**Research Article**

# A Study to Assess the Effect of Chilled Cabbage Leaves Application on Breast Engorgement among Post-natal Mothers Admitted in Selected Hospital of Navi Mumbai

## Rajashree Salgaonkar

Department of Obstetrics and Gynecological Nursing, College of Nursing, Bharati Vidyapeeth, Navi Mumbai, Maharashtra, India

## ABSTRACT

**Introduction:** Breast engorgement is a common problem among post-natal women worldwide. Engorgement is a unpleasant, painful condition in which there is swelling and distension of the breasts usually in the early days of the initiation of lactation. Breast engorgement can be relieved by various non-pharmaceutical interventions. Chilled cabbage leaves usage is one of them. **Aim:** The present study was conducted to reduce the level of breast engorgement by the use of chilled cabbage leaves. **Materials and Methods:** A quasi-experimental design was used for this study. The study was performed on 40 post-natal mothers of the post-natal ward of a selected hospital, of Navi Mumbai. Storr scale (1988) used for assessing breast engorgement before and after the application of chilled cabbage leaves. **Results:** The study results show that there was a reduction in breast engorgement after the intervention and statistically verified. **Conclusion:** The analysis of data showed that using chilled cabbage leaves there is a significant reduction in breast engorgement.

**Keywords:** Breast engorgement, Cabbage leaves, Post-natal mothers

**Address for Correspondence:** Mrs. Rajashree Salgaonkar, Department of Obstetrics and Gynecological Nursing, College of Nursing, Bharati Vidyapeeth, Navi Mumbai, Maharashtra, India. Email: salgaonkarrajshri@gmail.com

## Introduction

Breast engorgement is the most common complication during the post-natal period. It is the disease condition occurring in the mammary glands by expanding veins and the pressure of new breast milk contained within them.[1,2] The most common manifestation includes considerable pain and feeling of tenderness in the breast, generalized malaise, rise in temperature, and painful breastfeeding. Severe engorgement leads to mastitis and untreated engorgement puts pressure on the milk duct often causing the plugged nipple. The preventive aspect of breast engorgement is feed frequently.[3] The mother has to nurse at least 10–12 times in 24 h during the day with no >3 h stretch at night. Breast engorgement usually happens when the breast switches off from colostrum to mature milk. It can also happen if lactating women misses several nursing and not enough milk is expressed from breasts.

The incidence rate of breast engorgement all over the world is 1:8000, and in India, it is 1:6500. Engorgement symptoms occur most commonly between days 3 and 5, with more than two-thirds of women with tenderness on day 5 but some as late as days 9–10. Two-third of women experience at least moderate symptoms.[4] More time spent breastfeeding in the first 48 h is associated with less engorgement. The 20% post-natal mothers especially primigravida mothers are affected with breast engorgement from 0 to 4 days of the post-natal period (Rajiv Gandhi University Karnataka, 2012).

Numerous strategies have been adopted over the years in the treatment of breast engorgement, but very few researches have been conducted to monitor the effect of cabbage leaves on breast engorgement.

Cabbage leaves have been used for centuries as a folk remedy for a wide variety of ailments and received much-renewed interest from lactation professionals over the past 10 years. It contains a natural mixture of ingredients such as sinigrin rapine, mustard oil, magnesium, oxylate, and sulfur heterosides which helps to decrease tissue congestion by dilatory local capillaries in mild, moderate, and severe discomfort.[1,5] Hot application reduces pain and causes relaxation of blood vessels, thereby opening vessels and increasing blood flow. Thus, this study concluded that chilled cabbage leaf application had great improvement in treating this condition.

## Materials and Methods

The research objectives have been met through analysis of relevant data obtained through an experimental survey. The primary survey was conducted with a sample size of 40 (20 experimental and 20 control group) and the data obtained were analyzed using dependent *t*-test. Further, a three-point Likert scale was used to (1 for mild and 3 for severe) asses the breast engorgement. The study was conducted from selected Hospital, Navi Mumbai.

### Research approach

This was a quantitative research approach

### Research design

A quasi-experimental design was used for this study.
A quasi-experimental study is an empirical study used to estimate the causal impact of an intervention on its target population. Quasi-experimental research is similar to the traditional experimental design or randomized controlled trial, but they specifically lack the element of random assignment to treatment and control.

### Variable

- Independent variable: Chilled cabbage application
- Dependent Variable: Breast engorgement.

### Setting

The research is performed on post-natal mothers of the post-natal ward of selected Hospital, Navi Mumbai.

### Sample

The sample selected for the present study comprised post-natal mothers of the postnatal ward of selected Hospital, Navi Mumbai.

### Sample selection criteria for the study

The following criteria were set for the selection of the sample.

### Inclusion criteria

The following criteria were included in the study:
1. Post-natal mother who are admitted in post-natal ward of selected hospitals of Navi Mumbai.
2. Post-natal mothers who have breast engorgement.

### Exclusion criteria

The following criteria were excluded from the study:
1. Post-natal mother who are not willing to participate in the study.
2. Post-natal mothers who are severely ill.

### Sample size

A total of 40 samples from the post-natal ward selected hospital, Navi Mumbai.

### Sampling technique

A non-probability convenient sampling technique was used for this study.

### Data collection tool

The samples selected the investigator approached the concerned authority of the selected hospital of Navi Mumbai and discussed the objective of the study. A formal permission was taken from the authority consent was obtained from the participation. The present study was aimed to assess the effectiveness of chilled cabbage leaf application on breast engorgement in post-natal mother admitted in post-natal of selected hospital, Navi Mumbai.

- Section 1 - Demographic variables
- Section 2 - Standardized tool (Storr scale) 1988.

### Results

Data analysis on demographic variable:

### Age

| Age | Frequency (%) |
|---|---|
| 18–20 | 2 (10) |
| 21–23 | 7 (35) |
| 24–26 | 5 (25) |
| Above 26 | 6 (30) |

The result shows that 10% of samples are under the age of 18–20 years, 35% of samples are under the age

of 21–23 years, 25% of samples are under the age of 24–26 years, and 30% of samples are under the age of above 26 years.

## Education

| Education | Frequency (%) |
|---|---|
| Illiterate | 5 (25) |
| Primary (1–5) | 1 (5) |
| Secondary (6–10) | 9 (45) |
| Higher studies | 5 (25) |

The results shows that 25% of samples are under the illiterate, 5% of samples are under the primary education, 45% of samples are under the under the secondary education, and 25 % of samples are under the higher studies.

## Occupation

| Occupation | Frequency (%) |
|---|---|
| Housewife | 17 (85) |
| Housemaid | 2 (10) |
| Labor | 1 (5) |
| Other | 0 (0) |

The result shows that 85% of samples are under the housewife, 10% of samples are under the housemaid, and 5% of samples are under the labor.
Data analysis on obstetrical variable:

## Gravida

| Gravida | Frequency (%) |
|---|---|
| 1 | 13 (65) |
| 2 | 5 (25) |
| 3 | 1 (5) |
| >3 | 1 (5) |

The result shows that 65% of samples are under the Gravida 1, 25% of samples are under the Gravida 2, 5% of samples are under the Gravida 3, and 5% of samples are under the more than Gravida 3.

## Parity

| Parity | Frequency (%) |
|---|---|
| 1 | 13 (65) |
| 2 | 5 (25) |
| 3 | 1 (5) |
| >3 | 1 (5) |

The result shows that 65% of samples are under the parity 1, 25% of samples are under the parity 2, 5% of samples are under the parity 3, and 5% of samples are under the more than parity 3.

## Number of days admitted in hospital

| Number of days admitted in hospital | Frequency (%) |
|---|---|
| 1 day | 1 (5) |
| 2 days | 6 (30) |
| 3 days | 8 (40) |
| >3 days | 5 (25) |

The result shows that 5% of samples are under the day 1, 30% of samples are under the day 2, 40% of samples are under the day 3, and 25% of samples are under the >3 days.

## Frequency of feeding in a day

| Frequency of feeding in a day | Feeding (%) |
|---|---|
| 1–4 times | 2 (10) |
| 5–8 times | 3 (15) |
| 9–12 times | 12 (60) |
| >12 times | 3 (15) |

The result shows that 10% of samples are under the 1–4 times, 15% of samples are under the 5–8 times, 60% of samples are under the 9–12 times, and 15% of samples are under the >12 times.

## Section 2

### Calculation of data

Data are been calculated as per the dependent $t$-test which is applicable for 40 samples and above.
The total sample size is 40 out of which,
- Experimental - 20
- Control - 20
- Average of pre-test of the experimental group is 90 divided by 20 so the average is 4.5.
- Average of post-test of the experimental group is 53 divided by 20 so the average is 2.65.

| Experimental group | Mean | $n$ |
|---|---|---|
| Pre-test | 4.5 | 20 |
| Post-test | 2.6 | 20 |

- The average of the 1st day of control group is 75 divided by 20, so the average is 3.75
- The average after the 3rd day of control group is 84 divided by 20, so the average is 4.2.

| Control group | Mean | $n$ |
|---|---|---|
| 1st day | 3.75 | 20 |
| After 3rd day | 4.2 | 20 |

### The dependent $t$-test

The dependent $t$-test (also called the paired $t$-test or paired - sample test) compares the means of two related

groups to determine whether there is a statistically significant difference between these means. Thus, it is stated below:

As per dependent *t*-test:

$$t = \frac{\overline{d}\sqrt{n}}{s}$$

t = dependent t test

 = mean of the difference

n = number of samples

s = standard deviation.

| Experiment pre-test - Experiment post-test | t | df | Significant (2-tailed) |
|---|---|---|---|
| | 13.262 | 19 | 0.000 |

Explanation of the table:

df (degree of freedom) = 19

t = 13.262

*P* value (significant 2 tailed) = 0.000

According to this study, 5% of significance, *P* = 0.000. It means null hypothesis rejected and alternative hypothesis accepted. Hence, we concluded that the chilled cabbage leaf application is useful in the experimental group. Hence, chilled cabbage leaves have a useful effect on breast engorgement.

## Discussion

Breast engorgement is a common problem among post-natal women worldwide. Chilled cabbage leaf used for women with breast engorgement to reduce pain, the firmness of the engorged breasts, and increased the duration of breastfeeding.[6]

As per the statement objective was started, tool was designed to assess the effect of chilled cabbage leaves' application on breast engorgement and then it was given for validity to our guide as it was standardized tool (Storr scale) and necessary changes were made and pilot study was conducted on 10 post-natal mothers admitted in post-natal ward selected hospital, Navi Mumbai to find out the reliability of the tool. Moreover, we found that tool was sufficient to carry out the study effectively. The data collection and analysis were carried out. At the end of research we found out that chilled cabbage leaves therapy was effective in decrease the breast engorgement in post-natal mothers.

The present study shows that 35% of samples are under the age of 21–23 years, 45% of samples are under the under the secondary education, 85% of samples are housewives, 65% of samples are under the Gravida 1, 65% of samples are under the parity 1, 40% of patients admitted in the hospital for the 3 days, and 60% of samples feed 9–12 times in a day. These data are statistically calculated and verified also.

## Conclusion

The research conducted "a study to assess the effect of chilled cabbage leaves application on breast engorgement in post-natal mothers admitted in the post-natal ward of selected hospital, Navi Mumbai" the result of this research was that the chilled cabbage leaf application was effective in decreasing breast engorgement in post-natal mothers; thus, it was concluded that chilled cabbage leaves were effective.

## References

1. Lawrence RM, Lawrence RA. Given the benefits of breastfeeding, what contraindications exist? Pediatr Clin North Am 2001;48:235-51.
2. Ministry of Health Manat Hauora. Breast Engorgement and Breast Oedema. Health Workforce New Zealand; 2015. Available from: http://www.health.govt.nz/our-work/life-stages/br eastfeeding/health-practitioners/breast-engorgement-and-breast-oedema. [Last accessed on 2015 Oct 23].
3. Williams C. Breast Feeding and Engorgement: Obstetrics. 24th ed., Ch. 37. New York: McGraw-Hill Professional; 2014.
4. Sangar K. Engorgement of breast-potential problem in lactation. Nightingale Nurs Times 2004;1:17-21.
5. Smith S. Cabbage Leaves for Treatment and Prevention of Breast Engorgement; 2015. Available from: http://www.breastfeed ingonline.com/cabbage.shtml#sthash.4FMU5VUL.dpbs. [Last accessed on 2015 Oct 25].
6. Boi B, Koh S, Gail D. The effectiveness of cabbage leaf application (treatment) on pain and hardness in breast engorgement and its effect on the duration of breastfeeding. JBI Libr Syst Rev 2012;10:1185-213.