



A study to assess the effect of garlic preparation intake in promotion of breastfeeding among postnatal mothers in a selected rural community area at Mangalore

Renjitha SA¹, Hemalatha G²

¹ M.Sc Nursing student, Athena College of Nursing, Mangaluru, Karnataka, India

² Associate Professor and HOD OBG Nursing, Mangaluru, Karnataka, India

Abstract

Introduction: Breastfeeding is a special time for every woman. Throughout the world today, an infant receive less breast milk that at any time in the past. In normal mothers, this is because of less milk production, suckling problem of baby and poor knowledge of mother. Garlic is thought to be a galactagogue, helping nursing mothers to make more breast milk. It's also believed that the taste of the garlic in the breast milk may help keep breastfed babies nursing longer.

Objective: To determine the level of promotion of breastfeeding among postnatal mothers using observational checklist in experimental and control group. • To assess the effectiveness of garlic preparation intake in promotion of breastfeeding among postnatal mothers in experimental group using observational checklist. • To find out the association between pre-test scores level of promotion of breastfeeding among postnatal mothers with selected baseline variables.

Methodology: Quantitative evaluative approach with a quasi-experimental two group pre-test post-test design was used for the study. The study was conducted at selected rural area. Thirty samples were drawn using purposive sampling technique. Pre-test was done using observational checklist and post test was conducted using the same observational checklist.

Results: In the experimental group, 53.33% of postnatal mothers had moderate promotion of breastfeeding and 46.67% postnatal mothers had inadequate promotion of breastfeeding. After the intake of garlic preparation 66.67% of postnatal mother had adequate promotion of breastfeeding and 33.33% of postnatal mothers had moderate promotion of breastfeeding. Hence we can conclude that the garlic intake have good effect in promotion of breastfeeding. In the experimental group the mean post-test score (19.86 ± 4.22) is greater than that of mean pre-test score (9.4 ± 2.873). The calculated 't' value (14.83) is greater than the table value ($t_{28} = 2.05$) at 0.05 level of significance. Hence the null hypothesis was rejected and research hypothesis was accepted. This shows that intake of garlic preparation was effective in promotion of breastfeeding in experimental group.

Conclusion: The present study revealed that intake of garlic preparation for one week can promote level of breastfeeding in postnatal mothers. Therefore it was concluded that garlic preparation are highly effective in promotion of breastfeeding in postnatal mothers.

Keywords: effect, garlic preparation, promotion of breastfeeding, postnatal mother

Introduction

The World Health Organisation (WHO) recommends infants should be exclusively breastfed for the first six months of life to achieve optimal health and development, followed by complementary foods while continuing breastfeeding for up to two years or beyond. However, currently fewer than 40% of infants under six months of age are exclusively breastfed worldwide. Public health awareness events such as World Breastfeeding Week, as well as appropriate training of health professionals and effective planning, aim to increase this number by communicating the importance of protecting, promoting and supporting breastfeeding so that infants receive appropriate nutrition ^[1]. A larger duration of exclusive breastfeeding was significantly associated with positive maternal attitudes towards breastfeeding, adequate family support, appropriate sucking techniques and no nipple problems ^[2].

Garlic (*Allium sativum*) contains alliin, which is metabolized by the enzyme alliinase to allicin, thought to be responsible for most of garlic's medicinal properties and odour. Garlic has been used to lower cholesterol and blood pressure. Garlic has been used as a galactagogue in India ^[3]. Garlic contains vitamins, minerals, and amino acids. It is

also made up of sulphur compounds, which are responsible for most of its beneficial health properties and its strong odour. Over the centuries, garlic has been given to treat infection, swelling, and problems with digestion. If mother consumes garlic a few hours before breastfeeding, it appeals baby to suck the breast as it has an effect on the flavour of mother's milk. So garlic is effective during breastfeeding ^[4]. Although the majority of human infants are breastfed for the first few months of life, there is a paucity of information regarding the sensory qualities of human milk and how these qualities are affected by maternal diet. The present study investigated the effects of garlic ingestion by the mother on the odour of her breast milk and the suckling behaviour of her infant. Evaluation of the milk samples by a sensory panel revealed garlic ingestion significantly and consistently increased the perceived intensity of the milk odour; this increase in odour intensity was not apparent 1 hour after ingestion, peaked in strength 2 hours after ingestion, and decreased thereafter. That the nursing detected these changes in mother's milk is suggested by the finding that infants were attached to the breast for longer periods of time and sucked more when the milk smelled like garlic ^[5].

A subsequent study confirmed that infants attached to the breast longer than usual when their mothers started taking garlic⁶. Garlic has been used as a galactagogue in India. Garlic's odour is transmitted to breast milk, which may increase infant sucking time acutely and might enhance the breastfed infants' food choices in the long term. Garlic has a long history of use as a food and medicine and is "generally recognised as safe" (GRAS) as a food flavouring by the US Food and Drug Administration, including during lactation. Limited scientific data found that a few days of oral garlic supplementation caused no adverse effects in nursing mothers or infants. From these findings the investigator felt the need for selecting the present study^[7].

Methodology

In order to achieve the objectives of the study, quantitative research design with a quasi-experimental study design was adopted for the study. The conceptual framework used for the study was based on Ernestine Wiedenbach's Prescriptive Theory (1969). Non-probability purposive sampling technique was used. Data collection was done using baseline proforma and an observational checklist. Pilot study was conducted among 10 postnatal mothers who fulfilled the sampling criteria. The data was collected for the main study from selected rural area (Haleyangadi) at Mangalore. The sample consisted of 30 postnatal mothers within inadequate to moderate promotion of breastfeeding in which 15 were in the experimental and 15 in the control group. After pre-test for both groups, selected garlic preparation were administered to the experimental group and they had twice a day for 1 week. On the 7 th day post-test was conducted for both groups. The data collected was systematically tabulated to facilitate the data analysis. The collected data was analysed by using descriptive and inferential statistics.

Result

Organisation of the findings: The result have been organised and presented in following headings:

Part I: Demographic characteristics of the postnatal mothers.

Majority of samples (36.67%) were in the age of 22-25 years. Majority of samples (40%) were in the age of 15-28 days. Majority of samples (40%) of participants belonged to joint families. Majority of samples (50%) were Muslim. Majority of samples (33.33%) were primary educated. Most of the samples (66.67%) were housewives. Majority of samples (46.67%) participant belongs to family income between Rs.10, 000-15,000 per month. Most of the samples (56.67%) were normal delivery. Most of the samples (56.67%) had no previous preparation knowledge about garlic Preparation. Highest percentage (80%) were on vegetarian diet. Highest (93.3%) were healthy.

Part II: Level promotion of breastfeeding among postnatal mothers in pre-test.

Table 1: Frequency and percentage distribution of promotion of breastfeeding among postnatal mothers. N=30

Sl.NO	Promotion of Breastfeeding	Frequency	Percentage
1	Inadequate	13	43.33
2	Moderate	17	56.67
3	Adequate	-	-

Part III: Effectiveness of garlic preparation intake on promotion of breastfeeding among postnatal mothers. Section A: Comparison of pre-test and post-test score of experimental group.

Table 2: Frequency and Percentage distribution of sample according to the level of promotion of breastfeeding in experimental group n=15

Level of promotion of breast feeding	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	7	46.67	-	-
Moderate	8	53.33	5	33.33
Adequate	-	-	10	66.67

Table 3: Range, mean, median, and SD of pre-test and post-test promotion of breastfeeding score of experimental group n =15

Group	Range of score	Mean	Median	Mean diff.	SD	't' value
Pre test	5-14	9.4	10	10.46	2.873	18.07
Post test	10-25	19.86	21		4.223	

Hence the research hypothesis (H₁) was accepted. H₁1: There will be significant difference between mean pre-test and mean post-test Score of level of promotion of breastfeeding among postnatal mother in experimenta group.

Section B: Comparis on of pre-test and post-test scores of control group

Table 4: Frequency and percentage distribution of sample according to the level of promotion of breastfeeding in control group n =15

Level of promotion of breast feeding	Pre test		Post test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	6	40	7	46.67
Moderate	9	60	8	53.33
Adequate	-	-	-	-

Table 5: Range, mean, median, mean difference, SD and 't' value of pre-test and post-test promotion of breastfeeding scores in control group n =15

Group	Range of score	Mean	Median	Mean diff.	SD	't' value
Pre test	6-13	9.26	10	0.466	2.235	1.606
Post test	6 -14	9.733	10		2.143	

Section C: Comparison of post-test score of experimental and control group

Table 6: Frequency and percentage distribution of sample according to the post-test promotion of breastfeeding score in experimental and control group N=30

Level of promotion of breast feeding	Experimental group		Control group	
	Frequency	Percentage	Frequency	Percentage
Inadequate	-	-	7	46.67
Moderate	5	33.33	8	53.33
Adequate	10	66.67	-	-

Table 7: Mean, SD, Mean difference and ‘t’ value of post-test score in experimental and control group N=30

Post test	Mean score	SD	Mean diff	‘t’ value
Experimental group	19.86	4.223	2.005	14.831
Control group	9.733	2.218		

(H₁₂) is accepted. This shows that intake of garlic preparation was effective in promotion of breastfeeding in experimental group.

H₁₂: There will be significant difference between mean post-test score of level of promotion of breastfeeding among experimental and control group after administering garlic preparation

Part IV: Association of level of promotion of breastfeeding with baseline variables

Table 8: Association of level of promotion of breastfeeding with baseline variables N=30

Sl. No.	Demographic variable	χ ² value	df	Inference
1.	Age of mother in year	0.074	1	Not significant
2.	Age of the baby in days	0.782	1	Not significant
3.	Type of family	0.889	1	Not significant
4.	Religion	1.493	1	Not significant
5.	Educational status	0.023	1	Not significant
6.	Occupation of the mother	1.086	1	Not significant
7.	Monthly income of the family	0.271	1	Not significant
8.	Type of delivery	5.129	1	significant
9.	Previous information about garlic	0.782	1	Not significant
10.	Dietary pattern	0.305	1	Not significant
11.	Health status of mother	1.639	1	Not significant

(Table value of chi- square at 1 df with 5% level= 3.84) p>0.05.

The data presented in Table 8 shows that type of delivery are significantly

Associated with pre level promotion of breastfeeding (calculated value was more than the tabulated value at 0.05 level of significance). Statistical analysis of the present study shows that 56.66% of samples are undergone normal delivery. So the research hypothesis was partially accepted.

H₁₃: There will be significant association between pre-test score of level of promotion of breastfeeding among postnatal mothers with baseline variable.

Discussion

Baseline characters of the study, Majority of samples (36.67%) were in the age of 22-25 years. Majority of samples (40%) were in the age of 15-28 days. Majority of samples (40%) of participants belonged to joint families. Majority of samples (50%) were Muslim. Majority of samples (33.33%) had primary education. Most of the samples (66.67%) were housewives. Majority of samples (46.67%) belongs to family income group of 77 Rs. 10,000-15,000 per month. Most of the samples (56.67%) had normal delivery. Most of the samples (56.67%) had no previous information about garlic preparation. Highest percentage of samples (80%) were vegetarian. Highest percentage (93.33%) were healthy. Level of promotion of breastfeeding in pre-test Data shows that 56.67% of postnatal mothers had moderately promoted breastfeeding and 43.33% of the postnatal mothers had inadequately promoted breastfeeding Effect of garlic preparation intake In the experimental group, 53.33% of postnatal mother had

moderate promotion of breastfeeding and 46.66% postnatal mother had inadequate promotion of breastfeeding. After the intake of garlic preparation 66.67% of the postnatal mothers had adequate promotion of breastfeeding and 33.33% had moderate promotion of breastfeeding. Hence we can conclude that the garlic intake had good effect in promotion of breastfeeding. In the experimental group the mean post-test score (19.86±4.22) is greater than that of mean pre-test score (9.4±2.873). The Calculated ‘t’ value (18.07) is greater than the table value (t₁₄=2.15) at 0.05 level of significance. Hence the null hypothesis was rejected. The mean post-test promotion of breastfeeding score (19.86±4.22) in experimental group after taking garlic was greater than the post-test score in control group (9.73±2.218). The Calculated ‘t’ value 14.831 is greater than the table value (t₂₈=2.05) at 0.05 level of significance. Hence the null hypothesis was rejected and 78 research hypothesis was accepted. This shows that intake of garlic preparation was effective in promotion of breastfeeding in experimental group. Chi-square test was computed in order to find the association between promotion of breastfeeding and baseline variables. The findings showed that type of delivery was significantly associated with pre-test level at 0.05 level of significance. So the research hypothesis was partially accepted.

Conclusion

Garlic (lehsun): Among its many curative properties, garlic is said to help in increasing breast milk supply. Studies have shown that the infants of mothers who eat garlic tend to feed for a longer time, and many babies seem to like the flavour in breast milk. Though garlic can be eaten on its own, may find it more appetising when used as a condiment in dals, meats, vegetables, pastas and pickles. Garlic milk is a popular traditional post-delivery drink given to nursing moms.

References

1. Baker R. Human milk substitutes: An American perspective. *Minerva Paediatrics* 2003;55:195-207.
2. Bib-Wambach KA, Riordan A, Rojanasriat W. Maternal Employment and Breastfeeding. *American Journal of Maternal Child Nursing* 2004 Jul;222-7.
3. Sayed NZ, Deo R, Mukundan U. Herbal remedies used by Warlis of Dahanu to induce lactation in nursing mothers. *Indian J Tradit Knowl* 2007;6:602-5.
4. Murray D. Garlic and breastfeeding by a board-certified health professional. [online]. 2013 Oct [cited 2014 Dec 9] Available from: URL:http://breastfeeding.about.com/od/milksupplyproblems/a/Garlic.htm.
5. 20]; Available from: URL:http://www.ncbi.nlm.nih.gov/pubmed/18811774
6. Lauwers J, Swisher A. *Counselling the nursing mother*. 4th ed. Philadelphia: Jones and Bartlett Publishers; 2005. P. 279. 87
7. Ghosh. *Nutrition and child care*. [online] [cited 2013 Dec 24]. Available from: URL:http://www.revolutionhealth.com/healthyliving/pregnancy/breastfeedingtechniques.
8. Horwood LJ. Breastfeeding and cognitive ability at 7-8 years. *Arch Dis Child Foetal Neonatal Ed* 2001;84:23-7.