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A Study to Assess the Effectiveness of Planned Teaching Program Regarding the Management of the Breast Problems among the Postnatal Mothers in the Selected Hospitals, Bangalore, Karnataka

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Abstract: Introduction: During the postnatal period the mothers should be offered information to enable them to promote their own and their babies' health and well-being and to recognize and respond to problems. The mothers should be advised of the signs and symptoms, and appropriate action for potentially life-threatening conditions. All maternity care providers should encourage breastfeeding. The aim is for the midwife to visit the woman when she most likely to need assistance. If further postnatal care or lactation consultation (for any ongoing breastfeeding problems) is required additional visits can be arranged. **Objectives**: To assess the level of knowledge, effectiveness of planned teaching program and association with selected demographic variables regarding management of the breast problems among the postnatal mothers. **Material and methods:** A Quasi experimental one group pretest-posttest design is adopted for the present study. The study was conducted in K.C. General Hospital, Bangalore with 450 bedded hospital. The sample size of the study consists of 60 postnatal mothers who fulfil the inclusion criteria. Non-probability convenience sampling technique was adopted to select the sample. **Results**: The data is organized, analyzed and presented in two parts. The findings revealed that the gain in mean score of overall level for knowledge of postnatal mothers between pre-test with post-test was 44.06% with 't' test value of 31.70 which was highly significant at 5%. It revealed that the PTP was effective and hence research hypothesis H_1 was accepted. **Conclusion:** The study concluded that the PTP which was prepared was effective. Hence the postnatal mothers should be encouraged to attend teaching sessions, health education programme, workshops etc. will be more receptive to improve their knowledge level.
Keywords: Breast problems, postnatal mothers.

Introduction

Mastitis is an infection of the breast tissue. It is caused by organisms acquired from the infants nasopharyngeal or umbilical areas, which harbors colonies of the staphylococci or streptococci that develop within a few days of birth. It occurs at the end of the first week following birth. The mother develops fever; tenderness, red and firm to hard areas are felt in one of the breasts. Treatment consists of analgesics and antibiotics. If it is not too painful, the mother should empty her breast after a feed, as incomplete emptying leaves stagnant of milk in the system, which may become infected [1]. Plugged milk ducts are a common problem, encountered during the nursing period. This happens when one of the milk ducts becomes obstructed, causing a backup of the milk. The woman usually notice a sore, redden hard lump in one area of her breast. The woman should be taught to continue

nursing, take acetaminophen, apply warm compresses and massage the sites, nurse in different positions, including on her knees to facilitate drainage of the breast and to avoid constricting clothing or brassier. If the site does not improve within a few days, she should contact her health care provider [2].

Breast abscess, the infection usually enters through a break in the skin. It is usually confined to one quadrant of the breast. The most common organism identified is *Staphylococcus aureus*, mostly from the infant's nose or throat. The mother will have raised temperature, tachycardia, erythematous segment of the breast, even fluctuation. It can be managed by using broad spectrum antibiotic coverage; cloxacillin, cephalexin, cefuroxime, adequate supportive brassiere, continue breastfeeding from the normal breast and empty the affected breast by means of a breast pump. Surgical management is done under anesthesia by making circular incision over the areola followed by drainage [3]. Flat or retracted nipple is commonly met in primigravidae. It is usually acquired. Babies are able to attach to the breast correctly and are able to suck adequately. In difficult cases, manual expression of milk can initiate lactation gradually breast tissue becomes soft and more protractile, so that feeding is possible [7]. It is important to deal with problems faced by mothers during breastfeeding as they may frequently result in the stoppage of breastfeeding or addition of supplements of animal milk or commercial infant formula. It is found that about 3% Korean women have nipple inversion and 73-92% is bilateral and 10% women are having inverted nipple. Nipple soreness has been reported by 33-96% lactating women [4]. The incidence of maternal morbidity was 42.9% during puerperium [5].

The most common postpartum morbidities included breast problems (18.4%). Abnormal presentation and some puerperal complications (infection, fits and psychosis and breast problems) were significantly associated with adverse prenatal outcomes, but prolonged labor was not [6]. In the Grampian study 33% of all women experienced breast problems in the first 2 weeks and 28% in the thereafter. This may be an underestimation, because some of the women may have considered these problems as baby feeding problems. Apart from overt mastitis, a relatively rare condition of these problems may have comprised engorgement, sore, cracked, bleeding or inverted nipples [7]. Breast problems are often cited as the reason for stopping breastfeeding, and breastfeeding rate might improve if effective care could be given for these problems. The majority of such problems can be prevented by routines and practices which support breastfeeding, and skilled help to establish breastfeeding in the early postpartum period [8].

Objectives

1) To assess the pretest knowledge regarding management of the breast problems among the postnatal mothers.
2) To assess the posttest knowledge regarding the management of the breast problems among the postnatal mother.
3) To assess the effectiveness of planned teaching program regarding the management of the breast problems among the postnatal mothers.
4) To associate the pretest knowledge regarding the management of the breast problems among the postnatal mothers with their selected demographic variables.

Methodology: A Quasi experimental one group pretest-post-test design is adopted for the present study. The study was conducted in K.C. General Hospital, Malleswam, with 450 bedded hospital and 10kms away from Nagarbhavi. The total population of the study comprised of all postnatal mothers admitted in K.C. General Hospital, Bangalore. The sample size of the present study consists of 60 postnatal mothers who fulfil the inclusion criteria. In the present study, non probability convenience sampling technique was adopted to select the samples. The tool consists of 2 sections covering the following areas: Section-A: Structured questionnaire for collecting demographic data of the patients such age, religion, education, occupation, type of family, family income, age at marriage, number of parity, nature of past delivery, nature of present delivery, number of postnatal days, number of living

children, previous exposure of information, sources of information. Section–B: Structured knowledge questionnaire on knowledge regarding the management of breast problems among postnatal mothers. The tool was found adequate and minor suggestions given by the experts were incorporated.

Results

Table 1. Frequency and percentage distribution of demographic variables of patients with breast problems (n=60).

S. No.	Demographic variables	Frequency	Percentage (%)
1	**Age in year**		
	a) 20-24	26	43.3
	b) 25-29	27	45
	c) 30-34	7	11.7
	d) 35-40	0	0
2	**Religion**		
	a) Hindu	24	40
	b) Muslim	12	20
	c) Christian	24	40
	d) Others	0	0
3	**Educational Status**		
	a) Illiterate	7	11.7
	b) Primary education	32	53.3
	c) Secondary education	21	35
	d) Graduation	0	0
4	**Occupation**		
	a) Housewife	52	86.7
	b) Coolie	7	11.7
	c) Private employee	1	1.7
	d) Government employee	0	0
5	**Type of family**		
	a) Nuclear	40	66.7
	b) Joint	20	33.3
6	**Family income per month**		
	a) Rs. 1000-3000	6	10
	b) Rs. 3001-5000	14	23.3
	c) Rs. 5001-7000	18	30
	d) Above 7000	22	36.7
7	**Age at marriage**		
	a) Below 20 years	39	65
	b) 20-24 years	21	35
	c) 25-29 years	0	0
	d) 30-34 years	0	0

The above table revealed that the majority of postnatal mothers 22 (45%) were in the age group of 25-29 years, 26 (43.3%) were in the age group of 20-24 years, 7 (11.7%) were in the age group of 30-34 years and none them were aged above 35-40 years. With regard to religion, 24 (40%) of postnatal mothers belong to Hindu, 24 (40%) of postnatal mothers belong to Christian and 12 (20%) of postnatal mothers belong to Muslim. Regarding the educational status, 32 (53.3%) had primary education, 21 (35%) had secondary education, 7 (11.7%) were illiterate and none of them were graduated. With regard to occupation, 52 (86.7%) were housewives, 7 (11.7%) were coolie, 1 (1.7%)

were private employee and 0 (0%) none of them were government employees. Majority 40 (66.7%) of postnatal mothers belong to nuclear family and 20 (33.3%) of postnatal mothers belong to joint family. With regard to age at marriage, 39 (65%) of them got married below 20 years of age, 21 (35%) got married at 20-24 years of age and none of them got married at 25-29 years of age and 30-34 years of age.

Table 2. Frequency and percentage distribution of demographic variables of mothers with breast problems (n=60).

S. No.	Demographic variables	Frequency	Percentage (%)
8	**Number of parity**		
	a) Primiparity	31	51.7
	b) Multiparity	29	48.3
9	**Nature of past delivery**		
	a) Normal vaginal delivery	19	31.7
	b) Caesarean section	8	13.3
	c) Forceps delivery	1	1.7
	d) Others	32	53.3
10	**Nature of present delivery**		
	a) Normal vaginal delivery	33	55
	b) Caesarean section	27	45
	c) Forceps delivery	0	0
	d) Others	0	0
11	**Which postnatal day you are**		
	a) 1-3 days	31	51.7
	b) 4-6 days	22	36.7
	c) 7-9 days	7	11.7
	d) 10 days and above	0	0
12	**Number of living children**		
	a) One	33	55
	b) Two	15	25
	c) Three	8	13.3
	d) Four and above	4	6.6
13	**Have you heard of breast problems**		
	a) Yes	25	41.7
	b) No	35	58.3
	If yes, source of information		
	Health professionals	13	21.7
	Family members	8	13.3
	Friend	4	6.6
	Mass media	0	0

The above table revealed that majority 31 (51.7%) of postnatal mothers belong to multiparity and 29 (48.3%) of postnatal mothers belong to Primiparity. 32 (53.3%) of postnatal mothers had other types of delivery, 19 (31.7%) of postnatal mothers had normal vaginal delivery, 8 (13.3%) of postnatal mothers had caesarean section and 1 (1.7%) of postnatal mother had forceps delivery. With regard to the nature of present delivery 33(55%) had normal vaginal delivery, 27 (45%) had caesarean section, none of them had forceps delivery and others types of delivery. Majority 31 (51.7%) of postnatal mothers belong to 1-3 postnatal days, 22 (36.7%) belong to 4-6 postnatal days, 7 (11.7%) belong to 7-9 postnatal days and none of the postnatal mothers belong to 10 days and above. Regarding the number of living children 33 (55%) had one child, 15 (25%) had two children, 8 (13.3%) had three children and 4 (6.7%) had four and above children.

Table 3. Percentage and frequency distribution of postnatal mothers on knowledge regarding the management of breast problems before PTP (n= 60).

Level of Knowledge	Classification of Respondents	
	Pretest	
	Number	Percentage
Inadequate (< 50%)	46	76.7
Moderate (51-75%)	14	23.3
Adequate (> 75 %)	0	0

The above table showed that 46 (76.7%) of the postnatal mothers had inadequate knowledge, 14 (23.3%) of the postnatal mothers had moderate knowledge and none of the postnatal mothers had adequate knowledge in the pretest.

Table 4. Mean, Standard Deviation and mean percentage of knowledge postnatal mothers regarding management of breast problems before PTP (n=60).

S. No	Aspects of knowledge	Statements	Max. Score	Range Score	Respondents Knowledge		
					Mean	SD	Mean (%)
1	About general information	16	16	3-11	6.58	2.23	41
2	About the management of breast problems	14	14	2-10	4.8	2.36	34
3	Over all knowledge	30	30	5-19	11.28	4.07	37

The above table revealed that the maximum score about general information was 16 and about management of breast problems was 14. The range score about general information was 3-11 and about the management of breast problems was 2-10. Mean score about general information was 6.58 and about the management of breast problems was 4.8.

The SD about general information was 2.23 and about the management of breast problems was 2.36. Mean percentage score about general information was 41 and about the management of breast problems was 34. The overall knowledge maximum score was 30, range score was 5-19 and the overall knowledge score obtained by the subjects in the pre-test was 11.28 with standard deviation of 4.07.

Table 5. Percentage and frequency distribution of postnatal mothers on knowledge regarding management of breast problems after PTP (n=60).

Level of Knowledge	Classification of Respondents	
	Posttest	
	Number	Percentage
Inadequate (< 50%)	0	0.00
Moderate (51-75%)	15	25.00
Adequate (> 75 %)	45	75.0

The above table showed that 45 (75%) of the postnatal mothers had adequate knowledge, 15 (25%) of the postnatal mothers had moderate knowledge and none of the postnatal mothers had inadequate knowledge in the posttest.

Table 6. Mean Standard Deviation and mean percentage for the level of knowledge of postnatal mothers regarding management of breast problems after PTP (n= 60).

S. No	Aspects of knowledge	Statements	Max. Score	Range Score	Respondents Knowledge		
					Mean	SD	Mean (%)
1	About general information	16	16	9-15	13.3	1.86	83
2	About the management of breast problems	14	14	7-14	11.8	1.8	84
3	Over all knowledge	30	30	16-29	24.5	3.18	81

The above table revealed that the maximum score about general information was 16 and about management of breast problems was 14. The range score about general information was 9-15 and about the management of breast problems was 7-14. Mean score about general information was 13.3 and about the management of breast problems was 11.8. The SD about general information was 1.86 and about the management of breast problems was 1.8. Mean percentage score about general information was 83 and about the management of breast problems was 84. The overall knowledge maximum score was 30, range score was 16-29 and the overall knowledge score obtained by the subjects in the pre-test was 24.5 with standard deviation of 3.18.

Table 7. Percentage and frequency distribution of postnatal mothers on knowledge regarding management of breast problems before and after PTP (n=60).

Knowledge	Respondents Knowledge			
	Pretest		Posttest	
	No	%	No	%
Inadequate (< 50%)	46	76.7	0	0
Moderate (50-75%)	14	23.3	15	25.0
Adequate (> 75%)	0	0	45	75.0

Table revealed that in the pretest 46 (76.6%) of the postnatal mothers had inadequate knowledge, 14 (23.3%) of the postnatal mothers had moderate knowledge and none of the postnatal mothers had adequate knowledge. In the posttest 45 (75%) of the postnatal mothers had adequate knowledge, 15 (25%) of the postnatal mothers had moderate knowledge and none of the postnatal mothers had inadequate knowledge.

Table 8. Mean, mean percentage and gain in mean score percentage for knowledge of postnatal mothers regarding management of breast problems before and after PTP (n=60).

S.No	Aspect of knowledge	Maximum Possible score	Pretest		Post test		Gain in mean score percentage
			Mean	Mean score %	Mean	Mean score %	
1	About general information	16	6.58	59	13.3	88	42%
2	About management of breast problems	14	4.8	48	11.8	84	50%
3	Over all knowledge	30	11.28	59	24.5	84	44.06%

The above table revealed that the maximum score about general information was 16 and about management of breast problems was 14 both in pretest and post-test. In the pretest mean score about general information was 6.58 and about the management of breast problems was 4.8. Mean percentage score about general information was 41 and about the management of breast problems was 34. In the posttest mean score about general information was 13.3 and about the management of breast problems was 11.8.

Mean percentage score about general information was 83 and about the management of breast problems was 84. The gain in mean score percentage about general information was 42% whereas gain in mean score percentage about the management of breast problems was 50%. With regard to the overall knowledge maximum score was 30, the overall knowledge score obtained by the subjects in the pre-test was 11.28 whereas in the posttest was 24.5, mean score percentage in the pretest was 37 whereas in the posttest was 84. The overall gain in mean score percentage was 44.6%.

Table 9. Mean and SD of knowledge scores before and after PTP and statistical significance.

S. No	Aspects of knowledge	Pretest		Posttest		paired 't' value	P value
		Mean	SD	Mean	SD		
1	About general information	6.58	2.23	1.3	1.86	19.62*	P<0.05
2	About the management of breast problems	4.8	2.36	11.8	1.8	27.3*	P<0.05
3	Over all knowledge	11.28	4.07	24.5	3.18	31.70*	P<0.05
Note: *- Significant at 5% level for 59 df (i.e. P<0.05)							

The above table represented the mean pre and post-test knowledge regarding management of breast problems. The paired t-test was carried out and it was found to be invariably significant at P< 0.05 level, hence null hypothesis (H_{01}) is rejected and research hypothesis (H_1) was accepted. It is evident that the Planned Teaching Programme (PTP) is significantly effective on improving the knowledge regarding management of breast problems among postnatal mothers.

Table 10. Association between knowledge and selected demographic variables of age, religion, education, occupation and type of family (n=60)

Demographic variables	Sample (n)		Knowledge level of Respondents				Chi-square $\chi 2$ value
	No. (60)	%	<Median		≥ Median		
			No. (47)	%	No. (13)	%	
1. Age (years)							
20-24	26	43.3	22	46.8	4	30.74	6.39, df=2, S
25-29	27	45.0	19	40.4	8	17.0	
30-34	7	11.7	6	12.7	1	7.6	
35-40	-	-	-	-	-	-	
2. Religion							
Hindu	24	40.0	21	44.6	3	23.0	4.81,df=2, NS
Muslim	12	20.0	8	17.0	4	30.7	
Christian	24	40.0	18	38.2	6	46.1	
Others	-	-	-	-	-	-	
3. Education							
Illiterate	7	11.7	6	12.7	1	7.6	1.15, df=2,

Primary	32	53.3	25	53.1	7	53.8	NS
Secondary	21	35.0	16	34.0	5	38.4	
Graduation	-	-	-	-	-	-	
4. Occupation							
House wife	52	86.7	41	87.2	11	84.6	1.44, df=3, S
Coolie	7	11.7	5	10.6	2	15.3	
Private employee	1	1.7	1	2.2	-	-	
Government employee	-	-	-	-	-	-	
5. Type of family							
Nuclear	40	66.7	30	63.8	10	76.9	0.37, df= 1, NS
Joint	20	33.3	17	36.1	3	23.0	
6. Family Income (Rs/month)							
1000-3000	6	10.0	5	10.6	1	7.6	5.79, df=2, S
3001-5000	14	23.3	8	17.0	6	46.1	
5001-7000	18	30.0	14	29.7	4	30.7	
Above 7000	22	36.7	20	42.5	2	15.3	
7. Age of marriage							
Below 20 years	39	65.0	30	63.8	9	69.3	0.11, df=1, NS
20-24 years	21	35.0	17	36.1	4	30.7	
25-29 years	-	-	-	-	-	-	
30-34 years	-	-	-	-	-	-	
Note: S-Significant at 5% level ($p<0.05$); NS- Not significant at 5% level ($p>0.05$).							

Table 11. Association between knowledge and selected demographic variables of number of parity, nature of past delivery, nature of present delivery, which postnatal day, number of living children, previous knowledge and source of information (n=60)

Demographic variables	**Sample (n)**		**Knowledge level of Respondents**				**Chi-square χ^2 value**
	No. (60)	**%**	**<Median**		**≥ Median**		
			No. (47)	**%**	**No. (13)**	**%**	
8. Number of parity							
Primiparity	31	51.7	26	55.4	5	38.4	1.06, df= 1, N.S
Multiparity	29	48.3	21	44.6	8	61.5	
9. Nature of past delivery							
Normal vaginal delivery	19	31.7	13	27.6	6	46.1	1.81, df=3, N.S
Caesarean Section	8	13.3	5	10.6	3	23.0	
Forceps delivery	1	1.7	1	2.2	-	-	
Others	32	53.3	28	59.5	4	30.7	
10. Nature of present delivery							
Normal vaginal delivery	31	51.7	24	51.0	7	53.8	19.03, df=0.01, S
Caesarean Section	22	36.7	16	97.4	6	46.1	
Forceps delivery	7	11.6	7	14.8	-	-	
Others	-	-	-	-	-	-	
11. Which postnatal day you are							
1-3 days	31	51.7	24	51.0	7	53.8	2.81, df=2,

4-6 days	22	36.7	17	36.1	5	38.4	N.S
7-9 days	7	11.7	6	12.7	1	7.6	
10 days and above	-	-	-	-	-	-	
12. Number of living children							
One	33	55.0	28	59.5	5	38.4	5.02, df=3, N.S
Two	15	25.0	11	23.4	4	30.7	
Three	8	13.3	4	8.5	4	30.7	
Four and above	4	6.7	4	8.5	-	-	
13. Have you heard of breast problems							
Yes	25	41.7	17	36.1	8	61.5	2.67, df=1, N.S
No	35	58.3	30	63.8	5	38.4	
If yes, the sources of information							
Health professionals	13	21.7	8	17.0	5	38.4	2.24, df = 2, N.S
Family members	8	13.3	7	14.8	1	7.6	
Friend	4	6.7	2	4.2	2	15.3	
Mass media	-	-	-	-	-		

The above table represented the mean pre and posttest knowledge regarding management of breast problems. The paired t-test was carried out and it was found to be invariably significant at $P< 0.05$ level, hence null hypothesis (H_{01}) is rejected and research hypothesis (H_1) was accepted. It is evident that the Planned Teaching Programme (PTP) is significantly effective on improving the knowledge regarding management of breast problems among postnatal mothers.

Conclusion

The present study emphasizes on effectiveness of PTP on knowledge regarding the management of breast problems and encourages the postnatal mothers to observe their breast for any abnormalities and seek appropriate health care. In order to achieve this, the hospital should include health teaching to postnatal mothers on care and hygiene during postnatal period as a routine.

Conflict of interest

The authors declare no conflicts of interest.

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