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EFFECTS OF NURSE-LED EDUCATION PROGRAM ON KNOWLEDGE AND ATTITUDE ON EXCLUSIVE BREASTFEEDING AND BREAST CARE AMONG ANTENATAL MOTHERS

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ABSTRACT

Breast milk or mother's milk is milk produced by mammary glands in the breast of a human female. Breast milk is the primary source of nutrition for newborns, containing fat, protein, carbohydrate, and variable minerals and vitamins. The present study was conducted to evaluate the effect of a nurse-led education program on knowledge and attitude on exclusive breastfeeding and breast care among antenatal mothers in antenatal OPD of St. Gregorios Medical Mission Hospital, Parumala. The objectives of the study were to assess the knowledge and attitude of antenatal mothers on exclusive breastfeeding and breast careto assess the effect of nurse-led education programs on knowledge and attitude regarding exclusive breastfeeding and breast care among antenatal mothers. A quantitative evaluative approach with pre-experimental one-group pre-test post-test design and purposive sampling was used to select 60 antenatal mothers of this study. Education program was administered on the same day after the pre-test. The data were collected using a structured knowledge questionnaire and Likert's attitude scale. The post-test was done one week after the pre-test with the same questionnaire. The data were analyzed using descriptive and inferential statistics. The findings show that the gain in knowledge and attitude was significant (t = 21.33, t =19.24). Nurse-led education program was found to be effective in improving the knowledge and attitude of antenatal mothers on exclusive breastfeeding and breast care.

Keywords: Nurse-led education program, Antenatal mothers, Exclusive breastfeeding, Breast care, Knowledge and attitude.

INTRODUCTION

"Let's make breastfeeding at work, work" –World Breastfeeding Week theme 2023. Going by this year's theme UNICEF and WHO are emphasizing the need for greater breastfeeding support across all workplaces to sustain and improve progress on breastfeeding rates globally[1]. Breastfeeding is one of the most effective ways to ensure child health and survival. Breast milk is the ideal food for infants. It is safe, clean and contains antibodies that help protect against many common childhood illnesses. Breast milk provides all the energy and nutrients that the infant needs for the first months of life, and it continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one-third during the second year of life[2].

The American Academy of Paediatrics recommends exclusive breastfeeding for about 6 months, and then continuing breastfeeding while introducing complementary foods until a child is 2 years old or older. Exclusive breastfeeding refers to feeding an infant with no other food or drink, also not even water, except breast milk for the first five to six months of life. This includes expressed milk or milk from a wet nurse[3].

Improving breastfeeding rates around the world could save the lives of more than 820,000 children under age 5 every year, the majority (87 percent) under 6 months of age. Breastfeeding promotes healthy growth and boosts early child development. Breastfeeding supports healthy brain development and is associated with higher performance in intelligence tests among children and adolescents across all income levels[4]. Breastfeeding has been shown to protect mothers against post-partum hemorrhage, postpartum depression, ovarian and breast cancer, heart disease and type 2 diabetes. It is estimated that improving breastfeeding rates could prevent an additional 20,000 maternal deaths from breast cancer[5.]

The prevalence of exclusively breast fed infants in India up to the age of five months in 2021 saw a decrease compared to 2012 when the share of infants stood at just above 53.1 percent[6]. Currently, 55% of children are exclusively breastfed in India and less than 50% of the infants are breastfed within one hour of birth. Economic losses in India because of non-breastfeeding stands at dollar 106 million for health care costs and dollar 4 billion in household costs[7].

Breast care is the process of cleaning the breast of the mother that helps in maintaining hygiene and preventing cross-infection during feeding. Breast care is an important routine during pregnancy and breastfeeding. Its absence leads to inadequate milk production before and after childbirth[8].

Antenatal mothers' knowledge and attitude regarding the practice of exclusive breastfeeding was found to be poor and inadequate[9]. Most ofthe women attending antenatal clinics were not aware of exclusive breastfeeding[10]. Knowledge and attitude of Breast care was low to moderate among pregnant mothers[11]. Nurse-led education programs are found to be effective in various setups and study populations. This study was conducted to study the effectiveness of a Nurse-led education program on exclusive breastfeeding and breast care among antenatal mothers.

OBJECTIVES OF THE STUDY

1. To assess the knowledge and attitude of antenatal mothers on exclusive breastfeeding and breast care.
2. To evaluate the effect of nurse-led education program on knowledge and attitude on exclusive breastfeeding and breast care.

HYPOTHESIS

H1-The pre-test knowledge and attitude scores of antenatal mothers on non pharmacological measures to improve breast milk production and breast care will be significantly low.

H2- Nurse-led education program will be effective in improving the knowledge and attitude of antenatal mothers on exclusive breastfeeding and breast care.

METHODOLOGY

A pre-experimental one-group pretest-posttest design was used in this study. It judges the effect of the nurse-led education program by the differences between pre-test and post-test scores without any comparison with a control group.

Pre-experimental one group pre-test post-test design

Group	Pre-test	Treatment	post-test
Antenatal mothers between 32 to 36 weeks of gestation	O_1	**X**	O_2

Variables

Independent variable

It is the cause supposed to be responsible for bringing about changes in a phenomenon or situation. Nurse-led education program on exclusivebreastfeeding and breast care among antenatal mothers was considered as the independent variable for the selected study.

Dependent variable

It is the outcome of the change(s) brought about by the introduction of an independent variable. knowledge regarding exclusive breastfeeding and breast care among antenatal mothers was considered as the dependent variable for the study.

Setting of the study

The present study was conducted at the antenatal outpatient departments of St.Gregorios Medical Mission Hospital Parumala, Pathanamthitta District, Kerala. St.Gregorios Medical Mission Hospital has 300 beds and an average attendance of 150 to 200 antenatal mothers per week. The Obstetric and Gynecological department consists of 3 Out Patient Departments and well-equipped labor room facilities.This hospital was selected for the study on the basis of geographical proximity, feasibility of conducting the study, and availability of the sample.

Population

In the present study, the population consists of all antenatal mothers who are visiting the antenatal Out Patient Department, and the target population was 60 antenatal mothers who are in 32 to 36 weeks of gestation attending antenatal Out Patient Departments of St. Gregorios Medical Mission Hospital, Parumala.

Sampling technique

Purposive sampling technique was used to select 60 antenatal mothers between 32 to 36 weeks of gestation, who were regularly attending the antenatal Out Patient Department of St. Gregorios Medical Mission Hospital, Parumala were taken as the sample for the present study.

Inclusion criteria

- Antenatal mothers in 32 to 36 weeks of gestation irrespective of parity.
- Antenatal mothers who can understand Malayalam or English.

Exclusion criteria

- Antenatal mothers who are in a high-risk group like [GDM, PIH, Placental abnormalities]
- Antenatal mothers who are not willing to participate in the study

Tool/Instruments

Close-ended structured knowledge questionnaire was prepared in three parts.

Part I: It includes nine items of demographic variables such as age in years, education, religion, occupational status, monthly family income, parity, and previous source of information regarding exclusive breastfeeding and breast care.

Part II: It includes 29 questions related to knowledge regarding exclusive breastfeeding and breast care among antenatal mothers. The highest possible score was 29 and the lowest score was 0.

Part III: It includes 16 questions related to attitude regarding exclusive breast feeding and breast care among antenatal mothers. Highest possible score was 18 and lowest score was 0.

Criteria for grading the knowledge and attitude score

Opinion from statistician, guide and experts was taken to develop criteria for the rating scale, to categorize the sample according to their knowledge and attitude on exclusive breast feeding and breast care.

Percentage of Score Grade

75 – 100 Adequate Knowledge

50 – 74 Moderately Adequate Knowledge

<49 Inadequate Knowledge

Percentage of Score Grade

75 – 100 Favourable attitude

50 – 74 Moderately Favourable attitude

<49 Unfavourable attitude

The respondents were required to select the best possible option by marking against the acceptable answer. The answer key was formulated for scoring each question in relation to knowledge and was scored one for each answer and zero for the wrong answer. The question related to attitude was scored with a five-pointLikert scale.

Data collection process

The main study data collection was done from 19th August 2023 to 10th September 2023. After obtaining permission from the institutional ethical committee the investigator approached antenatal mothers and explained to them the purpose of the study. Written consent was obtained from the samples before collecting the data. After obtaining their willingness, data were collected from 60 antenatal mothers who are in between 32 to 36 weeks of gestation, by purposive sampling, who fulfilled the selection criteria. Each group constituted around 4 to 5 samples. A detailed structured teaching was administered on the same day of a pre-test.A post-test was done after one week with the same structured knowledge questionnaire and Likert attitude scale. The data collection was terminated by thanking the respondents for their cooperation.

RESULTS

Section I: Percentage distribution of antenatal mothers based on socio-demographic characteristics.

Table 1-Frequency and percentage distribution of demographic variables among antenatal mothers.n=60.

S NO	DEMOGRAPHIC VARIABLE	FREQUENCY (n)	PERCENTAGE (%)
1	Age		
	1. 18-24	19	32%
	2. 25-31	39	65%
	3. 32-39	2	3%
	4. 40 and above	-	-
2	Education		
	1. Primary	17	28%
	2. Secondary education	17	28.33%
	3. Graduate	21	35.70%
	4. Postgraduate	5	8%
3	Religion		
	1. Hindu	22	36.7%
	2. Christian	32	53.3%
	3. Muslim	6	10%
	4. Others	-	-
4	Occupation		
	1. Home-maker	42	70%
	2. Self-employed	4	6.6%
	3. Private employee	9	15%
	4. Govt.employee	5	8%
5	Monthly family income		
	1. Less thanRs.10,000	18	30%
	2. Rs.10,001 to 20,000	16	27%
	3. Rs.20,001 to 30,000	13	22%
	4. Rs.30, 001 and above.	13	21%
6	Parity		
	1. Primi	31	52%
	2. 1-2 Children	23	38%
	3. 3 children and more	6	10%
7	Source of information		
	1. Family members	50	83.3%
	2. Health Personnel	2	3.3%
	3. Previous experience	8	13.4%

Section II: Frequency and percentage distribution of samples based on pre-test and post-test levels of knowledge on exclusive breastfeedingand breast care among antenatal mothers.

Table2: Frequency and percentage distribution of samples based on pre-test knowledge scores on exclusive breastfeeding and breast care among antenatal mothers. n=60

Level of Knowledge	Range of scores	Frequency	Percentage (%)
Inadequate	≤49	6	10
Moderately Adequate	50-74	34	56.67
Adequate	75-100	20	33.33

Data presented in Table 2 shows that the majority (56.67%) of mothers had moderately adequate knowledge, one-third (33.33%) of samples had adequate knowledge and 10% of samples had in adequate knowledge on exclusive breastfeeding and breast care.

Table 3-Frequency and percentage distribution of samples based on post-test knowledge scores on exclusive breastfeeding and breast care. n = 60

Level of Knowledge	Range of scores	Frequency	Percentage (%)
Inadequate	≤49	0	0
Moderately Adequate	50-74	10	16.67
Adequate	75-100	50	83.33

Data represented in table 3 depicts that the majority (83.33%) of mothers had adequate knowledge on exclusive breastfeeding and breast care, and 16.67% of mothers had moderately adequate knowledge after the administration of a structured teaching program.

Section III- Frequency and percentage distribution of samples based on pre-test and post-test attitudescores on exclusive breastfeeding and breast care.

Table 4-Frequency and percentage distribution of pre-test attitude scores on exclusive breastfeeding and breast care.n = 60

Level of Attitude	Range of scores	Frequency	Percentage (%)
Unfavourable	≤49	9	15
Moderately favourable	50-74	11	18.33
Favourable	75-100	40	66.6

Data presented in Table 4 shows that out of 60 samples, 66.67% of the samples had favourable attitudes on exclusive breastfeeding and breast care, 18.33% of antenatal mothers had moderately favourable attitudes and15% of the mothers had unfavourableattitudes.

Table 5-Frequency and percentage distribution of post-test attitude on exclusive breastfeeding and breast care .n = 60

Level of Attitude	Range of scores	Frequency	Percentage (%)
Unfavourable	≤49	0	0
Moderately favourable	50-74	0	0
Favourable	75-100	100	100

Data presented in Table 5 shows that 100% of the mothers had favourable attitudes on exclusive breastfeeding and breast care after the intervention.

Section IV–Significant difference between protest and post-test knowledge and attitude scores on exclusive breastfeeding and breast care

Table 6-Significant difference between pre-test and post-test knowledgescores on exclusive breastfeeding and breast care.n = 60.

Knowledge	Mean	SD	t	p-value
Pre-test	13.1	4.057	21.33	2.45*
Post-test	25.37	1.862		
Difference	12.27	2.195		

*Significance at 0.05 level

The above-presented table shows that there is an increase in the level of knowledge on exclusive breastfeeding and breast care after the education program. The statistical test reveals that the increase in knowledge was significant. The calculated value of 21.3324 is greater than the table value of 2.45.

Table 7-Significant difference between pre-test and post-test attitude scores on exclusive breastfeeding and breast care n = 60.

Knowledge	Mean	SD	t	p-value
Pre-test	49	14.85	19.24	1.98 *
Post-test	73.55	4.975		
Difference	24.55	9.883		

*Significance at 0.05 level

The above-presented table shows that there is increase in level of attitude on exclusive breastfeeding and breast care. The statistical test reveals that the increase in attitude was significant. The calculated value of 19.24 is greater than the table value (1.98).This shows that there is a significant difference between the two mean knowledge scores.

DISCUSSION

This study was conducted to know the effects of a nurse-led education program on exclusive breastfeeding and breast care among antenatal mothers.Table 1 depicted the distribution of demographic variables of the study participants.Among the 60 participants, a significant number of antenatal mothers (65%) belong to the age group of 25– 31 years, 32% belongs to 18– 24 years of age and 3% belong to 32-39 years of age, no one is above or equal to 40 years. Majority of antenatal mothers (70%) were homemakers and a few (15%) of them were employed in the private sector, 8% were Govt. employees, and 6.6% were self-employed.Most of the antenatal mothers (53.3%) were Christian, 36.7% were Hindu and 10% were Muslim. 83.3% of mothers got awareness on exclusive breastfeeding from their family members, whereas 3.3% were from health personnel and least from previous experience. Most of them (28.3%) had primary education, 35.70% were graduates, 28.33% had secondary education and 8.30% had post-graduation respectively. 30% of antenatal mothers had a monthly family income of less than Rs.10, 000, 27% of antenatal mothers had monthly family income of Rs.10, 001 -20,000, 22% of antenatal mothers had monthly family income of Rs.20, 001 -30,000, 21% of antenatal mothers had monthly family income of Rs.30, 001 and above.

The first objective of the study was to assess the knowledge and attitude of antenatal mothers regarding exclusive breastfeeding and breast care. Data presented in table 2 shows that the majority (56.67%) of mothers had moderately adequate knowledge, one-third (33.33%) of samples had adequate knowledge and 10% of samples had inadequate knowledge on exclusive breastfeeding and breast care. This shows that Antenatal mother's knowledge on exclusive breastfeeding and breast care is moderate and only a minimal number of participants had adequate knowledge. The analysis of data in table 4 shows that out of 60 participants, 66.67% of them had favourable attitudes on exclusive breastfeeding and breast care, 18.33% of antenatal mothers had moderately favourable attitudes,and 15%of the mothers had unfavourable attitudes. These findings of the study show that H1 is accepted.There are various previous studies supporting this finding. A study conducted by Yuelu Chen, et al, in 2023 on Factors associated with exclusive breastfeeding during postpartum in Lanzhou city, and concluded that postnatal mothers had low knowledge about exclusive breastfeeding[12].

A cross-sectional study conducted on level of knowledge, attitude, and practice of pregnant women on antenatal care in Amatere Health Center, Massawa, Eritrea, found out that the majority of the pregnant women had low level of knowledge and attitude about antenatal care[13].

The second objective of the study was to evaluate the effect of a nurse-led education program on knowledge and attitude regarding exclusive breastfeeding and breast care.The study findings show that the mean post-test knowledge score (χ^2= 25.366)is higher than the mean pre-test knowledge score (χ^1 = 13.1). The calculated t=21.332 is greater than the table value ($p<0.05$). This shows that there is a significant difference between the two mean knowledge scores. The study findings show that the mean post-test attitude score ($\chi^2_{=73.55}$) is higher than the mean pre-test attitude score ($\chi^1_{=}$ 49). The calculate dt=19.24 is greater than the table value ($p<0.05$). This shows that there is a significant difference between the two mean attitude score. With both the above findings research hypothesis H_2 is accepted. This indicates that the Nurse-Led education program was effective in improving the knowledge and attitude of antenatal mothers regarding exclusive breastfeeding and breast care.

Previous studies on similar topic found out that education programs on breastfeeding and exclusive breastfeeding were found to be effective. Shaimaa Mohamed Amin,et al, conducted a similar study in 2022 to study the effectiveness of an interactive digital-based educational program in improving breastfeeding knowledge, attitudes, and self-efficacy among primiparous women in Egypt.The results of this study support our study findings which concluded that an educational program about breastfeeding was suggested to be effective in enhancing the knowledge, attitude, and self-efficacy of the primiparous women, in combination with other health education activities[14].

A study conducted on effectiveness of nurse-led education programsregarding attitude and knowledge of selected aspects of prenatal care among primigravida mothers attending antenatal OPDby Mahindrakar Smeeta D in 2015 found out that education programs conducted by nurse educators was effective in improving knowledge and attitude on prenatal care among antenatal mothers[15].

CONCLUSION

Breast milk is the elixir of life for newborn babies. There should be an increase in the

breastfeeding rate provided only 50% of the babies are breastfed exclusively for first six months of life. Breast care a part of antenatal care is proven to increase the chances of increased breastfeeding. Nurses being the advocates of health, play an important role in advocating the importance of breastfeeding for the newborns and help in bridging the gap between knowledge and practice about breastfeeding among mothers and their families. Healthcare workers should be trained to play an important role in the overall multi-dimensional promotion and support of breastfeeding.

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