



ORIGINAL RESEARCH PAPER

Nursing

A STUDY TO ASSESS THE EFFECTIVENESS OF APPLICATION OF COLD COMPRESS VERSUS HOT COMPRESS IN THE MANAGEMENT OF BREAST ENGORGEMENT AMONG POST-NATAL MOTHERS IN SELECTED HOSPITAL, GUWAHATI, ASSAM.

KEY WORDS: Effectiveness, cold compress, hot compress, postnatal mother, breast engorgement.

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ABSTRACT

Objectives: To assess the level of breast engorgement among post-natal mothers before and after the application of cold compress and hot compress. To compare the effectiveness of cold compress and hot compress on breast engorgement among post-natal mothers. To find out the association between the pre-test level of breast engorgement score with selected demographic variables. Methods: Quasi experimental non equivalent pre-test post-test design. Purposive sampling technique was used. Demographic profile and six point breast engorgement scale was used to collect the data. Analysis: The mean of hot compress group i.e., 1.4 was lower than the cold compress group i.e., 2.3. The calculated independent 't' value (t58=5.5 at 0.05 level of significance) was more than the tabulated value (t58=2.0003 at 0.05 level of significance). Conclusion: The present study showed no significance association with the demographic variables of the postnatal mothers. The study revealed that both the interventions were effective, but hot compress was found to be more effective in reduction of breast engorgement as compared to cold compress.

1. INTRODUCTION

Breast engorgement is a well-known problem but poorly researched aspect of lactation which occurs in 3rd and 4th postpartum day due to excessive production of milk, obstruction to outflow of milk or poor removal of milk by the baby. 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.

Various management modalities of breast engorgement have been explored like pharmacological and non-pharmacological. Now a day's most of the postnatal mothers prefer the non pharmacological methods which include cold cabbage compresses, cold gel pads, hot compresses and warm showers, which are used to activate the milk ejection reflex.

2. MATERIALS AND METHODS

A quasi experimental non equivalent pre-test post-test design was adopted for the study. The study was conducted in Guwahati Medical College & Hospital (GMCH), Guwahati, Assam. The tools used for the study were demographic variables and six point breast engorgement scale. The permission was obtained from the concerned authority to conduct the study and ethical approval was obtained from the Ethics Committee Assam down town University. Data was collected from 6th Dec. to 31st Dec. 2017 after taking informed consent and confidentiality of the data collected had been ensured. Purposive sampling technique was used and the samples were divided into two groups i.e., cold compress group (30) and hot compress group (30). In cold compress group, local moist application in which damp cloth soaked in cold water about 15°C (59°F) to 20°C (68°F) and in hot compress group, warm compress in which sponge cloth soaked in hot water about 43°C (109.4°F) to 46°C (114.8°F) were applied on the engorged breast for 15 minutes in between feedings 3 times per day respectively for two days. Observation was done before and after the intervention. The data was analyzed by using descriptive and inferential

statistics in terms of frequency, percentage, mean, standard deviation, paired 't' test, independent 't' test and chi square test.

3. RESULTS AND DISCUSSION

Characteristics of demographic variables

The findings showed that majority of the postnatal mothers in cold compress group i.e 53.3% (16) were in the age group of 30-35 years, whereas in hot compress group majority were in the age group of 24-29 years i.e., 56.7% (17). In cold compress group, maximum number of postnatal mother has completed their High school education which comprises of 50% (15), whereas in hot compress group majority of postnatal mothers has completed their primary education i.e., 53.3% (16). In both the group all the postnatal mothers were unemployed i.e., 100% (30) in each group. In cold compress group majority of postnatal mothers belong to joint family i.e., 56.7% (17). In hot compress group majority were from nuclear family i.e., 60% (18). In both the group majority of postnatal mothers were primigravida i.e., 73.3% (22) in each group. In both the group majority of the mother had vaginal delivery i.e., 60% (18) and 76.7% (23) respectively. In both the group majority of postnatal mothers were feeding on interval i.e., 60% (18) and 66.7% (20) respectively.

Objective wise analyses

Objective 1: To assess the level of breast engorgement before and after the application of cold compress.

Table 1: Frequency and Percentage distribution of breast engorgement score before and after cold compress n=30

Days	Free from engorgement (BES of 1)		BES between (2-5)		Severe engorgement (BES of 6)	
	f	%	f	%	f	%
Pre-test	0	0	26	86.7	4	13.3
Post-test	6	20	24	80	0	0

Table 1 represents that in cold compress group majority of postnatal mothers had Breast engorgement score between 2-5 i.e., 86.7% (26) and 13.3% (4) had severe engorgement in

their pre-test score. Whereas in post-test score majority of postnatal mothers had breast engorgement score between 2-5 i.e., 80% (24), 20% (6) were free from engorgement and severe engorgement was 0% (0).

Objective 2: To assess the level of breast engorgement before and after the application of hot compress.

Table 2: Frequency and Percentage distribution of breast engorgement score before and after hot compress

n=30			
Days	Free from engorgement (BES of 1)	BES between (2-5)	Severe engorgement (BES of 6)
Pre-test	0	24	6
Post-test	19	6	5

	f	%	f	%	f	%
Pre-test	0	0	18	60	12	40
Post-test	19	63.3	11	36.7	0	0

Table 2 represents that in hot compress group majority of postnatal mothers had Breast engorgement score between 2-5 i.e. 60% (18) and 40% (12) had severe engorgement in their pre-test score. Whereas in post-test score majority were free from engorgement i.e., 63.3% (19), 36.7% (11) had breast engorgement score between 2-5 and severe engorgement was 0.

Objective 3: To compare the effectiveness of cold compress and hot compress on breast engorgement.

Table 3: Mean, Standard deviation, t- value of Breast engorgement score among postnatal mothers before and after Cold compression

Breast engorgement score (BES)	Standard deviation	df	t (paired t-test)	p - value	Inference
Pretest	0.5	29	16.2	0.00001	S
Post test	0.8				

S = Significant at p <0.05 level of significance (t29 = 2.05)

Table 4: Mean, Standard deviation, t- value of Breast engorgement score among postnatal mothers before and after Hot compression.

Breast engorgement score (BES)	Mean	Standard deviation	df	t (paired t-test)	p - value	Inference
Pretest	5.2	0.8	29	31.1	0.00001	S
Post test	1.4	0.5				

S = Significant at p <0.05 level of significance (t29 = 2.05)

Table 3 and 4, reveals that there was significant difference between cold compress (t₂₉=16.2, p-value = 0.00001) and hot compress (t₂₉=31.1, p-value = 0.00001) inferring that both cold and hot compress are effective in decreasing breast engorgement among postnatal mothers. These findings was supported by a study conducted by **Disha, Rana A, Singh A, Suri V (2015)** to know the effect of chilled cabbage leaves vs.

hot compression on breast engorgement among post natal mothers admitted in post natal wards of Nehru Hospital, PGIMER, Chandigarh. The findings reveal that at the end of intervention severity of pain and breast engorgement was decreased in both groups. Hence the study concluded that both the interventions were effective in relieving pain and reducing breast engorgement.

Table 5: Mean, Standard deviation and independent 't' value of cold compress and hot compress group on breast engorgement.

Group	Sample	Mean	Standard deviation	df	Independent t- test	p value	Inference
Cold compress	30	2.3	0.8	58	5.5	0.00001	S
Hot compress	30	1.4	0.5				

S = Significant at p < 0.05 level of significance (t58 =2.0003)

Table 5 shows that the mean of hot compress group 1.4 was lower than the mean of cold compress group 2.3. The calculated independent't' value (t₅₈=5.5 at 0.05 level of significance) was more than the tabulated value (t₅₈=2.0003 at 0.05 level of significance). Hence the research hypothesis was retained, inferring that reduction in breast engorgement score of hot compress group was significantly higher than that for cold compress group. Lower the mean, the more effective is the intervention. This finding is supported by a study conducted by **Manna M, Podder L and Devi S (2016)** to compare the effectiveness between hot fomentation and cold

compression as the treatment of breast engorgement and associate the findings with demographic variables. Reduction in breast engorgement score of cold compress group was not significantly higher than that for hot fomentation group (p=0.116). The study concluded that hot fomentation was more effective in reduction of breast engorgement.

Objective 4: To find out the association between the pre-test level of breast engorgement score with selected demographic variables.

Table 6: Association between the pre-test level of breast engorgement score of cold compress group with selected demographic variables

Demographic variables	BES 2-5	BES 6	Chi square (x ²)	df	p - value	Inference
Gravida			0.01	1	0.93574	NS
a. Primi	19	3				
b. Multi	7	1				
Type of delivery			1.2	1	0.27332	NS
a. Vaginal delivery	14	4				
b. Cesarean section	12	0				
Breast feeding status			0.2	1	0.65472	NS
a. Interval	16	2				
b. Demand	10	2				

NS= Not significant at p <0.05

Table 7: Association between the pre-test level of breast engorgement score of hot compress group with selected demographic variables

Demographic variables	BES 2-5	BES 6	Chi square (χ^2)	df	p- value	Inference
Gravida						
a. Primi	13	9	0.03	1	0.86249	NS
b. Multi	5	3				
Type of delivery						
a. Vaginal delivery	11	12	0	1	1	NS
b. Cesarean section	7	0				
Breast feeding status						
a. Interval	13	7	0.6	1	0.4292	NS
b. Demand	5	5				

n=30

NS= Not significant at p <0.05

Table 6 and 7 shows that there was no significant association between the pretest breast engorgement score and the selected demographic variables of the postnatal mothers. The present study findings is also found to be contradictory to the study findings of Manna M, Podder L and Devi S, where it was found that there was significant association with the gravida.

4. CONCLUSION:

The present study showed no significance association with the demographic variables of the postnatal mothers. The study revealed that both the interventions were effective, but hot compress was found to be more effective in reduction of breast engorgement as compared to cold compress. As both the treatment modalities are low cost and easily available, so it can be implemented by the nurses in day to day practice at hospital as well as at home to manage breast engorgement.

5. Recommendations:

- A similar study can be replicated on large samples for each group.
- A comparative study can be done between the pharmacological and non-pharmacological therapies.
- A study can be done using traditional methods of managing breast engorgement of a specified area according to their culture and practice.

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