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A Quasi Experimental Study To Assess The Effectiveness Of Chilled Cabbage Leaves On Breast Engorgement Among Postnatal Mothers In Selected Hospital Of Amritsar, Punjab.

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ABSTRACT

Introduction

Breast engorgement is a condition which is caused by rise in production of milk & blood flow which leads to tender & swollen breast that give sense of extreme fullness. Symptoms of engorged breast are firm, painful & swollen breast. Symptoms of severe breast engorgement include hard, swollen, warm, shiny breasts with slightly lumpy to touch & slight fever of around 100.4F.

Methodology

The aim of study was to assess the effectiveness of chilled cabbage leaves on breast engorgement among postnatal mothers in selected hospital of Amritsar, Punjab. Quasi experimental study design was adopted for this study. Purposive sampling technique was used in which 60 postnatal mothers (30 in experimental group and 30 in control group) was selected. Prior data collection Formal permission was obtained from the concerned authority of the hospital. Researcher explained the benefits of the study & obtained Informed consent from all the participants. The data was collected using tool consists of socio-demographic variables, six point engorgement scale. In experimental group postnatal mothers were administered with chilled cabbage leaves. After 1 week post-test data was collected from both the groups. Data was analyzed by using descriptive and inferential statistics.

Results

Results shows that in pre interventional level maximum (66.67%) of postnatal mothers were having moderate breast engorgement and others (16.67%) postnatal mothers having mild and severe breast engorgement in control group. in post interventional level maximum (70.00) of postnatal mothers having medium breast engorgement and others were having severe (16.67) & mild (13.33) breast engorgement. whereas in experimental group pre-interventional level , maximum (73.3%) of postnatal mothers were having medium breast engorgement and others (13.33%) were having mild and severe breast engorgement followed by post-interventional level maximum (60.00%) were having medium breast engorgement and others were having (36.67%) mild & severe (3.33%) breast engorgement.

Hence, it can be concluded that the chilled cabbage has significant effect on the breast engorgement among postnatal mothers so, the null hypothesis is rejected.

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, Amritsar. 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.

Key words: Effectiveness, Breast engorgement, Chilled cabbage leaves application, Postnatal mothers

INTRODUCTION:

"Breastfeeding is a mother's gift to herself, her baby, and the earth"

The birth of the baby is an important event in any family. It is therefore important for a mother to have a well & fine baby, she gives her baby the best nutrition, for babies breast mill is the best food as breastfed babies are generally healthier than formula fed babies. In recognition of the importance of breastfeeding, the baby friendly hospital initiative was launched by UNICEF/WHO in 1991. Breast feeding enhances the cognitive development and decreases the problem such as obesity, hypertension, and insulin dependent diabetes mellitus. Given the strong evidence of benefits of breastfeeding for women and babies, in all part of the world, babies should be exclusively breastfed for the first six months "to achieve optimal growth, development and health." Recommended by WHO. In female reproductive system the breast or mammary glands are accessory glands. In the male they exist but only in rudimentary form. The breasts are quite small until puberty in females. Estrogen and progesterone influence leads to the growth & development of breasts to their mature size. During pregnancy, the breast increase in size & become more tender, especially in the first half of the pregnancy. In the first eight weeks of pregnancy breast grows most rapidly.

As the pregnancy progress, the breast becomes firmer and more modular to prepare for lactation. The areole is surrounded by Montgomery's gland which becomes more pigmented followed by dark pigmentation of areole. The nipples become larger and more erect when preparation of milk production starts. The ducts growth gets stimulated when blood vessel within the breast enlarges as increase of estrogen and glandular tissue expand due to the surges of progesterone. Prolactin, a hormone produced by pituitary gland, starts the growth after mammary gland & triggers production of milk. After child birth, estrogen & progesterone level decrease and production of prolactin declines. After women give birth the breast will usually begin to produce milk 3 to 5 days. During these few days colostrum (first form of milk) is produced by mammary glands that contains antibodies to help protect the infant against infection.

Breastfeeding is widely encouraged in current obstetric practice. While its advantages to mother and child are well recognized, there are number of problems associated with it. One common problem that is encountered is breast engorgement, which makes continuation of breast feeding difficult. Engorgement of breast is the overfilling of breast milk that causes discomfort and pain to the mother. Correct breastfeeding is important to ensure successful breast feeding. Breast engorgement can occur cause of incorrect technique and to suck effectively in particular it is important for the baby to attach to the breast correctly during feeding. In order to do this correct position of the baby is important and advice should be given to the new mothers. Breast engorgement may affect the region all over the nipple and areola only or the entire breast and that may affect one breast or both. Once engorgement occurs, swelling and nipple may make it even more difficult for the baby to latch-on and feed successfully and this may make the engorgement worse. Within a week of the birth breast engorgement usually occurs, but can also occur later.

Breast engorgement and breast fullness are different; breast fullness is characterized by swollen yet compressible breast tissue. At full breast the infant is able to latch on properly and suckle effectively. 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:

- To the breast warm moist compresses can be applied or take warm shower before breast feeding.
- To stimulate milk production Breast fed often (every one and half to three Hrs) or pump the breast.
- To decrease swelling icy compresses can be used by mother after breast feeding.
- To soften the breast milk can be pumped from the breast before breast feeding.
- Ask a physician about the safety before taking over the counter medication (such as tylenol) to relieve engorgement.
- Massage the breast downwards the nipple with the finger tips in circular motion cold cabbage application is the breast under the bra. This simple plant is a powerhouse of nutrients, including fiber, vitamins and minerals.

Breast engorgement is a condition which is caused by rise in production of milk & blood flow which leads to tender & swollen breast that give sense of extreme fullness. Symptoms of engorged breast are firm, painful & swollen breast. Symptoms of severe breast engorgement include hard, swollen, warm, shiny breasts with slightly lumpy to touch & slight fever of around 100.4F. Breast engorgement can occurs when you have a regular breast feeding but can't feed or pump as much as usual and stop breast feeding suddenly, where the breastfeeding becomes less than usual by baby suddenly. When the baby is starting or increasing solid foods or baby is ill and has poor appetite this may occur. After birth of baby breasts start making milk about 2 to 5 days. Before that, they make colostrum's, which carry essential nutritious that baby require immediately after birth. It's normal for breasts to feel heavy, warm, and swollen when milk "comes in." This women make and extra blood and fluids in her breasts cause breast fullness. To make more breast milk for baby body uses the extra fluids. As breastfeed and body adjusts to baby's needs this normal breast fullness will probably go away in a few days.

Due to expansion and pressure exerted by the synthesis and storage of breast milk breast engorgement occurs in the mammary glands. In altering the ability of the infant to latch on it is also a main factor. The shape and curvature of the nipple region changes & lead to making the breast inflexible, flat, hard, and swollen due to breast engorgement. Due to breast engorgement the nipples on an engorged breast are flat. Engorgement usually happens when the breasts switch from colostrum's to mature milk (often referred to as when the milk "comes in") engorgement usually happens. However, Engorgement can also happen later if the mother who is lactating skip several breastfeed and sufficient milk does not come out from the breast. When breastfeeding which is not enough or milk ducts are blocked it can led to exacerbation. when engorgement occurs breast may distend, enlarge, throb & cause light to severe pain (Espey & Pasternack, 2014). Inflammation of the breast i.e. mastitis can happen due to breast engorgement & plugged ducts are caused when engorgement left untreated by placing oppression on the ducts of milk. The lump in some region of the breast and the skin around that area may be warm & red which can be felt by woman. Breast infection can occur if plugged duct left unchecked.

This slowly disappear if breasts are not arouse to create milk. There is no approved medicine to "dry up" milk supply and prevent engorgement at present. (WHO, 2013). Symptoms of breast engorgement include firm, swell, painful breasts. Symptoms of severe breast engorgement are swollen, hard, shiny, warm, & somewhat bulging to the touch. The area around the nipple, the areola, may be very firm. This makes it hard for the baby to attach to the breast when the area around the nipple, the areola, are very firm. A slight fever of around 100.4°F(38°C). Slightly swollen and tender lymph nodes in your armpits. Because of which baby may not obtain adequate milk when the breast may not empty completely. This can lead to sore and cracked nipples. This leads to worsening of the engorgement and reduced breastfeeding. Blocked milk ducts and breast infection which is called mastitis can occur cause of severely engorged breast. Mastitis infection i.e

inflammation of the breast due to block milk duct / break in tissue. Antibiotics, moist heat, analgesics and continued breastfeeding are required to be treated.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 in the path of our daily lives.

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 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 proteins who protects the body to do a superior job to get rid of carcinogens cause of sulforaphane enables them to do so , it might distinctly be most productive during those phase 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 lower the chance 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 4 lipoproteins (LDL's) or "bad" cholesterol, which frequently causes clotting 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 extend bowel motions. A medical journal as far back as 1936 noted that the respective stool weights increased by twenty percent when every gram of powder cabbage fed to well males. This is attributed to the cabbage fiber which has water holding capacity, which also increases stool bulk and helps to move it through the system. The use of Cabbage as a vermifuge to get rid of insect from the intestinal system is perhaps the result 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 suppressing other yeast infections. It is said that Cabbage can lower the acid in the stomach may ease the healing of ulcers. By, it is believed to relieve any kind of gastrointestinal ulcer, including duodenal and peptic ulcers, etc. Lees suggests that sulfur in amino acid (methionine) which in turn draws an extra flow of blood to the area and acts as an anti-irritant and antibiotic. This relieves the engorgement & inflammation and ease the milk flow by dilating the capillaries and acts as a counter irritant.

RESEARCH STATEMENT

A quasi experimental study to assess the effectiveness of chilled cabbage leaves on breast engorgement among postnatal mothers in selected hospital of Amritsar, Punjab.

OBJECTIVES:

1. To assess the Pre-interventional level of breast engorgement among postnatal mothers in experimental and control group.
2. To assess the Post-interventional level of breast engorgement among postnatal mothers.
3. To compare the Pre & Post interventional level of breast engorgement among postnatal mothers.
4. To find out the association between Post-interventional level of breast engorgement with selected socio demographic variables.

OPERATIONAL DEFINITIONS:

5. **EFFECTIVENESS:** It refers to outcome of cold cabbage leaves on breast engorgement among post natal mothers.
6. **CHILLED CABBAGE LEAVES APPLICATION:** It refers to cabbage leaf refrigeration for 30 minutes prior to the procedure then applied over the engorged breast inside women brassiere for 15 minutes twice a day for 3 days.
7. **BREAST ENGORGEMENT:** It refers to development of hard, swollen, and painful breast.
8. **POSTNATAL MOTHERS:** It refers to all mothers having breast engorgement in the first week of postnatal period.

RESEARCH METHODOLOGY

RESEARCH APPROACH

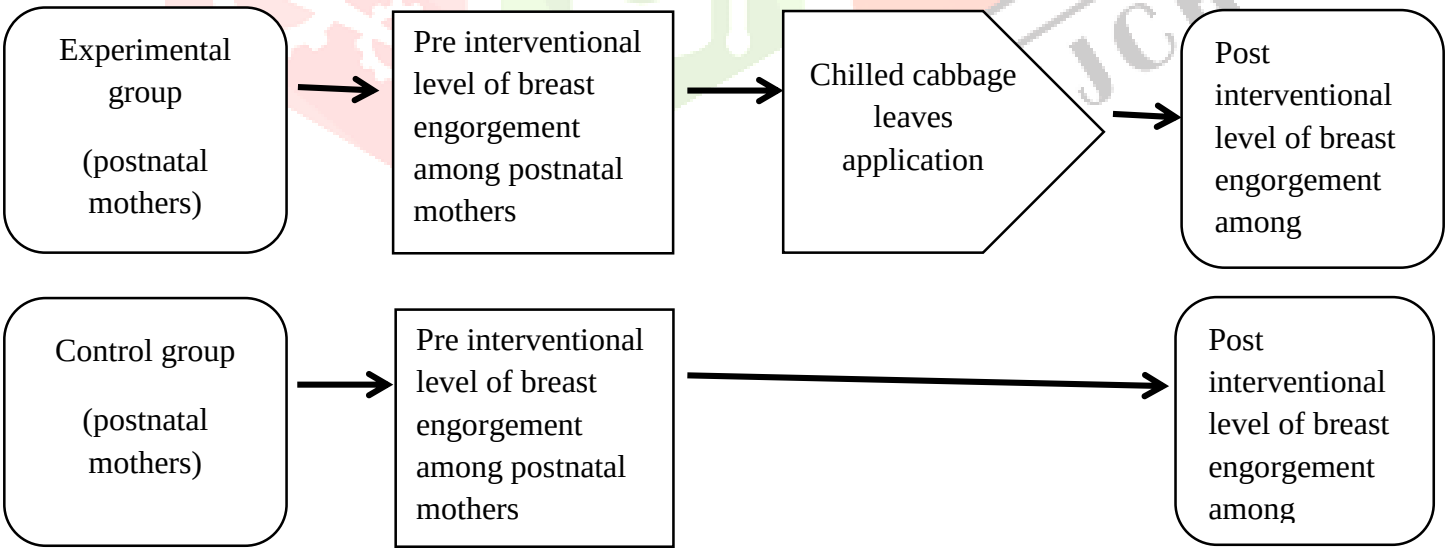
Sharma Suresh k (2011) stated that the research approach involves the description of the plan to investigate the phenomena under study in a structured (quantitative), unstructured (qualitative) or a blend of the 2 methods (quantitative-qualitative integrated approach). Therefore, the approach helps to decide the presence or absence as well as manipulation and control over variables.

For the present study, **Quantitative research approach** was considered appropriate it aimed only to assess the effectiveness of chilled cabbage leaves on breast engorgement among postnatal mothers.

RESEARCH DESIGN

Basvanthappa BT (2007) stated that research design involve the plan of organization of scientific investigation. The research design explain the plan of action that the researcher adapts to facts that are true, objective, and meaningful.

A Quasi experimental research design was used to achieve the objectives of the study.



RESEARCH SETTING

The study was conducted in Guru Nanak Dev hospital Amritsar, Punjab. Guru Nanak dev (GND) Hospital, under government medical college Amritsar is the only government facility providing which is 24 KM away from college campus. It has Gynae department with Gynae wards, Labour room, Gynae OT, Gynae ICU, Postnatal wards, Gyane OPD in bebe nanaki hospital department under GND hospital complex. It is 1050 beded hospital from which approximation 300 beded for Gynae in bebe nanaki department in GND hospital

and complex. The reason for selecting this hospital was researcher's familiarity with the setting, convenience, feasibility, expected cooperation from the authorities in getting permission, language, and geographical proximity.

RESULT

SECTION -1
SAMPLE CHARACTERISTICS
Table 1

Frequency & % distribution of age of socio-demographic variables of postnatal mothers in control and experimental groups (N=60)

Socio-demographic variables	N	Control group (n=30)		Experimental group (n=30)	
		f	% age	f	% age
Age of mothers (in years)					
18 - 21	20	11	36.7	9	30.0
22 - 26	23	13	43.3	10	33.3
27 - 30	17	6	20.0	11	36.7
Day of postnatal period					
1st	34	10	33.3	24	80.0
2nd	26	20	66.7	6	20.0
Mode of delivery					
Normal vaginal delivery	7	4	13.3	3	10.0
NVD with episiotomy	9	3	10.0	6	20.0
Cesarean section	18	11	36.7	7	23.3
Forceps delivery	26	12	40.0	14	46.7
Number of deliveries					
One	27	14	46.7	13	43.3
Two	29	14	46.7	15	50.0
Three or more	4	2	6.7	2	6.7
Frequency of feeding					
Half an hourly	40	18	60.0	22	73.3
Every hourly	20	12	40.0	8	26.7
Duration of feeding (in minutes)					
Less than 5	31	17	56.7	14	46.7
5 - 10	29	13	43.3	16	53.3

Education of mother					
Illiterate	21	11	36.7	10	33.3
Primary	21	12	40.0	9	30.0
Secondary	6	2	6.7	4	13.3
Higher secondary	12	5	16.7	7	23.3
Occupation of mother					
Housewife	44	22	73.3	22	73.3
Working	11	5	16.7	6	20.0
Others	5	3	10.0	2	6.7

*** Highly significant difference p<0.01

Table -1 Frequency & % age of socio-demographic variables of postpartum mothers in control and experimental groups. According to the **Age,** in experimental group maximum (36.7%) of postnatal mothers were in age group 27-30years, followed by 33.3% in age group 22-26 years in age group 18-21 years and remaining (30.0%) . whereas in control group, maximum (43.3%) of postnatal mothers were in age group of 22-26 years, 20.0% in age group 27-30 years and 36.7 in 18-21. According to **Day of postnatal period**, in experimental group, majority (80%) of postnatal mothers were 1st and remaining (20%) were 2nd whereas in control group, maximum (66.7%) of postnatal mothers were 2nd and remaining (33.3%) were 1st. As stated in **Mode of delivery,** in experimental group nearly half (46.7%) of postnatal mothers were having forceps delivery and above, (23.3%) were having higher secondary between cesarean delivery (20.0%) were having NVD with episiotomy and remaining 10.0% in normal vaginal delivery. whereas in control group, maximum (40%) were having forceps delivery and above, 36.7% were having cesarean section nearly, 10.0% were having NVD with episiotomy and 13.3% were having normal vaginal delivery. According to **Number of deliveries,** in experimental group, maximum(50.0%) of postnatal mothers were two,43.3% were one and 6.7% three or more.

According to ,**Frequency of feeding** in experimental group, (73.3%) of postnatal mothers had half an hourly and remaining (26.7%) had every hourly whereas in control group, maximum (60%) of postnatal mothers had half an hourly and remaining (40%) of postnatal mother had every hourly. According to **Duration of feeding**, in experimental group more than half (53.3%) of postnatal mothers were 5-10 and remaining nearly half (46.7%) were less than 5. whereas in control group (56.7%) were less than 5 and remaining 46.7% were 5-10. As reported by **Education of mother**, in experimental group more than half (33.3%) of postnatal mothers were illiterate and remaining nearly half (13.3%) were secondary. whereas in control group (40.0%) were primary and remaining (6.7%) were secondary. Hence, it can be concluded that, According to **Occupation**, in experimental group (73.3%) of postnatal mothers were housewife and (6.7%) were others whereas in control group,73.3% were Housewife and remaining 10.0% were others.

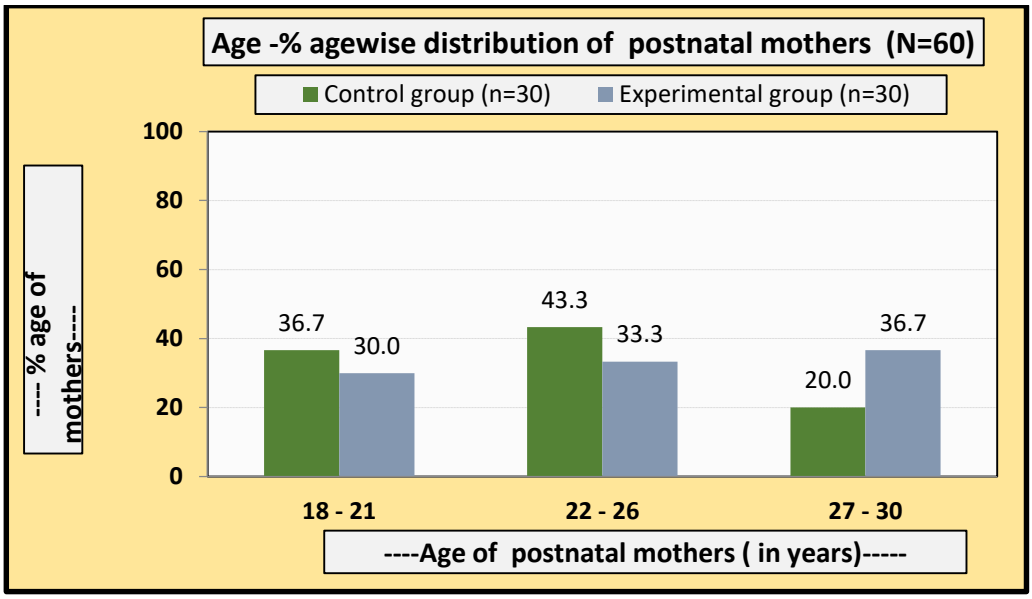


Figure 3(a) frequency and percentage distribution of postnatal mother according to age of the postnatal mother.

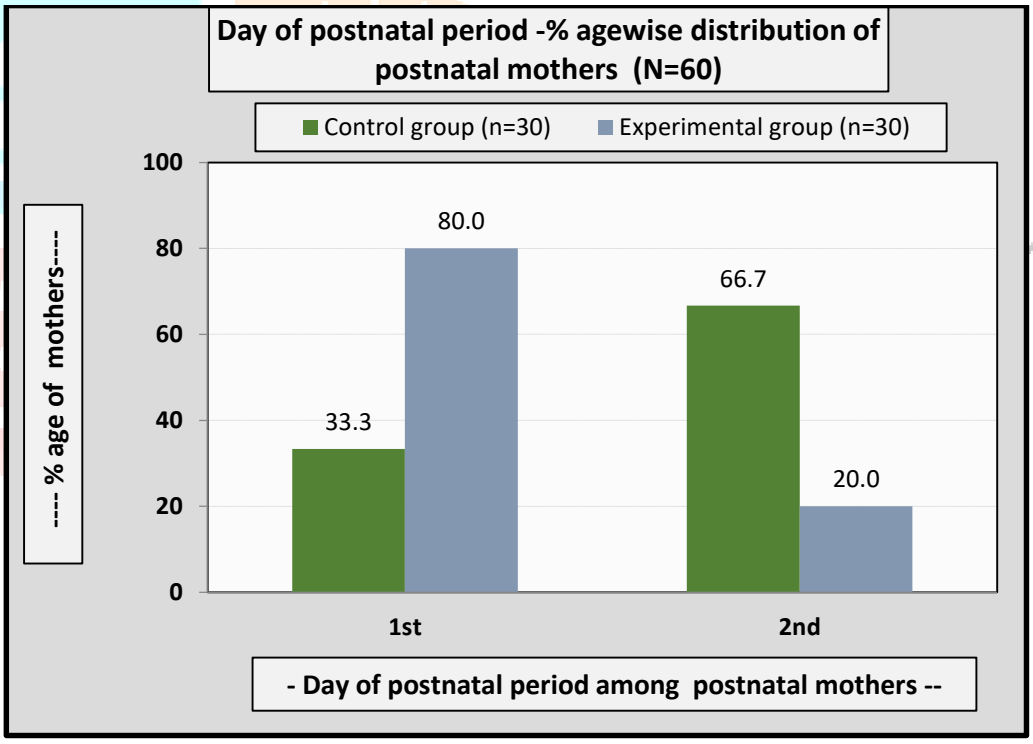


Figure 3(b) frequency and percentage distribution of postnatal mother according to Day of postnatal period.

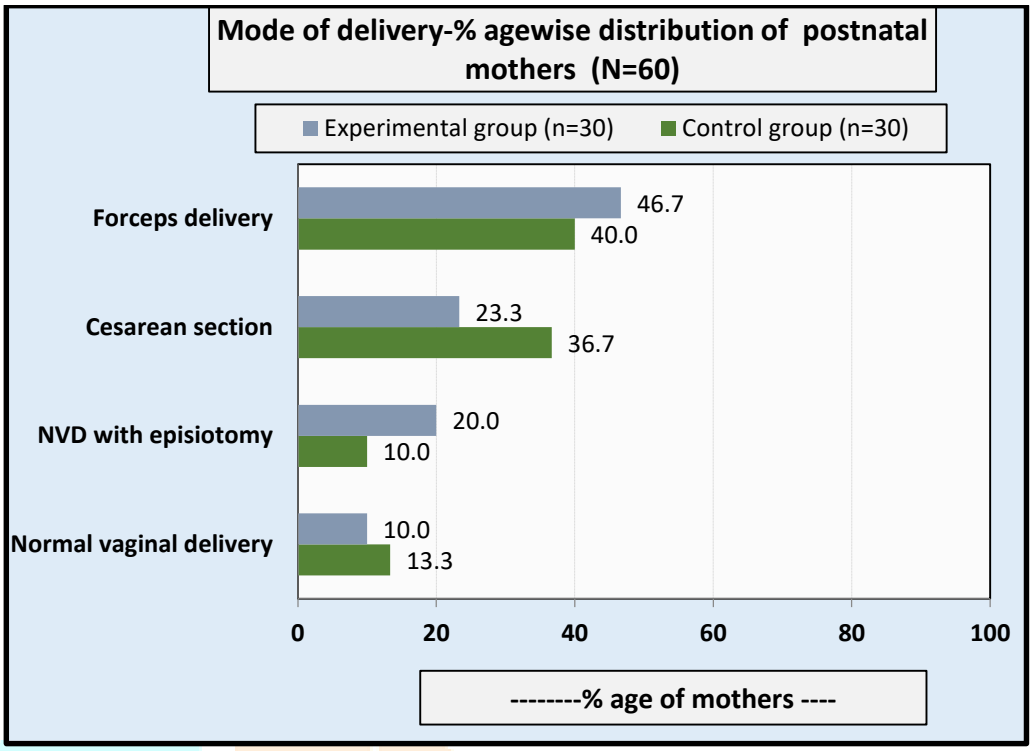


Figure 3(c) frequency and percentage distribution of postnatal mother according to mode of delivery.

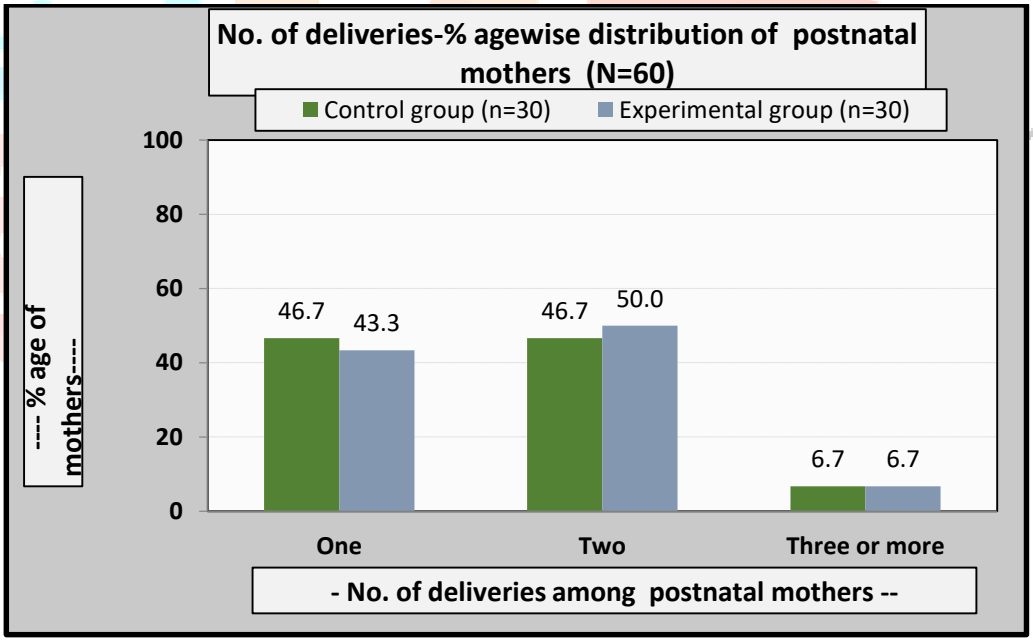


Figure 3(d) frequency and percentage distribution of postnatal mother according to no.of delivery

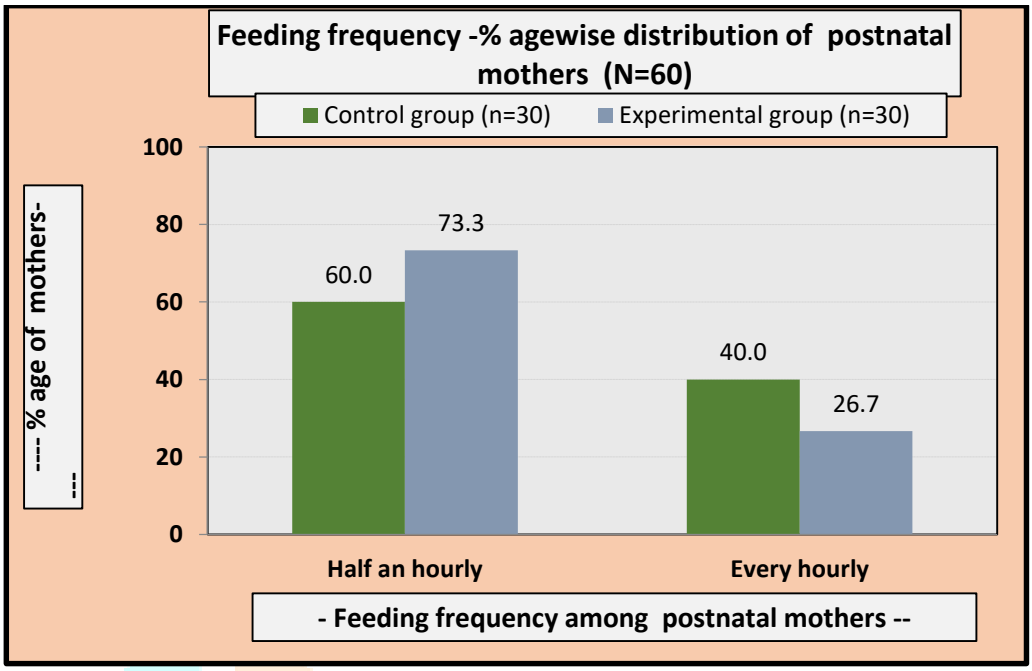


Figure 3(e) frequency and percentage distribution of postnatal mother according to Feeding frequency.

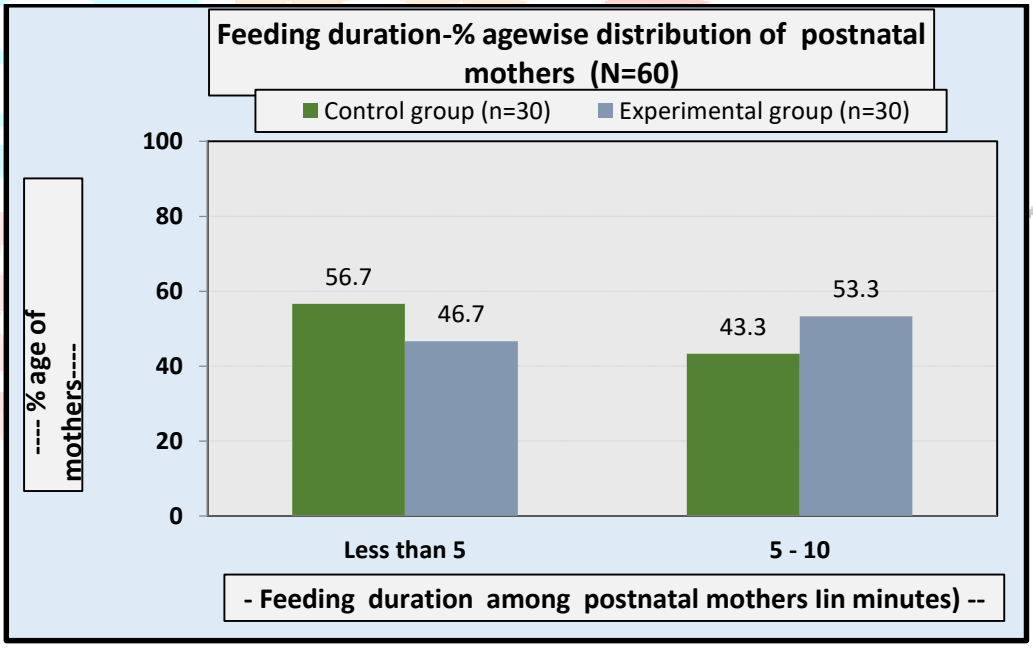


Figure 3(f) frequency and percentage distribution of postnatal mother according to Feeding duration.

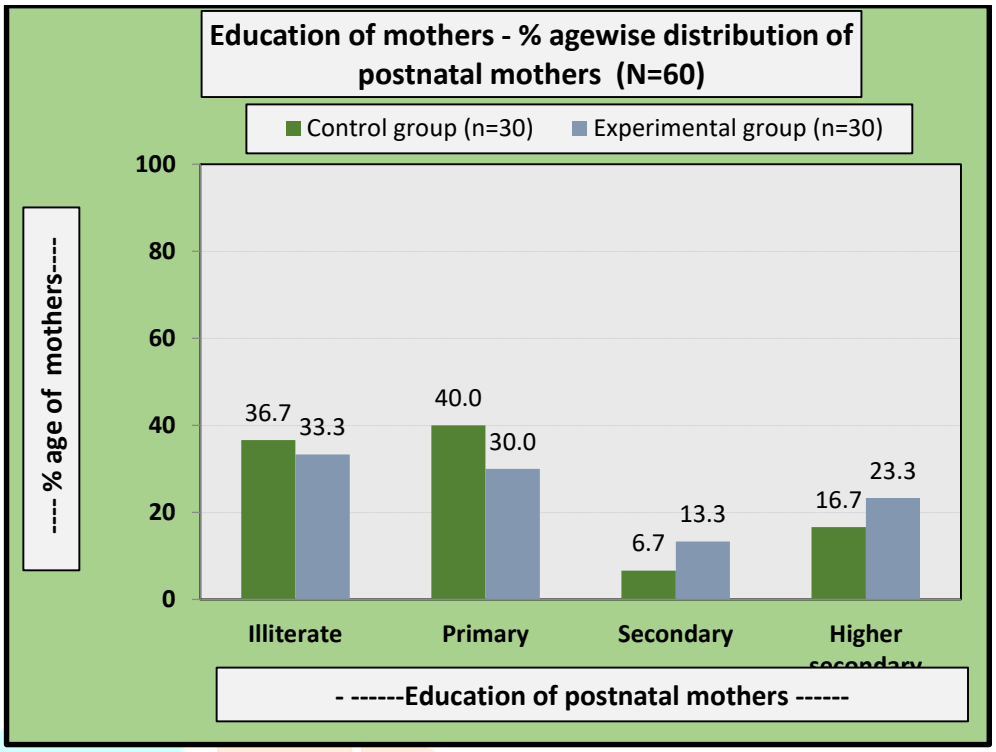


Figure 3(g) frequency and percentage distribution of postnatal mother according to Education of mother.

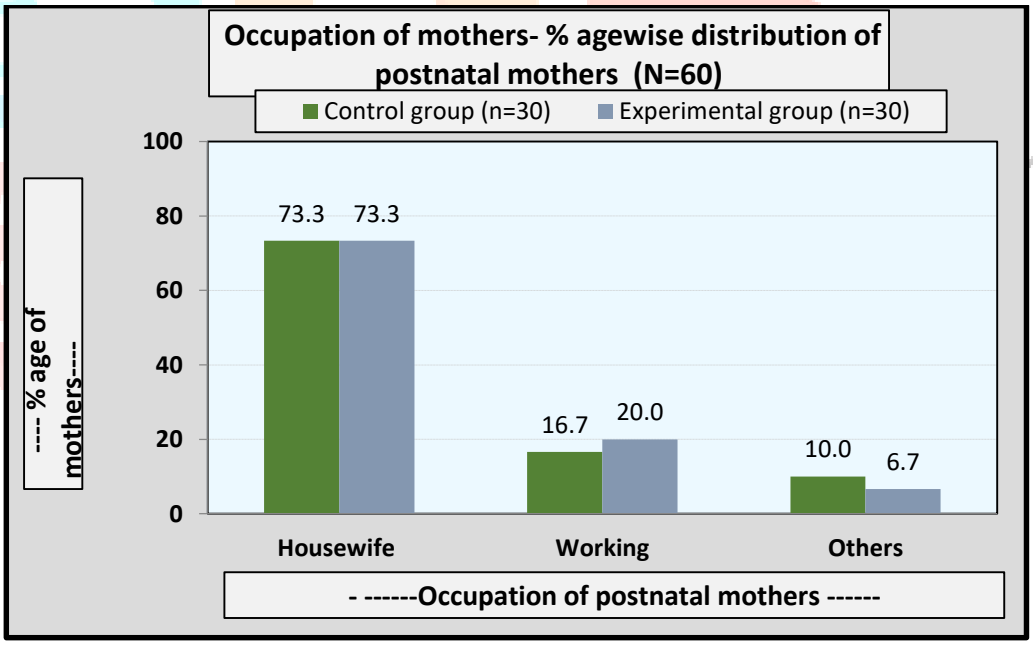


Figure 3(h) frequency and percentage distribution of postnatal mother according to occupation of mothers

SECTION -2

OBJECTIVE WISE ANALYSIS

Objective1- Assessment of Pre- interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control and experimental groups (N=60)

Objective2-Assessment of Post-interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves among postnatal mothers in control and experimental groups (N=60)

Control group

- Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control group (n=30)

Table-2

Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control group (n=30)				
Severity of breast engorgement	**Control group (n=30)**			
	Pre - intervention		**Post - intervention**	
	f	**% age**	**f**	**% age**
Mild (1 - 2)	5	16.67	4	13.33
Moderate (3 - 4)	20	66.67	21	70.00
Severe (5- 6)	5	16.67	5	16.67

Table -2 Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control group (n=30) depicts the frequency, percentage and mean of postnatal mothers in control group according to pre interventional level of severity of breast engorgement**.** In pre interventional level maximum (66.67%) of postnatal mothers were having moderate breast engorgement and others (16.67%) postnatal mothers having mild and severe breast engorgement in control group whereas

in post interventional level maximum (70.00) of postnatal mothers having moderate breast engorgement and others were having severe (16.67) & mild (13.33) breast engorgement.

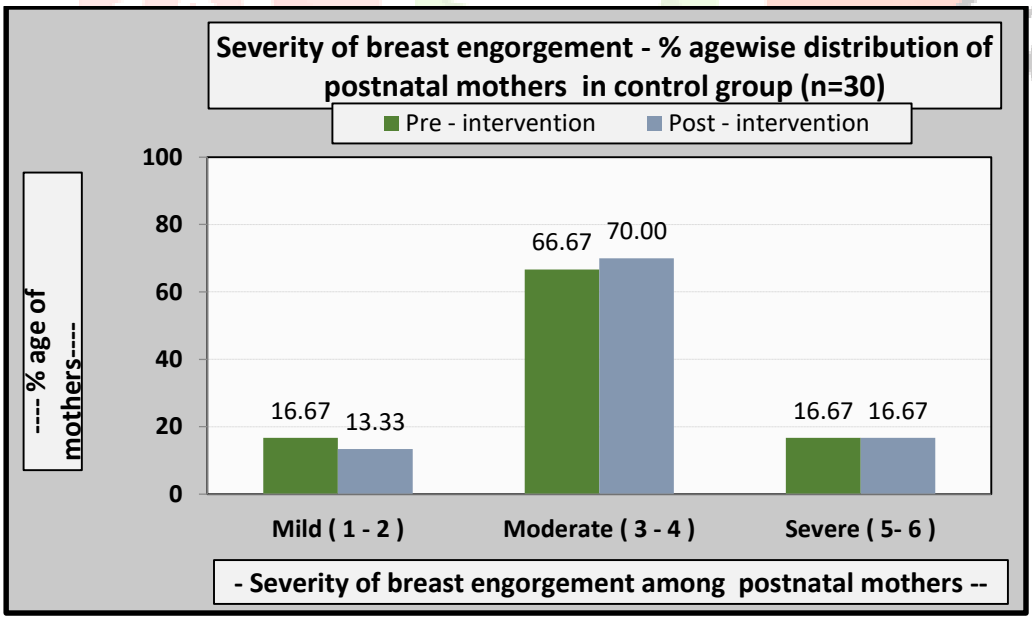


Figure 4(a) frequency and percentage distribution of postnatal mother according to severity of breast engorgement.

-Data statistics of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control group (n=30)

Data statistics of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control group (n=30)		
Control group (n=30)		
Description	**Value**	
	Pre - intervention	**Post - intervention**
N	30	30
Range	2 - 5	2 - 5
Mean	3.53	3.57
Std. Deviation	0.97	0.94
Mean %age	58.9	59.4
Max scale	6	6

Table-3

Experimental group

- Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)

Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)				
Severity of breast engorgement	**Experimental group (n=30)**			
	Pre - intervention		**Post - intervention**	
	f	**% age**	**f**	**% age**
Mild (1 - 2)	4	13.33	11	36.67
Moderate (3 - 4)	22	73.33	18	60.00
Severe (5- 6)	4	13.33	1	3.33

Table-4

Table -4 Frequency & % age of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30) depicts the frequency, percentage of postnatal mothers in Experimental group according to pre interventional level of severity of breast engorgement. In pre-interventional level , maximum (73.3%) of postnatal mothers were having moderate breast engorgement and others (13.33%) were having mild and severe breast engorgement whereas in post interventional level maximum (60.00%) were having moderate breast engorgement and others were having (36.67%) mild & severe (3.33%) breast engorgement.

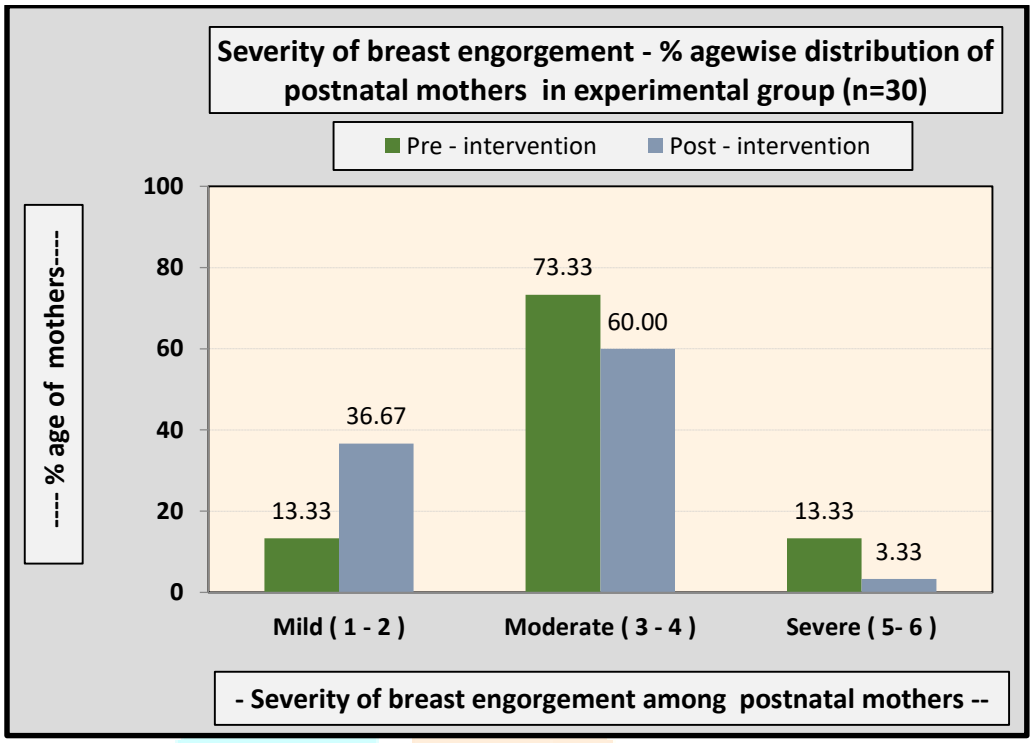


Figure 4(b) frequency and percentage distribution of postnatal mother according to severity of breast engorgement.

Data statistics of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)

Data statistics of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)		
Experimental group (n=30)		
Description	**Value**	
	Pre - intervention	**Post - intervention**
N	30	30
Range	2 - 5	2 - 5
Mean	3.50	2.93
Std. Deviation	0.90	1.01
Mean %age	58.3	48.9
Max scale	6	6

Table-5

Objective-3Comparison of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control & experimental groups (N=60)

Comparison of pre- & post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in control & experimental groups (N=60)									
Group	**Pre - intervention**				**Post - intervention**				**Paired t-test**
	Range	**Mean**	**Std. Devi.**	**Mean % age**	**Range**	**Mean**	**Std. Devi.**	**Mean % age**	**t, p-value**
Control Group (n=30)	2 - 5	3.53	0.97	58.89	2 - 5	3.57	0.94	59.44	0.17, 0.865
Experimental Group (n=30)	2 - 5	3.50	0.90	58.33	2 - 5	2.93	1.01	48.89	2.42, 022*
Independent t-test	0.14, 0.891				2.51, 0.015*				
t, p-value									
* significant difference p<0.05									

Table-6

Table 6 depicts the comparison between pre-interventional and post interventional level of severity of breast engorgement in the control group and experimental group among Postnatal mother. It showed that in the experimental group, the mean (3.50) of pre interventional level of breast engorgement is greater than the mean (2.93) of post interventional level of breast engorgement and in control group, the mean (3.57) of post interventional level of breast engorgement was higher than the mean (5.53) of pre interventional level of breast engorgement. The mean difference between pre-interventional and post interventional level of breast engorgement in experimental group was found statistically significant at $p<0.05$ and in control group it was found statistically non-significant at $p<0.01$. The difference between the pre-interventional mean(58.67) of experimental group and control group was statistically non-significant at $p<0.01$. The mean difference of post-interventional score between experimental and control group was found statistically significant at $p<0.01$.

Hence, it can be concluded that the chilled cabbage has significant effect on the breast engorgement among postnatal mothers so, the null hypothesis is rejected.

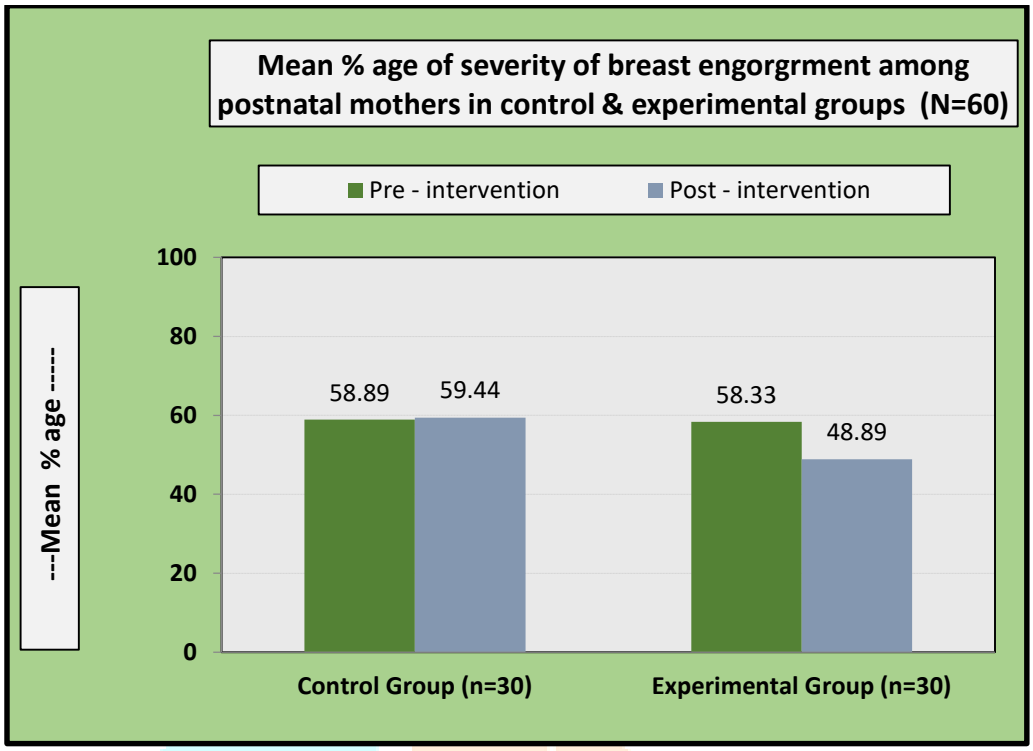


Figure 5 frequency and percentage distribution of postnatal mother according to mean %age of severity of breast engorgement.

Objective-4Association of pre- & post interventional level of severity of breast engorgement with socio-demographic variables regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)

Association of pre- & post interventional level of severity of breast engorgement with socio-demographic variables regarding the effectiveness of chilled cabbage leaves on among postnatal mothers in experimental groups (n=30)						
Socio-demographic variables	**Chi-square test**					
	Pre - intervention			**Post - intervention**		
	Value	**df**	**p-value**	**Value**	**df**	**p-value**
Age of mothers (in years)	4.21	4	0.378	2.50	4	0.644
Day of postnatal period	1.17	2	0.559	0.74	2	0.691
Mode of delivery	11.32	6	0.079	9.87	6	0.130
Number of deliveries	5.02	4	0.285	1.61	4	0.807
Frequency of feeding	2.57	2	0.276	0.07	2	0.967
Duration of feeding (in minutes)	2.06	2	0.357	4.04	2	0.132
Education of mother	2.72	6	0.843	8.02	6	0.236
Occupation of mother	0.87	4	0.929	3.66	4	0.454

Table depicts the association between the pre-& post interventional level of severity of breast engorgement regarding the effectiveness of chilled cabbage leaves with their selected socio demographic variables among

the postnatal mothers in experimental group (n=60). The analysis revealed that there both pre and post intervention socio demographic variables such as age, day of postnatal period, education of mother, number of deliveries, duration of feeding, occupation, frequency of feeding, mode of delivery was not found statistically significant at level $p<0.05$.

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