



A STUDY TO ASSESS THE EFFECTIVENESS OF NURSES- LED BREASTFEEDING CLINICS ON KNOWLEDGE, THE PRACTICE OF EXCLUSIVE BREASTFEEDING, AND INFANT HEALTH OUTCOMES AMONG PRIMI MOTHERS

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ABSTRACT

Background: Breast milk is recommended as the sole source of an infant's nutrition for the first six months of life. The primi para women may have difficulties with lactation management. So, motivation to initiate early and exclusive breastfeeding through educating them by personal approach during pregnancy will be beneficial for both mother and young children. The aim of the study to Evaluate the Effectiveness of Nurses-led breastfeeding clinics on Knowledge, practice of exclusive breastfeeding. **Methods:** An interrupted Time Series Design was adopted for the present study. By using Non probability purposive sampling technique a population of about 50 primi mother –infant pairs were selected for the study. After obtained the informed consent the data was collected by structured self-administered questionnaires. Data collection was done in four frequencies on 37th week of gestation, first post-natal day, 1st week of post-natal, on DPT 1 dose (6 week of infant age). **Result:** The study found that before the intervention, 66% of women had inadequate knowledge, 32% had moderate knowledge, and 2% had adequate knowledge about exclusive breastfeeding. After the intervention, 74% had adequate knowledge, 26% had moderate knowledge, and 0% had inadequate knowledge. In terms of practice, 82% had moderate practice, 8% had poor practice, and 10% had good practice before the intervention. Post-intervention, 78% had good practice, 22% had moderate practice, and 0% had poor practice. A positive correlation ($r = 0.329$, $p < 0.02$) was observed between post-test knowledge and practice. Wilcoxon sign-rank test showed a significant improvement in knowledge scores (pre-test mean: 6.40, post-test mean: 10.38, $Z = -5.935$, $p = 0.000$). However, multiple linear regression analysis ($R^2 = 0.08$, $p = 0.156$) indicated no significant long-term relationship between knowledge, practice, and infant health outcomes. The study suggests that a nurse-led breastfeeding clinic effectively improves knowledge and practice but does not establish a sustained impact on infant health outcomes.

Keywords: Primi mother, Exclusive breastfeeding, knowledge, practice, infant health outcome.

INTRODUCTION

Today's Nurses are empowered with competencies and knowledge. In Developing countries, there is a need to focus on the utilization of nursing services and knowledge in the area, where they are enriched



with core competencies needed for patient care. Nurse-led Clinics appear to be an innovative approach to patient management. The recent growth of nurses-led clinics is considered an emerging area of nursing practice.

Nurse-led clinics typically focus on the condition where a patient needs regular follow-up and expertise is required. In those clinics, the nurses undertake the role of patient education, assessment, and management of risks and issues, much research proved that nurse-led clinics were more effective in conventional care for many diseases.

Breast milk is recommended as the sole source of an infant's nutrition for the first six months of life. The primi para women may have difficulties with lactation management. So motivation to initiate early and exclusive breastfeeding through educating them by personal approach during pregnancy will be beneficial for both mother and young children.

The nurse-led clinic is the best innovative approach to educate the mother about exclusive Breastfeeding and help the mother to overcome the difficulties in lactation management. So the researcher planned to adopt the nurse-led breastfeeding clinics to enhance the exclusive breastfeeding practices among primi mothers.

Back ground and significance need for the study:

A Nurse-led clinic is an emerging area of nursing practice in the hospital and community. Nurse-led clinics are typically focused on chronic disease management where regular follow-up is required. A nurse-led clinic is considered as extra support to maintain patient safety.

According to WHO the recommended doctor-patient Ratio is 1:1000 but the overall doctor-patient ratio now is 1:1456. In many low socioeconomic countries, the clinics are managed by nurses to overcome the shortage of doctors.

However, the Growth of nurses-led clinics has been not equal across different countries. The health awareness services provided by the nurses in the community help people to gain knowledge about acute and chronic diseases. The nurses-led clinic may be the best practice to enhance the health status of the people where primary prevention is required. Nurse-led clinic will facilitate for the patient not to wait for the physicians for that health problem that can be effectively handled by the nurses. It helps doctors to reduce their workload and spend their time with critically ill patients.



Statement of the problem:

A study to evaluate the effectiveness of Nurse-Led Breast-Feeding Clinic on Knowledge, Practice of Exclusive breastfeeding and infant health outcome among primi mothers in selected hospitals at Chennai – An interrupted Time Series Design.

Aim of the study:

To investigate the effectiveness of a nurse-led breastfeeding clinic on knowledge and practice of Exclusive Breastfeeding and its impact on infant health outcomes among primi mothers.

Objectives:

1. To assess and compare the pretest and posttest level of knowledge and practice of exclusive breastfeeding among primary mothers
2. To find the correlation between the knowledge and practice of exclusive breastfeeding among primi mothers
3. To Evaluate the Effectiveness of Nurses-led breastfeeding clinics on Knowledge and practice of exclusive breastfeeding,
4. To determine the long-run relationship of the Nurses-led breastfeeding clinic on Knowledge, practice of exclusive breastfeeding, and infant health outcomes among primi mothers

Hypotheses:

H₁: There is a significant difference in the knowledge and practice of exclusive breastfeeding among primary mothers

H₂: There is a significant long-run relationship between the Nurses-led breastfeeding clinic on Knowledge, the practice of exclusive breastfeeding, and infant health outcomes among primi mothers.

MATERIAL AND METHODS

This study employed a quantitative research approach with an Interrupted Time Series Design to evaluate the impact of a Nurse-Led Breastfeeding Clinic on the knowledge and practice of exclusive breastfeeding among primi mothers. The design included pre-test assessments of knowledge and practice (O1, O2), an intervention (X) involving counseling sessions on breastfeeding techniques and benefits, followed by post-test assessments (O1, O2) and observation of infant health outcomes.

The study was conducted in antenatal, postnatal, and child care outpatient departments at ACS Medical College Hospital and Sri Lalithambigai Medical College Hospital, Chennai. The target population included all primi mothers attending antenatal, postnatal, and child care clinics in Chennai, while the accessible population comprised primi mothers visiting the selected hospitals. The independent variable



was counseling sessions provided through a Nurse-Led Breastfeeding Clinic, while the dependent variables included knowledge and practice of exclusive breastfeeding and infant health outcomes.

A purposive sampling technique was used to select 50 primi mothers based on inclusion and exclusion criteria. Inclusion criteria required primi mothers willing to participate, without high-risk conditions, able to understand the local language, and without contraindications for breastfeeding. Exclusion criteria included mothers with multiple pregnancies, breast diseases, unregistered in selected hospitals, or at high risk for complications.

The research instrument consisted of structured self-administered questionnaires, the Bristol Breastfeeding Assessment Tool, and a structured checklist for infant health outcomes. The knowledge assessment tool included 15 items, with scoring categorized as adequate (10-15), moderate (5-10), and poor (0-5). Breastfeeding practice was assessed using four components, scoring good (5-8), moderate (1-4), and poor (0). Infant health outcomes were evaluated using a six-component structured checklist, with scores categorized as good (23-30), moderate (15-22), and poor (6-14).

The data collection spanned six months (March–December 2023). After obtaining formal approval, 50 antenatal mothers were selected, and informed consent was obtained. Data was collected at multiple time points: pre-test knowledge assessment during the 37th gestational week, pre-test practice assessment on the first postnatal day, intervention through counseling using audiovisual aids (pamphlets, charts, models, PPT, videos), post-test knowledge and practice assessment during the first postnatal week, and infant health outcome observation during the first dose of DPT vaccination.

Data analysis was performed using SPSS Version-21, employing descriptive and inferential statistics. Demographic data, pre-test, and post-test comparisons were analyzed using descriptive statistics (frequency distribution, mean, standard deviation). The Karl Pearson correlation method assessed the relationship between knowledge and practice. The Wilcoxon Signed-Rank Test evaluated the effectiveness of the intervention, and multiple regression analysis determined the long-term impact of the Nurse-Led Breastfeeding Clinic on knowledge, practice, and infant health outcomes.

RESULT

This analysis part of this study deals with organizing and synthesizing the data to answer the research question. It represents the analysis and interpretation of the data collected from the 50 primi mothers about knowledge, practice of exclusive breastfeeding, and infant health outcome

The result shows that most of the primi mothers (76%) were 21to30 years old, (52%) were completed school education, Majority (72%) belonged to the Hindu community,(82%) of primi mothers were unemployed, (56%) were living in the joint family, all primi women(100%) were Married, Most of the



women (70%) belongs to the middle class, (58%) of the primi mothers acquiring the health information through internet, most of the primi mothers 84% had natural conception.

Table 1: Assessment of Frequency and Percentage Distribution of demographic variable among primi mothers.

Demographic variables	Frequency	Percentage
Age		
< 20 years	4	8
21-30 years	38	76
>30 years	8	8
Educational status		
Illiterate	4	8
School education	26	52
Degree holder	20	40
Religion		
Hindu	36	72
Christian	10	20
Muslim	4	8
Employment Status		
Unemployed	41	82
Self employed	6	12
Employed	3	6
Family type		
Nuclear	21	42
Joint family	28	56
Broken Family	1	2
Marital Status		
Married	50	100
Unwed Mother	0	0
Divorced	0	0



Socio economic status		
Lower class	12	24
Middle class	35	70
Upper class	3	6
Source of health information		
Television	21	42
Internet	29	58
Newspaper/Magazines	0	0
Mode of conception		
Natural	42	84
By Induction	8	16
IVF/ICSI/IUI	0	0

Tabel 2: Distribution of frequency and percentage distribution of Knowledge and practice about Exclusive breastfeeding

Knowledge level			Practice level		
Knowledge	Pre-test F %	Post-test F %	Practice	Pre -test F %	Post-test F %
In adequate	17 66%	0 0%	Poor	4 8%	0 0%
Moderate	33 32%	13 26%	Moderate	41 82%	11 22%
Adequate	1 2%	37 74%	Good	5 10%	39 78%

The table shows the frequency and percentage of pretest and posttest levels of knowledge and practice about exclusive breastfeeding among primi mothers. Regarding knowledge Majority of the women (17)66% had inadequate knowledge, (33) 32% had moderate knowledge and (1) 2% had adequate knowledge after intervention Majority 74% (37) had adequate knowledge and 26% (13) had moderate level of knowledge and 0% inadequate knowledge. Regarding practice Majority of the women, 82% (41) had Moderate practice 8% (4) had poor Practice and 10% (5) had good practice after intervention



Majority 78% (39) had good practice and (11) 22% had moderate level of Practice and 0% had poor practice.

Figure-1: Comparison of pretest and posttest level of knowledge and Practice about exclusive breast feeding among primi mothers

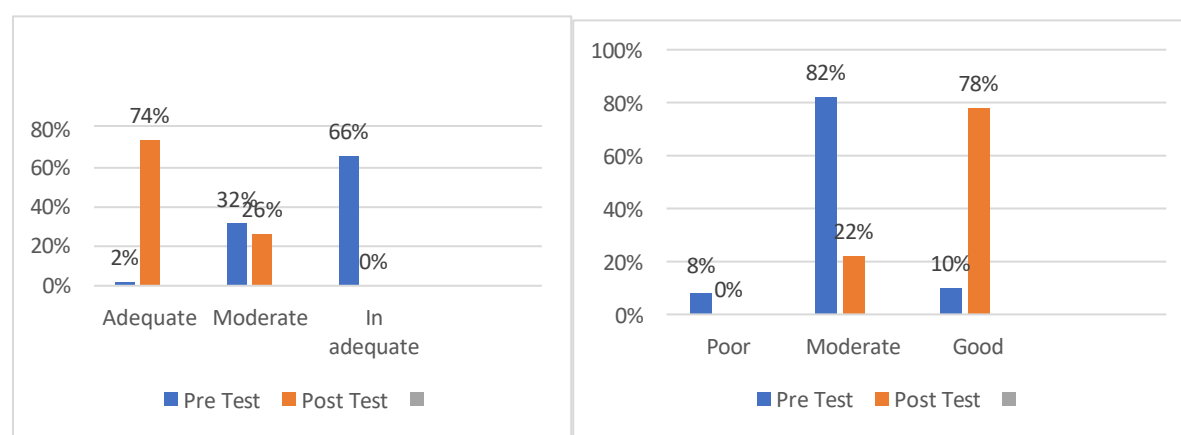


Figure 1 showing the comparison of pretest and posttest level of knowledge and practice about exclusive breast feeding among primi mothers. Regarding knowledge Majority of the women 66% had inadequate knowledge and 2% had adequate knowledge after intervention Majority 74% had adequate knowledge and 26% had moderate level of knowledge and 0% inadequate knowledge. Regarding practice Majority of the women 82% had Moderate practice and 8% had poor Practice and 10% had good practice after intervention Majority 78% had Good practice and 22% had moderate level of Practice and 0% had poor practice.

Table 3: Correlation between posttest knowledge and practice about exclusive breast feeding among primi mothers

Variable	Mean	S.D	Karl Pearson's correlation's r and p-value
Knowledge	2.74	0.443	r=0.329 P=0.02 Sig. (2-tailed)
practice	6.18	1.119	

The above table shows that the calculated Karl Pearson's value $r=0.329$ indicates that there is a positive correlation between the posttest knowledge and posttest practice of exclusive breast feeding with the



statistical significance at the $p < 0.02$ level. This result suggests that enhancing the knowledge about exclusive breast feeding through nurse led breast feeding clinic among primi mother resulted in a enhancing their practice towards exclusive breast feeding.

Table 4: Evaluate the Effectiveness of Nurses-led breastfeeding clinic on Knowledge about exclusive breastfeeding, Wilcoxon sign-Rank Test Table

Knowledge	Ranks				Mean	S.D	Mean difference	Z	Asym p.Sig-(2-tailed)
	Rank	N	Mean Rank	Sum of Rank					
Pre test	Negative Rank	03	3.50	10.50	6.40	2.100	3.98	-5.935	
Post test	Positive Rank Tie	45 02	25.90	1165.50	10.38	1.244			

The above table shows that the mean pretest value was 6.40 with S.D of 2.100 and the posttest mean value were 10.38 with S.D of 1.244, the mean difference between pre and posttest is 3.98. The calculated Wilcoxon sign rank test by SPSS Versio-22 the value of $Z = -5.935$ the posttest rank of knowledge was statistically significantly higher than the pretest Rank at the significant level of $p = 0.000$.

Table 5: Evaluate the Effectiveness of Nurses-led breastfeeding clinic on practice of exclusive breastfeeding, Wilcoxon sign-Rank Test Table

Knowledge	Ranks				Mean	S.D	Mean difference	Z	Asymp. Sig-(2-tailed)
	Rank	N	Mean Rank	Sum of Rank					
Pre test	Negative		0.00	0.00	4.20	1.385		-	



	Rank	0 0	25.40	1176.0			1.98	6.16	0.000
	Positive	48		0				3	
Post test	Rank	02			6.18	1.119			
	Tie								

The above table shows that the mean pretest value was 4.20 with S.D of 1.385 and the posttest mean value were 6.18 with S.D of 1.119, the mean difference between pre and posttest is 1.98. the calculated Wilcoxon sign rank test by run the SPSS Versio-22 the value of $Z = -6.163$ the posttest rank of practice was statistically significantly higher than the pretest practice Rank at the Significant level of $p=0.000$.

Table 6: Relationship between knowledge, practice and infant health outcome among primi mothers.

	Unstandardized coefficient		Standardized coefficient		
	B	Std. Error	Beta	t	Sig
Constant	14.818	5.616		2.639	.011
knowledge	2.102	1.417	0 .210	1.483	.145
practice	0.842	0,561	0.213	1.500	.140

Dependent variable: Infant health outcome

Table -3.7 shows that the variable y as a infant health outcome (dependent variable) and run a multiple regression with X1 as knowledge and X2 as a practice (Independent variable) the calculated multiple linear regression analysis as $y=(2.10)+0.842x_2+14.8$, $R= 0.276$, Adjusted $R^2 = 0.037$, $R^2 = 0.08$ value respectively. The calculated p value of 0.156 which is statistically not significance at the $p<0.005$ level.

DISCUSSION

The discussion part of this present study describes the research objectives and Data analysis on the basis of hypotheses. The main focus of the present study is to determine the effectiveness of nurse led breast feeding clinic on knowledge and practice of exclusive breast feeding and to assess the long run relation between knowledge, practice of exclusive breast feeding and the infant health outcome.

A purposive sampling technique was used to select the 50 study samples for the investigation. The research design adopted for this present study was quasi experimental time series design. The result of the study is based on self-administered knowledge questionnaires were prepared to assess the knowledge about exclusive breastfeeding. A Bristol Breastfeeding Assessment tool to assess breastfeeding practice the structured checklist to assess the infant's health and is based on the outcome of statistical analysis of evaluation by the study objectives formulated.



The distribution of the samples according to the demographic variables showed most of the primi mothers (76%) are 21 to 30 years old, (52%) were completed school education, Majority (72%) belongs to Hindu community, (82%) of primi mothers were unemployed, (56%) were living in the joint family, all primi women (100%) were Married, Most of the women (70%) belongs to middle class, (58%) of the primi mothers acquiring the health information through internet, most of the primi mothers 84% had natural conception.

The first objective was to assess and compare the pretest and posttest level of knowledge and practice of exclusive breastfeeding among primary mothers

The study found comparison of pretest and posttest level of knowledge about exclusive breast feeding among primi mothers. Majority of the women 66% had inadequate knowledge and 2% had adequate knowledge after intervention Majority 74% had adequate knowledge and 26% had moderate level of knowledge and 0% inadequate knowledge. Regarding practice pretest and posttest level of practice about exclusive breast feeding among primo mothers. Majority of the women 82% had Moderate practice and 8% had poor Practice and 10% had good practice after intervention Majority 78% had Good practice and 22% had moderate level of Practice and 0% had poor practice.

The second objective is to find the correlation between the knowledge and practice of exclusive breastfeeding among primi mother.

The study shows that the calculated Karl Pearson's value $r=0.329$ indicates that there is a positive correlation between the posttest knowledge and posttest practice of exclusive breast feeding with the statistical significance at the $p<0.02$ level. This result suggests that enhancing the knowledge about exclusive breast feeding through nurse led breast feeding clinic among primi mother resulted in a enhancing their practice towards exclusive breast feeding.

The third objective is to evaluate the Effectiveness of Nurses-led breastfeeding clinic on Knowledge, practice of exclusive breastfeeding among primi mothers.

The study shows that the mean pretest value was 6.40 with S.D of 2.100 and the posttest mean value were 10.38 with S.D of 1.244, the mean difference between pre and posttest is 3.98. the calculated Wilcoxon sign rank test by SPSS Versio-22 the value of $Z = -5.935$ the posttest rank of knowledge was statistically significantly higher than the pretest Rank at the significant level of $p=0.000$. And the practice shows that the mean pretest value was 4.20 with S.D of 1.385 and the posttest mean value were 6.18 with S.D of 1.119, the mean difference between pre and posttest is 1.98. the calculated Wilcoxon sign rank test by run the SPSS Versio-22 the value of $Z = -6.163$ the posttest rank of practice was statistically significantly higher than the pretest practice Rank at the the. Significant level of $p=0.000$.



The fourth objectives is to determine the long-run relationship of the Nurses-led breastfeeding clinic on Knowledge, practice of exclusive breastfeeding, and infant health outcomes among primi motherr

The study shows that the variable y as an infant health outcome (dependent variable) and run a multiple regression with X1 as knowledge and X2 as a practice (Independent variable) the calculated multiple linear regression analysis as $y = (2.10) + 0.842x_2 + 14.8$, $R = 0.276$, Adjusted $R^2 = 0.037$, $R^2 = 0.08$ value respectively. $F(2, 27) = 1.934$ with the p value of 0.156 which is statistically not significance at the $p < 0.005$ level.

The above study was supported by Preethi, Dr.Kanchana Bala, Reshmi Bharadraj 2021 To assess the effectiveness of Nurse Led Breastfeeding Support on breastfeeding self-care practice among sixty postnatal mothers, 30 each in the experimental and control group who were selected by using Total Enumeration sampling Technique. Data was collected by using self-care practice checklist regarding breastfeeding and analysed by using descriptive and inferential statistics. Result: The mean post-test day 7th self-care practice score of the experimental groups (16.93 ± 1.31) is higher than that of the control group (13.77 ± 1.45). For comparison of post-test day 3rd and post-test day 7th between the group, the experimental group post-test day 3rd means and SD was (15.23 ± 1.07), post-test day 7th means and SD was (16.93 ± 1.31), mean difference was 1.633 and t- calculated value was 0.106. The overall p-value was 0.000, which showed that nurse-led breastfeeding support was effective in enhancing the self-care practice regarding breastfeeding and it improved the breastfeeding outcomes among the experimental group than in the control group. Conclusion: From the study findings it could be concluded that Nurse-Led Breastfeeding support on breastfeeding found to be an effective method in improving breastfeeding knowledge among postnatal mothers.

CONCLUSION:

This study methodology and objective were created by the researcher based on a relevant literature review. The purpose of the study is to assess the effectiveness of nurses-led breastfeeding clinics on knowledge, practice, and infant health outcomes. The goal of the study was to investigate the effectiveness of nurses-led breastfeeding clinics on knowledge, practice, and infant health outcomes. This study suggests that the nurses-led breastfeeding clinic resulted in significant changes in the knowledge and practice and no long-run relationship between knowledge and practice with infant health outcomes.

Implication: The result of the study will have implications for various areas of nursing practice, nursing education, nursing management, and nursing research.

Recommendation for further study:



Similar studies may be conducted like the effect of nurse-led clinics on chronic diseases that require regular follow-up care.

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