



# AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF APPLICATION OF CABBAGE LEAVES ON REDUCTION OF BREAST ENGORGEMENT AMONG POSTNATAL MOTHERS IN SELECTED HOSPITALS OF JABALPUR

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## ABSTRACT

**Background** – The most innate and purest of all human activities is breastfeeding. Its an up breast in strengthening the mother baby bonding. Amongst the postpartum complications one of the commonest is breast engorgement. Its an painful overfilling of the mammary glands with milk. If not treated it can result in severe breast complications like mastitis. The nurse practioners knowledge of alternative and complementary therapy of dealing with engorgements would surely help in reducing this post partum morbidity and thereby improving the maternal and newborn care Need Of The Study---The investigator herself is a woman, hence she could discern the urgent requirement of promoting an efficacious technique for decreasing the breast engorgement following labour. Using cabbage leaves is a convenient method for this purpose. Hence the study was undertaken to determine the outcome of cabbage leaves application in reducing it. Method The study utilized a Quasi experimental research approach with two group pretest - posttest design. The data was collected from selected hospitals of Jabalpur city by using purposive sampling technique. The sample comprised 40 postnatal mothers. The tool used for collecting demographic data were a interview along with the analogue pain scale and Hill& Humenic breast engorgement scale, Application of cabbage leaves was done for 20 minutes after the breast feeding for reduction of breast engorgement in post natal mother

**Result**-- The assessment of breast engorgement scale in this study shows that the Assessment control group indicate majority of engorgement scale Severe engorgement (11) 55% group, moderate was (8) 40% and mild engorgement is (1) 5% Finding of the present study shows the assess in breast engorgement scale indicate majority of engorgement scale Severe engorgement (13) 65% group, moderate was (6)30% and mild engorgement is (1)5% in Pre-Experimental group. Finding of the present study shows the assess in breast engorgement scale indicate majority of engorgement scale Severe engorgement (11)55% group, moderate was (8)40% and mild engorgement is (1)5% in Post-Experimental group. The t-test compared result showed positive correlation that calculated value is  $t=5.075$  which is greater than  $t=1.685$  at the 0.05 level of significance. Findings related to the comparison of severity of the breast engorgement score with control group and experimental group by the unpaired t-test, compared result showed positive correlation  $t=3.90$  which is greater than the table value 2.02 at the 0.05 level of significance. Conclusion – In order to foster the MGDs 4 and MGD 5 simple and easily available techniques like cabbage leaves application on breast engorgement should be commonised in practice by the nurse administrators and midwifery practioners so that this major discomfort is relieved .cabbage leaves does not reduce the milk production and supply but only works on the fluid trapped around . it helps in the capillary dilatation and acts a counter irritant . The inflammation ,pain and engorgement is reduced allowing the milk to flow freely

**KEY WORDS**-- Cabbage Leaves, Reduction of breast Engorgement, Postnatal mothers

## INTRODUCTION

Sufficient milk, early supplementation and the higher percentage of breast feeding results in minimal or no engorgement in the first seven days postpartum .This leads to the decline in the early week. [1] (Dutta 2004)

It is well established that cabbage leaves contain sinigrin (allylisothiocyanate) rapine, magnesium, oxalate and sulphur

heterosides. sulpher and the sulpher and amino acid methionine in cabbage contains both antibiotic and anti-irritant qualities. It dilates local capillaries and hence reduces congestion in tissues. This results in enhanced blood flow which permits reabsorption of the fluid confined in the breast by the body. This in turn helps in relieving the engorgement and inflammation ensuring free flow of the breast milk.[2]



In May 2004, Cotterman conducted a study which proved that efficacious breastfeeding needs effective milk transfer through the nipple areola complex embraces sub-areola tissue. Resistance in sub-areola tissue enhances during engorgement, as there is competition for space as a result of increased circulation and surplus interstitial fluid with expanding milk volumes. Breast anatomy often gets distorted owing to physiologic and iatrogenic activities. Several mothers get disheartened because of various underlying factors such as latch difficulty, slow milk ejection, reflex, low milk transfer, persistent pain and nipple injury. [3]

### NEED OF THE STUDY

13.3% of non-breastfeeding mothers suffer from puperial fever as a result of breast engorgement. Although there are several medications, which go well with breastfeeding, minimizing the use of medication during breastfeeding is recommended. [4]

The incidence rate of breast engorgement all over the world is 1:8000 and in India its 1:6500. Symptoms of engorgement usually appear between days 3 and 5. Generally, more than 2/3 of women get tenderness on fifth day but some may show tenderness as late as ninth or tenth day. Two-thirds of women feel at least moderate symptoms. Engorgement reduces if the mother breastfeeds more during the first 48 hours. The 20% postnatal mothers particularly primigravida mothers suffer from breast engorgement as early as 0-4 days of postnatal period. [5]

Looking to both educate mothers and celebrate breastfeeding, UNICEF, WHO and WABA along with the scientific community strongly advocate beginning breastfeeding within of the first hour of birth. Various researches have proved that early start of breastfeeding can check 22% of all fatalities among infants under 1 month in developing countries. (Cape Cod Daily 2017) [6]

Investigator had observed many mothers who were suffering from breast engorgement during postnatal period. The maternal complications like mastitis and breast abscess were common. This results in the infant being deprived of adequate milk, incomplete emptying of the breast and sore and damaged nipples with an indirect adverse impact on the infant. The nurse should have a knowledge of the fruitful treatment of breast

engorgement and the resulting complications in order to diminish the pain of mothers a bit. The study was undertaken with the following objectives:

1. Assessment of the level of breast engorgement among post natal mothers in control group.
2. Assessment of the effectiveness of cabbage leaf application during breast engorgement among experimental group mothers.
3. Comparison of the breast engorgement score of postnatal mothers in control group with experimental group.
4. Association of the breast engorgement level with selected socio demographic variable in control group.
5. Association of the breast engorgement level with selected socio demographic variable in the experimental group.

**HYPOTHESES** ( All hypotheses were tested at 0.05 % level of significance)

H1: There will be significant mean difference between control group and experimental group in level of breast engorgement and pain among post-natal mothers.

H2: There will be significant association between breast engorgement score with selected demographic variable in control group.

H3: There will be significant association between the breast engorgement score with selected demographic variable in experimental group.

Modified Wiedenbach's Helping Art of Clinical Nursing Theory was adopted as conceptual frame.

### RESEARCH METHODOLOGY

The study utilized a Quasi experimental research approach with two group pretest - posttest design. The data was collected from selected hospitals of Jabalpur city by using purposive sampling technique. The sample comprised 40 postnatal mothers. The tool used for collecting demographic data were a interview along with the analogue pain scale and Hill & Humenic breast engorgement scale, Application of cabbage leaves was done for 20 minutes after the breast feeding for reduction of breast engorgement in postnatal mothers.



## MAIN OPERATIONAL DEFINITIONS

### 1. Application of Cabbage leaves

In this study it refers to cover the engorged breast with the appropriate size cabbage leaves to decrease the breast engorgement during post-natal period for 20 minutes

<repeated from introduction> Use of Cabbage Leaves for Breast Engorgement

- The leaves were rinsed and the stem was carefully cut out so that the leaves might fit entire breasts leaving the nipples uncovered.

- Clean cabbage leaves were placed on the breasts. Areola was left uncovered while wrapping the leaves around breastso that the area around areola might remain dry and intact.

### 2. Breast engorgement

In this study, breast engorgement refers to the disease condition in the mammary glands which results from expansion of blood vessels and the pressure of new breast milk filled within them and this is assessed by using Storr scale/ Hill & Humenic scale.

### 3. Postnatal mother

In this study it refers to all the mothers of post-natal period with normal delivery and lower segment caesarean delivery admitted in selected hospitals of Jabalpur without any breast complications.

## CRITERIA FOR SAMPLE SELECTION

Inclusion criteria-

Post natal mothers,

1. Who are undergoing normal vaginal delivery
2. Who have had a lower segment caesarean section
3. Who have had classical caesarean section
4. Both primi and multi para mothers

Exclusion criteria-

Postnatal mothers,

1. Who were having mastitis and cracked nipples
2. Who did not agree to participate in the study
3. Who were absent when data were being collected.

## VALIDATION OF THE TOOL

The prepared tool with statement, objectives, and hypotheses was submitted to ten obstetrics and gynecology department experts and five other experts. Necessary changes were made as per suggestions given by the expert's opinion.

## RELIABILITY OF THE TOOL

The reliability was calculated by means of split half method, which measures the coefficient of internal consistency. The correlation obtained by using Karl Pearson's Correlation Coefficient.

The reliability for visual analogue pain scale was calculated and obtained value was  $r = 0.93$  which showed that the tool was reliable.

The reliability for breast engorgement scale was calculated and obtained value was  $r = 0.93$  which showed that the tool was reliable.

## DESCRIPTION OF THE TOOL

The tools used in this study were:

- 1)Section A: Demographic data of post natal mothers
- 2)Section B:
  - i. Assessment by visual analogue pain scale
  - ii. Six point breast engorgement scale

Section A:

Socio-Demographic Data of Postnatal Mothers

A structured interview schedule was used to collect baseline data about socio-demographic variables like age, education, working, socio-economic status, parity of mother, type of delivery process, previous treatment for breast engorgement, breastfeeding initiated within and baby is with.

Section B

i. Assessment of Breast Pain Intensity

It comprised visual analogue pain assessment scale to assess the intensity of pain during breast engorgement.

ii. Six Point Engorgement Scale:

Developed by Hill & Humenick, it was utilized to assess the level of breast engorgement in the given scoring ranges from 1 to 6.9 In this the researcher rated the breast engorgement level of the post natal mothers. The scoring was done before and after application of cabbage leaves. Engorgement score increases from 1 to 6 according to severity of engorgement.

### i. VISUAL ANALOUGE PAIN SCALE.[8]

FACIAL EXPRESSION	SCORE
NONE	0
ANNOYING	1-2
UNCOMFORTABLE	3-4
DREADFUL	5-6
HORRIBLE	7-8
AGONIZING	9-10

Score of postnatal women's response to the questions was marked as follows:

- soft breast and without any changes, score as-1
- slight changes in the breast, score as-2
- firm and no tender breast, score as -3
- firm, and beginning tenderness in breast, score as-4
- firm and tender of the breast, and score as-5
- very firm and very tender, score as-6

ENGORGEMENT SCORE:Mild: (1-2) Moderate: (3-4 )  
 Severe: (5-6)

## RESULTS

Control Group

Finding of the variables shows that out of 40 samples maximum numbers of mothers are in the age group of 26-30 years which is 40%, in education group majority of mothers are primary which is 35%, in type of family majority belongs to nuclear family which is 45%, the maximum socio economic status was below Rs. 10000 (40%), maximum occupation of mother were self employed which is(45%), maximum age for menarche was 11 years and 12 years which is (35%), the maximum parity of



mother was primi para was 10 which is (50%), the maximum mothers who faced breast engorgement were 18 which is (90%), the maximum delivery was lower segment caesarean section were 13 which is (65%), the maximum breast feeding initiated was feeding after 11-15 hours which is 9 that is (45%), the maximum babies were with mother were 15 which is (75%)

**Experimental Group**

Finding of the variables show that the maximum age group was between 21-25years 8 (40%), the maximum place of residence was urban (45%), the maximum educational standard of mother was senior secondary (35%), the maximum family type is joint family (60%), the maximum socio economic status was below Rs. 10000 which is (55%), the maximum occupation of mother were home maker (60%) the maximum parity of mother was primi para which is (55%), the maximum delivery were lower segment caesarean section which is (60%), in the maximum samples breast feeding was not initiated which is (55%) the maximum babies were with mother which is (75%)

**FINDINGS RELATED TO THE SEVERITY OF BREAST ENGORGEMENT IN THE CONTROL GROUP**

Finding of the present study shows the assess in breast engorgement scale shows that the I Assessment control group indicate majority of engorgement scale Severe engorgement (11) 55% group, moderate was (8) 40% and mild engorgement is (1) 5%

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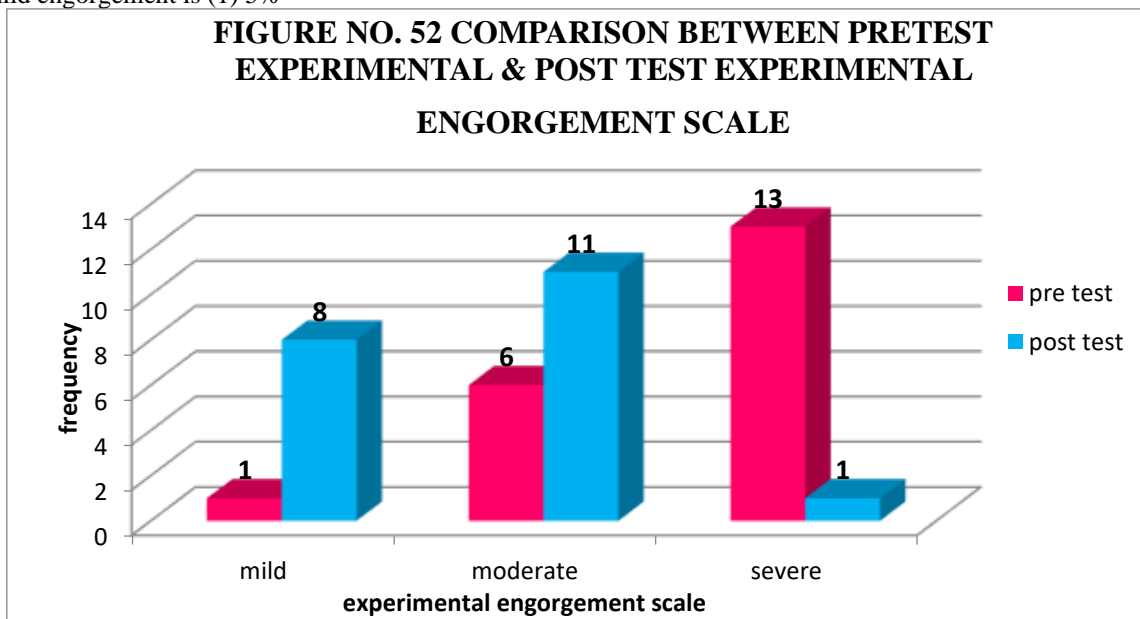
The t-test is 0.35, which is less than  $t=1.685$  at the 0.05 level of significance. compared result showed to be non-significant. Thus it fulfilled the objective no.1

**FINDINGS RELATED TO THE SEVERITY OF BREAST ENGORGEMENT IN THE EXPERIMENTAL GROUP**

Finding of the present study shows the assess in breast engorgement scale indicate majority of engorgement scale Severe engorgement (13) 65% group, moderate was (6)30% and mild engorgement is (1)5% in Pre-Experimental group.

Finding of the present study shows the assess in breast engorgement scale indicate majority of engorgement scale Severe engorgement (11)55% group, moderate was (8)40% and mild engorgement is (1)5% in Post-Experimental group.

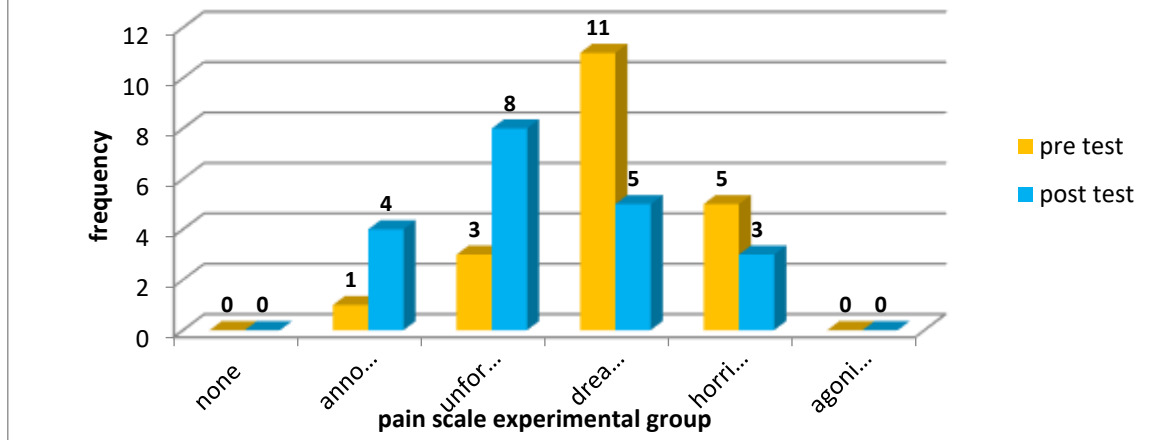
The t-test compared result showed positive correlation that calculated value is  $t=5.075$  which is greater than  $t=1.685$  at the 0.05 level of significance. Thus, it fulfilled the objective no.2







**FIG. NO.46 COMPARISON BETWEEN PRE AND POST PAIN SCALE SCORE IN EXPERIMENTAL GROUP**

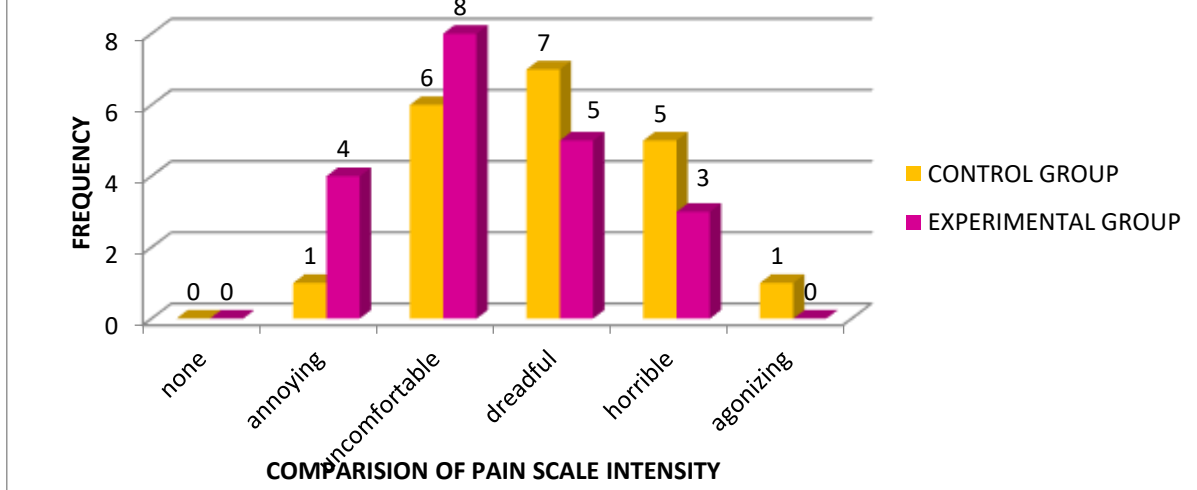


**FINDINGS RELATED TO THE COMPARISON OF THE PAIN SCALE SCORE OF CONTROL GROUP WITH PAIN SCALE SCORE OF EXPERIMENTAL GROUP.**

Control group indicate that the pain intensity of breast engorgement in postnatal mother none was 0, annoying was 1(5%), uncomfortable 6(30%), dreadful 7(35%), horrible 5(25%), agonizing 1(5%). Post-Experimental group indicate pain intensity in breast engorgement of postnatal mother none

was 0, annoying was 4(20%),uncomfortable 8(40%), dreadful 5(25%), horrible 3(15%), agonizing 0. The comparison between the control and experimental group in which the pain intensity among post natal mothers in experimental group, the pain is reduced, when compared to the control group. The paired t-test compared result showed positive correlation that calculated value is  $t = 2.974$  which is greater than  $t = 1.685$  at the 0.05 level of significance

**FIGURE NO.53 COMPARISON BETWEEN PAIN SCALE OF CONTROL GROUP WITH EXPERIMENTAL GROUP**



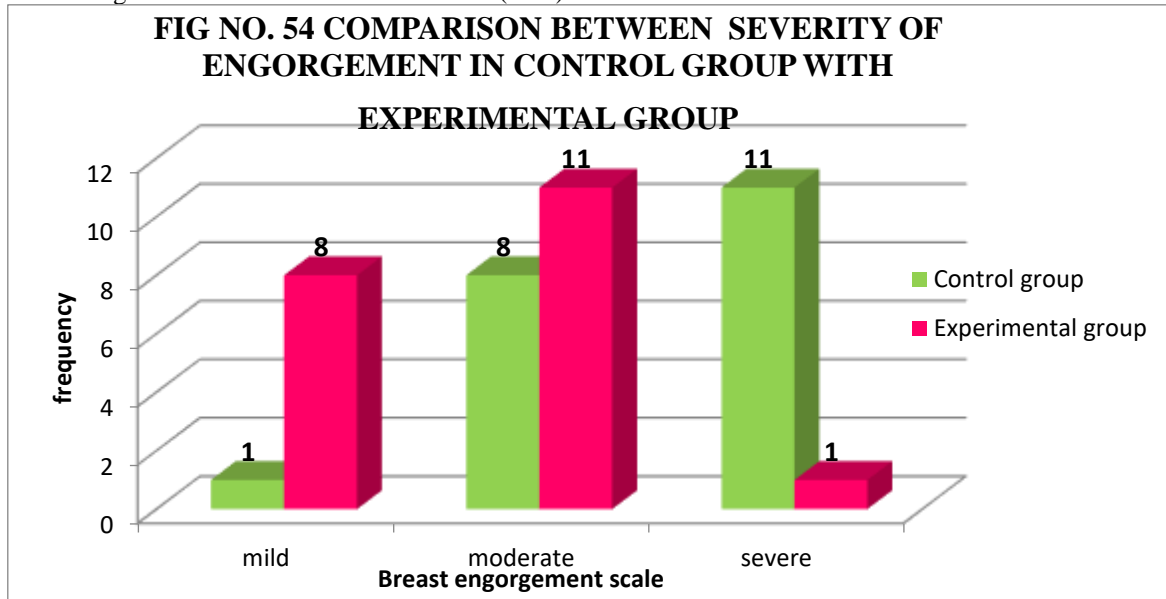
The comparison between the control and experimental group in which the pain intensity among post natal mothers in experimental group, the pain is reduced, when compared to the control group. The unpaired t-test compared result showed positive correlation that calculated value is  $t = 3.47$  which is greater than  $t = 1.685$  at the 0.05 level of significance. 0 2 4 6 8 0 1 6 7 5 1 0 4 8 5 3 0 FREQUENCY COMPARISON OF PAIN SCALE INTENSITY COMPARISON BETWEEN PAIN SCALE OF CONTROL GROUP WITH EXPERIMENTAL GROUP CONTROL GROUP EXPERIMENTAL GROUP Thus it fulfilled the objective no.3

hence hypothesis 1 was accepted H1 - that there will be significant difference in mean control group and experimental group in the level of breast engorgement and pain among post-natal mothers. FINDINGS RELATED TO THE COMPARISON OF SEVERITY OF THE BREAST ENGORGEMENT SCORE WITH CONTROL GROUP AND EXPERIMENTAL GROUP. Control group indicate that the severity of breast engorgement in postnatal mother Severe engorgement (11)55% group, moderate was (8)40% and mild engorgement is (1)5%. Experimental group indicate that the severity of breast engorgement in postnatal mother, Severe engorgement (1)5% group, moderate was (11)55% and mild



engorgement is (8)40% . Thus, the severity of breast engorgement in experimental group has been reduced after the application of cabbage leaves i.e severe reduce from 11(55%)

to 1(5%), moderate increased from 8(40%) to 11(55%) and mild increased from 1(5%) to 8(40%)



The comparison of six point engorgement scale and engorgement score among post natal Mothers, The paired t-test, compared result showed positive correlation  $t=5.075$  which is greater than the table value 2.02 at the 0.05 level of significance. The unpaired t-test, compared result showed positive correlation  $t=3.90$  which is greater than the table value 2.02 at the 0.05 level of significance. Thus it fulfilled the objective no.3 hence hypothesis H1 - that there will be significant difference in mean control group and experimental group in the level of breast engorgement and pain among post-natal mothers.

**FINDINGS RELATED TO THE ASSOCIATION OF THE LEVEL OF BREAST ENGORGEMENT WITH SELECTED SOCIO DEMOGRAPHIC VARIABLE IN CONTROL GROUP.**

**MOST SIGNIFICANT** In association of severity of breast engorgement with demographic variable, Age is most significant in control group its chi- square value 60, & p value is 0 so  $p < 0.001$ ). On Day 3, tenderness vanished in 86.20% subjects in experimental group compared to 58.62% subjects in control group. Thus, the study concluded that application of cabbage leaves was effective in diminishing breast engorgement.

**CONCLUSION**

The study focused on the fact that home remedies are also of great scientific values. The simple measures like cabbage leaves application was very helpful in reducing the breast engorgement . The nurse midwives could use it effectively in minimizing the complications at the earliest, thereby promoting safe and sound maternal and neonatal care. This research helps in the implementation of the MDG 5 for fostering safe and sound postnatal care.

**REFERENCES**

1. D.C. Dutta ;Text book of Obstetric ;ed.7 th Calcutta: central Book agency; 203- 213
2. [https://www.researchgate.net/publication/6902296\\_effect\\_of\\_intervention\\_to\\_improve\\_breastfeeding\\_technique\\_on\\_the\\_frequency\\_of\\_exclusive\\_breastfeeding\\_and\\_lactation-related\\_problems](https://www.researchgate.net/publication/6902296_effect_of_intervention_to_improve_breastfeeding_technique_on_the_frequency_of_exclusive_breastfeeding_and_lactation-related_problems)
3. Basket T.F. Essential Management of Obstetric Emergencies 3rd ed. Bristol, England, Clinical press, 1999: 165-168
4. [https://www.researchgate.net/publication/294919327\\_cabbage\\_compression\\_early\\_breast\\_care\\_on\\_breast\\_engorgement\\_in\\_primiparous\\_women\\_after\\_cesarean\\_birth\\_a\\_controlled\\_clinical\\_trial](https://www.researchgate.net/publication/294919327_cabbage_compression_early_breast_care_on_breast_engorgement_in_primiparous_women_after_cesarean_birth_a_controlled_clinical_trial)
5. HMSNOWDEN <http://onlinelibrary.wiley.com/doi/10.1002/14651858.cd000046/abstract?jsessionid=e48ff22ccb11821fea490f537a01b38.f04t02>
6. Patel,a.l. Et al. Impact of early human milkon sepsis and health-care costs in very low birth weight infants. J perinatol 33, 514-519(2013).
7. [https://www.researchgate.net/publication/14957898\\_do\\_cabbage\\_leaves\\_prevent\\_breast\\_engorgement\\_a\\_randomized\\_controlled\\_study](https://www.researchgate.net/publication/14957898_do_cabbage_leaves_prevent_breast_engorgement_a_randomized_controlled_study)
8. Bare, Brenda and Smeitzer, Suzanne C (2004), text book of Medical Surgical nursing , pain and pain perception, (2001ursing, 10th ed. Louis mosby publication
9. Hill,p.d., aldag,j.c., & chatterton,r.t. Initiation and frequency of pumping and milk Production in mothers of non-nursing preterm infants. J hum lact 17, 9-13