A STUDY TO EVALUATE THE EFFECTIVENESS OF COLD CABBAGE LEAVES COMPRESSION ON BREAST ENGORGEMENTAMONG POST NATAL MOTHERS (IUD, ABORTION) IN MEDICAL COLLEGE HOSPITAL AT TIRUNELVELI DISTRICT, India.

By

[1]G.M.Moorthy, [1]S.Muthusamy, [2]K.Sakthi Karbagam

[1]Department of Geology, V.O.Chidambaram College, Tuticorin-628008, Tamilnadu, India.
(Affiliated to Manonmaniam Sundaranar University, Tirunelveli, India)

[2]PG & Research Department of History, V.O. Chidambaram College Thoothukudi, India.

E-mail: moorthy.geo@voccollege.ac.in

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ABSTRACT

An evaluative study on cold cabbage leaves compression on breast engorgement among post natal mothers in Tirunelveli district, as partial fulfillment of the requirements for the award of the degree to Master of Science in nursing was done by 30083223 from Cherraan's college of nursing, Telungupalayam pirivu, affiliated to the Tamil nadu Dr. M.G.R. Medical university, Chennai.

The objectives of the study were : (i) To assess the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers. (ii) To associate the post test score of breast engorgement with their selected demographic variables among post natal mothers.

The hypothesis of the study were:

There was a significant difference between the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.

There was a significant association between the post test score on breast engorgement with their selected demographic variables among post natal mothers.

Conceptual frame work for the study was based on the Wiedenbacks theory (1964). Research design used for this study was quasi experimental one group pre and post design. The study was conducted in Medical college hospital at Tirunelveli district. The population for this study was post natal mothers. Purposive sampling technique was used to select the sample.

Data collection tool consisted of six point breast engorgement scale, demographic variables to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement.

The content validity of the tool was done by experts in different fields. Reliability was obtained by Karal Pearson's method. The score was r=0.768, which was reliable. Pilot study was conducted in Sundakamuthur, Sakthi hospital to find out the feasibility of conducting the study.

The collected data were tabulated analyzed and interpreted by using descriptive and inferential statistical methods.

Major findings of the study were regarding effectiveness of cold cabbage leaves compression, the obtained value was significant at 0.05 level. Hence the null hypothesis wasrejected.

There was no significant association with their demographic variables like age, education status, type of work, religion, parity, income, dietary pattern, family type, medical complication during pregnancy, living area, puerperium period, mode of delivery. So the stated null hypothesis was accepted. So the cold cabbage leaves compression was independently effective in reducing breast engorgement among post natal mothers (IUD, Abortion).

Based on the findings, the recommendation drawn for nursing service, nursing administration, nursing education and nursing research.

CHAPTER – I

INTRODUCTION

"Nothing healthier than the nature nothing nourishing than the breast milk"

BACK GROUND OF THE STUDY

The breast or mammary glands are accessory glands of the female reproductive system. They also exist in the male but only in a rudimentary form.

In the female the breasts are quite small until puberty. There after they grew and develop to their mature size under the influence of estrogen and progesterone.

During pregnancy, the breast increase in size and become more tender, especially in the first half of pregnancy. The most rapid period of breast grows in decrease first eight weeks of pregnancy. As the pregnancy progresses, the breast become firmer and more modular to prepare for lactation. The montgomery's gland surrounding the areole (the pigmented region grand the nipple) becomes darker and more prominent, and the areole it self darkens. The nipples also become larger and more erect as they prepare for milk production. The blood vessels with in the breast enlarger as surges of estrogen stimulate the growth of the ducts and surges of progesterone cause to glandular tissue to expand. Prolactin, a hormone produced by the pituitary gland, starts the growth after mammary gland & triggers production of milk.

After child birth, estrogen & progesterone levels decrease and the production of prolactin declines. The breast will unusually begin to produce milk three to five days after a woman has given birth. During these few days milk is produced to body producer's colostrums a liquid substance that contains anti bodies to help protect to infant against infection Some physicians believe that colostrums also decreases an infants chances of developing asthma and other allergies with in a few days to effortsown immune system will develop and she will not need colostrums.

When an infant suckles at the mother's breast it brings milk out of nipple. This section signals the body to make more milk and deliver more milk. The body also

produces a variety of other hormones (insulin, thyroid, cortical) that are useful to theinfant.

If the baby has problems like cleft lip, cleft palate, premature baby, fetal distress, IUD means the baby cannot suck properly and also the mother has problem like retracted ripple, cracked ripple, abortion, medical disorders such as cardiac failure, hepatitis, HIV means the mother cannot give breast feeding. In this condition there was stasis of breast milk, so it leads to a problem to the mother. In India 72% to 85% of women suffering with this problem.

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 three to six days after delivery. Not to be confused with breast fullness, breast engorgement can occur any time during lactation when milk is not transferred from the breast.

Breast engorgement and breast fullness are different; breast fullness is characterized by swollen yet compressible breast tissue. The infant is able to latch on properly and suckle effectively at a full breast. Breast engorgement is characterized by swelling, heat, hardness of breast tissue, breast skin tightness, flatness of nipples, discomfort and pain. Due to the varying severity of breast engorgement, several methods are used to quantify it like thermography, the Roberts Durometer and the six- point engorgement scale, and also

Many methods have been used to relieve the symptoms of engorgement.

- Before breast feeding, take a warm shower or apply warm moist compresses tothe beast.
- Breast fed often (every one and half to three hrs) or pump the breast to stimulate milk production.
- Use icy compresses after breast feeding to decrease swelling.
- Pump milk from the breast before breast feeding to soften the breast.
- Ask a physician whether over the counter medication (such as tylenol) as safe to relieve engorgement

- . Massage the breast with the finger tips in a circular motion down toward the nipple cold cabbage application is the breast under the bra.

This simple plant is a powerhouse of nutrients, including fiber, vitamins and minerals. More importantly, Cabbage may enhance our body's carcinogen-fighting compounds *and* detoxify the system of harmful chemical additives, including the radiation that surrounds and bombards our bodies during the course of our daily lives.

Beneficial Uses

Cabbage (in addition to other members in the cruciferous family) has lately been credited with the ability to enhance the body's resistance to invasion of foreign toxins and infection. Significant medical and scientific studies from Johns Hopkins suggested that the sulforaphane and histidine in Cabbage boost the body's immunity and carcinogen-fighting enzymes and help fight free radicals in the body that can cause damage to important cellular molecules. Those same constituents appear to rid the system of harmful chemical additives, detoxify carcinogens and may reduce severe problems in the colon, rectum and prostate. It is believed that because sulforaphane enables the body's protective proteins to do a better job at clearing out carcinogens, it would clearly be most effective during those periods when carcinogens are most active, well before any problems are clinically detectable.

Further supporting the use of Cabbage to detoxify the system of harmful chemical additives, it is strongly believed to afford our bodies protection from radiation poisoning to which we are exposed every day, ranging from home computers, microwave ovens, color televisions and high-tension power lines outside our homes. Two important medical studies have shown that animals exposed to lethal doses of uranium and X-rays were afforded considerable protection against harmful effects when given Cabbage.

Cabbage is thought to significantly reduce the risk of heart ailments by protecting the heart from free radicals, inflammation and high blood pressure. Cabbage is said to lower overall serum cholesterol and may dramatically reduce the low-density

lipoproteins (LDL's) or "bad" cholesterol, which frequently causes hardening of the arteries and the development of coronary heart problems and strokes later on in life.

As a mild laxative, Cabbage is said to improve colon function and increase bowel movements. A medical journal as far back as 1936 noted that for every gram of powdered cabbage leaves fed to healthy males, their respective stool weights increased by twenty percent. This is attributed to the water-holding capacity of cabbage fiber, which also increases stool bulk and helps to move it through the system. The use of Cabbage as a vermifuge to eliminate worms from the intestinal system is perhaps theresult of this laxative action.

Cabbage is believed to be an antifungal and may be very helpful in suppressing yeast infection. Ethnic folk healers from the Hispanic and African-American communities have long used Cabbage juice for yeast infections, both internally and externally, and scientific research has confirmed these applications, claiming that the sulfur content in Cabbage is very useful in treating *Candida albicans* and suppressingother yeast infections.

It is said that Cabbage may facilitate the healing of ulcers. By reducing acid in the stomach, it is believed to relieve any kind of gastrointestinal ulcer, including duodenal and peptic ulcers, etc.

Lees suggests that sulfur in amino acid methionine acts as an antibiotic and anti-irritant, which in turn draws an extra flow of blood to the area. This dilates the capillaries and acts as a counter irritant, thus relieving the engorgement and inflammation and allowing milk to flow freely.

Recommended Dosage:

Take two capsules, two to three times each day with water at mealtimes.

Contraindications:

Currently, there are no warnings or contraindications with the use of Cabbage.

The researcher selected cold cabbage leaves compression for reducing engorgement, because Dr. Anureg Srivastava study proved that, the cabbage leaves has action of both antibiotic and anti irritant properties. It is theorized that this natural mixture of ingredients helps decrease tissue congestion by dilating (opening) local capillary (small blood vessels) improving the blood flow in the area.

NEED FOR THE STUDY

Breast milk is the ideal form of nutrition for a baby. It is nutritionally balanced with the perfect amount of proteins, carbohydrates, fats, vitamin and iron to help the baby grow. Breast milk also changes to suit the different needs of the baby as it grows.

Despite the nutrition advantages that are associated with breast feeding, some women may be unable to breast feed for medical or practical reasons.

Ex: if mothers have blood borne viruses such as hepatitis B or HIV, or if they were taking a certain type of medication, these can be passed on to the baby through the breast milk. In this circumstance bottle feeding in recommended.

The mother of today has adopted to the recent trends of life style replacing traditional ones and also in order to maintain their body beauty, the mothers are not giving breast feeding, then the mother who is undergoing for certain complications such as (antepartum haemorrhage, malpresentation, fetal distress, pre-eclampsia, Rh-in compatibility) during pregnancy, labour the fetus may die in the womb itself. In this condition the mother developing breast engorgement.

According to Dr. Ruth Lawrence engorgement is “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.

If the breast engorgement is not treated properly it leads to breast abscess, mastitis, breast cancer.

Totally 1193 mothers were experimented mastitis, 5% developed breast abscess, 2.9% of women who took antibiotic for mastitis, although many mothers estimate 11% of women developed breast abscess and mastitis.

In order to prevent these complications, the researcher found cold cabbage leaves compression is better in reducing breast engorgement as per following researcher studies.

Nikodum. Ve. Danziger 1993 conducted study on breast engorgement by applying cabbage leaves. He selected 120 breast engorgement mothers by purposive sampling method, in that 60 mothers under control group and remaining 60 in experimental group. He found that, those who used cabbage leaves had better result,than those who not used cabbage leaves application.

STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers (IUD, Abortion) in Medical college hospital at Tirunelveli district.

OBJECTIVES

- To assess the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.
- To associate the post test score of breast engorgement with their selected demographic variables among post natal mothers.

HYPOTHESIS

- There will be a significant difference between the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.
- There will be a significant association between the post test score on breast engorgement with their selected demographic variables among post natal mothers.

OPERATIONAL DEFINITION

Effectiveness

Out come of cold cabbage leaves compression on breast engorgement among post natal mothers.

Cabbage

Plant with head of green leaves used as vegetable.

Breast Engorgement

Accumulation of milk in the breast during post natal period.

ASSUMPTION

- Post natal mothers were more prone to get breast engorgement.
- Cold cabbage leaves compression may be effective in relieving breastengorgement.
- The tool which is used by the investigator is sufficient to measure the breastengorgement.
- The response given by post natal mothers was the true response.

DELIMITATION

- The study was delimited to post natal mothers in Medical college hospital at Tirunelveli district.
- Samples were selected by non-random method (purposive sampling technique).

CONCEPTUAL FRAME WORK

Conceptual framework adopted in the present study was modified Wiedenbacks theory. Helping art of clinical nursing theory (1964). According to her nursing practice it includes 3 steps which are:

- Identifying the need for help.
- Ministering the needed help.
- Validating that the need for help was met.

Step I: Identifying the need for help by conducting pre test with the help of six pointbreast engorgement scale.

Step II: Ministering the needed help: it has 2 Components.

Prescription

Plan of care to achieve the purpose which includes development of validation and following by application of cold cabbage leaves compression on breast engorgement.

Realities : It includes the following factors.

Agent : Investigator

Recipient : Post natal mothers (IUD, Abortion)

Goal : To reduce breast engorgement

Facilities : Hospital.

Step III : Validating that the need for help was met.

Conducting post test with the help of six point breast engorgement scale. Validation was done by analyzing the attainment of central purpose.

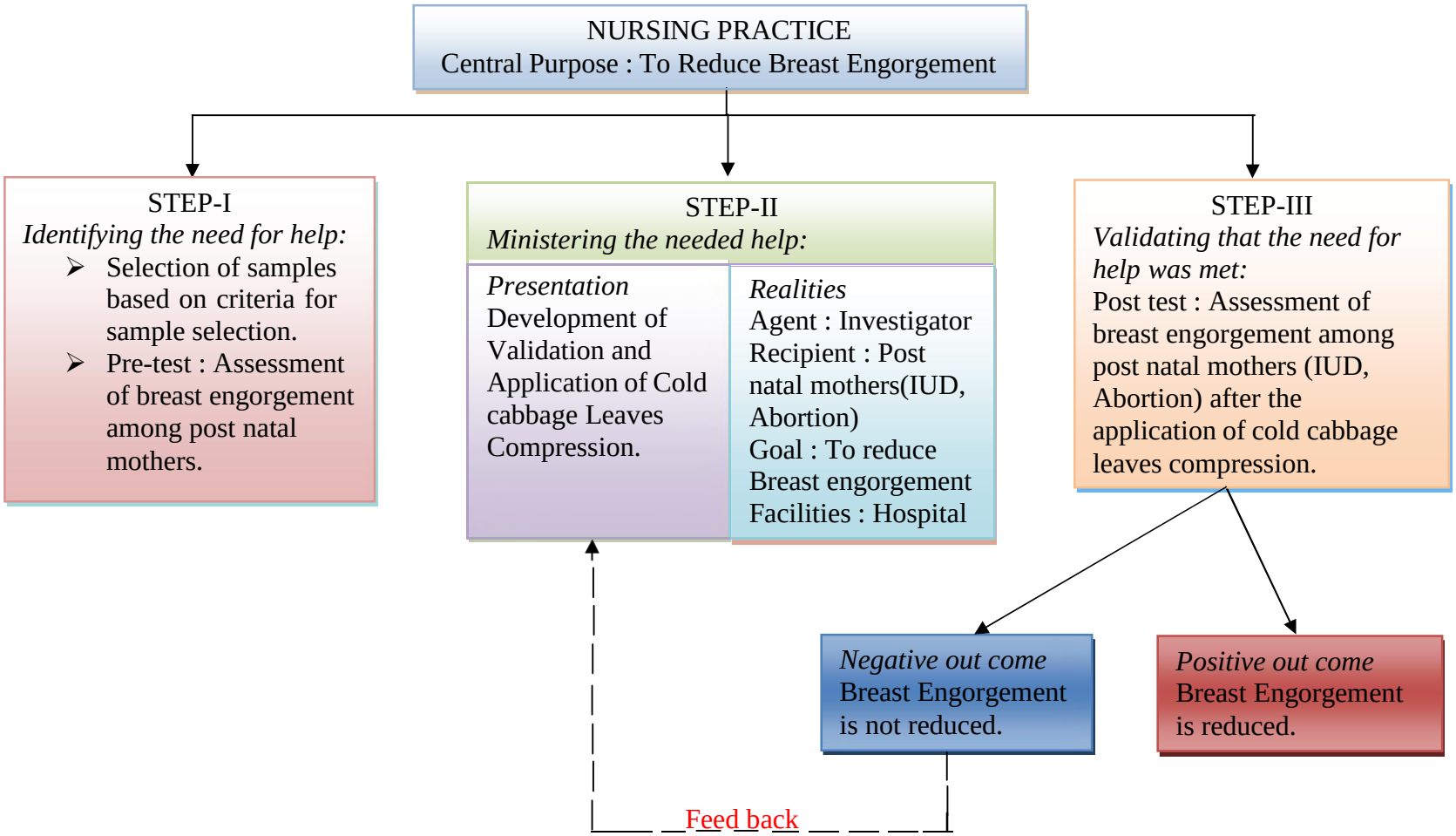

Fig – 1: MODIFIED WIEDEN BACK'S HELPING ART OF CLINICAL NURSING THEORY

CHAPTER – II

REVIEW OF LITERATRE

Review of literature is an essential component of the research process. It is a critical examination of publication related to the topic of interest. Review should be comprehensive and evaluative. It helps to plan and conduct the study in a systematicand scientific manner.

Nursing research may be considered as a continuing process in which knowledge from earlier studies is an integral part. Capitalizing on the review of expert research can be fruitful in providing helpful idea and suggestion.

(Treece and Treece – 1986)

For the present study the related literature was reviewed and organized in thefollowing.

I. Studies related to breast engorgement

II. Studies related to cold cabbage leaves compression on breast engorgement.

III. Studies related to cabbage leaves

STUDIES RELATED TO BREAST ENGORGEMENT

Dr. Weight, (2008), Conducted study on Efficacy report of the whittlestone breast as a treatment for breast engorgement. He selected 20 women, who has history of first week of post partum, swelling and painful breast. After the using WBE the mother got relief from breast engorgement. It was assessed by the six point breast engorgement scale.

Gailblair Storr, (2006), conducted study on Prevention of nipple tenderness and breast engorgement in the past partal period. A study was conducted to identify an effective preparation method for breast feeding and to develop measurement tool for nipple tenderness and breast engorgement for use in a clinical setting. 25 subjects served as their as controls by preparing nipple and messaging one breast either the left or right, but not the other breast or nipple. Nipple tenderness and breast engorgement

were recorded on five point scales. Analysis of the data relieved that tenderness and engorgement were decreased in the prepared massaged breast.

Prof. Mrs. K. Emmanuel, (2005) conducted a study on nursing intervention to postnatal mothers with breast engorgement. They have conducted a study on breast engorgement in case study method. The finding of the study reveals that breast engorgement is preventable and the nursing personnel should show keen interest in the prevention of it. Early diagnosis, timely and appropriate nursing intervention is vital inthe management of breast engorgement.

Marsha Walker; 2000, conducted study on Breast feeding and engorgement, in his article he explained in order to prevent breast engorgement mother has to give regular breast feeding.

Molly babi (1998) a study of the postnatal and neonatal health problems and home remedies used during puerperium,. The study was conducted using the descriptive survey method. The sample consisted of 100 postnatal mothers who had normal deliveries and an alive baby between the 3rd postnatal day and 6th week of puerperium. In this study they have selected health problems like after pains, backache, pain in the legs, shivering breast engorgement, fatigue, lack of sleep. They have used home remedies like massage, oil both, applying jasmine flower etc. The findings of the study reveal that all mothers used some form of home remedies for relieve themselves and their babies.

V. Telwar, A.Bhansali, et.al (1996) gestational macromastia. It is a rare disorder, with 24 reported cases till 1996. Presented at 20th gestational week with bilateral progressive breast enlargement of 10 weeks, to the extent of hindering her routine activities and increasing peri-areolar ulceration in right breast for 4 weeks. On physical examination, the breasts were massively enlarged with engorged superficial veins and were tense and tender. An area of ulceration was seen over lower and outer quadrant of the right breast. Conservative management in the form of breast support, analysis ice packs, was tried for a week without relief and parent then underwent bilateral near total mastectomy.

STUDIES RELATED TO COLD CABBAGE LEAVES COMPRESSION ON BREASTENGORGEMENT.

Elizabeth Jay, 2009, conducted study on do cabbage leaves really help to relieve engorgement. She selected a sample as experimental group 60 control group 60. At last he found that the percentage of women who reported experiencing engorgement went as follows:

- After the 1st feed 54% of the cabbage group and 57% of the control group.
- After the 3rd feed 49% of the cabbage group and 51% of the control group.
- After the 4th feed 45% of the cabbage group and 50% of the control group.

So the researcher said that those who are used cabbage leaves have better result in reducing engorgement.

Dr. Anureg Srivastava (2009), conducted study on department of surgery; cabbage leaves to the rescue of lactation mothers. Cabbage has both antibiotic and anti irritant properties. It helps decreasing tissue congestion by dilating local capillaries and improving in blood flow in the area.

Marie Davis (2009), conducted study on Engorgement: The cabbage cure; in his article, he said that, the common green cabbage is used for engorgement therapy. Cabbage is known to contain sinigrin rapine, mustard oil, magnesium, orylate and sulphur heterosides. Herbalists believe that cabbage has both antibiotic and anti irritant properties. It helps decrease tissue congestion by dilating local capillaries, which improves the blood flow in and out of the area, allowing the body to reabsorb the fluid trapped in the breast. Cabbage may also have a type of drawing or wicking action, that helps move trapped fluid.

Dr. Ashikin Mokhtar, (2008), conducted study on in his article; he explained breast engorgement will occur with in 3rd to 6th day due to deficiency of feeding. So he has done research in using cabbage leaves on breast engorgement. Finally he got better result.

Arera Smriti et.al(2008), a comparison of cabbage leaves vs hot and cold compress in the treatment of breast engorgement. This was a Pre experimental study conducted in the post natal ward of All Inida institute of medical science, New Delhi. The study comprised a total of 60 mothers, 30 in the experimental group and 30 in the control group. The control group received alternate hot and cold compresses and the experimental group received cold cabbage leaves treatment for relieving breast engorgement. The pre and post treatment score of breast engorgement and pain were recorded. The data were analyzed using descriptive and inferential statistical method using the statistical software STRATA. Both the treatment ie hot and cold compress and cabbage leaves were effective in decreasing breast engorgement and pain in post natal mothers ($p<0.001$). Cold cabbage and hot and cold compress were both equally effective in decreasing breast engorgement ($p=0.07$). where as hot and cold compress were found to be more effective than cold cabbage leaves in relieving pain due to breast engorgement($p<0.001$) in post natal mother. Cold cabbage leaves as well as alternate hot and cold compress both can be used in the treatment of breast engorgement. Hot and cold compress are effective in decreasing pain than cold cabbage leaves to breast engorgement.

V. Cheryle Nikoden; 2004, conducted study on to evaluate the effect of cabbage leaves on mother perceptions of breast engorgement and the influence of this treatment on breast feeding practices. The greater breast feeding success in the engorgement may have been due to some beneficial effect of cabbage leaf application.

Newman Jack, (2002) conducted a study on cabbage leaves for engorgement, in his article; severe engorgement of the breast on about the third or fourth day postpartum can usually be prevented by getting the baby latched on and drinking well from the very beginning. If the mother does become engorged, there was no specific treatment. She should continue to breast feed the baby, making sure be latches on well and nurses well. However, if the engorgement gets to the point of severe discomfort. In this condition cabbage leaves seem to help decrease the engorgement more rapidly than ice packs or other treatment.

Australian researchers; 1998, conducted study on compared the effectiveness of cabbage leave extract and a place be in treating lactating women for engorgement. The researchers concluded that both groups were reported that equal relief from engorgement.

Roberts KL, et al. 1998, conducted study on the effectiveness of cabbage leaf extract was compared with that of a placebo in treating breast engorgement in lactating women. In that 21 participants received a cream containing cabbage leaf extract, while 18 received placebo cream with the two groups showing no difference on all out women measures. Mother perceived both were effective in relieving discomfort. Feeding had a greater effect than the application of cream on relieving discomfort and decreasing tissue hardness. It is therefore recommended that lactation consultants encourage mother to breast feed if possible to discomfort of breast engorgement.

Sandra Smith; 1997, conducted study on Cabbage leaves for treatment and prevention of breast engorgement, here the experimental group received cabbage leaves and control group received regular breast care. At six weeks the group using cabbage leaves was more likely to be breast feeding exclusively ($p=0.09$) and their mean duration of exclusive breast feeding was significantly longer than control ($p=0.04$). Researchers concluded that, cabbage leaves gives better results than normal breast care.

Kathryn L. Roberts; 1996, conducted study on A Comparison of chilled and room temperature cabbage leaves in treating breast engorgement. He selected 30 mothers for chilled cabbage leaves and 30 mothers for room temperature cabbage leaves. Finally he concluded that it is not necessary to chill cabbage leaves before use.

Kathryn L. Roberts; 1995, conducted study on A comparison of chilled cabbage leaves and chilled gelpaks in reducing breast engorgement; 34 lactating women with breast engorgement used chilled cabbage leaves on one breast and chilled gelpaks on their other for upto eight hours. Their pain levels were established pre- treatment compared post-treatment for both conditions. There was no difference in the post-treatment rating for the two treatments. Mother reported a statically drop in pain

with both treatment, 68 percent obtained relief with in one to two hours. But the majority of mothers preferred the cabbage leaves.

British researchers - 1994, conducted study on effects of using cabbage leaves of breast engorgement. They concluded that the use of cabbage leaves resulted in was helping in reducing breast engorgement.

Netwon et.al (1993), Conducted study on comparison of cabbage leaves compression and routine breast care and breast engorgement. Evaluated 120 breast feeding women who were split into two groups. One group used cabbage leaves on their breast to relieve engorgement and other group relieved routine care. The researchers found that the women who used cabbage leaves were more likely to be exclusively breast feeding.

Rosier, (1993), in his article described the use of chilled cabbage leaves applied to engorged breast and changed every two hours in a small sample of women as having a rapid effect on reducing edema and increasing milk flow.

STUDIES RELATED TO CABBAGE LEAVES

Michael van stratin, (2009), conducted study on cabbage leaves for arthritic joint; cabbage contains powerful anti inflammatory compounds applied to arthritic joints. These compounds are remarkably effective at relieving both pain and swelling.

Garnell Cherey, (2008), conducted a study on cabbage leaves in gastric ulcer. He selected 65 cases for this study. In that 62 were cured at the end of three week and also he said cabbage has been recommended to correct anemia.

Rev. Bras. Farmacogn, (2006), conducted study on evaluates the use of cabbage leaves in stabilize bone mass; it was administered as a juice to the women for 24 months. According to the results found the use of cabbage leaf juice result in bonemass stabilization.

CHAPTER III

METHODOLOGY

Research methodology is a way to systematically solve the research problem. It is a science of studying how research is done scientifically. Methodology is a significant part of the research under which the research is able to project a blue print of the research undertaken.

This chapter includes research design, variable, setting, population, sample size, sampling technique, development of tool, data collection procedure, plan for data analysis and ethical consideration. The problem stated in this study was "A study to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers (IUD, Abortion) in Medical college hospital at Tirunelveli district.

RESEARCH DESIGN

The term research design refers to the plan of a scientific investigation. Research design helps the researcher in the selection of the subject. Identification of variables, their manipulation, control observation to be made and types of statistical analysis to interpret the data.

Considering all the above factors and the availability of time for data collection the researcher had selected the pre-experimental design i.e. the one group pre test- post test design.

Group	Pre test	Treatment	Post test
Experimental	01	X	02

Key:

01–Pre test of breast engorgement.

X- Application of cold cabbage leaves compression on the breast. 02 –Post test of breast engorgement.

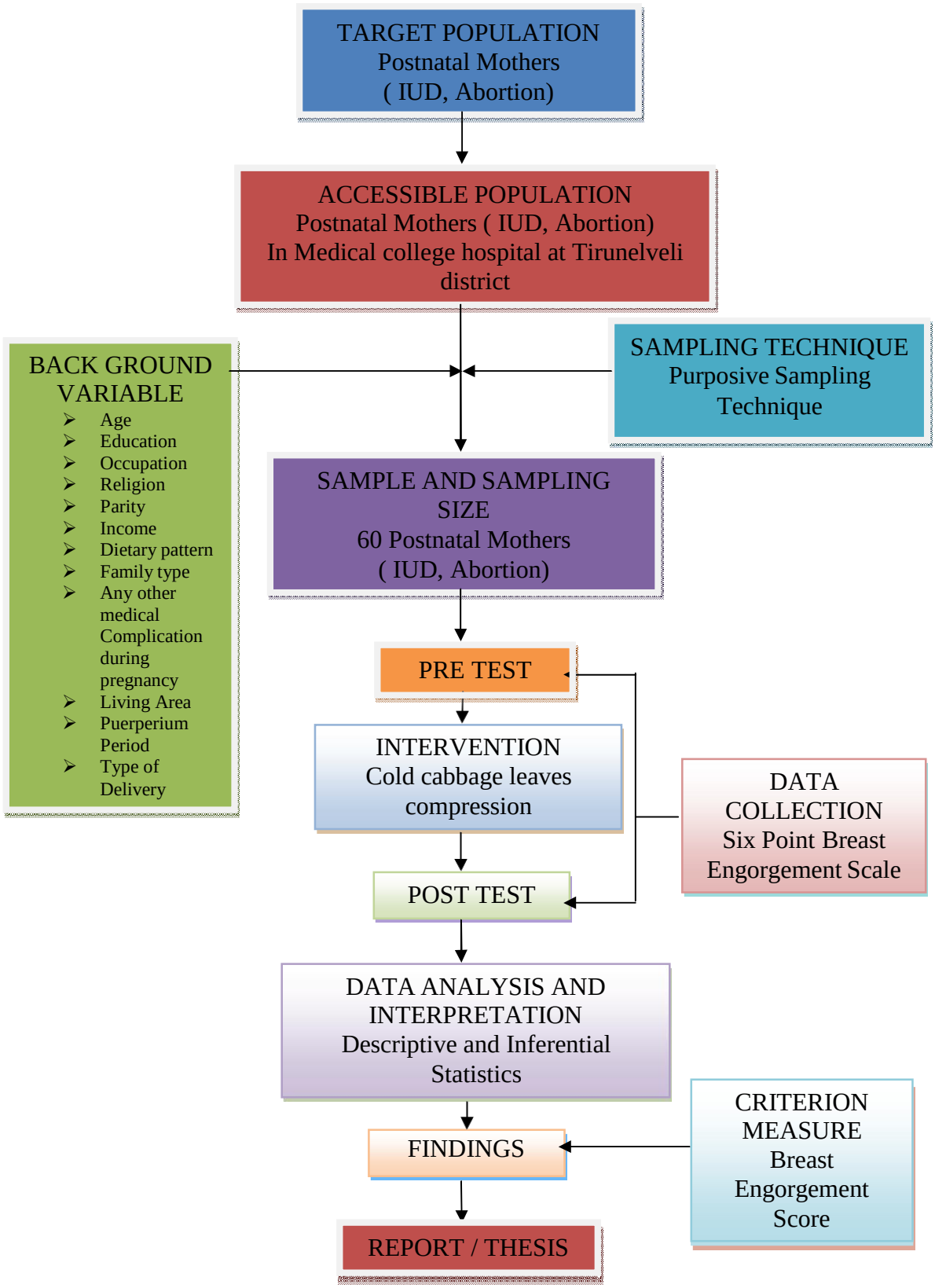

Fig 2 : SCHEMATIC PRESENTATION OF RESEARCH DESIGN

VARIABLE

The three categories of variables discussed in the present study were:

Independent Variable : Cold cabbage leaves compression.

Dependent Variable : Breast Engorgement.

Associate Variable : Age, Education, Religion, Occupation, Income, Parity, Dietary pattern, Family type, Any other medical complication during pregnancy, living area, puerperium period, type of delivery.

SETTING OF THE STUDY

Research setting is the specific place where data collection is to be made. The selection of setting was done on the bases of feasibility of conducting the study, availability of subject and permission from authorities. The study was conducted in Medical college hospital, Tirunelveli district.

POPULATION

Polit and Hungler (2004) referred population as the entire set of individuals (or) subjects having common characteristic some time referred to as universe. Population may be of two types – Target population, Accessible population. In this study two populations were described.

TARGET POPULATION

It refers to the population that the researcher wishes to make a generalization.

In this research the target population was post natal mothers (IUD, Abortion).

ACCESSIBLE POPULATION

In this research the accessible population was post natal mothers from Medical college hospital at Tirunelveli district.

SAMPLE

Sample consists of sub set of the population selected to participate in the research study. In this study the sample were post natal mothers (IUD, Abortion), Medical college hospital at Tirunelveli district.

SAMPLE SIZE

The sample size for the present study was arbitrarily decided to be 60 post natal mothers. The sample size was determined based on the type of study variables being studied, the statistical significance required and availability of sample and feasibility ofconducting the study.

SAMPLING TECHNIQUE

The purpose of using a sampling technique is to increase representativeness and to decrease bias and sampling error. In this study purposive sampling technique was used to select subject as they fulfilled the inclusive criteria.

SAMPLING CRITERIA

In sampling criteria the researcher specifies the characteristics of the population under the study by detailing the inclusive and exclusive criteria. Inclusive criteria are characteristics that each sample elements must posses to be included in the sample. Exclusive criteria are characteristics that confound or contaminate the result of the study; therefore such participants are excluded from the study.

Inclusion Criteria

- Post natal mothers (IUD, Abortion) from Medical college hospital at Tirunelveli district.
- Mother's who were willing to participate.
- Mothers who can speak in Tamil.

Exclusion Criteria

- Mothers with allergy to cabbage.
- Mothers receiving lactation suppressants.
- Mothers with infected breast, breast abscess, mastitis, broken skin of breast, bleeding or cracked nipples.

DEVELOPMENT OF TOOLS

A tool in research refers to the tool or equipment used for collecting data. The investigator was using a six point breast engorgement scale to assess the level of breast engorgement among post natal mothers (IUD, Abortion).

DESCRIPTION OF THE TOOL

The tool consists of 2 sections.

SECTION - I : Demographic variables of post natal mothers (IUD, Abortion)

SECTION - II : Six point breast engorgement scale to assess breast engorgement during post natal period.

VALIDITY OF THE TOOL

Validity is the degree to which as instrument measures what it is intended tomeasure.

Polit and Hungler (2004) In the present study, five experts including one Obstetrician and 4 Nursing experts validated the entire sections of the tool. The experts were requested to check for the adequacy of the content, sequence in framing of questions. Items with 100% agreement were included in the study. The tool was drafted in English and translated into Tamil and retranslated into English. This was to satisfy the language validity based on their suggestion.

RELIABILITY OF THE TOOL

Reliability of an instrument is the degree of consistency in which it measures the attribute; it is suppose to be measuring.

Polit and Hungler (2005)

The reliability of the tool for the present study was established by test retest method among post natal mothers (IUD, Abortion). Then the score obtained was correlated. Reliability was computed by using Karl Pearson's correlation. The obtained 'r' = 0.768. The tool was found to be reliable.

PREPARATION OF COLD CABBAGE LEAVES FOR COMPRESSION

The procedure is to wash the cabbage leaves, allow them to dry and place them in polythene bag and keep it in the refrigerator for one to two hours. The vein of the cabbage can be scored with a knife before the application. Then the cabbage leaves will be applied on the breast for two hrs. This compression has to give three times a day.

PILOT STUDY

Pilot study is a small scale version on trial run done in preparation for a major study.

(Polit and Hungler (2004)

The pilot study was conducted in Sakthi hospital, and Sundakkamuthur PHC, at Coimbatore among post natal mothers, those who had breast engorgement. Five samples were selected by screening. The pre test was assessed by using six point breast engorgement scale. Then intervention was given to the mothers (ie Cold cabbage leaves compression) for three days and each day three times. After three days the post test was conducted by using six point breast engorgement scale. The pilot study was feasible to conduct the main study.

DATA COLLECTION PROCEDURE

The Present study was conducted in Medical college hospital at Tirunelveli district. The data were collected for 4 weeks from 12/8/2009 to 10/09/2009.

Prior permission from the authorities was sought and obtained. Individual informed consent was taken from the study samples orally. The study samples were selected by purposive sampling method based on sample selection criteria.

All the post natal mothers (IUD, Abortion) from the selected Medical college hospital were screened. In that 60 post natal mothers were selected, who satisfied the selection criteria were recruited in the experimental group. The objectives and purpose of the study was explained and confidentiality was maintained.

Then cold cabbage leaves compression was applied on the breast. The compression was given two hours at a time and per day three times for three days. After the third day the post test was conducted. The effective sample was 60 post natal mothers who participated in the post test. The tools were checked for their completion.

PLAN FOR DATA ANALYSIS

The investigator edited the tool, coded the data and entered the data into excel sheet. statistical analysis was done by SPSS packages version 10. The level of significance, 0.05 was used to reject the null hypothesis.

The data were analyzed as follows:

1) Demographic variables were analyzed by using frequency and percentagedistribution.
2) Effectiveness of cold cabbage leaves compression was evaluated by paired ‘t’test.
3) Association between post test score of breast engorgement and demographic variables were analyzed by Chi-square test.

ETHICAL CONSIDERATION

The study objective intervention and data collection procedures were approved by the research and ethical committee of the institution. Informed consent was obtained from the individual post natal mothers (IUD, Abortion) in oral form. The post natal mothers had the freedom to leave the study at their will without assigning any reason confidentiality was assured. Thus the ethical issues were ensured in the study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the description of the sample analysis and interpretation of the data.

The purpose of analysis was to reduce the collected data for intelligible and interpretable form, so that the relation of the research problem can be studied and tested.

According to Denise Polit 2005, analysis is the method of organizing, sorting and scrutinizing data in such a way that research question can be answered. The analysis and interpretation of data were based on the data collected through the six point breast engorgement scale from post natal mothers. The results were analyzed by using descriptive and inferential statistics.

The analysis of the data were organized and presented under the following heading.

Section I :

Data on frequency and percentage distribution of demographic variables of post natal mothers regarding breast engorgement.

Section II:

Data on effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.

Section III:

Data on association between post test score on breast engorgement with their selected demographic variables among post natal mothers.

SECTION - I

Data on frequency and percentage distribution of demographic variables of post natal mothers regarding breast engorgement.

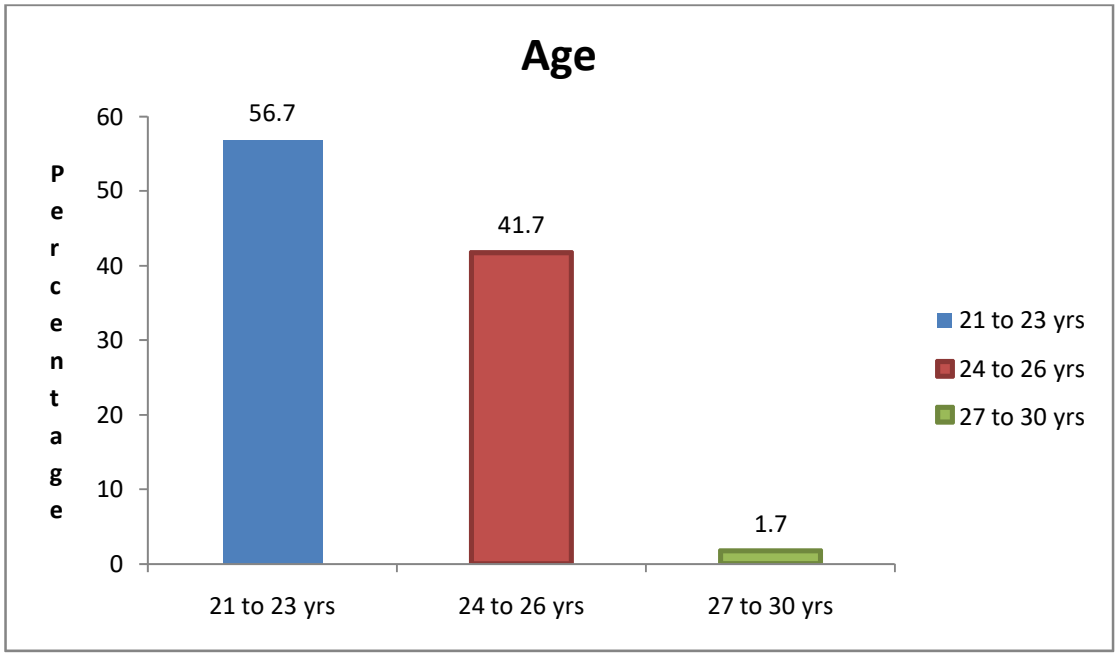

Fig – 3 : Percentage distribution of demographic variables of Age,

Fig:- 3 revealed that age majority 34(56.7%) belonged to 21 – 23 yrs, and the least 1 (1.7) belong to 27 to 30 yrs among postnatal mothers.

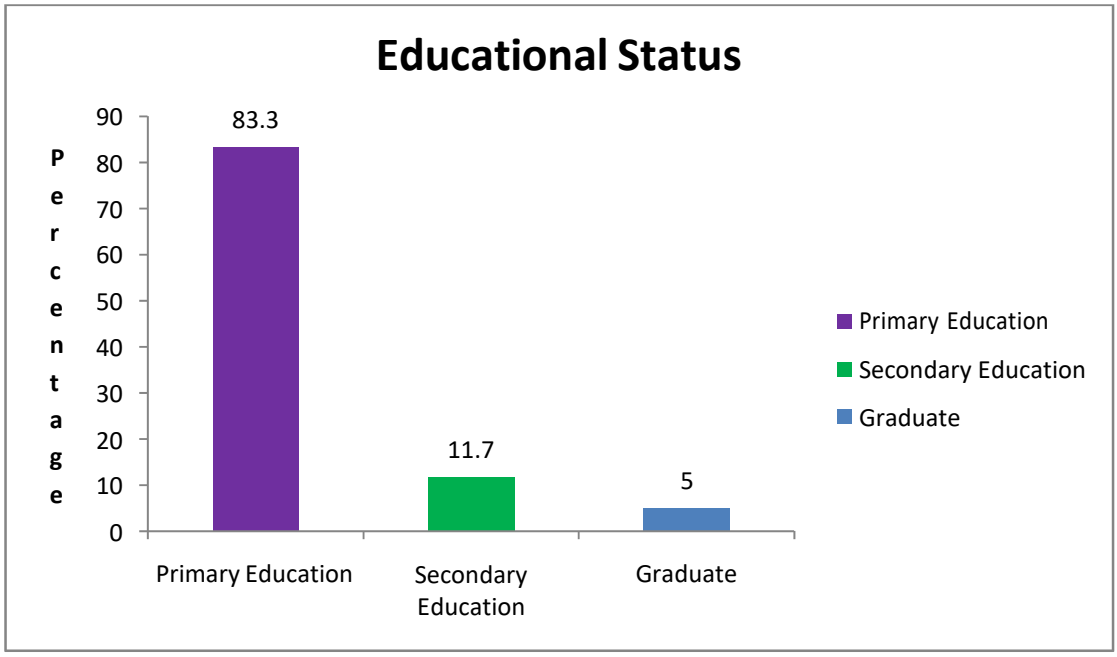

Fig – 4: Percentage distribution of demographic variables of educational status.

Fig – 4 **:** Revealed that educational status majority 50 (83.3%) belonged to primary education and the least 3 (5.0) graduate among postnatal mothers.

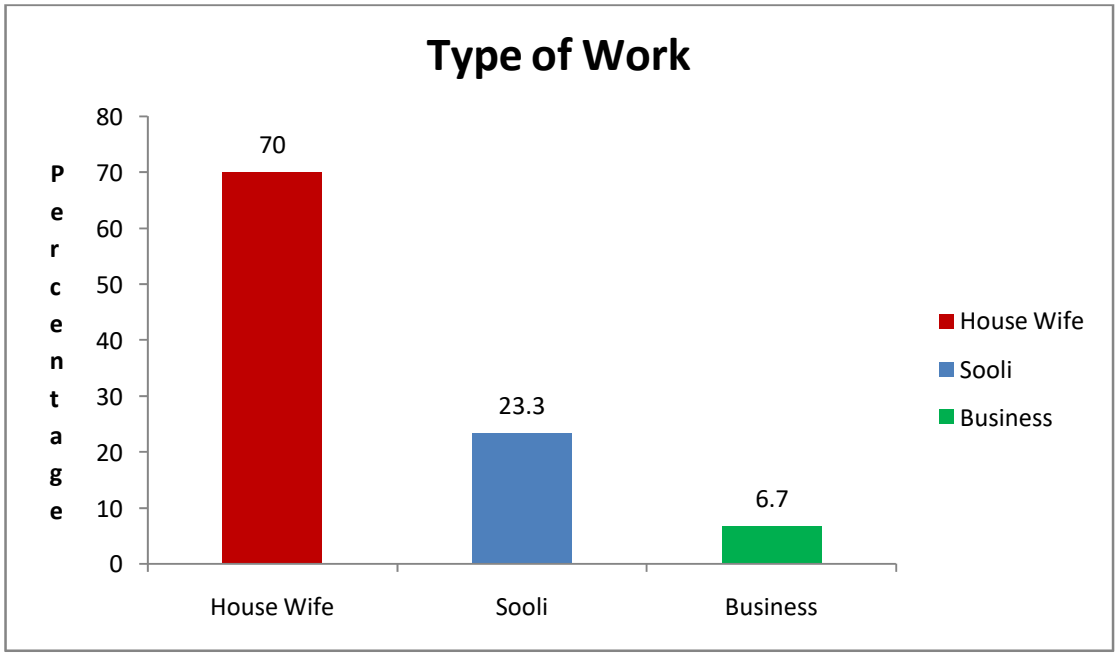

Fig – 5: Percentage distribution of demographic variables of type of work.

Fig:5 Revealed that type of work majority 42 (70.0%) belonged to house wife and least 4 (6.7%) were business among postnatal mothers.

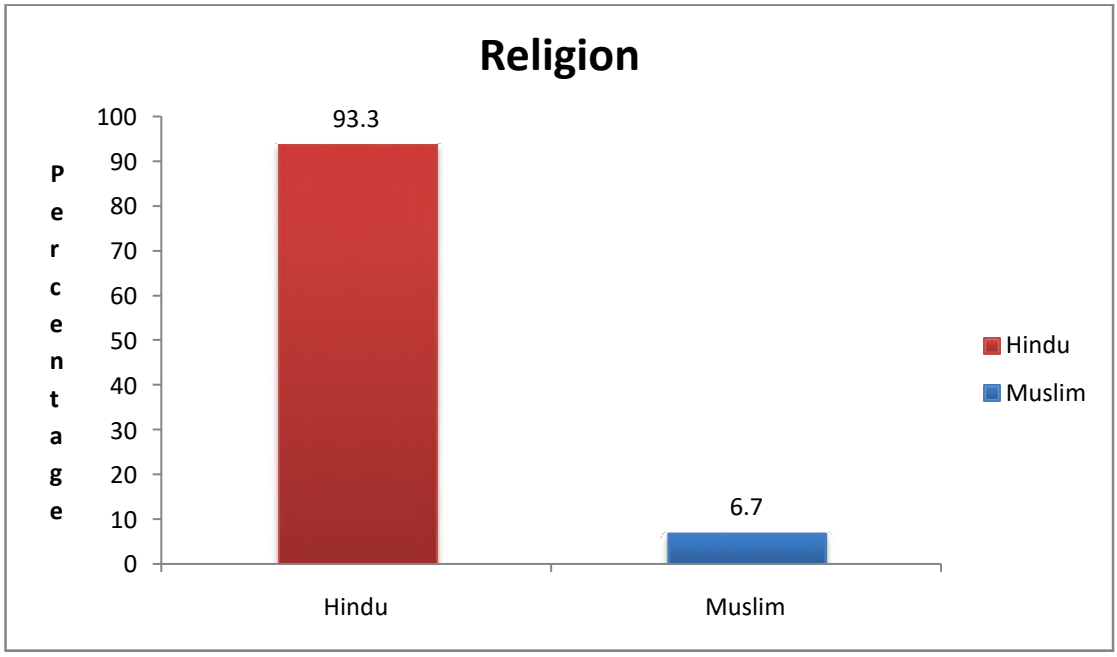

Fig – 6: percentage distribution of demographic variables of religion.

Fig : 6 Revealed that religion majority 56 (93.3%) belonged to Hindu and least 4 (6.7%) were belonged to Muslim among postnatal mothers.

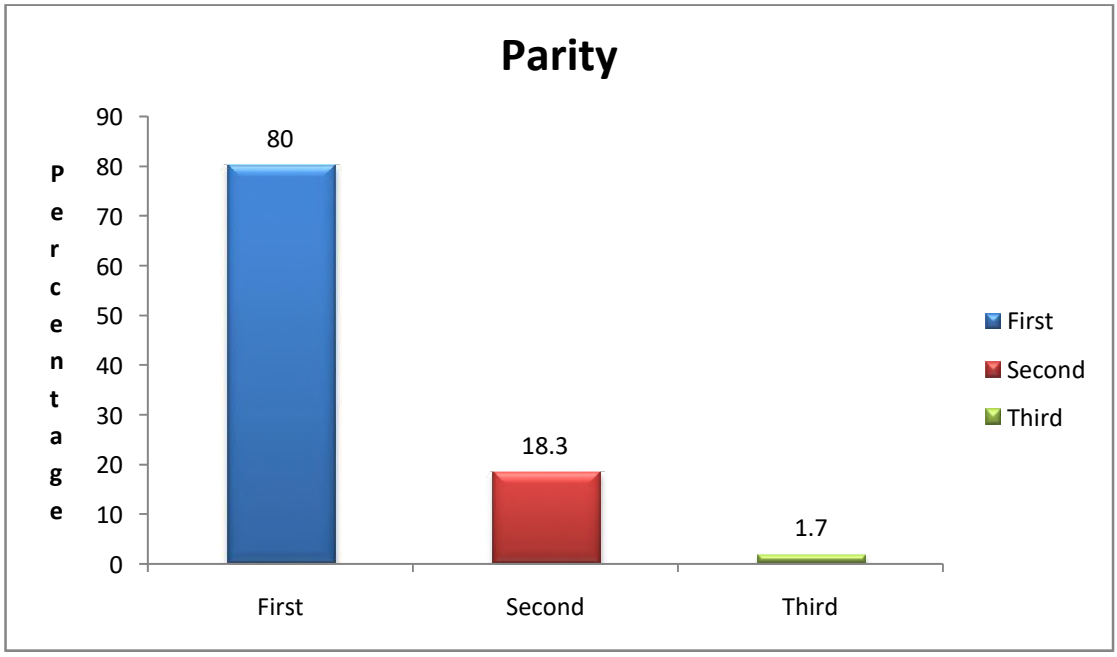

Fig – 7 : Percentage distribution of demographic variables of parity

Fig : 7 Revealed that Parity majority 48 (80.0%) belonged to primi gravida and least 1 (1.7%) were third gravida among postnatal mothers.

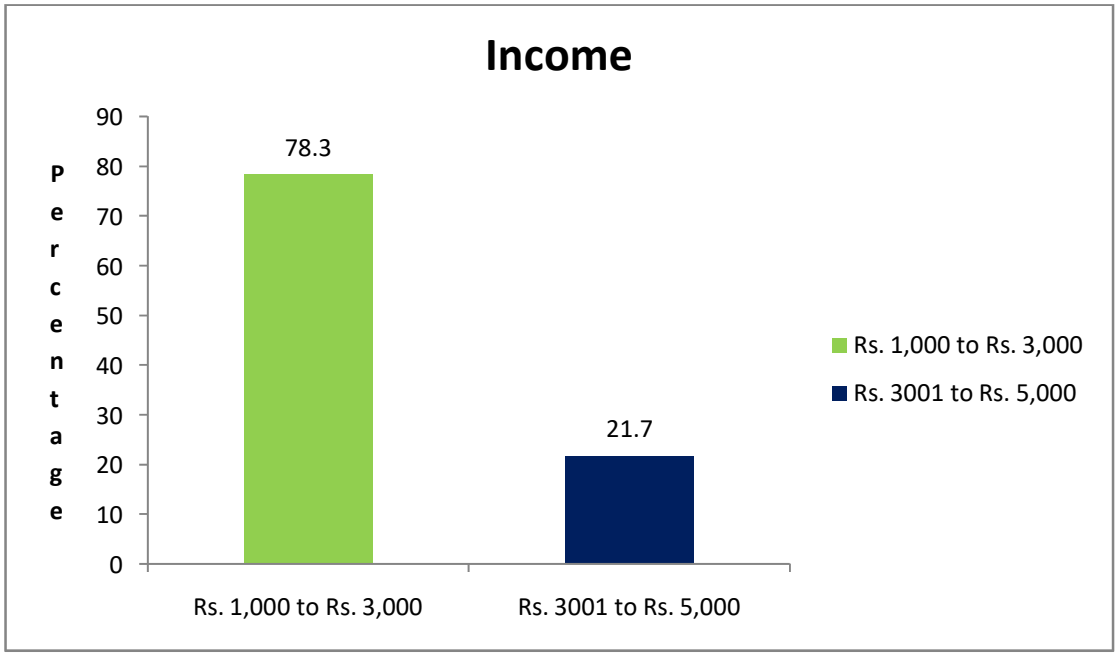

Fig – 8: Percentage distribution of demographic variables of income

Fig : 8 Revealed that Income majority 47 (78.3%) belonged to Rs. 1,000 to 3,000 and least 13 (21.7%) were belonged to Rs. 3,001 to 5,000 among postnatal mothers.

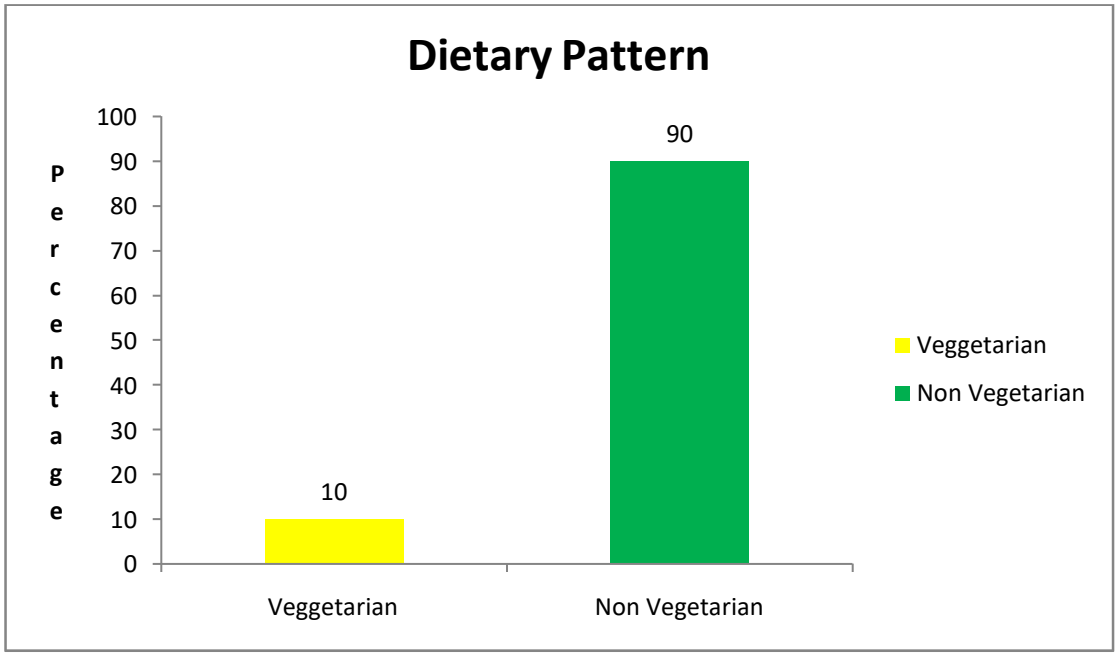

Fig – 9 : Percentage distribution of demographic variables of dietary pattern,

Fig : 9 Revealed that Dietary Pattern majority 54 (90.0%) belonged to non-vegetarian and least 6 (10.0%) were belonged to vegetarian among postnatal mothers.

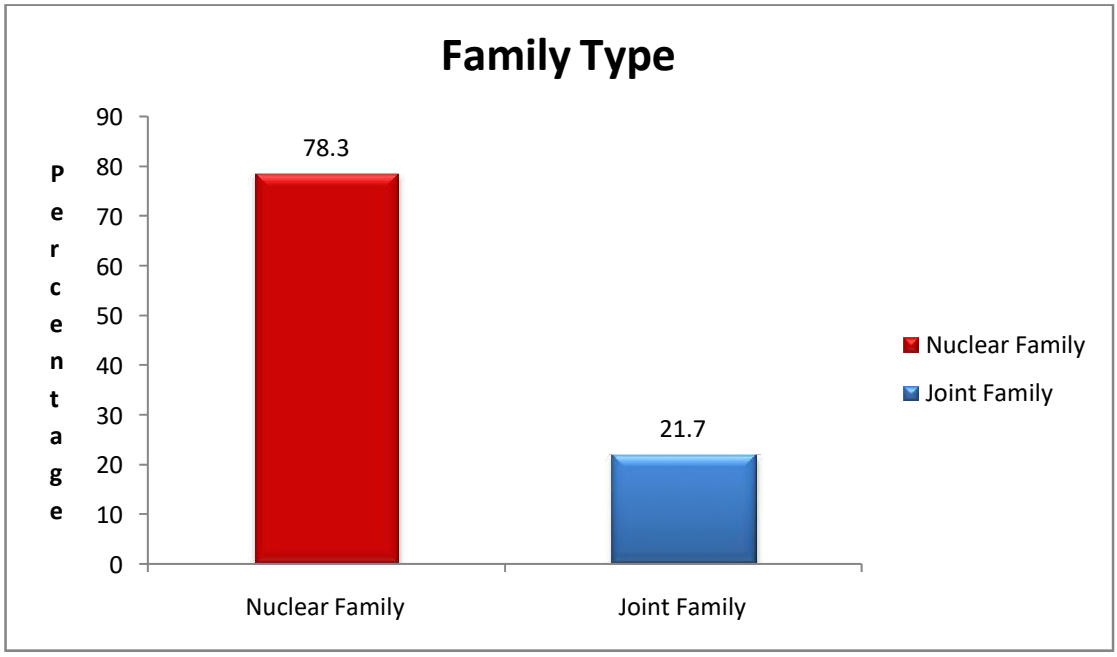

Fig – 10: Percentage distribution of demographic variables of family type

Fig : 10 Revealed that Family type majority 47 (78.3%) belonged to Nuclear family and least 13 (21.7%) were belonged Joint family among postnatal mothers.

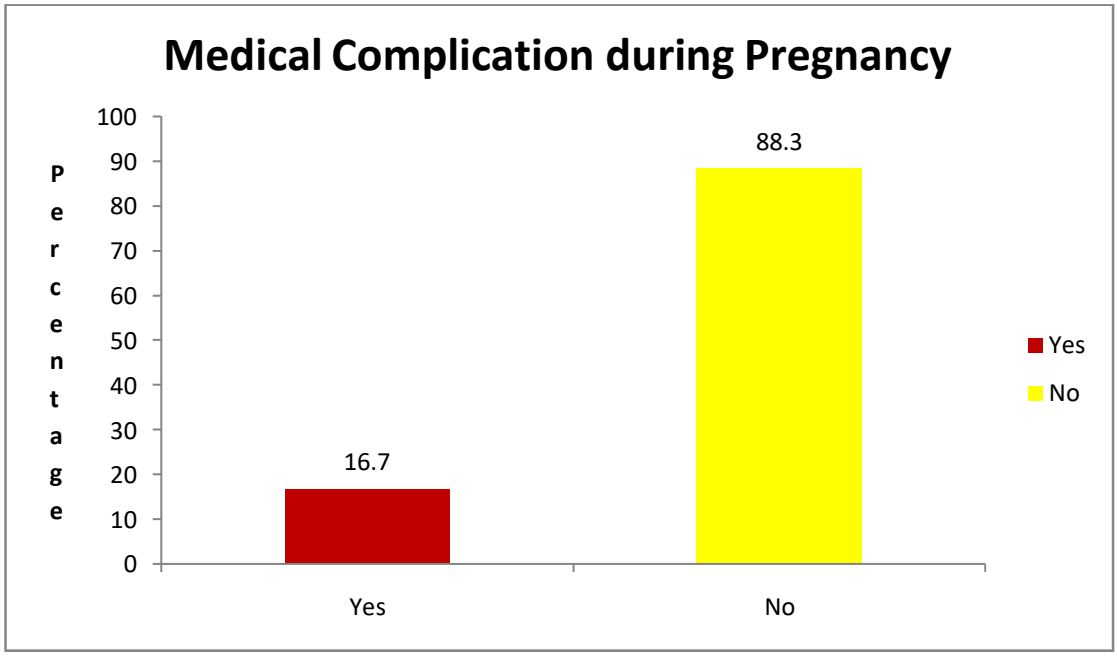

Fig – 11 : Percentage distribution of demographic variables of medical complication during pregnancy

Fig : 11 Revealed that Medical Complication during pregnancy majority 53 (88.3%) did not have complication and least 7 (11.7%) had complication among postnatal mothers.

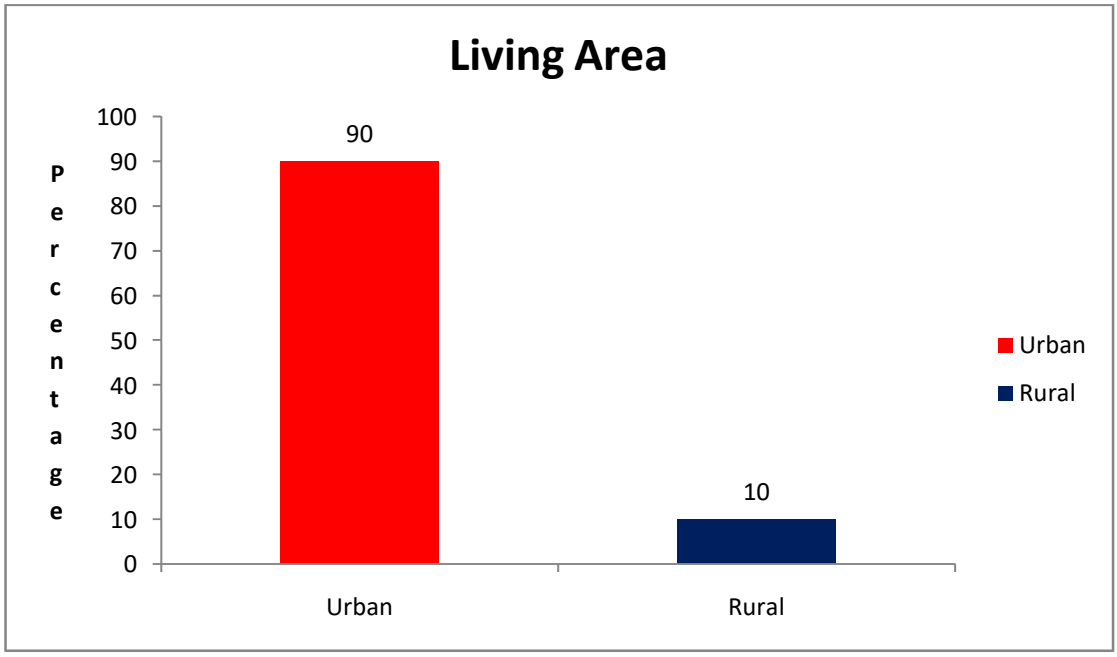

Fig – 12: Percentage distribution of demographic variables of living area

Fig : 12 Revealed that Living Area majority of the mother 54 (90.0%) belonged to Urban and least 6 (10.0%) belonged to Rural among postnatal mothers.

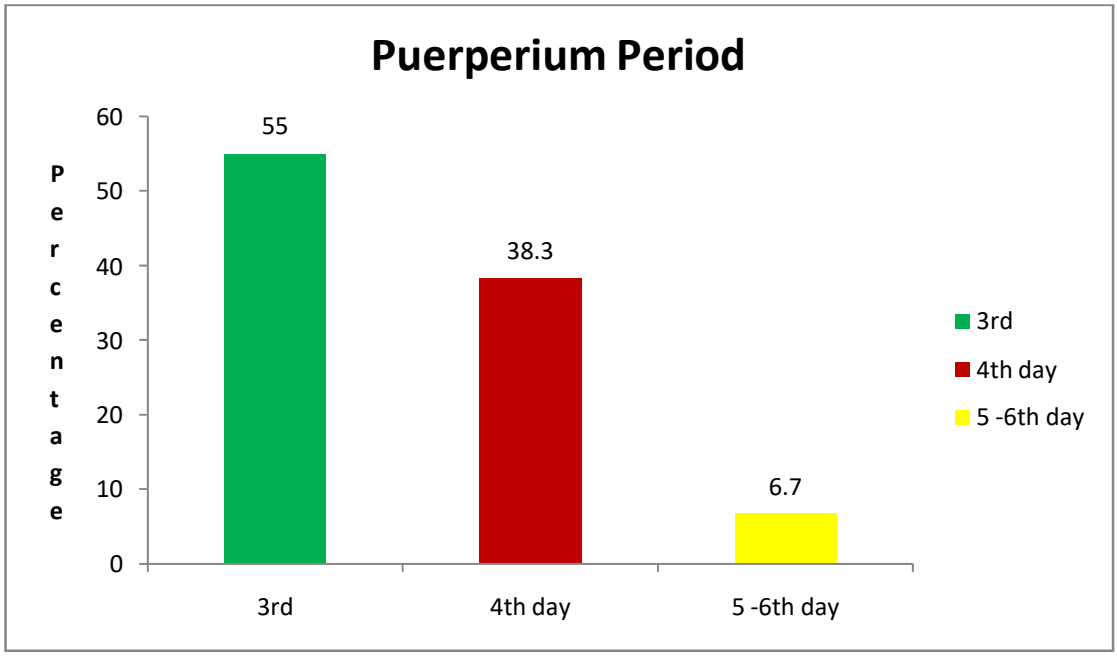

Fig – 13 : Percentage distribution of demographic variables of puerperium period

Fig : 13 Revealed that Puerperium period majority of the mother 33 (55.0%) belonged to 3rd day and least 4 (6.7%) belonged to 5-6th day among postnatal mothers.

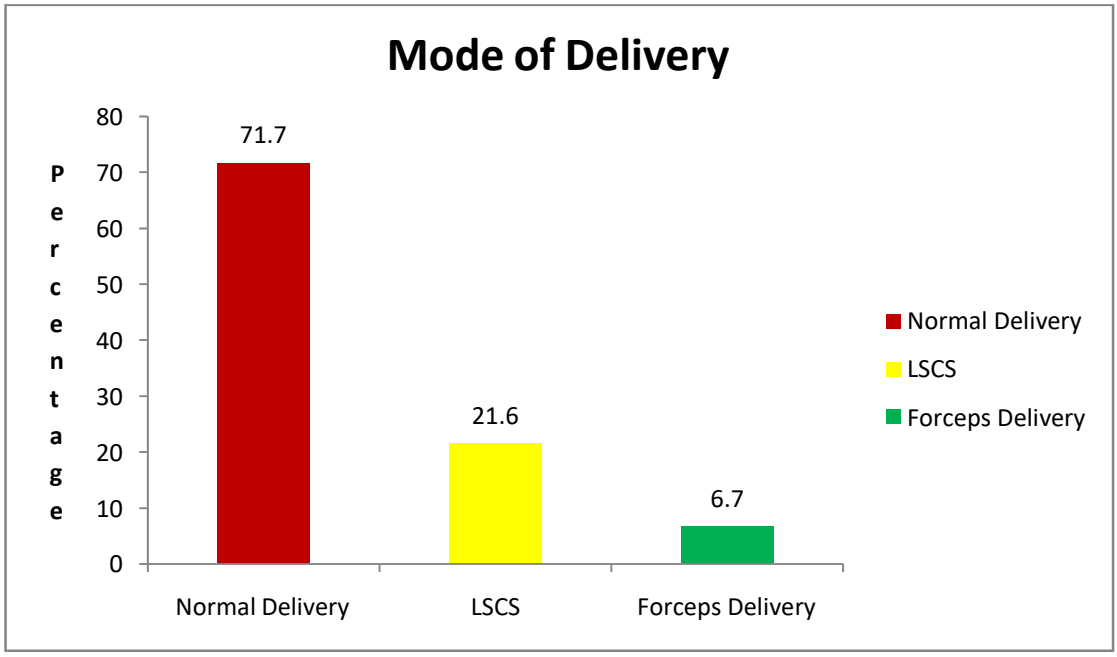

Fig – 14: Percentage distribution of demographic variables of mode of delivery

Fig : 14 Revealed that Mode of delivery majority of the mother 43(71.7%) belonged to Normal delivery and least 4 (6.7%) belonged to Forceps delivery among postnatal mothers.

It was inferred that majority of post natal mothers belonged to 21 – 23 yrs of age, they had primary education, they were house wife, belonged to Hindu religion, majority were primi gravida, their income belonged to Rs. 1000 to 3000, they were non-vegetarian, they belonged to nuclear family, they did not have medical complication during pregnancy, they belong to rural, and they were on 3rd day of puerperium period, had normal delivery.

SECTION II :DATA ON EFFECTIVENESS OF COLD CABBAGE LEAVES COMPRESSION ON BREAST ENGORGEMENT AMONG POSTNATAL MOTHERS.

H01 : There will be no significant difference between the effectiveness of clod cabbageleaves compression on breast engorgement among post natal mothers.

TABLE 1

Mean, SD and 't' value of effectiveness of cold cabbage leaves compression on breastengorgement.

S.No.	Variables	Mean	SD	't' Value
1	Pre test	4.6667	.96843	58.397
2	Post test	1.8333	.74029	(p<0.05)

Table 1shows that among 60 post natal mothers the post test mean 1.8333 wasless than the pre-test mean 4.6667. The obtained 't' value 58.397 was significant at

0.05 level ($p<0.05$). Hence the null hypothesis was rejected.

It was inferred that, the application of cold cabbage leaves on the breast washighly effective in reducing engorgement.

SECTION III: DATA ON ASSOCIATION BETWEEN POST TEST SCORE ONBREAST ENGORGEMENT WITH THEIR SELECTED DEMOGRAPHIC VARIABLES AMONG POSTNATAL MOTHERS.

H02 :- There will be no significant association between the post test finding on breastengorgement with their demographic variables among post natal mothers.

TABLE 2

Data on association between the post test finding on breast engorgement with theirdemographic variables among post natal mothers. N=60

S.No	Demographic Variables	Mild		Moderate		Severe		χ^2
		F	%	F	%	F	%	
1.	Age							
	21 to 23 yrs	26	43.3	8	13.3	-	-	
	24 to 26 yrs	21	35	4	6.6	-	-	0.7646 (NS)
	27 to 30 yrs	1	1.6	0	-	-	-	
2.	Educational status							
	Primary education	40	66.6	10	16.6	-	-	
	Secondary education	5	8.3	2	3.3	-	-	0.5187 (NS)
	Graduate	2	3.3	1	1.6	-	-	
3.	Type of work							
	House wife	32	53.3	10	16.6	-	-	
	Coolie	11	18.3	3	5	-	-	1.2204 (NS)
	Business	4	6.6	0	0	-	-	
4.	Religion							
	Hindu	45	75	11	18.3	-	-	
	Muslim	3	5	1	1.6	-	-	0.668 (NS)
5.	Parity							
	First	38	63.3	10	16.6	-	-	
	Second	10	16.6	1	1.6	-	-	4.8388 (NS)
	Third	0	0	1	1.6	-	-	

6.	Income							
	Rs. 1000 to 3000	36	60	11	18.3	-	-	0.3982 (NS)
	Rs. 3001 to 5000	12	20	1	1.6	-	-	
7.	Diet							
	Vegetarian	5	8.3	1	1.6	-	-	0.0462 (NS)
	Non - Vegetarian	43	71.6	11	18.3	-	-	
8.	Family type							
	Nuclear	36	60	11	18.3	-	-	1.5710 (NS)
	Joint	12	20	1	1.6	-	-	
9.	Medical complication during pregnancy							
	Yes	6	10	1	1.6	-	-	0.0865 (NS)
	No	43	71.6	10	16.6	-	-	
10.	Living area							
	Urban	43	71.6	11	18.3	-	-	0.0462 (NS)
	Rural	5	8.3	1	1.6	-	-	
11.	Puerperium period							
	3rd day	24	40	9	15	-	-	2.7864 (NS)
	4th day	20	33.3	3	5	-	-	
	5-6th day	4	6.6	0	0	-	-	
12.	Mode of Delivery							
	Normal	37	61.6	6	10	-	-	
	LSCS	11	18.3	2	3.3	-	-	3.4437 (NS)
	Forceps	2	3.3	2	3.3	-	-	

Table 2 : Revealed that regarding age majority 26 (43.3%) belonged to 21 to 23 yrs had mild breast engorgement, and least 1 (1.6%) belonged to 27 – 30 yrs had mild breast engorgement. The χ^2 value (0.7646) was not significant at 0.05 level.

Regarding educational status majority 40 (66.6%) primary education mother had mild breast engorgement, and least 1 (1.6%) belonged to graduate mother had moderate breast engorgement. The χ^2 value 0.5187 was not significant.

Regarding to type of work, majority 32 (53.3%) belonged to house wife mother had mild breast engorgement, and least 3 (5%) belonged to coolie mother had moderate breast engorgement. The χ^2 value 1.2204 was not significant.

Regarding to religion, majority 45 (75%) belonged to Hindu mother had mild breast engorgement, and least 1 (1.6%) belonged to Muslim mother had moderate breast engorgement. The χ^2 value 0.0668 was not significant.

Regarding to parity, majority 38 (63.3%) belonged to primi mother had mild breast engorgement, equally distributed 1 (1.6%) belonged to second and third gravida mother had moderate breast engorgement. The χ^2 value 0.0668 was not significant.

Regarding to income, majority, 36 (60%)belonged to Rs.1000 to 3000 earning mother had mild breast engorgement, and least 1 (1.6%) belonged to Rs 3000 to 5000 earning mother had moderate breast engorgement. The χ^2 value 0.3982 was not significant.

Regarding to diet majority 43 (71.6%) belonged to non-vegetarian had mild breast engorgement, and least 1 (1.6%) belonged to vegetarian had moderate breast engorgement; The χ^2 value 0.0462 was not significant.

Regarding to family type, majority 36 (60%) belonged to nuclear family mother had mild breast engorgement, and least 1 (1.6%) belonged to joint family mother had moderate breast engorgement. The χ^2 value 1.5710 was not significant.

Regarding medical complication during pregnancy, majority 6(10%) did not had medical complication during pregnancy, and least 1 (1.6%) belonged to had moderate medical complication during pregnancy. The χ^2 value 0.0865 was not significant.

Regarding living area, majority 43 (71.6%) belonged to urban mother had mild breast engorgement and least , 1 (1.6%)belonged to rural mother had moderate breast engorgement. The χ^2 value 0.0462 was not significant.

Regarding puerperium period, majority 24 (40%)belonged to3rdday had mild breast engorgement, and least 3 (5%)belonged to 4^{th} day had moderate breast engorgement,. The χ^2 value 2.7864 was not significant.

Regarding mode of delivery, majority 37 (61.6%)belonged to normal delivery mother had mild breast engorgement, and equal distribution 2 (3.3%)belonged to LSCS and forceps delivery mother had moderate breast engorgement;. The χ^2 value 3.4437 was not significant.

It was inferred that there was no association with their demographic variable like age, educational status, type of work, religion, parity, income, diet, family type, medical complication during pregnancy, living area, puerperium period, mode of delivery. The stated null hypothesis was accepted. So the cold cabbage leave compression was independently effective in reducing breast engorgement among postnatal mothers [IUD, abortion].

CHAPTER – V

FINDINGS AND DISCUSSION

The aim of the present study was to evaluate the effectiveness cold cabbage leaves compression on breast engorgement. The study was a Pre experimental with one group pre test and post test design. Sample size was 60 postnatal mothers were selected by purposive sampling technique.

The effectiveness of cold cabbage leaves compression were evaluated with six point breast engorgement scale.

The responses were analyzed through descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistics (paired 't' test, χ^2). **DISCUSSION ON THE FINDINGS WAS ANALYZED BASED ON THE OBJECTIVESOF THE STUDY.**

Objective 1:

To assess the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.

Findings 1

There was a significant difference (pre test mean 4.6667, SD 0.96843, post test mean 1.8333 and SD 0.74029) in cold cabbage leaves compression on breast engorgement among post natal mothers, 't'=58.397 ($p<0.05$). So the cold cabbage leaves compression was independently effective in reducing breast engorgement among postnatal mother [IUD, abortion].

Discussion

The above objective was supported by Elizaberth joy (2007) conducted a study on relieve breast engorgement. She found that the percentage of women who reported experiencing engorgement went as follows:

- After the 1st feed 54% of the cabbage group and 57% of the control group.
- After the 3rd feed 49% of the cabbage group and 51% of the control group.
- After the 4th feed 45% of the cabbage group and 50% of the control group.

The above finding was supported by Sandra Smith; 1997, conducted study on Cabbage leaves for treatment and prevention of breast engorgement, here the experimental group received cabbage leaves and control group received regular breast care. At six weeks the group using cabbage leaves was more likely to be breast feeding exclusively (p=0.09) and their mean duration of exclusive breast feeding was significantly longer than control (p=0.04). researchers concluded that, cabbage leaves gives better results than normal breast care.

Objective 2 :

To associate the post test score of breast engorgement with their selected demographic variables among post natal mothers.

Findings 2 :

There was no significant association with their demographic variables, age 0.7646, education status 0.5187, occupation 1.2204, religion 0.668, parity 4.8388, income 0.3982, dietary pattern 0.0462, family type 1.5710, medical complication 0.0865, living area 0.0462, puerperium period 2.7864, mode of delivery 3.4437 among post natal mothers.

CHAPTER – VI

SUMMARY LIMITATION, IMPLICATIONS, RECOMMENDATION ANDCONCLUSION

This chapter deals with summary, conclusion, limitation and recommendation of the study. Further it includes implications for nursing practice, nursing education, nursing administration and for future nursing research.

SUMMARY

The present study was a pre experimental study to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers in medical college hospital at Tirunelveli district.

OBJECTIVES

- To assess the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.
- To associate the post test score of breast engorgement with their selected demographic variables among post natal mothers.

HYPOTHESIS

- There will be a significant difference between the effectiveness of cold cabbage leaves compression breast engorgement among post natal mothers.
- There will be a significant association between the post test score on breast engorgement with their selected demographic variables among post natal mothers.

The study was conducted in medical college hospital at Tirunelveli district.

The research design used in this study was a Pre experimental one pre and post test design. The samples were selected by purposive sampling technique. The sample size consisted of 60 post natal mothers. The tool used for the data collection was a six point breast engorgement scale to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.

The content validity was done by 5 experts. Reliability was 0.768.

The tool used to collect the data was comprised of 2 parts. Part I dealt with demographic variables, part II had six point breast engorgement scale to evaluate the effectiveness of cold cabbage leaves compression on breast engorgement among post natal mothers.

The data were analyzed by using descriptive statistics percentage, mean and standard deviation and inferential statistics (paired‘t’ test, chi-square test).

MAJOR STUDY FINDINGS

The major findings of the study were classified under the following heading based on the objective of the study.

OBJECTIVE 1

To evaluate the effectiveness of cold cabbage leaves compression on breast engorgement.

There was a significant difference (pre test mean 4.6667, SD 0.96843, post test mean 1.8333 and SD 0.74029) in cold cabbage leaves compression on breast engorgement among post natal mothers, $t=58.397$ ($p<0.05$). So the cold cabbage leaves compression was independently effective in reducing breast engorgement among postnatal mother [IUD, abortion].

OBJECTIVE 2

To associate the post test score of breast engorgement with their selected demographic variables among post natal mothers.

Findings are, there was no significant association with their demographic variables, age χ^2 0.7646, education status χ^2 0.5187, occupation χ^2 1.2204, religion χ^2 0.668, parity χ^2 4.8388, income χ^2 0.3982, dietary pattern χ^2 0.0462, family type χ^2 1.5710, medical complication χ^2 0.0865, living area χ^2 0.0462, puerperium period χ^2 2.7864, mode of delivery χ^2 3.4437 among post natal mothers. So the cold cabbage leave compression was independently effective in reducing breast engorgement among postnatal mother [IUD, abortion].

IMPLICATIONS

The result of the study proved that cold cabbage leaves compression had asignificant effect in reducing breast engorgement among post natal mothers.

The findings of the study have the following implications in nursing practice andnursing research.

NURSING PRACTICE

1) Nurses have a responsibility to reduce the breast engorgement among post natal mothers.
2) Cold cabbage leaves compression can be part of nursing intervention because it is cost effective and can be easily practiced by post natal mothers.

NURSING ADMINISTRATION

- The nurse administrator can encourage the staff nurses, student nurses and multipurpose health workers to involve in research activities of cold cabbage leaves compression.
- Periodic seminar, discussion, workshop and conference have to conduct for the staff nurses and other medical professionals.
- Arrange other alternative therapies and give training to the health workers and make them put in to practice.
- Appropriate teaching – learning materials need to be prepared and made available for nurses.

NURSING EDUCATION

- There is a need for collaboration of the nursing and health with other department like education to ensure that regular health sessions are organized for the post natal mothers.
- Nurse educator need to prepare the nursing students to obtain the skill to educate the mother about importance of cold cabbage leaves compression onbreast engorgement.
- Nurse educator must know about the preparation of cold cabbage leaves.

NURSING RESEARCH

The study will be a valuable reference for future researchers.

1) The findings of the study would help to expand the scientific body ofprofessional knowledge upon which further research can be conducted.
2) Cold cabbage leaves compression may be studied more scientifically and usedas a specific nursing intervention.

LIMITATIONS

1) The study was limited to post natal mothers had IUD, and Abortion.
2) The study had no control group to prove the effectiveness of cold cabbageleaves compression.
3) The samples were selected by non-random method limiting the generalizability.
4) The intervention was given only for 4 weeks.

RECOMMENDATION

1) A similar study can be replicated on a large sample for more reliability and effectiveness.
2) A true experimental study with experimental and control group can beconducted.
3) Similar study can be conducted with modified tool on breast engorgement.

CONCLUSION

Cold cabbage leaves compression was effective in the reduction of breast engorgement. Therefore cold cabbage leaves compression should be used as supportive therapy for breast engorgement.

REFERENCE

BOOK

1. Adelepillitteri. “Maternal and child health nursing”, 5th edition, Lippincott, Williams and Wilkins publications.
2. Basavanthappa. BT. “Nursing research”, 2nd edition, Jaypee brothers.
3. Bennet V.R. and Brown L.K. “ Myles text book for midwives”, 14th edition, Edinburgh, Churchill Livingston, 2003.
4. Bobak. M.I. Laudermilk D.L. and Janse M.D. “Essential of Maternity Nursing”, St. Louis C.V. Mosby. 1987
5. Chenoy. R. “Clinical obstetrics and Gynaecology” London, Addison wesly publishing company, 1987.
6. Dona Rinaldi. “Qualitative research in nursing”, 1st edition, J.B. Lippincott company, 1995.
7. Dutta DC. “Text book of obstetrics including perinatalogy and contraception”, 3rd edition, Calcutta; New central book agency: 2004.
8. Deitra leonard lowder milk et.al; maternity and women’s health care ; 6th Edition, mosby publication, 1997.
9. Franger DM, Cooper MA. “Myles text book for midwives”, 14th edition. Toronto, Churchill Livingston: 2005.
10. Jan Riordan; breast feeding and human lactation, 1st edition, jones and Bartlett publication,2005.
11. Judy torgus et.al. the womanly art of breast feeding, 35th edition, blume publication,2004.
12. Kerlinger FN. “Foundation of behavioural research”, 2nd edition, New Delhi; Surject publication: 1983.
13. Kothari CR. “Research methodology”, 2nd edition, New Delhi, New age international publication: 2004.
14. Marsha walker. Core curriculum for lactation consultant practice, 1st edition, jones and Bartlett publication, 2002.
15. Novak C. Julie. “Maternal and child health nursing”, Mosby publications, 8th edition. 1995

16. Polit DF, Hungler BP. "Nursing research principles and methods", 6th edition, Philadelphia, Lippincott:2008.
17. Pamela gansohow. Breast health and common breast problem; a practical approach, 1st edition, ACP publication.
18. Reader SJ, Martin LL, "Maternity nursing", 18th edition, Philadelphia, Lippincott: 1997.
19. Sheila Humphrey. The nursing mother's herbal, 1st edition, fair view publication, 2003.
20. Susan Scott Ricci. "Essentials of maternity, new born and women's health nursing", 1st edition, Lippincott Williams and wilkins publications: 2007.

JOURNAL OBSTETICS

1. Ayers, J. F. The use of alternative therapies in the support of breast feeding. Journal of human lactation, vol.16, (2000). 52-56.
2. Caplan, L. M. Drawing action of cabbage leaves, Journal of human lactation, vol.15,No.4:1999.
3. Emmanuvel. K. nursing intervention of post natal mothers with breast engorgement. Nightingale nursing times. Vol. 2 ; No:1; 2005.
4. Kathryn L. Roberts. A comparison of chilled cabbage leaves and chilled gelpacks in reducing breast engorgement. Journal of human lactation. Vol. (ii); No:1 ; 1995: 17-20.
5. Lawrence, R.A. (1999). Breast feeding: A guide for the medical profession, 5th ed. New York, NY: C.V Mosby.
6. Nikodem V.C, Danzinger D et.al, Do cabbage leaves prevent breast engorgement. Issues in postnatal care and education. Vol. 20; No:2; 1993: 61-64.
7. Roberts KL, Reiter et. al. A comparison of chilled and room temperature cabbage leaves in treating breast engorgement. Journal of human lactation. Vol. 11; No: 3; 1995: 191-194.
8. Robert, K.R. A Comparison of Chilled Cabbage Leaves and Chilled Gelpacks in Reducing Breast Engorgement. Journal of human lactation, vol.11, (1995). 17-20.
9. Rosier, W. Cool Cabbage Compresses. Breast feeding review, vol.12.No.1. (1988). 28-37.
10. Shifer, P. Cabbage leaf enzymes (letter to the editor). Journal of human lactation vol.(11), (1995). 264.
11. Talwar V. gestational macromastia. Journal of obstetrics. Vol. 48; No:2; 1998: 48-50.

NET REFERENCE

http://www.breastpumpdeals.com.

http://www.breastfeedingonline.com

http://www.ncbi.nib.gov/pubmed.

http://midwifeinfo.com/articles/cabbageleaves-for.breast.engorgement.

http://www.tuscalosaneus.com

http://www.IJCM.org.in

http://www.drgreene.com

http://www.babymed.com

http://www.loveyourbaby.com

http://www.leron-line.com

http://www.sths.com

http://www.imaginis.com

http://www.imaginis.com//breastfeeding/problems.asp

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APPENDIX – I

Tool

SECTION - I

DEMOGRAPHIC VARIABLES

Tick (√) the appropriate answer.

1) Age

   a) 21 to 23 Years ( )

   b) 24 to 26 Years ( )

   c) 27 to 30 Years ( )

2) Educational Status

   a) Primary Education ( )

   b) Secondary education ( )

   c) Graduate ( )

3) Type of work

   a) House wife ( )

   b) Cooli ( )

   c) Business ( )

4) Religion

   a) Hindu ( )

   b) Muslim ( )

5) Parity

   a) 1 ( )

   b) 2 ( )

   c) 3 ( )

6) Income

   a) Rs. 1000 to 3000 ( )

   b) Rs. 3001 to 5000 ( )

7) Dietary pattern

   a) Vegetarian ( )

   b) Non-Vegetarian ( )

8) Family type

   a) Nuclear family ( )

   b) Joint family ( )

9) Any other medical complication during pregnancy

   a) Yes ( )

   b) No ( )

10) Living area

   a) Urban ( )

   b) Rural ( )

11) Puerperium period

   a) 3rd day ( )

   b) 4th day ( )

   c) 5 – 6th day ( )

12) Mode of delivery

   a) Normal delivery ( )

   b) LSCS ( )

   c) Forceps delivery ( )

SECTION - II

SIX POINT BREAST ENGORGEMENT SCALEs

S.No	Score	Description
1	1	Soft
2	2	Heaviness
3	3	Firm, non-tender breast
4	4	Firm, beginning tenderness in breast
5	5	Firm tender
6	6	Very firm, very tender with observable vein

Scoring

1 to 2 – Mild breast engorgement

3 to 4 – Moderate breast engorgement

5 to 6 – Severe breast engorgement.