



ANTENATAL COUNSELLING OF FIRST-TIME MOTHERS IN LACTATION CLINIC AND ITS EFFECT ON FEEDING PRACTICES TILL 2 YEARS POSTPARTUM A PROSPECTIVE COHORT STUDY

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ABSTRACT

Background: Despite efforts by various organizations, achieving breastfeeding goals are still far from optimal. Lactation management clinic (LMC) supports breastfeeding through counselling, prepares mother and family for breastfeeding and identifies maternal conditions which hinders breastfeeding.

Aim: This research was conducted to study the effect of antenatal breastfeeding counselling of first-time mothers in LMC on feeding practices till 2 years postpartum.

Methods: A total of 300 first-time mothers were enrolled. Out of them, antenatal breastfeeding counselling was offered to 150 women in LMC by trained lactation team and rest 150 women didn't receive breastfeeding counselling. They were followed longitudinally till 2 years postpartum for pre-defined outcomes. Chi-square test was used for testing statistical significance.

Results: Baseline characteristics were comparable in both the groups. Initiation of breastfeeding within 1 hour of birth, breastfeeding on demand even during night time, feeding with correct breastfeeding technique, acceptance of mother's milk as a complete diet and exclusive breastfeeding for 6 months were significantly higher in counseled group than non-counseled group ($p < 0.05$).

Conclusion: Antenatal breastfeeding counselling in lactation management clinic has been found to improve breastfeeding practices in this study. This needs to be strengthened with multi-disciplinary involvement including obstetricians, pediatricians and lactation nurses, so as to reach out the mothers in both antenatal and postnatal periods. The lactation management clinic facility should be extended to all hospitals with maternal and child health services as this in turn would bring attitudinal changes in the community and thereby exerting positive effect on the breastfeeding practices.

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INTRODUCTION

"If ever I get a chance, I should love to be reborn – just to have the ecstasy of being re-fed by the kindly mother" said Oscar Wilde long back. As has been pointed out by him, it is natural and biological right of every newborn to breastfeed; more so, it is the duty of mother to feed the newborn with her own milk. The importance of human milk in infant nutrition, health and survival has long been recognized. It is now well established that mother's milk is the major determinant of growth and development during early years of life, prevents from infections and allergic disorders and chronic diseases in later years. A World Health Organization (WHO) review of about 200 studies from 86 countries has reported 3 basic phases in breast-feeding pattern in a society: Phase 1 or Traditional phase where breastfeeding rate and duration is high; Phase 2 or Transformation phase where rate starts falling and duration becoming shorter and Phase 3 or Resurgence phase where rate as well as duration starts rising.¹

The patterns emerging from Asia suggest that the decline in breastfeeding was started in 1970s among certain population sub groups (i.e. urban and more educated) in many countries and this phenomenon is still continuing in some countries. But a few countries have experienced a stabilization or actual resurgence in breastfeeding among some sub groups.² The phenomenon of resurgence suggests one important lesson; Decline in breastfeeding is not irreversible. It is likely that appropriate policies and well-designed programs will have positive effects on breastfeeding behavior. Studies carried out in fifties and sixties have shown that both in urban and rural areas in India, breast-feeding were nearly universal. No marked differences were noted between the states or between the different income groups. According to the report of National Family Health Survey (NFHS-4) 2015-2016, an increment of just 8.5% was observed over a decade in exclusive breastfeeding rate (46.4% in 2005 to 54.9% in 2015) while only 41.6% babies received mother's milk within one hour of birth.^{3, 4} In Tamil Nadu, a southern state of India, NFHS-4 has observed that initiation of breastfeeding within

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one hour of birth and exclusive breastfeeding for 6 months in 2015-16 was 54.7% and 48.3% respectively while 98.9% births were institutional.⁵The International Baby Food Action Network (IBFAN) in Asia has made tremendous contribution in promoting breastfeeding. The major effort being the Infant Milk Substitutes (IMS) act and feeding bottles and infant foods (Regulation of production supply and distribution) Act with a view to the protection and promotion of breast-feeding and ensuring the proper use of infant foods.⁶ Despite efforts made by WHO, IBFAN, United Nations International Children's Emergency Fund (UNICEF) and Breastfeeding Promotion Network of India (BPNI), achieving the goals of breast feeding are still far from optimal. Lactation management clinic (LMC) supports breastfeeding through counselling and education and prepares the mother and family for breastfeeding, identifies the maternal conditions which hinders breastfeeding and introduction of complementary feeding at appropriate age in infancy. The role of LMC in influencing the Knowledge, Attitude and Practice (KAP) of breast-feeding is essential in early initiation of breastfeeding, practicing of exclusive breast-feeding for 6 months, introduction of homemade complementary foods after 6 months and continuation of breastfeeding up to 2 years. The outcome is important to formulate new intervention strategies to help mothers in continuation of breastfeeding.

This research was conducted to study the effect of antenatal breastfeeding counselling in first-time mothers in lactation management clinic on feeding practices till 2 years postpartum.

METHODS

This study was conducted in a lactation management clinic (LMC) of a Baby Friendly Hospital, in a southern state of India over a period of 3 years. The hospital has a LMC where lactation counselling is given to all expectant and lactating mothers. The primary aim of this research was to study the effect of antenatal counselling on breastfeeding practices in first-time mothers till 2 years postpartum. Only first-time mothers were included in this study which were then followed till 2 years postpartum, the maximum age up to which breastfeeding is recommended. First-time mothers were selected to nullify the confounding effect of previous breastfeeding experience. The study was approved by institutional ethical and scientific committees and informed consent was obtained from both mother and her husband.

By simple random technique, 150 first-time mothers attending LMC were enrolled in this study. Another 150 first-time mothers selected from another hospital, not designated as Baby Friendly Hospital with no antenatal breastfeeding counselling facility, served as a control group. Lactation management team comprised of a pediatrician trained in lactation counselling, in house trained medical officers and a lactation nurse. Lactation telephone helpline was established which was manned by in house trained medical officer for quick response and redressal of breastfeeding related issues.

Counselling was Given in Following Aspects

1. Mother's milk should be the 1st feed for the baby
2. Initiation of breastfeeding within one hour of birth
3. Demonstration of proper breastfeeding technique including position of the baby
4. Importance of feeding colostrum to the baby
5. Breastfeeding the baby on demand

6. Exclusive breastfeeding for first 6 months
7. Complementary feeding advice starting at 6 months
8. Continuation of breastfeeding till 2 years
9. Continuation of breastfeeding in common illnesses of mother/baby
10. Extra diet for lactating mothers
11. Hazards of artificial milk
12. Management of common breast problems.

All the enrolled mothers were followed up at 6, 10 and 14 weeks (the age at which babies get routine immunization shots) then at 6 months; thereafter every 3 monthly till 2 years postpartum. A telephonic interview was arranged if any of the enrolled mothers couldn't attend LMC on designated follow up dates. Lactating mothers were also instructed to attend LMC if they needed to attend the hospital for any other reason. All the data were entered in a pre-designed questionnaire for analysis.

Statistical Analysis

Data were entered in Microsoft Excel and SPSS 18, IBM, United States of America. All the variables in the study were dichotomous, therefore summarized as percentages and hence analysis was done by Chi-square test or Fisher's exact test, whichever was appropriate. $P < 0.05$ was taken as statistically significant.

RESULTS

A total of 300 first-time mothers were enrolled in this study out of which 150 women received antenatal breastfeeding counselling from lactation management clinic and another 150 first-time mothers, similar in baseline characteristics but didn't receive antenatal breastfeeding counselling, served as control group.

The baseline characteristics of 2 groups are shown in table 1. Both the groups were comparable in age, socioeconomic status⁷, education and occupation ($p > 0.05$). In both the groups, 91% of the enrolled mothers belonged to young age group of 20-30 years. Most of the mothers were educated and majority of them (74% and 72% in study and control group respectively) have completed a graduation or post-graduation qualification. In both the groups, working mothers comprised of more than 60% of the population while more than 80% belonged to middle class as per socioeconomic classification. The mode of delivery (normal vs caesarean) was also comparable in 2 groups.

Table 1 Baseline characteristics

| Variable | Counseled Group (N=150) n (%) | Non-Counseled Group (N=150) n (%) | P value |
|---|-------------------------------|-----------------------------------|---------|
| Socioeconomic status: | | | |
| Upper class | 12 (8.0) | 13 (8.6) | |
| Middle class | 130 (86.7) | 126 (84) | >0.05 |
| Lower class | 8 (5.3) | 11 (7.3) | |
| Age: in years | | | |
| < 20 | 8 (5.4) | 9 (6.0) | |
| Between 20-30 | 137 (91.3) | 136 (90.7) | >0.05 |
| >30 | 5 (3.3) | 5 (3.3) | |
| Education: | | | |
| Primary school (8 th Std) | 5 (3.3) | 7 (4.6) | |
| Secondary school (10 th Std) | 10 (6.7) | 8 (5.3) | |
| Higher secondary (10+2 Std) | 24 (16) | 27 (18.0) | >0.05 |
| Graduate & above | 111 (74.0) | 108 (72.0) | |
| Occupation: | | | |
| Working | 93 (62.0) | 98 (65.3) | |
| Housewife | 57 (38.0) | 52 (34.7) | >0.05 |
| Mode of Delivery: | | | |
| Normal | 95 (63.3) | 98 (65.3) | |
| Cesarean | 55 (36.7) | 52 (34.7) | >0.05 |

The outcome variables are shown in tables 2 and 3; depicting effect of antenatal breastfeeding counselling on feeding practices. Both the counseled and non-counseled groups were aware of importance of mother's own milk as the 1st feed as well as feeding colostrum to the newborn baby as shown in table 2 ($p > 0.05$). Continuing breastfeeding during maternal or infant's illness, need of extra diet for lactating mothers and continuing breastfeeding along with recommended complementary feeding practice were equally seen in both the counseled and non-counseled groups as seen in table 2 ($p > 0.05$).

Table 2 Feeding Practices were Antenatal Breastfeeding Counselling had no effect

| Variable | Counseled Group (N=150) n (%) | Non-Counseled Group (N=150) n (%) | P value |
|---------------------------------------|-------------------------------|-----------------------------------|---------|
| Mother milk as 1 st feed | 149 (99.3) | 146 (97.3) | 0.37 |
| Babies received colostrum | 131 (87.3) | 120 (80.0) | 0.12 |
| Breastfeeding during maternal illness | 148 (98.7) | 145 (96.7) | 0.44 |
| Breastfeeding during infant's illness | 144 (96.0) | 145 (96.7) | 1.0 |
| Need of extra diet during lactation | 126 (84.0) | 123 (82.0) | 0.76 |
| Breastfeeding till 2 years | 117 (78.0) | 105 (70.0) | 0.15 |

Initiation of breastfeeding within 1 hour of birth, breastfeeding on demand, feeding with correct breastfeeding technique and exclusive breastfeeding for 6 months were significantly higher in counseled group than non-counseled group as depicted in table 3 ($p < 0.05$). Apart from these feeding practices, breastfeeding during night time and knowledge of mother's milk being the complete diet till 6 months were also significantly higher in counseled group than non-counseled group as observed in table 3 ($p < 0.05$).

Table 3 Feeding Practices where Antenatal Breastfeeding Counselling had positive effect

| Variable | Counseled Group (N=150) n (%) | Non-Counseled Group (N=150) n (%) | P value |
|---|-------------------------------|-----------------------------------|---------|
| Breastfeeding within 1 hour of birth | 128 (85.3) | 95 (63.3) | 0.01 |
| Breastfeeding on demand | 138 (92.0) | 112 (74.7) | < 0.01 |
| Feeding with correct breastfeeding technique | 102 (68.0) | 70 (46.7) | < 0.01 |
| Breastfeeding during night hours | 132 (88.0) | 108 (72.0) | < 0.01 |
| Giving water in 1 st 6 months in hot weather | 30 (20.0) | 48 (32.0) | 0.03 |
| Exclusive breastfeeding for 6 months | 116 (77.3) | 57 (38.0) | < 0.01 |
| Mother's milk complete diet for baby | 117 (78.0) | 66 (44.0) | < 0.01 |

It was also observed that 32% (n=48) mothers in non-counseled group fed water to their infants during 1st 6 months in hot weather as compared to 20% (n=30) in counseled group, which was statistically significant as shown in table 3 ($p=0.03$). Although only 20% mothers in counseled group adopted this feeding practice, the finding was interesting as emphasis was laid on exclusive breastfeeding and promoting it as a complete diet till 6 months of age during all antenatal breastfeeding counselling sessions.

DISCUSSION

This research was conducted to study the effect of antenatal breastfeeding counselling in first-time mothers on feeding practices till 2 years postpartum.

In our study, both the counseled (99.3%) and non-counseled (97.3%) mothers gave own milk to infants as their 1st feed after birth. This was in contrast to other studies where prelacteal feeds were predominantly given as the 1st feed.⁸⁻¹¹ This might be due to the prevailing traditional practices in some sections of society. Mothers who were not aware of prelacteal feeds could not be influenced by external sources to give the same. This could be due to the fact that all deliveries were institutional and access to prelacteal/formula feeds in such situations is restricted. This indirectly shows that the advice of health care workers can exert considerable influence if it is put in a right perspective.

This study observed a high percentage of babies receiving mother's milk within 1 hour of birth (85.3% in counseled group and 63.3% in non-counseled group) which is in contrast to other studies. As per WHO, percentage of babies fed within 1 hour of birth in African countries varies from 32% to 65%. The prevalence of breastfeeding in the first hour of life varied from 11.4% in a province of Saudi Arabia to 83.3% in Sri Lanka.¹²⁻¹⁴ NFHS-4 has reported that percentage of initiation of breastfeeding within 1 hour of birth in India and Tamil Nadu state was 41.6% and 54.7% respectively in 2015-16.⁵ This can be attributed to emphasis on this aspect during counselling sessions in lactation management clinic and feeding of expressed mother's milk in case mother was not yet comfortable to feed.

Exclusive breastfeeding for 6 months was practiced by 77.3% of mothers in counseled group whereas only 38% of mothers in non-counseled group, in our study. Nita *et al.*, Haider *et al.* and Senarath *et al.* have observed an exclusive breastfeeding rates of 42%, 70% and 55% respectively.^{10, 11, 14} The overall percentage of exclusive breastfeeding for 6 months in India and Tamil Nadu was 54.9% and 48.3% in 2015-16, respectively. (As per NFHS-4).⁵ Thus this finding underlines the need of LMC in improving breastfeeding scenario in the country.

Both the groups were well aware of the importance of feeding colostrum to their newborns (87.3% and 80% of mothers in counseled and non-counseled groups respectively). The magnitude of colostrum avoidance has varied in different developing countries like 13.5% in Ethiopia, 76% in Jammu and Kashmir and 85.7% in Jaipur city. Therefore, preventing the practice of colostrum avoidance in the first three crucial days can help to prevent neonatal morbidity and mortality.¹⁵⁻¹⁷ The high percentage in our study can be attributed to emphasis on feeding colostrum to babies during counselling sessions and high percentage of highly educated mothers in both the groups.

High percentage of mothers in both the groups were feeding their babies on demand rather than at fixed intervals. In lactation management clinic, counselling was given to emphasize that the babies should be breast fed on demand. So considerable number of mothers in counseled group opted for demand feeding as compared to non-counseled group.

More than 3/4th and 2/3rd of mothers in counseled and non-counseled groups continued breastfeeding till 2 years

postpartum. Malla *et al.* reported in their study that 57% mothers knew that they should continue breastfeeding till 2 years postpartum.¹⁷ LMC imparted the knowledge regarding continuation of breastfeeding up to 2 years. Sustained support during lactation period would help the mothers to practice the same.

Most of the lactating mothers irrespective of the group they belong, favored continuing breastfeeding even during maternal or infant's illness. Kataria *et al.* reported that breastfeeding can be successfully continued even when mother has breast abscess by reassuring the mother and by manual expression of breast milk.¹⁸ So assurance during lactation management clinic would help the mothers to continue breastfeeding during illness.

Antenatal breastfeeding counselling had a huge impact on believing lactating mothers that mother's milk is the complete diet for their babies till 6 months of age. Our study found that 78% of lactating mothers in counseled group agreed with this as compared to 44% in non-counseled group. The difference between the counseled and non-counseled groups was significant emphasizing the importance of breastfeeding counselling in LMC in imparting the knowledge, to lactating mothers in particular and to community in general, that the mother's milk is the complete diet till 6 months.

It was also observed that 1/3rd of mothers in non-counseled group fed water to their infants during 1st 6 months in hot weather as compared to 1/5th in counseled group, which was a significant finding. Although only 20% mothers in counseled group adopted this feeding practice, the finding was interesting as emphasis was laid on exclusive breastfeeding and promoting it as a complete diet till 6 months of age during all antenatal breastfeeding counselling sessions. This finding reminds of peer influences and traditional practices affecting feeding practices which needs continuing breastfeeding support and imparting knowledge against these unnecessary practices.

Lactating mothers in both the groups were aware of the importance and practice of feeding their babies during night hours. However the mothers in counseled group significantly practiced night feeding as compared to non-counseled group. The problem should be addressed by the lactation management clinic to guide the mothers to continue breastfeeding the babies irrespective of day or night.

Both groups were well aware of the need of extra diet during lactation period. More than 2/3rd of the study population took extra calories till the time they were feeding their babies. A similar study conducted by Vijayalakshmi *et al.* has found that 49.6%–61.2% of mothers were aware of need of extra calories during lactation period.²⁰ Thus breastfeeding counselling in LMC emphasized the importance and need of extra diet for mothers during lactation.

It was not heartening to see the lower percentage of mothers who followed correct breastfeeding technique in both the counseled (68%) and non-counseled group (46.7%), though the LMC succeeded in helping the lactating mothers to feed the babies by correct breastfeeding technique. Hence LMC needs to be strengthened so that lactating mothers bring out improvements in mothers to breastfeed the babies by correct technique.

CONCLUSION

Antenatal breastfeeding counselling in lactation management clinic has been found to improve breastfeeding practices in this study. Hence this needs to be strengthened with multi-disciplinary involvement including obstetricians, pediatricians and lactation nurses, so as to reach out the mothers in both antenatal and postnatal periods. The lactation management clinic facility should be extended to all hospitals with maternal and child health services as this in turn would bring attitudinal changes in the community and thereby exerting positive effect on the breastfeeding practices.

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