swelling for women with breast engorgement.

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CONCEPTUAL FRAMEWORK

Conceptual framework is brief explanation of a theory or those portions of a theory to be tested in a study. (Grove,S. 2003).

The conceptual framework of this study is based on the Callista Roy Adaptation Model (1984). According to Roy, a system is a set of units so related or connected as a form a unity or whole and characterized by inputs, outputs, control process and feedback processes.

Input

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

In this study, input refers to selected demographic such as age, education, religion, parity, type of family, type of delivery and frequency of feeding.

Control process

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

In this study control process refers to perception pain among post natal mothers with breast engorgement admitted in selected hospital Kanyakumari.

Effectors

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

In these study effectors refers to application vacuum bottle.

Output

Adaptive responses are “responses that promote integrity of the person in terms of the goals of survival, growth, reproduction and mastery”. Ineffective responses are “responses that do not contribute to adaptive goals that is survival, growth, reproduction and mastery”.

In this study output refers to reduction of pain and breast engorgement

CONCEPTUAL FRAMEWORK

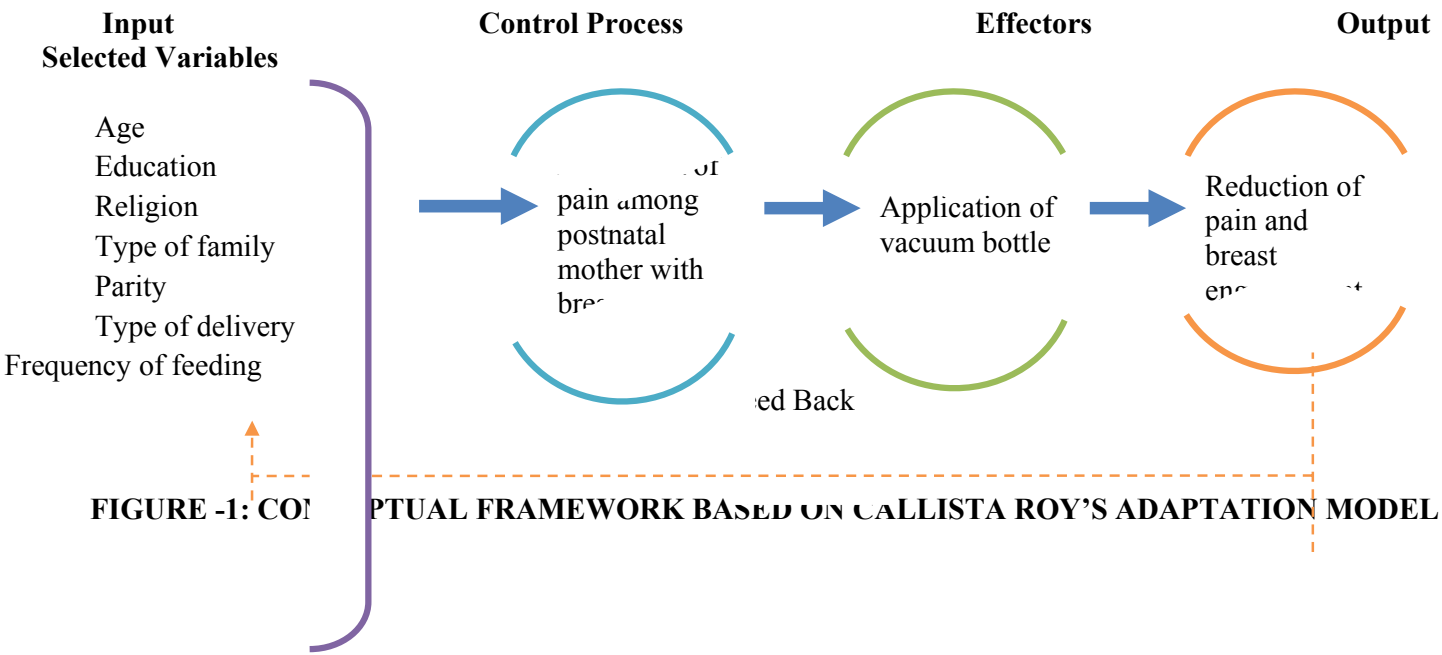


FIGURE -1: CO PTUAL FRAMEWORK BASED ON CALLISTA ROY'S ADAPTATION MODEL (1984)

CHAPTER- III

METHODOLOGY

Research methodology is designed to develop or define or refine methods of obtaining, organizing or analyzing data [polit 2006]. It is the systematic way to solve research problems [Kothari, 1990].

This chapter deals with research approach , the research design, the setting, population, sample and sampling technique, data collection tools and plan for data analysis

RESEARCH APPROACH

Quantitative approach is a powerful design for testing hypothesis of causal relationship among variables (Basavantahappa, 2005).

The research approach used for this study was a quantitative approach

RESEARCH DESIGN

The research design is the plan of how, when and where data are to be collected and analyzed (Parahoo, 2006).

In this study quasi-experimental one group pre -test and post- test design was adopted.

The diagrammatic representation of this design is as follows:

O_1 X O2.

O_1 - Pre test Observation.

X - Intervention by vacuum bottle extraction

O_2 - Post Test Observation.

VARIABLES UNDER THE STUDY

Variables are the inherent characteristics of research subject (Polit 2008).

Independent Variable - Vacuum Bottle Extraction

Dependent Variable - Breast Engorgement

RESEARCH SETTINGS

Setting is the physical location and condition in which data collection takes place in the study (Polit, 2008).

The study was conducted in the postnatal ward of M.L Hospital, Punnai nagar, Irene hospital Nagercoil and Lekshmi hospital, kottar .These hospitals had a well equipped labour room recording more than 50 deliveries per month. To have a large sample these hospitals was selected.

POPULATION

Population is the entire set of individuals or objects, having some common characteristics, sometime referred to as universe. (Polit 2008)

The target population of this study comprised of postnatal mothers admitted in M.L Hospital, Punnai nagar, Irene hospital Nagercoil and Lekshmi hospital ,Kottar

SAMPLE

Sample refers to a fraction or portion of the elements in a universe drawn out deliberately in a planned representative manner for studying interested characteristics of a larger group of population (Polit, 2004).

In this study, the sample comprised of all postnatal mothers from 3rd day of postnatal period admitted in postnatal ward who fit in to the inclusion criteria was selected.

SAMPLE SIZE

Sample size is the total number of study participants participating in a study (Polit, 2008).

The Sample size consisted of 30 postnatal mothers.

SAMPLING TECHNIQUE

It is the process of selecting a portion of the population to represent the entire population.

In this study, the technique used was non-probability convenience sampling technique.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Mother who underwent normal delivery and LSCS
- Postnatal mother whose babies are in ICU
- Willing to participate in the study

EXCLUSION CRITERIA

- Mother with soft breasts
- Mother who receiving lactation suppressants

- ❖ Mother with infection in the breasts, breast abscess, mastitis, broken skin of breasts, bleeding or cracked nipple etc.

RESEARCH TOOL

Based on the objectives demographic data, visual analog pain scale and breast engorgement checklist was used to assess the level of pain and breast engorgement. The tool was formulated based on the review of literature and discussion with the experts in the field of nursing. This standardized tool was considered adequate. The breast engorgement check list was validated

DESCRIPTION OF THE TOOL

The tool used for this study was divided in to three sections.

SECTION I

It consisted of demographic data of post natal mothers which included - age, education, religion, type of family ,parity, type of delivery and frequency of feeding

SECTION II

Section II consisted of visual analog scale to access the intensity of pain related to breast engorgement. It consisted of baseline interval ranging from 0 to 10

Scoring Procedure

No Pain (0) - 0%

Mild Pain (1-3) - 10 to 30%

Moderate pain (4-6) - 40 to 60%

Severe Pain (7-10) -70 to 100%

SECTION III

Section III comprised of breast engorgement check list .it consisted of 10 characteristics of breast engorgement .The maximum score was 10.

The score was interpreted on the following

Total score - 10

Mild breast engorgement - 1 - 3

Moderate breast engorgement - 4 - 7

Severe breast engorgement - 8 -10

CONTENT VALIDITY

Validity is the degree to which the instrument measures what is intended to measure (Polit, 2008).

The content validity of an instrument is essentially based on adequate coverage of the consent area and the judgment of experts on the subject matters. The five nursing experts were requested to check for the relevance of items in the observation checklist

PILOT STUDY

A pilot study is a small scale version or trial run designed to test the methods to be used in a larger, more rigorous study which is sometimes referred to as the present study (Polit, 2008).

Pilot study was conducted in postnatal ward of the C.S I mission hospital ,Neyyoor .The investigator obtained permission from the concerned authorities prior to the study. The study was carried out on three samples. The visual

analogue pain scale , breast engorgement check list was used for data collection. The pilot study was conducted to study the reliability of the tool, which is used to measure the attributes of breast engorgement in terms of their stability and internal consistency, and the study was found to be feasible to continue the main study.

STABILITY

The stability was assessed by test retest method. The obtained reliability co efficient was γ=0.999

INTERNAL CONSISTENCY

The internal consistency between the questions was tested. The reliability co-efficient was highly significant and the tool was considered as a reliable and valid tool for collecting the data restraining the main study

METHOD OF DATA COLLECTION

The data was collected within the given period of 6 weeks after obtaining a written permission from the concerned authorities .The purpose and the nature of the study was explained.

Pre test was done by using instrument Visual analog scale and breast engorgement check list. Followed by the pre test vacuum bottle extraction was done . In this procedure, the boiling water was poured in to the bottle for making it warm and gradually keeps it for 3 minutes. After 3 minutes, the bottle was emptied and kept open for 3 seconds. Then the mouth of the bottle was fixed to the nipple immediately after making it airtight and the mother's comfort was ensured . The bottle was taken off after the release of vacuum. The effectiveness

of the intervention was studied after conducting post- test using the same instruments. Total time taken for data collection for person was approximately 30 - 45 minutes

PLAN FOR DATA ANALYSIS

The data analysis was planned according to the objectives and hypothesis of the study

- **DESCRIPTIVE STATISTICS**

  Frequency, percentage, means, standard deviation was planned for analysing pretest, post test assessment

- **INFERENTIAL STATISTICS**

  Chi square was used to determine the association between demography variables with vacuum bottle extraction .paired "t" test was used to determine the effectiveness of vacuum bottle extraction.

PROTECTION OF HUMAN RIGHTS

The study was conducted after the approval from the dissertation committee of Christian college of nursing, Neyyoor. Formal administrative permission was obtained from various hospitals

Assurance was given to the subjects and individual consent was obtained from the subjects. The subjects were informed that they were free to with hold from the study at any time. The subjects were also informed that any clarification regarding vacuum bottle extraction would be given to them at any time

CHAPTER IV
DATA ANALYSIS AND INTERPRETATION
SECTION: I
DESCRIPTION OF STUDY SUBJECTS

The study subjects were described according to their demographic variables such as age, education, religion, type of family, parity, type of delivery and frequency of feeding.

table - i : frequency and percentage distribution of the demographic variables of the groups N=30

S.no	Variables	groups	Number of post natal mothers	percentage
1	Age	15-19	3	10.0
		20-24	13	43.3
		25-29	9	30.0
		30-34	5	16.7
2	Education	Primary	12	40.0
		High school	8	26.7
		Graduation	10	33.3
3	Religion	Hindu	17	56.7
		Christian	10	33.3
		Muslim	3	10.0
4	Type of family	Nuclear	22	73.3
		Joint	8	26.7
5	Parity	Primi	22	73.3
		Multi	8	26.7
6	Type of delivery	Vaginal	11	36.7
		Operative	19	63.3
7	Frequency of feeding	Demand	3	10.0
		Once in 2 hours	1	3.3
		Once in 3 hours	8	26.7
		rarely	18	60.0

The above table -1 describes the study subjects in terms of their demographic variables. The median age of mothers was 24 years and the mean age of them was 25.6 ± 4.3 years.

Regarding the education of mothers 12(40%) had primary level, 8(26.7%) were educated up to high school level and 10(33.3%) mother had graduated.

The Hindu, Christian and Muslim religious mothers were 13(56.7%), 10(33.3%) and 3(10.0%) mothers respectively.

Majority 22(73.3%) of mothers were in nuclear family and the remaining 8(26.7%) mothers were in joint family setup.

Nearly three fourth 22 (73.3%) of mothers were primi para and only 8 (26.7%) were multipara.

Majority of mothers 19(63.3%) had undergone operative delivery.

Three fifth 18(60.0%) had the habit of rare feeding practices.

FIG - 2: DISTRIBUTION OF AGE IN YEARS OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT

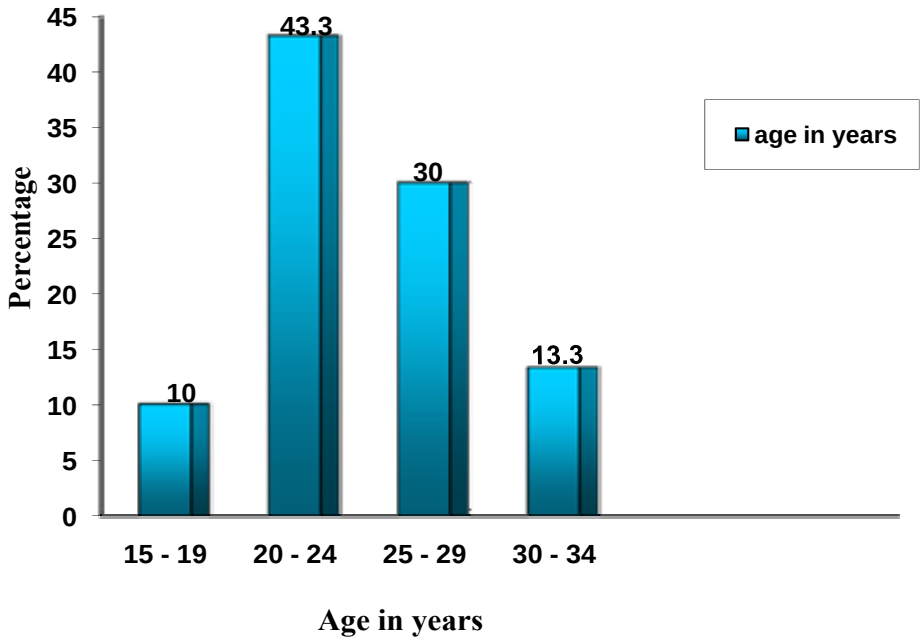


FIG - 3: DISTRIBUTION OF EDUCATION OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT

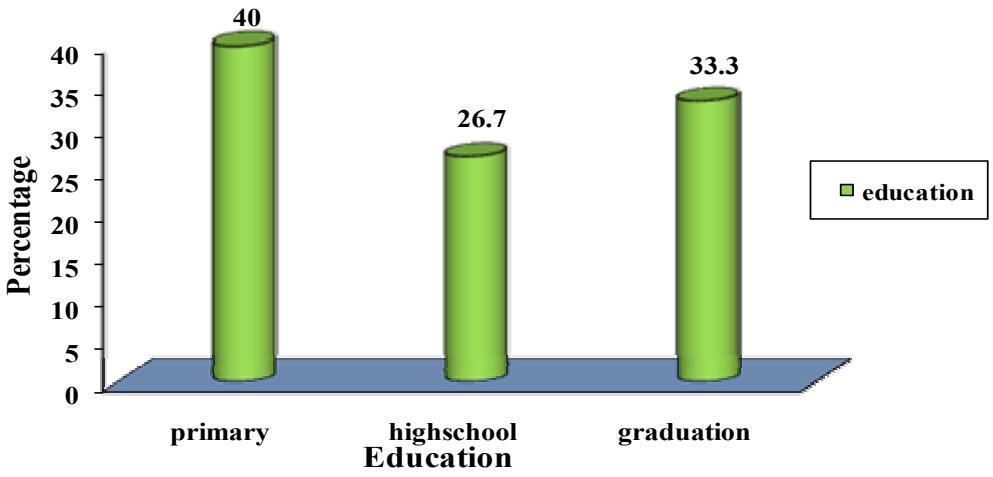


FIG - 4: DISTRIBUTION OF RELIGION OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT

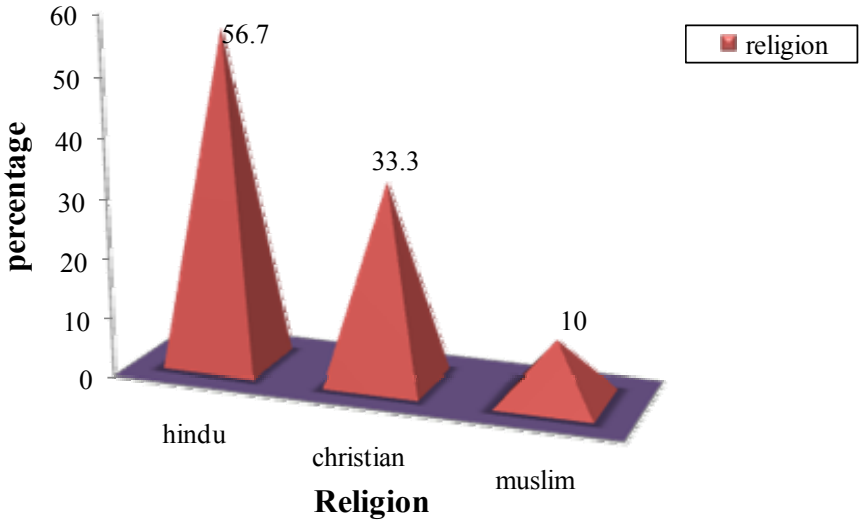


FIG - 5: DISTRIBUTION OF TYPE OF FAMILY OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT

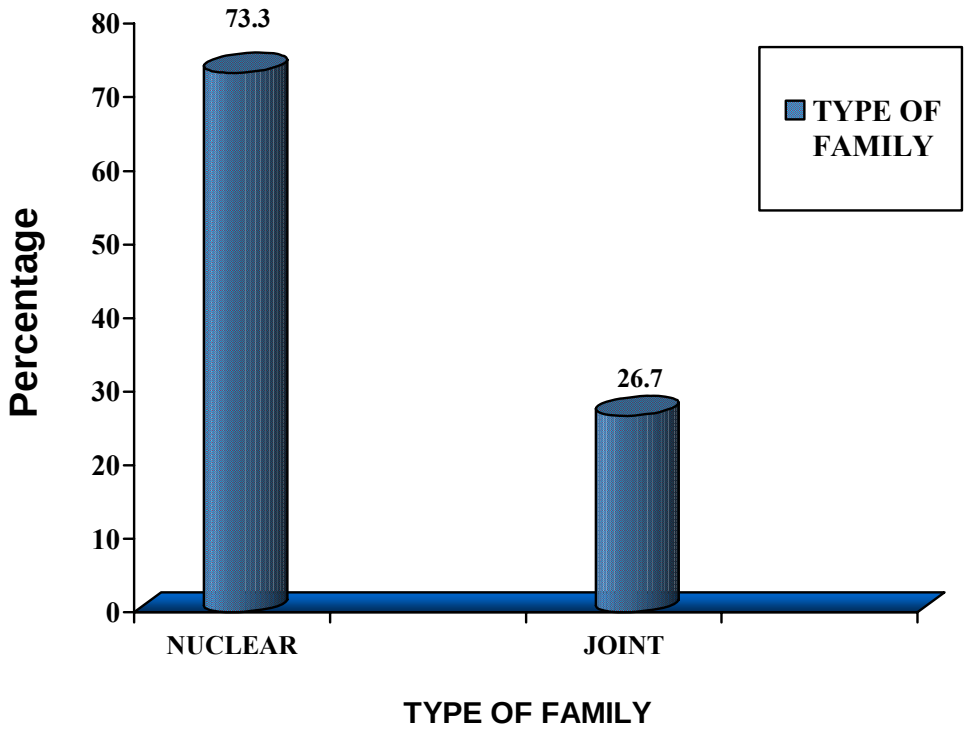


FIG - 6: DISTRIBUTION OF PARITY OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT

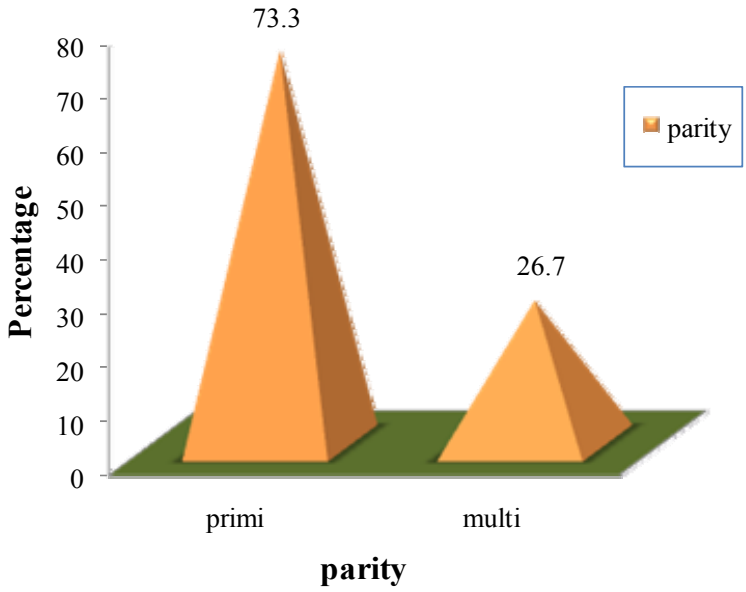


FIG - 7: DISTRIBUTION OF TYPE OF DELIVERY OF POSTNATAL MOTHERS WITH BREAST ENGORGEMENT

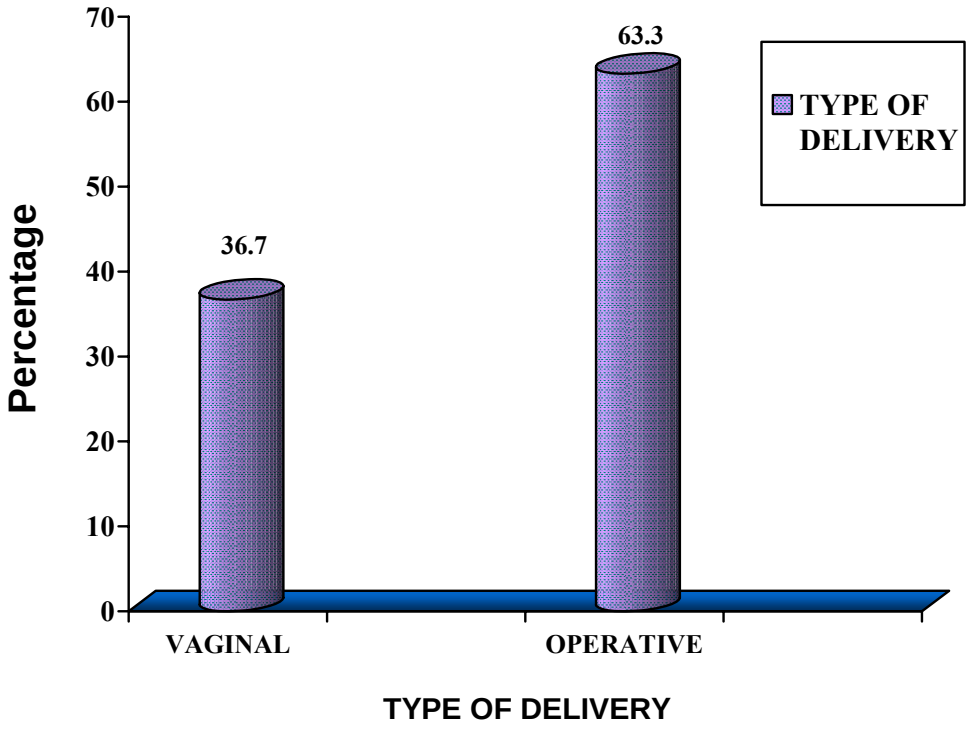
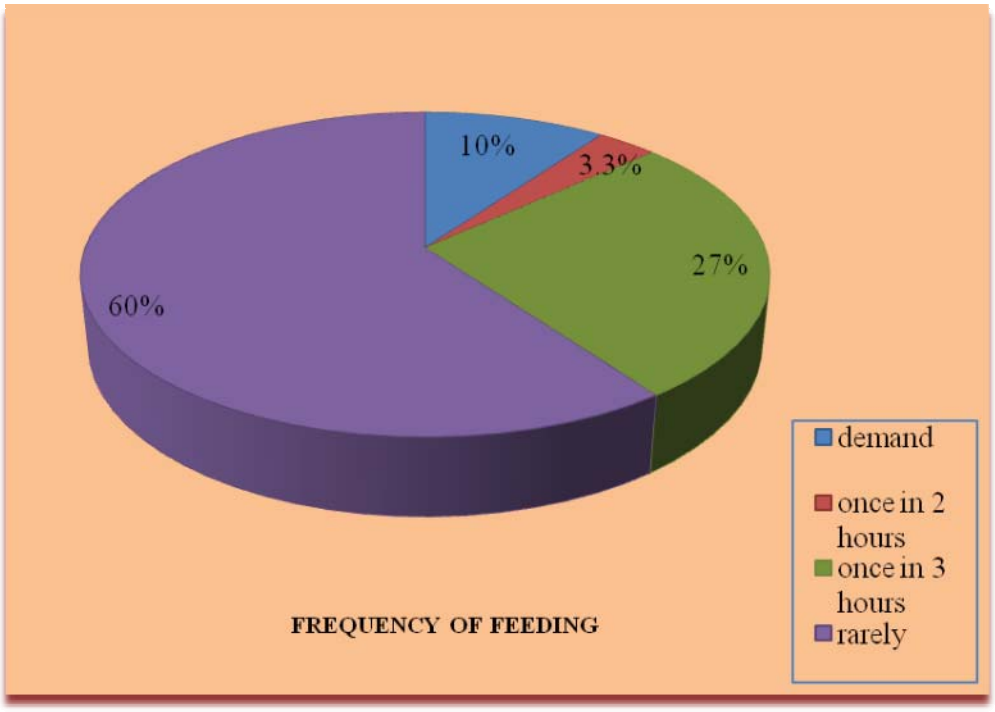


FIG - 8: DISTRIBUTION OF FREQUENCY OF FEEDING OF POST NATAL MOTHERS WITH BREAST ENGORGEMENT


10%
3.3%
27%
60%
demand
once in 2 hours
once in 3 hours
rarely
FREQUENCY OF FEEDING

SECTION: II
ASSESSMENT OF LEVEL OF BREAST ENGORGEMENT

The level of breast engorgement was assessed by observational check list and visual analog scale before application of vacuum bottle.

TABLE - 2: ASSESSMENT OF BREAST ENGORGEMENT BEFORE INTERVENTION

N=30

Score	**Level of breast engorgement**	**Before intervention**	
		No of postnatal mothers	**%**
1-3	Mild engorgement	-	-
4-7	Moderate engorgement	17	56.7
8-10	Severe	13	43.3
Total		30	100.0

The breast engorgement of postnatal mothers was assessed before application of vacuum bottle. On analysing the data in table -2 shows among the 30 post natal mothers 17(56.7%) mothers had moderate engorgement and the remaining 13(43.3%) had severe engorgement.

SECTION -III
EFFECTIVENESS OF VACCUM BOTTLE EXTRACTION

The effectiveness of vacuum bottle extraction of breast engorgement was determined by analysis and interpretation of observation of engorgement and level of pain before and after vacuum bottle extractions as follows

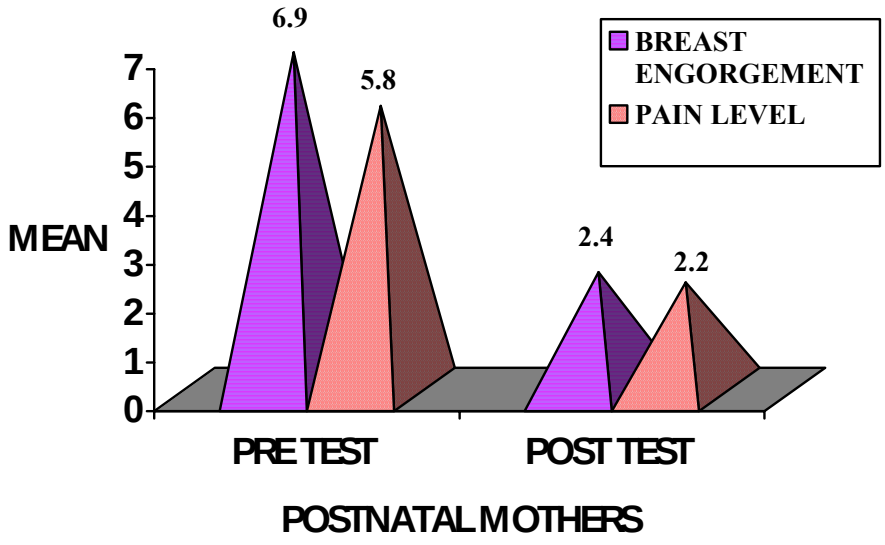
Table - 3 : DISTRIBUTION OF MEAN AND STANDARD DEVIATION OF EFFECTIVENESS OF VACUUM BOTTLE EXTRACTIONS IN REDUCTION OF BREAST ENGORGEMENT AND PAIN

N= 30

Variables	Before vacuum bottle extraction		After vacuum bottle extraction		Reduction		"t"	df	significance
	Mean	S.D	Mean	S.D	Mean	S.D			
Breast engorgement	6.9	1.4	2.4	1.0	4.5	1.2	21.468	29	P<.001
Pain level	5.8	1.3	2.2	1.0	3.6	0.8	26.492	29	P<.001

The table- 3 shows the effectiveness of vacuum bottle extraction. The mean engorgement before intervention was 6.9 ± 1.4 and the same after intervention was 2.4 ± 1.0. The reduction of engorgement was 4.5± 1.2 .The pain level before intervention was 5.8 ± 1.3 and the same after extraction was 2.2 ± 1.0 .The mean reduction of pain was 3.6 ± 0.8 .The reduction of breast engorgement and pain were statistically very highly significant ($p<0.001$)

FIG - 9: COMPARISON OF PRE AND POST TEST BREAST ENGORGEMENT AND PAIN LEVEL OF POST NATAL MOTHERS



SECTION: IV

ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF PAIN

The demographic variables such as age, education, religion , type of family, parity, type of delivery and frequency of feeding were associated with level of pain before application of vacuum bottle as follows

TABLE – 4: ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF PAIN BEFORE INTERVENTION

N= 30

S.no	Demographic variables	Chiquare ($\chi 2$)	d.f	Significance
1	Age	0.956	3	P>0.05
2	Education	1.944	2	P>0.05
3	Religion	3.529	2	P>0.05
4	Type of family	0.130	1	P>0.05
5	Parity	4.675	1	P<0.05
6	Type of delivery	4.983	1	P<0.05
7	Frequency of feeding	2.288	3	P>0.05

The above table - 4 shows the demographic variables like age, education, religion, type of family and frequency of feeding were not having any association with level of pain.

There is significant association between parity and level of pain. The obtained $\chi 2$ value 4.675 was significant association at 0.05 level of significance.

There is significant association between type of delivery and level of pain .The obtained $\chi 2$ value 4.983 was significant association at 0.05 level of significance .

SECTION: V

ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH BREAST ENGORGEMENT

The demographic variables such as age, education, religion , type of family, parity, type of delivery and frequency of feeding were associated with breast engorgement before application of vacuum bottle as follows

TABLE - 5: ASSOCIATION BETWEEN DEMOGRAPHIC VARIABLES WITH LEVEL OF BREAST ENGORGEMENT BEFORE INTERVENTION

N= 30

S.No	demographic variables	$\chi 2$	d.f	significance
1	Age	5.078	3	P>0.05
2	Education	0.305	2	P>0.05
3	religion	3.138	2	P>0.05

4	Type of family	1.493	1	P>0.05
5	parity	4.224	1	P<0.05
6	Type of delivery	0.889	1	P>0.05
7	Frequency of feeding	1.719	3	P>0.05

The above table - 5 shows the demographic variables like age, education, religion, type of delivery, type of family and frequency of feeding were not having any association with breast engorgement.

There is significant association between parity and level of breast engorgement .The obtained $\chi 2$ value 4.224 ($p<0.05$).

CHAPTER V

DISCUSSION

The present study was aimed to evaluate the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at KanyaKumari district.

The study was conducted by using quasi-experimental one group pretest and post test design. Samples were selected by convenience sampling technique. A total number of 30 samples were selected for the study from various hospitals. The pre test was conducted by using visual analog scale and breast engorgement checklist. After the pre test, the researcher applied vacuum bottle.post test was conducted by using the same instruments.

OBJECTIVES

The objectives of the study were

- To assess the level of breast engorgement among postnatal mothers before vacuum bottle extraction.

- To determine the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement
- To associate the level of pain before application of vacuum bottle with selected demographic variables such as age, education, religion , type of family ,parity, type of delivery and frequency of feeding.
- To associate the level of breast engorgement before application of vacuum bottle with selected demographic variables such as age, education, religion , type of family , parity, type of delivery and frequency of feeding.

SAMPLE CHARACTERISTICS.

The demographic profiles of the postnatal mothers were shown in the table. 1. The median age of mothers was 24years and the mean age of them was 25.6±4.3 years. Regarding the education of mothers 12(40%) had primary school level, 8(26.7%) were educated up to high school level and 10(33.3%) mothers had graduated .13(56.7 %) were Hindus. Majority 22(73.3%) of mothers were in nuclear family. Nearly three fourth 22(73.3%) of mothers were primi 19(63.3%) had under gone operative delivery and three fifth 18(60%) had the habit of rare feeding practices.

❖ **THE FIRST OBJECTIVE OF THE STUDY WAS TO ASSESS THE LEVEL OF BREAST ENGORGEMENT AMONG POSTNATAL MOTHER BEFORE AND AFTER VACCUM BOTTLE EXTRACTION**

The breast engorgement of postnatal mothers was assessed before application of vacuum bottle. On analysing the data in table -2 shows among

the 30 post natal mothers 17(56.7%) mothers had moderate engorgement and the remaining 13(43.3%) had sever engorgement.

- **THE SECOND OBJECTIVE OF THE STUDY WAS TO DETERMINE THE EFFECTIVENESS OF VACCUM BOTTLE EXTRACTION AMONG POSTNATAL MOTHER WITH BREAST ENGORGEMENT**

The data obtained from the table -3 reveals effectiveness of vacuum bottle extraction .The mean engorgement before intervention was 6.9± 1.4 and the same after intervention was 2.4± 1.0.The reduction of engorgement was 4.5±1.2.the pain level before intervention was 5.8±1.3 and the same after the intervention was 2.2±1.0 .The mean reduction of pain was 3.6 ± 0.8.The reduction of breast engorgement and pain were statistically very significant ($p<0.001$)

- **THE THIRD OBJECTIVE OF THE STUDY WAS TO ASSOCIATE THE LEVEL OF PAIN BEFORE APPLICATION OF VACCUM BOTTLE WITH SELECTED DEMOGRAPHIC VARIABLES SUCH AS AGE, EDUCATION, RELIGION , PARITY, TYPE OF DELIVERY AND FREQUENCY OF FEEDING**

Table -4 showed that there is no significant association between the level of pain and the demographic variables like age, education, religion, type of family and frequency of feeding were not having any association with level of pain

Table -4 showed there is significant association between parity and level of pain. The obtained $\chi 2$ value 4.675 was significant association at 0.05 level of significance.

Table -4 showed there is significant association between type of delivery and level of pain. The obtained $\chi 2$ value 4.983 was significant association at 0.05 level of significance.

❖ **THE FOURTH OBJECTIVE OF THE STUDY WAS TO ASSOCIATE THE LEVEL OF BREAST ENGORGEMENT BEFORE APPLICATION OF VACCUM BOTTLE WITH SELECTED DEMOGRAPHIC VARIABLES SUCH AS AGE, EDUCATION, RELIGION, PARITY, TYPE OF DELIVERY, TYPE OF FAMILY AND FREQUENCY OF FEEDING.**

Table - 5 showed that there is no significant association between the level of breast engorgement and the demographic variables like age, education, religion , type of delivery ,type of family and frequency of feeding

Table -5showed there is significant association between parity and level of breast engorgement. The obtained $\chi 2$ value 4.224 was significant association at 0.05 level of significance.

HYPOTHESES

- There will be a significant reduction of breast engorgement among postnatal mothers after application of vacuum bottle.

- There will be a significant reduction of pain among postnatal mothers after application of vacuum bottle.

CHAPTER VI

SUMMARY AND RECOMMENDATION

This chapter deals with the summary of the study findings, implication and recommendation of it in various areas of nursing profession. The study was undertaken to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at KanyaKumari district.

SUMMARY OF THE STUDY:

The main aim of the present study was to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement.

A quasi-experimental approach one-group pre test post test design was used for this study. The conceptual framework used for this study was based on Callista Roy's adaptation model. The samples were selected by convenience sampling. The instrument used for the data collection procedure was visual analog scale and observation checklist.

The content validity and pilot study were conducted to find out the feasibility of the study. The data collection was done for six weeks.

Based on their objectives and hypotheses, the collected data were analyzed by using both descriptive and inferential statistics. The level of significance was taken at 0.05 levels.

THE OBJECTIVES OF THE STUDY WERE:

- To assess the level of breast engorgement among postnatal mother before vacuum bottle extraction.
- To determine the effectiveness of vacuum bottle extraction among postnatal mother with breast engorgement
- To associate the level of pain before application of vacuum bottle with selected demographic variables such as age, education, religion , type of family, parity, type of delivery and frequency of feeding
- To associate the level of breast engorgement before application of vacuum bottle with selected effectiveness of vacuum bottle extraction with selected demographic variables such as age, education, religion , type of family ,parity, type of delivery and frequency of feeding.

MAJOR FINDINGS OF THE STUDY:

- Among the 30 samples, 43.3% (13) of them were in the age group of 20-24 years.
- In the present study the majority of samples, 73.3 %(22) belong to nuclear family.
- This study denotes majority of samples, 73.3% (22) were Primi Para mothers.
- In the association between the level of pain and selected demographic variables such as Age, Education, Religion, Type of Family & Frequency of Feeding have no significant association.

- In the association between the Level of Pain and selected Demographic, variables such as parity and mode of delivery have significant association.
- In the association between the level of breast engorgement and selected demographic variables such as Age, Education, Religion, Type of Family, Type of Delivery and Frequency of Feeding has no significant association.
- There was a significant association between parity and level of breast engorgement.

COMPARISON OF GROUP BEFORE AND AFTER VACUUM BOTTLE EXTRACTION:

- The difference of Pre and Post test breast engorgement mean sore was 4.5 and the differences was statistically significant (paired 't' = 21.468, d.f=29,p<0.01)
- The difference of Pre and Post test pain mean score was 3.6 and the difference was statistically significant (paired't' = 26.492, d.f=29,p<0.01).

NURSING IMPLICATIONS:

The study has implications in various areas such as Nursing Practice, Nursing education, Nursing Administration and Nursing Research.

NURSING PRACTICE:

- Based on the findings vacuum bottle extraction can be incorporated, in maternity wards and the midwives can use the vacuum extraction to reduce breast engorgement.
- Vacuum bottle extraction can be taught to Midwives.
- Vacuum bottle can be administered as measure of relief of, pain and breast engorgement in the institutional level since it has no side effects.
- It is expected to practice the vacuum bottle extraction as a procedure in the field of maternity.
- It would be more encouragement and for deep research. If the nursing administrator can encourage the nursing personal to conduct the research on vacuum bottle extraction and related non-pharmacological methods to alleviate the breast engorgement.

NURSING EDUCATON:

- The findings of present study would help the nursing students to give importance in applying Vacuum bottle as a nursing intervention in the management of breast engorgement.
- To educate the nursing students to practice the Vacuum bottle extraction intervention as measure of relief of pain and breast engorgement among post natal mothers.
- It can also be included in a nursing curriculum as a non-pharmacological measure to relieve pain and breast engorgement among post natal mothers.

NURSING ADMINISTRATION:

- In-service education can be conducted to the nursing personal regarding non-pharmacological measure to reduce breast engorgement.
- Nursing administrator can prepare a protocol based on institutional policy regarding vacuum bottle extraction as intervention among postnatal mothers to reduce the breast engorgement.
- In the administrative level periodic conferences, symposium, seminars can be arranged to update the knowledge, skills and practice of the nurses.

NURSING RESEARCH:

The lack of research-based information shall be merged in relation to an intervention, frequently applied by midwife.

There is need for extensive and intensive research in this area.

- The study can be done with large sample for the generalization of the findings.
- This study finding will motivate to do further research in this area especially on non-pharmacological methods.
- The same study can be done in different settings.

RECOMMENDATIONS:

The previous reviews and the present study indicate the vacuum bottle extraction is the best option to reduce the breast engorgement since it has no side effects and non-invasive. So this study strongly recommended to use vacuum bottle extraction to reduce breast engorgement among postnatal mothers.

- A comparative study may be done between effectiveness of Vacuum bottle extraction and other pharmacological methods.
- A comparative study may be done between effectiveness of Vacuum bottle extraction and other non-pharmacological methods.
- Similar studies may be conducted in the early postnatal period.
- Similar study may be conducted with a larger population.

SUGGESTIONS:

- Additional knowledge may be imparted to the midwives regarding non-pharmacological methods of pain relief and breast engorgement among postnatal mothers.
- The knowledge of using Vacuum bottle device to be explained to the mid wives so that they can explain it to the mothers to adopt the appropriate technique.
- The knowledge can be imparted to all the post natal mothers regarding vacuum bottle extraction that it has no side no effects and it is non invasive.

CONCLUSION:

As for this research is concerned, the interventional study proved that there is a significant reduction of pain and breast engorgement among postnatal mothers. The difference of pre and post test breast engorgement's means score was 4.5. The differences was statistically significant **(paired't' = 21.468 & p<0.01)**. The pain mean sore was 3.6 between pre and post- test. The difference

was statistically highly significant **(t=26.492, p<0.01)**. Therefore the vacuum bottle extraction is very effective form of non pharmacological intervention to relieve pain and breast engorgement among post natal mothers as it is non invasive and no side effects. The findings of the present study agree with the findings of the previous clinical study, regarding vacuum bottle extraction.

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APPENDIX – A (i)

LETTER SEEKING PERMISSION TO CONDUCT RESEARCH STUDY

CHRISTIAN COLLEGE OF NURSING
C.S.I. KANYAKUMARI DIOCESE
(Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)
Approved by Indian Nursing Council New Delhi and Tamil Nadu Nurses and Midwives Council, Chennai
NEYYOOR - 629 802
KANYAKUMARI DISTRICT, TAMIL NADU, INDIA.

Principal
Prof. (Mrs.) SANTHI APPAVU, M.Sc.(N),M.Phil.
Phone : Per : 04651-221599, Off : 04651-221411

Fax : 04651-224382
E-mail : ccn.neyyoor@yahoo.com
Web : www.ccnneyyoor.org

Date : 26.04.2010

72/M.Sc.(N)/2010

To

Dr. Manimekalai, M.D., D.G.O,
M.L. Hospital,
Punnai Nager, Nagercoil,
Kanyakumari District.

Respected Madam,

Sub : Requisition for getting permission to do research study **to assess the effectiveness of vacuum bottle extraction among post natal mothers with breast engorgement in selected hospitals at Kanyakumari district."**

This is to introduce Mrs.R.S. Athullya, II year M.Sc. Nursing student of this College. She is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of University requirements for the award of M.Sc. degree in Nursing.

Topic:

A study to assess the effectiveness of vacuum bottle extraction among post natal mothers with breast engorgement in selected hospitals at Kanyakumari district."

This student is in need of your esteemed help and co-operation as she is interested in conducting her research study in your well esteemed institution.

This is to request you to kindly extend necessary facilities to her work on her proposed study during the month of May and June 2010.

Thanking you

Yours Faithfully,

PRINCIPAL
CHRISTIAN COLLEGE OF NURSING
NEYYOOR - 629802
K.K.DIST., TAMILNADU

CHRISTIAN COLLEGE OF NURSING HOSTEL
NEYYOOR
629 802
Kanyakumari Dist.

APPENDIX –A (ii)

LETTER SEEKING PERMISSION TO CONDUCT RESEARCH STUDY

CHRISTIAN COLLEGE OF NURSING
C.S.I. KANYAKUMARI DIOCESE
(Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai)
Approved by Indian Nursing Council New Delhi and Tamil Nadu Nurses and Midwives Council, Chennai
NEYYOOR - 629 802
KANYAKUMARI DISTRICT, TAMIL NADU, INDIA.

Principal
Prof. (Mrs.) SANTHI APPAVU, M.Sc.(N),M.Phil.
Phone : Per : 04651-221599, Off : 04651-221411

Fax : 04651-224382
E-mail : ccn.neyyoor@yahoo.com
Web : www.ccnneyyoor.org

Date : 26.04.2010

73/M.Sc.(N)/2010

To

Dr. Irene, M.D., D.G.O,
Irene Hospital, Nagercoil,
Kanyakumari District.

Respected Madam,

Sub : Requisition for getting permission to do research study **to assess the effectiveness of vacuum bottle extraction among post natal mothers with breast engorgement in selected hospitals at Kanyakumari district."**

This is to introduce Mrs.R.S. Athullya, II year M.Sc. Nursing student of this College. She is to conduct a research project which is to be submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai in partial fulfillment of University requirements for the award of M.Sc. degree in Nursing.

Topic:

A study to assess the effectiveness of vacuum bottle extraction among post natal mothers with breast engorgement in selected hospitals at Kanyakumari district."

This student is in need of your esteemed help and co-operation as she is interested in conducting her research study in your well esteemed institution.

This is to request you to kindly extend necessary facilities to her work on her proposed study during the month of May and June 2010.

Thanking you

Yours Faithfully,

PRINCIPAL
CHRISTIAN COLLEGE OF NURSING
NEYYOOR - 629802
K.K.DIST., TAMILNADU

APPENDIX-B

LETTER SEEKING EXPERTS OPINION FOR VALIDITY OF TOOLS

From

R.S Athullya,
Msc [N] II year,
Christian college of nursing,
neyyoor.

To

Respected madam/sir

Sub : Requisition for expert opinion on suggestion for content validity

I am doing II year Msc [N] in Christian college of nursing, Neyyoor, under Tamilnadu Dr.M.G.R medical university Chennai. As a partial fulfillment of the course, I have chosen a topic of my interest **" A study to assess the effectiveness of vacuum bottle extraction among postnatal mothers with breast engorgement in selected hospitals at KanyaKumari district**" I have prepared demographic data , pain assessment scale and breast engorgement check list . I here kindly request you to evaluate the tool based on the evaluation

criteria. Your opinion and suggestion will help me to modify and restructure the tool for successful completion of my study.

Thanking you

Yours truly

R.S Athullya

APPENDIX -C

EVALUATION CRITERIA CHECK LIST FOR TOOL VALIDATION

Instruction

The expert is requested to go through the following criteria for evaluation of questionnaire. Three columns are given for response and a column for remarks. Kindly place a tick mark in the appropriate column and give remarks.

Interpretation of columns

Column I - Meets the Criteria
Column II - Partly meets the Criteria
Column III - Does not meet the criteria

S.No	Criteria	I	II	III	Remarks
1.	***Scoring***				
	• Adequacy				
	• Clarity				
	• Simplicity				
2	***Content***				
	• Logical sequence				
	• Adequacy				
	• Relevance				
3	***Language***				
	• Appropriate				
	• Clarity				

	• Simplicity				
4	***Practicability***				
	• It is easy to score				
	• Does it precisely				
	• Utility				

Any other suggestions ----------

Signature :

Name :

Designation :

Address :

APPENDIX -D

LIST OF EXPERTS WHO HAVE VALIDATED THE TOOL

1. Dr.Christabel Reena, M.D.D.GO
   Obstetrics and gynaecologist
   ,C.S.I Medical Mission Hospital
   Neyyoor.

2. Mrs.Henita,Msc(N)
   Asst,Prof in obstetrics and gynaecoloical nursing
   C.S.I.Somervell college of nursing,
   Karaakonam

3. Mrs.Suguna,Msc(N),Ph.D,
   Vice principal,
   Nehru nursing college,
   Vallioor.

4. Mrs.Anita Mary Leena,Msc(N),
   Asst,Prof in obstetrics and gynaecoloical nursing
   St.Xaviers catholic college of nursing,
   Chunkankadai.

5. Mrs.Irine Praveen,
   Vice principal,
   Vengateshwara nursing college,Chennai.

6. Mrs.Majella Livingston,Msc(N)
   Reader,
   St.Xaviers catholic college of nursing,
   Chunkankadai

APPENDIX-E

RESEARCH TOOL

SECTION -I

DEMOGRAPHIC DATA

Sample No

1. Age
   a. 15-19 years ☐
   b. 20-24 years ☐
   c. 25-29 years ☐
   d. 30-34 years ☐

2. Education
   a. primary ☐
   b. High school ☐
   c. graduation ☐

3. Religion ☐

a. Hindu

b. Christian ☐

c. Muslim ☐

4. Type of family

a. Nuclear family ☐

b. Joint family ☐

5. Parity

a. Primi ☐

b. Multi ☐

6. Type of delivery

a. Vaginal delivery ☐

b. operative delivery ☐

7. Frequency of feeding

a. Demand feeding ☐

b. once in 2 hours ☐

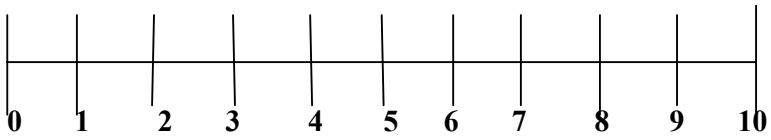
c. once in 3 hours ☐

d. Rare ☐

Section II

VISUAL ANALOG PAIN SCALE

Visual analog pain scale / numeric scale is a self report tool. It consist of 0-10 degree . if 0 means no pain and 10 means the worst pain the mother ever can imagine.



No pain Moderate pain worst possible pain

Scoring Procedure.

No Pain (0) - 0%

Mild Pain (1-3) - 10 to 30%

Moderate pain (4-6) - 40 to 60%

Severe Pain (7-10) -70 to 100

SECTION III

BREAST ENGORGEMENT CHECK LIST

S.NO	CHARACTERISTICS OF BREAST ENGORGEMENT	YES	NO
1	Swollen		
2	Firm		
3	Nipple edematous		
4	Flattened nipple		
5	Veins prominent		
6	Skin on the breast stretched		
7	Shiny skin on the breast		
8	Breast warmthness		
9	tenderness		
10	Malaise		

Total score - 10

Mild breast engorgement - 1 - 3

Moderate breast engorgement - 4 - 7

Severe breast engorgement - 8 -10

APPENDIX-F

PRE AND POST TEST SCORES OBTAINED BY THE POSTNATAL MOTHERS

SAMPLE No	*VISUAL ANALOG PAIN SCALE*		*BREAST ENGORGEMENT CHECK LIST*	
	PRE TEST	*POST TEST*	*PRE TEST*	*POST TEST*
1	7	4	8	3
2	8	4	7	4
3	4	2	6	2
4	6	2	8	4
5	7	3	8	3
6	8	3	9	3
7	6	2	5	2
8	6	2	7	2
9	4	1	6	1
10	7	3	8	3
11	6	2	5	2
12	5	1	6	0
13	4	0	5	1
14	6	2	7	3
15	6	3	8	2
16	7	2	7	2
17	6	3	7	4
18	8	3	8	3
19	5	2	5	2
20	6	3	8	3
21	5	2	7	2
22	4	0	4	1
23	6	2	8	3

24	7	4	9	2
25	4	1	4	1
26	5	2	8	4
27	4	1	6	1
28	5	2	7	3
29	6	2	8	3
30	7	2	9	2