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RESEARCH ARTICLE

AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF DOUBLE SYRINGE METHOD VERSUS RUBBER BAND METHOD ON SUCCESSFUL BREAST FEEDING AMONG PRIMI PARA MOTHERS WITH FLAT AND INVERTED NIPPLE AT MGMCRI, PUDUCHERRY

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ABSTRACT

True experimental research design was adopted. Sixty samples (30 in each group) including mothers with flat and inverted nipple were selected by using simple random sampling technique (lottery method). The pre-test data collection was done by Bristol breast feeding assessment tool. Group I includes Double syringe method, it was used for 2 minutes about 4 times a day for a period of 3 days to promote breast feeding. Group II includes rubber band method, it was applied towards the nipple about 3 times a day for 3 minutes before breast feeding for a period of 3 days. The main aim of the present study was to compare the effectiveness of double syringe and rubber band method on primipara mothers with flat and inverted nipple at MGMCRI Puducherry. The samples were divided into two groups, group I received double syringe method and group II received rubber band method. The pre-test standard deviation level of successful breast feeding of group I was 0.99 and post test was 0.55. The pre-test standard deviation level of successful breast feeding of group II was 0.94 and post-test was 1.19. The Wilcoxon value of group I is 3.985 and for group II is 3.947 that there was successful breast feeding with double syringe method than rubber band method. The study concludes that double syringe method is very effective on level of successful breast feeding among mothers with flat and inverted nipple.

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INTRODUCTION

Breast feeding provides an unique bonding experience for mother and child. Breast milk has the benefits which includes lower risk of asthma, food allergies, leukemia, and Type 1 diabetes. Breastfeeding decreases the risk of respiratory tract infections and diarrhea in both the groups developing and developed countries. Death of an estimated 820,000 children under the age of 5 could be prevented globally every year with increased breastfeeding. Benefits for the mother include less blood loss after delivery, better uterus shrinkage, and less postpartum depression. Breastfeeding delays the return of menstruation and fertility, a phenomenon known as lactational amenorrhea. Long-term benefits for the mother include decreased risk of breast cancer, cardiovascular disease, and rheumatoid arthritis. Breastfeeding is less expensive than infant formula. Health organization including the world health organization (WHO), recommend breastfeeding exclusively for 6 months. This means no other food or drinks other than possibly vitamin D are typically given. Breast milk is made from nutrients in the mother's blood stream and bodily stores.

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Breast milk has an optimal balance of fat, sugar, water, and protein that is needed for a baby's growth and development. Breastfeeding triggers biochemical reactions which allow for the enzymes, hormones, growth factors, and immunological substances to effectively defend against infectious diseases for the infant. The breast milk also has long chain polyunsaturated fatty acids which help with normal retinal and neural development. Breast milk begins producing mature milk around the third or fourth day after birth. Early in a nursing session, the breasts produce foremilk, a thinner milk containing many proteins and vitamins. Breastfeeding is one of the most natural and beneficial acts mother can do for her child. There is no other single action by which a mother can impact the present and future health of her baby. Breast milk is best for the baby and the benefits of breastfeeding extend well beyond basic nutrition. It is most effective to prepare the mother for breastfeeding. Examination of the areola and nipple is important to identify any anatomic problems. If any anatomical abnormalities exist, they should be discussed. There are many possible breast abnormalities that breastfeeding mothers may encounter. Identifying these issues is very important to continue a healthful breastfeeding relationship with her child. The abnormalities of the nipple includes long nipple, short nipple, abnormally large nipple, inverted and flat nipple, and

cracked or damaged nipple. Such abnormalities may cause difficulties to feed. The most common abnormality that found is flat or inverted nipple. It is commonly seen in primipara mothers. Breast engorgement is common problem seen in mothers who is having inverted/flat nipple. Some of the interventions that have been recommended to bring out inverted nipples include breast shells and Hoffman's exercises; which were found to be ineffective in one controlled study, breast pumps; which are expensive and they cannot provide steady pressure, nipple shields; give nipple confusion and also carry risk of infection and using disposable syringe technique; and latex rubber band is also available worldwide effective measure for flat and inverted nipple. The syringe technique is simple, inexpensive, and easily learned by mothers. The syringe is portable, safe and can be used as often as required. The technique can benefit even mothers with resistant inverted nipples. Latex rubber band is also a technique helps to relieve the mother from flat and inverted nipple and enhances breastfeeding to the child. There are three grades of inverted nipple, defined on how easily the nipple may be protracted and the degree of fibrosis existent in the breast as the damage it has caused on the milk ducts. Double syringe and rubber band method helps to convey care, support and comfort during breast feeding to promote successful breast feeding without any side effects.

Need for the study

Breast milk provides the ideal nutrition for infants. It has nearly perfect mix of vitamins, protein, and fat. Breast milk contains antibodies that help the baby to fight off viruses and bacteria. Breastfeeding linked to higher IQ scores in later childhood in some studies. During the antenatal period, mothers are likely to have flat and inverted nipple and such problems may discourage them not to breastfeed the infant after their delivery. Thus, the health counselors visit post-natal mothers during the first 2-3 weeks should clarify the doubts of mothers related to exclusive breastfeeding and related problems. Nipple abnormalities are commonly encountered in clinical practice especially in relation to lactation problems. These are common with the incidence of 60.8% women attending antenatal clinics. Inverted nipple was one of the reasons for consultation in 36% of cases. The prevalence is 0.22% in Hungarian population, 1.63% in African American population, 2.5% in Israeli population, and 5.6% in Indian population. The nutritional and health status of infants depend on the feeding practices of community. Early life is the period for rapid growth and the infant gains weight, doubles at 6 months and triples at 1 year of age with the proper feeding. Infant contributes 3% of India's population and though their chances of survival have improved by nearly 50% in the last 20 years. The infant mortality their chances of survival have improved by nearly 50% in the last 20 years. The infant mortality rate of India is 74/1000 live births much higher than infant mortality rate of developed country which stands at 8/1000 live births (H action 2004).

Statement of the Problem

“An Experimental Study To Assess The Effectiveness of Double Syringe Method Verses Rubber Band Method on Successful Breast Feeding Among Primi Para Mothers With Flat And Inverted Nipple At MGMCRI, Puducherry”

General Objectives

- To assess the successful breastfeeding among primipara mothers with flat and inverted nipple.
- To evaluate the effectiveness of double syringe method versus rubber band method on primipara mothers with flat and inverted nipple.
- To compare the effectiveness of double syringe method versus rubber band method on primipara mothers with flat and inverted nipple in both groups.
- To find out the association between the breast milk secretion and demographic variables of primipara mothers.

MATERIALS AND METHODS

Research Design: True Experimental research Design.

Research Approach: The quantitative research approach was used for this study.

Sample: Sample were calculated according to the earlier study on effectiveness of double syringe method versus rubber band method among primi para mothers with flat and inverted nipple in study setting, the sample was calculated by power analysis with the confidence of 99.14%. Number of the sample size was 30 in each group. 60 primipara mothers (30 in each group) selected based on inclusion criteria.

Sample Size: The sample size for this study was 60 (30 in each group).

Sample Technique: Simple Random Sampling Technique (Lottery Method).

Sample Selection Criteria

Inclusion Criteria

- Primipara mothers with flat nipple
- Primipara mothers with inverted nipple

Exclusion Criteria

- Post-natal mothers with critical conditions
- Post-natal mothers with post-natal complications
- Post-natal mothers delivered a dead fetus
- Mothers allergic to latex.

Population

The primipara mothers with flat and inverted nipple admitted in post natal ward, MGMCRI at Puducherry.

Description of Tool: It consists of two parts: Part I, Part II and Part III

Part I: Consists of demographic variables which include age, educational status, religion, area of residence, type of family, occupational status of mother, and family income per month.

Part II: Bristol breast feeding assessment tool to assess the effectiveness of breastfeeding. Each item is scored on a rate of 0-2 (poor) 3-4 (average). 5-8 (good) with a total score range of 0-8.

Scoring Interpretation

Grade	Score
Poor	0-2
Average	3-4
Good	5-8

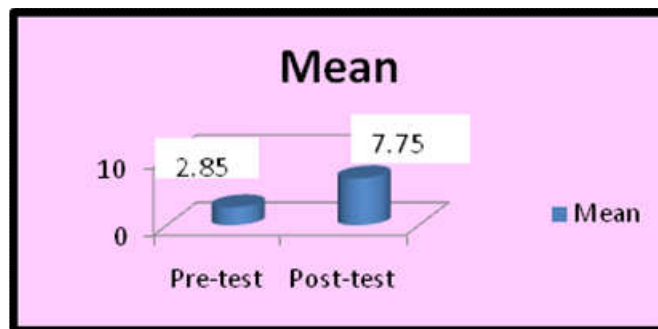
RESEARCH FINDINGS

Data obtained from the sample was organized and summarized with descriptive and inferential statistics.

SECTION- A: Distribution of demographic variables of primipara mothers with flat and inverted nipple.

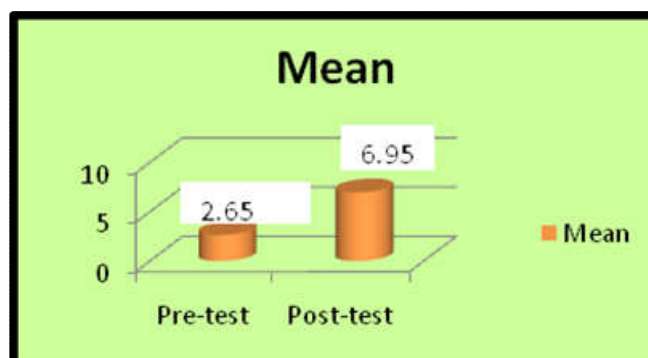
This table shows the distribution of successful breast feeding among primi para mothers in group I and group II during pre - test and post-test. In pre-test out of 30 samples in group I, 19(45%) rated the Bristol score of (0-2) poor and 11(55%) rated the Bristol score of (3-4) average. In group II, 23(65%) were rated the Bristol score of (0-2) poor and 7(35%) rated the Bristol score of (3-4) average. During post-test out of 30 samples, after application of double syringe method, In group I, no mother rated the Bristol score as (3-4) average, 30(100%) mothers rated the Bristol score of (5-8) good. In group II, after application of rubber band method, 1(5%) rated Bristol score of (3-4) average and 29(95%) rated Bristol score as (5-8) good. This shows among the interventions two groups was effective for primi para mothers with flat and inverted nipple.

Bristol score	Pretest				Post test			
	Group I		Group II		Group I		Group II	
	(N)	%	(n)	%	(n)	%	(n)	%
0-2 (poor)	19	45	23	65	-	-	-	-
3-4 (average)	11	55	7	35	-	-	1	5
5-8 (good)	-	-	-	-	30	100	29	95
Total	30	100	30	100	30	100	30	100



Comparison of pre and post mean level of successful breast feeding among primi para mothers in group II

Treatment = 2	Count	Mean	Median	Standard Deviation	Wilcoxon Test	p-value
Pre-test	30	2.55	2	0.94	3.947	<0.0001*
Post- test	30	6.95	7	1.19		



SECTION-B: Comparison of pre and post mean of level of successful breast feeding among primi para mothers in group I

This graph indicates the pre and post-test mean and standard deviation of successful breast feeding. The pre and post-test mean value was 2.85 and 7.75 respectively and p value was $< 0.0001^*$. It was highly statistically significant at $p < 0.001$ level. The result shows that double syringe method was effective on successful breast feeding among primi para mothers with flat and inverted nipple. Hence the stated Hypothesis (H_1) was accepted. The above table and graph indicates the pre and post-test mean of successful breast feeding. The pre and post-test mean value was 2.55 and 6.95 respectively and p value was $< 0.0001^*$. It was highly statistically significant at $p < 0.001$ level. There is significant difference between pre-test and post test values of successful breast feeding in group II. The result shows that rubber band method was effective on successful breast feeding among primi para mothers with flat and inverted nipple. Hence the stated Hypothesis (H_2) was accepted.

Comparison of pre and posttest mean of successful breast feeding among primi para mothers with flat and inverted nipple between group I and group II

Group	N	MEAN RANK
Group I	30	10.60
Group II	30	9.50

The above table indicates the pre-test and posttest mean of successful breast feeding. According to Mann-Whitney Test the mean rank of group I and group II was 11 and 10 respectively. Wilcoxon value of group I was 3.985 and group II was 3.947. It indicates that there was slight variation in successful breast feeding among primi para mothers in group I than group II. It shows that double syringe method was more effective than rubber band method. Hence the stated Hypothesis (H_3) was accepted.

SECTION-C: Association between successful breast feeding and selected demographic variables

The association between successful breast feeding and selected demographic variables. The demographic variables like age, educational status, religion, residence, type of the family, occupational status of the mother, family income, nature of marriage and family history of flat and inverted nipple was not associated with demographic variables. Hence, the stated Hypothesis (H_4) was rejected.

RESULTS

Frequency and percentage distribution of the demographic variables of primipara mothers with flat and inverted nipple. With regard to age, out of 60 samples majority of samples 10(50%) in group I, 14(70%) in group II belongs to the age group of 20 – 25 years. In education, most of samples 11(55%) in group I, 10(50%) in group II belongs to higher secondary education. Regarding religion Most of the Samples 19(95%) in group I, 18(90%) in group II were in Hindu religion. In regard of residential area, majority of samples 10(50%) in group I, 15(75%) in group II belongs to urban residence. Regarding type of family, majority of samples 12(60%) in group I, 13(65%) in group II were in joint family. In occupation status of the mother, majority of samples 14(70%) in group I,

14(70%) in group II were house makers. In regard of family income, majority of samples 12(50%) in group I, 13(70%) in group II were belongs to income of Rs.10000- 15000. Regarding nature of marriage, majority of samples 17(85%) in group I, 15(75%) in group II were belongs to non consanguineous marriage. Regarding the family history of flat and inverted nipple, most of the samples 19(95%) in group I, 18(90%) in group II were belongs to no family history of flat and inverted nipple category.

Distribution of successful breast feeding among primi para mothers in group I and group II during pre - test and posttest. In pre-test out of 30 samples in group I, 19(45%) rated the Bristol score of (0-2) poor and 11(55%) rated the Bristol score of (3-4) average. In group II, 23(65%) were rated the Bristol score of (0-2) poor and 7(35%) rated the Bristol score of (3-4) average. During posttest out of 30 samples, after application of double syringe method, In group I, 0% mothers rated the Bristol score as (3-4) average, 30(100%) mothers rated the Bristol score of (5-8) good. In group II, after application of rubber band method, 1(5%) rated Bristol score of (3-4) average and 29(95%) rated Bristol score as (5-8) good. This shows among the interventions administered to the primi para mothers with flat and inverted nipple double syringe method was more effective than rubber band method. Assessment of effectiveness of double syringe and rubber band method on successful breast feeding among primipara mothers with flat and inverted nipple in group I and group II during pre-test and post-test. The pre-test and post-test mean value was 2.85 and 7.75 respectively and the pre-test and post-test standard deviation was 0.99 and 0.55. The obtained Wilcoxon value was 3.985 and p value was $< 0.0001^*$. It was highly statistically significant at $p < 0.001$ level. There is significant difference between pre-test and post-test values of successful breast feeding in group I. The result shows that double syringe method was effective on successful breast feeding among primipara mothers with flat and inverted nipple. Hence the stated Hypothesis (H_1) was accepted.

In group II The pre-test and post-test mean value was 2.55 and 6.95 respectively and the pre-test and post-test standard deviation was 0.94 and 1.19. The obtained Wilcoxon value was 3.947 and p value was $< 0.0001^*$. It was highly statistically significant at $p < 0.001$ level. There is significant difference between pre-test and post-test values of successful breast feeding in group II. The result shows that rubber band method was effective on successful breast feeding among primipara mothers with flat and inverted nipple. Hence the stated Hypothesis (H_2) was accepted. Comparison of the effectiveness of double syringe versus rubber band on successful breast feeding among primipara mothers in group I and group II. According to Mann Whitney test the mean rank of group I and group II was 10.60 and 9.50 respectively. Wilcoxon value of group I was 3.985 and group II was 3.947. It indicates that there was slight variation in successful breast feeding among primipara mothers in group I than group II. It shows that double syringe method was more effective than rubber band method. Hence the stated Hypothesis (H_3) was accepted. Association between successful breast feeding and selected demographic variables. The demographic variables like age, educational status, religion, residence, type of the family, occupational status of the mother, family income, nature of marriage and family history of flat and inverted nipple was not associated with demographic variables. Hence, the stated Hypothesis (H_4) was rejected.

Conclusion

The main aim of the present study was to compare the effectiveness of double syringe and rubber band method on primipara mothers with flat and inverted nipple at MGMCRI Puducherry. The samples were divided into two groups, group I received double syringe method and group II received rubber band method. The pre-test standard deviation level of successful breast feeding of group I was 0.99 and post test was 0.55. The pre-test standard deviation level of successful breast feeding of group II was 0.94 and post-test was 1.19. The Wilcoxon value of group I is 3.985 and for group II is 3.947 that there was successful breast feeding with double syringe method than rubber band method. The study concludes that double syringe method is very effective on level of successful breast feeding among mothers with flat and inverted nipple.

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