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A Pilot Study to Evaluate the Impact of Prenatal Teaching Programme on Breastfeeding Practices among Primi Mothers having Nipple Defects, Registered at Tertiary Care Teaching Hospital, Dharwad.

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ARTICLE DETAILS

Research Paper

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Prenatal teaching, Hoffman's Exercise, Breastfeeding, , Nipple defects, primi mothers.

ABSTRACT

BACKGROUNG OF THE STUDY: Breastfeeding is universally recognized as the best form of nutrition for infants. However, nipple defects such as flat or inverted nipples can hinder effective breastfeeding, leading to early cessation. The present study was conducted to evaluate the impact of a prenatal teaching programme on breastfeeding practices among primi mothers having nipple defects.

Aims and objectives : 1. To evaluate the impact of prenatal teaching programme on breastfeeding practices among primi mothers having nipple defects. 2. To compare the post test scores between experimental and control group of primi mothers having nipple defects.

Research design : A quasi-experimental , non-equivalent control group pretest-posttest design was used. The **subjects** for the study were 10 primi mothers (5experimental,& 5 control group) selected using **Non probability purposive sampling technique**. The experimental group received structured prenatal teaching programme(Hoffman's exercise) on breastfeeding practices, whereas the control group received routine antenatal care. Data were collected using the **tool** structured knowledge questionnaire and Modified Via Christi and LATCH breastfeeding assessment tool. **Results :** The data

was analysed using descriptive and inferential statistics . and results revealed that, the mean pretest knowledge score in the experimental group was 3.20 (SD 1.92), which significantly increased to 14.40 (SD 1.82) after the intervention ($p < 0.05$). The control group has a minimal change from 3.00 (SD 1.87) to 3.40 (SD 2.30). The Modified LATCH breastfeeding scores also improved significantly in the experimental group compared to the control group ($p < 0.05$). These findings confirmed that the prenatal teaching programm(Hoffman's Exercise) had significant impact on correcting nipple defects and promoting exclusive breast feeding practices among primi mothers.

Introduction:

" Motherhood has the greatest potential influence in human life"

Motherhood is a state of being a mother. It is the natural and unique experience of every mother. It is cherished and a learned art. Breastfeeding is most enriching experience for mother, it plants the seeds of mother-child bonding. [1] Breast feeding is instinctive and natural for both mother and baby. However, its not always easy for New mothers though they have ample support at the hospital but, they can feel overwhelmed with the newborn at home, especially in the first few weeks. If breastfeeding is going on well, it is easier for moms to start enjoying their newborn while they recover.

However, the women with inverted nipples has to have patience to breastfeed as the baby may need more time to latch, and most often they have difficulties in maintaining breastfeeding due to improper infant latching that may cause insufficient milk extraction and poor infant satiety, thus leading to early termination of breastfeeding. Congenital inversion of the nipple is the most common nipple deformity, due to early developmental arrest, with an estimated prevalence of about 10%. The nipple inversion is also be acquired secondary to breast infections and also can be associated with congenital syndromes. Getting help early is the best way to avoid some of the serious breast feeding issues.

NEED FOR THE STUDY

Pregnancy is a journey of creating a new life. Motherhood makes this journey memorable and happy. [2]During pregnancy, changes in breasts are best evident in a primigravida.

[1,2] Breast care and preparation for breastfeeding begin in the antenatal period. The majority of women when they conceive are excited that they dream of want to breast feed their babies . Breastfeeding is important component of survival of baby . [1] The early feedings might best consists of approximately 5-10 minutes suckling on each breast , while the nipples are accustomed to it . this frequent suckling stimulates the production and let -down of lactation and reduces the potential severity of engorgement.

[1,2]) About 10% of pregnant women who intend to breastfeed have inverted or flat nipples and this may lead to problems in establishing and maintaining breast feeding. For more than 50 years such women have been advised to prepare their breasts during pregnancy.

The intervention strategy of prenatal teaching programme has advantage. It is painless treatment and will improve the breastfeeding practice and can be practiced in all settings. Hence, the researcher felt with the personal experiences and during clinical postings , the need to conduct study to evaluate the impact of prenatal teaching programme on Hoffman's exercise for successful breastfeeding among primipara mother.

STATEMENT OF THE PROBLEM:

"A PILOT STUDY TO EVALUATE THE IMPACT OF PRENATAL TEACHING PROGRAMME ON BREASTFEEDING PRACTICES AMONG PRIMI MOTHERS HAVING NIPPLE DEFECTS, REGISTERED AT TERTIARY CARE TEACHING HOSPITAL.

OBJECTIVES OF THE STUDY:

1. To evaluate the impact of prenatal teaching programme on breastfeeding practices among primi mothers having nipple defects .
2. To compare the post test scores between experimental and control group of primi mothers having nipple defects.

DELIMITATIONS:

The study is limited to the primi mothers with nipple defects who are attending OBG unit of Tertiary care teaching Hospital.

H**YPOTHESES** :The hypothesis of the study were tested at 0.05 level of significance.

- **H_1:** The mean post-test knowledge and practice scores of primimothers with nipple defects on breastfeeding in experimental group will be significantly higher than the mean pre-test score.
- **H_2. :** The pre-test and post-test scores on modified via Christi LATCH breastfeeding scores of experimental group will be significantly higher than control groups.

VARIABLES UNDER STUDY :

- **Independent Variable** : Prenatal Teaching (Intervention Hoffman's Exercise)
- **Dependent Variable** : Breastfeeding practices.
- **Demographic Variable** : Baseline information of the primigravida women.

METHODOLOGY :

SOURCE OF DATA:

1. **Primary source** : Primi mothers registered at tertiary care teaching hospital Hospital Dharwad.
2. **Secondary source** : The data will be collected from the related reviews of literature.

RESEARCH APPROACH

Quantitative evaluative research approach will be used to conduct the proposed study

RESEARCH DESIGN :

A quasi - experimental research approach with a Non - equivalent control group, pre-test & post-test design is used in this study.

GROUP	PRE-TEST	INTERVENTION	POST-TEST
Experimental group	0_1	X	0_2
Control group	0_1	----------	0_2

Key's :

1. 0_1 : Pre-test
2. X : Intervention (Prenatal teaching programme on Hoffman's exercise)
3. 0_2 : Post- test

DURATION OF THE PILOT STUDY :

The pilot study was conducted from 9th september 2022 to 17th september 2022 .

STUDY SETTING :

The study was conducted at the OBG OPD and OBG ward of Tertiary care teaching hospital, Dharwad

POPULATION:

Primi mothers attending OBG unit of Tertiary care Hospital Dharwad .

SAMPLE: The subjects for my study were the Primi mothers attending the OBG unit with Nipple Defects.

SAMPLING PROCEDURE: Non – probability purposive sampling technique was used.

SAMPLE SIZE: A total of 10 primi mothers with nipple defects were selected , among which for Pilot study, 05 in experimental and 05 in control were grouped.

INCLUSION CRITERIA:

The mothers who are : Primi mothers

1. able to read and write English and regional language .
2. registerd at 37 to 40 weeks Gestation.
3. attending in OBG unit identified with inverted and flat nipples of Grade I and II .

EX CLUSION CRITERIA:

The mothers who are : Primi mothers with

1. cracked nipples.
2. sore nipples .
3. history of breast surgery

STUDY INSTRUMENT:

The tool consists of following parts

1. **Part -I (A) :** It consists of selected **socio-demographic variables** (age, domicile, type of family, religion, education, occupation, weeks of gestation, and advice received during visits) related to the primiparous mothers participating in the study
1. **Part –I(B) :** The **structure Knowledge questionnaire** was developed after taking following steps

- Review of literature related to similar studies.
- Opinion of experts from experts.

The related literature was reviewed for the construction of the structured knowledge questionnaire.

It consists of 17 items, each item were multiple choice questions, which had alternative responses. A score value of 1 was allotted to each correct response

2. **Part - II**: The Modified via Christi and LATCH breastfeeding assessment tool was developed with the aim of assessing the impact of a prenatal teaching program (Intervention Hoffman's exercise) on breastfeeding practices among primiparous mothers with nipple defects and the tool consists of 5 assessment factors: latch-on and time taken to latch, audible swallowing during suckling, type of nipple, hold positioning, and mom's evaluation.

CONTENT VALIDITY:

The content validity of the tool was obtained by submitting the prepared tool, along with problem statements, objectives, operational definitions, the tool itself, and a blueprint, to 5 experts from the field of obstetrics and gynecological nursing, as well as expert obstetricians, gynecologists, and statistical guidance. Additionally, the tool was validated by presenting it to the members of the research committee.

RELIABILITY:

Reliability exists in degrees and is usually expressed as a correlation coefficient (r). Cronbach's alpha coefficient is the most commonly used measure of reliability for multiple item scales . The test used was Karl Pearson's correlation coefficient, calculated using the split-half method (r=2r1/2/(1+r1/2) formula). The reliability for the structured knowledge questionnaire was r = 0.90, and the test-retest method using Cronbach's alpha coefficient for the Modified Via Christi and LATCH breastfeeding assessment tool was r = 0.91. Hence, the tools that were prepared were highly reliable and feasible for conducting the main study**.**

DATA COLLECTION:

1. The investigator obtained permission and ethical consent from ethical committee and obstetrics and Gynaecology Department of Shri Dharmasthala manjunatheshwara college of medical sciences and Hospital, Dharwad.

2. Participants will be selected according to the selection criteria and will be assured the confidentiality of the same.
3. Informed Consent was obtained from the study participants who were willing to participate in the study.
4. The investigator selected the samples by Non Probability purposive Sampling technique.
5. The investigator assessed the pre - interventional level of knowledge by using knowledge questionnaire on prenatal teaching programme on breastfeeding practices among primi mothers having nipple defects in experimental and control group.
6. The investigator performed prenatal teaching programme (Hoffman's Exercise) to the experimental group.
7. The investigator conducted Re-demonstration of prenatal teaching programme (Hoffman's Exercise) on breastfeeding practices from the experimental group .
8. The Post test observations were done on day 1 and day 3 of post natal period using Modified via Christi and LATCH Breastfeeding assessment tool for breastfeeding practices.
9. The investigator compared the post test scores between experimental and control group on breastfeeding practices among primi mothers with nipple defects.

DATA ANALYSIS

In order to achieve the objectives of the study the data collected was organized on a master sheet and analyzed by using descriptive and inferential statistics.

Descriptive Statistics:

- Frequency and percentage distribution were used to analyze the socio-demographic variable of primi mothers with nipple defects in both experimental and control group
- Tabulation of data in terms of frequency, percentage, mean, and standard deviation

Inferential statistics:

- **Un paired 't-test was** used for comparison of the experimental and control group with pretest and post-test knowledge scores, and also for comparison of the experimental and control group with Modified via Christi breastfeeding Assessment tool scores.

- **Paired 't', test** was used for comparison of pretest and post-test knowledge scores in the experimental and control group. and also, for comparison of pre and post-test scores with Modified via Christi breastfeeding Assessment tool in the experimental and control group.
- **Mann-Whitney U test** was used for comparison of experimental and control group with Modified via Christi breastfeeding Assessment tool at Day 1 (Before/Pre) and Day 3 (After/ Post) undergoing the training time points .
- **Wilcoxon matched pairs test** was used for comparison of Day 1 (Before/Pre) and Day 3 (After/ Post) by Modified via Christi breastfeeding Assessment tool in the experimental and control groups.

RESULTS AND DISCUSSION

Table 1: Comparison of experiment group and control group with demographic characteristics

n=10

Demographic profile	Experiment group	%	Control group	%	Total	%
Age groups						
18-22	0	0.00	5	100.00	5	50.00
23-27	3	60.00	0	0.00	3	30.00
28-32	2	40.00	0	0.00	2	20.00
Domicile						
Urban	3	60.00	1	20.00	4	40.00
Rural	2	40.00	4	80.00	6	60.00
Nature of family						
Nuclear	2	40.00	1	20.00	3	30.00
Joint	3	60.00	4	80.00	7	70.00
Extended	0	0.00	0	0.00	0	0.00
Religion						
Hindu	5	100.00	4	80.00	9	90.00
Muslim	0	0.00	1	20.00	1	10.00
Education						
Primary	0	0.00	3	60.00	3	30.00

Secondary	1	20.00	2	40.00	3	30.00
Graduate	4	80.00	0	0.00	4	40.00
Occupations						
Home maker	3	60.00	5	100.00	8	80.00
Private	2	40.00	0	0.00	2	20.00
Government	0	0.00	0	0.00	0	0.00
Gestational weeks						
37 week	3	60.00	1	20.00	4	40.00
38 week	2	40.00	2	40.00	4	40.00
39 week	0	0.00	2	40.00	2	20.00
Total	5	100.00	5	100.00	10	100.00

- Majority of the experimental group mothers were aged **23–27 years (60%)**, while all control group mothers were **18–22 years (100%)**.
- Most participants were from **rural areas (60%)**, and **70% belonged to joint family**.
- **90% were Hindus**, and educational status varied, with **80% of the experimental group graduates** and **60% of the control group only primary educated**.
- Majority **(80%)** were **homemakers**, and gestational age ranged between **37–39 weeks**.

Hence , Both groups were comparable in socio-demographic characteristics, though minor differences existed in education and age distribution. These variations did not influence the study outcome significantly.

Table 2 : Comparison of experiment group and control group with pretest and posttest knowledge scores by Mann-Whitney U test

Time points	Experiment group			Control group			U-value	Z-value	p-value
	Mean	SD	Mean rank	Mean	SD	Mean rank			
Pretest	3.20	1.92	5.70	3.00	1.87	5.30	11.50	0.1044	0.9168
Posttest	14.40	1.82	8.00	3.40	2.30	3.00	0.00	2.5067	0.0122*

Difference	11.20	1.30	8.00	0.40	0.55	3.00	0.00	2.5068	0.0122*

*p<0.05

Hence, The pretest scores were similar ($p > 0.05$), indicating baseline equivalence. Post-test scores increased significantly in the experimental group ($p < 0.05$), proving the effectiveness of the prenatal teaching programme.

Objective 1:

To evaluate the impact of prenatal teaching programme on breastfeeding practices among primi mothers having nipple defects

Table 3 : Comparison of pretest and posttest knowledge scores in experiment group and control group by Wilcoxon matched pairs test

Groups	Time points	Mean	SD	Mean Diff.	SD Diff.	% of change	Z-value	p-value
Experiment group	Pretest	3.20	1.92	-11.20	1.30	-350.00	2.0226	0.0431*
	Posttest	14.40	1.82					
Control group	Pretest	3.00	1.87	-0.40	0.55	-13.33	1.3416	0.1797
	Posttest	3.40	2.30					

*p<0.05

Thus,the experimental group showed a statistically significant improvement ($p < 0.05$), while the control group's change was not significant, demonstrating that the gain in knowledge was due to the intervention. Hence , Significant improvements in knowledge and breastfeeding (LATCH) scores among experimental participants clearly demonstrated that prenatal education was effective hence, **H_1 accepted.**

Objective 2 : To compare the post test scores between experimental and control group of primi mothers having nipple defects

Table 4 : Comparison of experiment group and control group with Modified Latch BF (grades) at day 1 and day 3 treatment time points by Mann-Whitney U test

Time points	Experiment group			Control group			U-value	Z-value	p-value
	Mean	SD	Mean rank	Mean	SD	Mean rank			
Day 1(Before)	1.2	0.4	3.4	2.2	0.4	7.6	2.0	-2.0889	0.0367*
Day 3(After)	1.0	0.0	3.0	2.2	0.4	8.0	0.0	-2.5067	0.0122*
Difference	0.2	0.4	5.9	0.0	0.7	5.1	10.5	0.3133	0.7540

*p<0.05

The results revealed that, On Day 1 and Day 3 postpartum, the experimental group showed significantly better LATCH scores, indicating improved breastfeeding practices and comfort due to prenatal education (Hoffman's exercise). Hence, The Mann–Whitney U test showed statistically significant differences ($p < 0.05$) in both knowledge and breastfeeding scores, thus, **H2 accepted.**

Table 5 : Comparison of pretest and posttest Modified Latch BF (grades) in experiment group and control group by Wilcoxon matched pairs test

Groups	Time points	Mean	SD	Mean Diff.	SD Diff.	% of change	Z-value	p-value
Experiment group	Pretest	1.20	0.45	0.20	0.45	16.67	0.0000	1.0000
	Posttest	1.00	0.00					
Control group	Pretest	2.20	0.45	0.00	0.71	0.00	0.0001	1.0000
	Posttest	2.20	0.45					

Although the within-group difference wasn't statistically significant due to small sample size, the overall scores indicated better latch performance in the experimental group compared to control.

Hence, both the objectives were achieved and hypotheses were supported, proving that the prenatal teaching programme(Hoffman's Exercise) have positive impact on improving knowledge and breastfeeding practices among primi mothers with nipple defects.

SUMMARY:

- The data was collected systematically, by using **quasi-experimental design** non probability purposive sampling technique.
- The total subjects **10 were grouped (5 in experimental and 5 in Control)**
- The data were tabulated and analysed using descriptive and inferential statistics
- The **Major Findings** of the study revealed that the Posttest knowledge scores significantly improved in the experimental group ($p = 0.012$).
- Breastfeeding practices (Modified LATCH scores) were significantly better in the experimental group on Day 1 and Day 3 ($p < 0.05$).
- Control group mothers showed negligible improvement.

Thus, prenatal teaching programme effectively enhanced knowledgeenabling mothers with nipple defects to initiate and maintain successful and exclusive breastfeeding practices.

CONCLUSION :

The study concluded that , the prenatal teaching programme (Hoffman's exercise) on breastfeeding practices , was highly effective in improving both knowledge and breastfeeding practices among primi mothers with nipple defects. Educating expectant mothers during antenatal visits prepares them for successful breastfeeding, prevents early feeding problems, and promotes exclusive breastfeeding.and It is recommended that **prenatal breastfeeding education** be integrated into routine antenatal care, especially for mothers with known nipple defects, to improve maternal and neonatal health outcomes.

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