Research Article

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Breast feeding and infant feeding practices among rural mothers in Goa

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ABSTRACT

Background: Breast feeding in India is universal. Integrated Management of Neonatal and Childhood illnesses (IMNCI) strategy recommended systematic assessment of breastfeeding and emphasized counseling of mothers, but the initiation of breast feeding is late and the colostrum is discarded. The aim of the study was to study infant feeding practices among rural Goan mothers, the various socio demographic factors influencing these feeding practices and study the practices among rural mothers towards health care of their children.

Methods: A cross sectional study was done among 307 rural mothers with children < 2 years in the rural community under rural Health Training Centre Mandur which is located 16 kilometres from the capital city of Panaji, by doing a house to house oral interview. Analysis of collected data was done using SPSS and Chi-square test was applied in addition to proportions and percentages.

Results: Around 46.25% of the mothers fed colostrum to their newborns and 73.62 % of the mothers' breastfed within 24 hours of birth. 37.59% of the mothers practiced exclusive breastfeeding (EBF) for the first six months. The association between literacy and prolonged duration of breastfeeding was found to be statistically significant (p<0.05). Cereal based diet was the commonest complementary feeding administered by 23% of the mothers.

Conclusions: The overall awareness about infant feeding practices such as early initiation of breastfeeding and feeding of colostrum among mothers was low despite the study area having quality antenatal and neonatal services.

Keywords: Infant feeding, Breast feeding, Colostrum, Rural Goa

INTRODUCTION

Infant feeding practices includes breast feeding and complementary feeding which influences the nutritional status of children below two years of age. Breast feeding is the most vital determinant factor of child survival. In India rural areas seems to be shaped with community social belief and cultural factors. The important infant feeding practices include initiation of breast feeding, breastfeeding on demand, artificial feeding, and complementary feeding. The WHO and UNICEF have developed the Global Strategy for Infant and Young Child Feeding (IYCF) which recognizes appropriate

feeding practices to be crucial for improving nutritional status and decreasing infant mortality in all countries. WHO offers three recommendations for IYCF practices for children aged 6 to 23 months: continued breast feeding for 23 months or feeding appropriate calcium rich food if not breast fed, feeding solid or semisolid food for minimum number of times per day according to breastfeeding status and including foods from a minimum number of food groups per day according to the breastfeeding status.² Breast feeding and a number of infant feeding practices differ amongst religions and communities. Goa has made remarkable progress in the health care sector. Mothers in rural areas get influenced

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by social, cultural and economic factors.³ This study was conducted to assess infant feeding practices in rural Goan mothers and to give suitable recommendations towards improved healthcare and health education towards better child health.

METHODS

Study design

This is a population based cross-sectional study for 1 year done to assess the knowledge, attitude of breast feeding, infant feeding and newborn healthcare practices of rural mothers of Goa.

Study population

This cross-sectional study was conducted in the rural community under sub health center Mandur and Carambolim. There were four villages under subcentre Mandur namely Dongrim, Mandur, Azossim and Neura. The villages under subcentre Carambolim include Corlim, Gaunsabhat, Carambolim and Dhulapi.

Sample size and sampling technique

The total population of the study area was 11,887. The study population comprised of women having living children born in the preceding 2 years prior to commencement of the study, in order to minimize recall bias. List of such records were obtained from records of sub-health center, Anganwadis and RHTC Mandur. Only women native of the village were included in the study. Mothers unwilling to participate, mothers that came only for confinement and delivery to their parent's home and mothers unavailable despite three home visits were excluded from the study. Study population was 332 mothers with children < 2 years.

Data collection

The proforma of the study was pretested among 30 such Goan mothers having children < 2 years. Final proforma was then in administered to the study participants by means of oral interview through house to house visits. 307 (97%) of the study population was interviewed. Data was analysed using Microsoft Excel and SPSS Windows version 14. Chi square and other relevant statistical tests were applied. Multiple logistic analyses was done using breast feeding, infant feeding as the dependent variable and maternal age, socio economic status, educational status, type of family as the independent variable. At the end of the interview, the mothers along with other family members were urged to follow the recommended practices on feeding, methods of complementary feeding and stop harmful traditional practices,

RESULTS

The study was carried out to assess feeding trends in the rural population of Goa and the results are as follows.

Table 1: Socio-demographic profile of mothers.

Age distribution(years)	Number	Percentage (%)
15-20	62	20.2
20-25	133	43.3
25-30	112	36.4
Educational status		
Graduate	10	3.26
HSSC	7	2.28
SSC	85	27.69
Secondary	101	32.90
Primary	55	17.92
No Formal Education	49	15.96
Socioeconomic status		
Group I (Upper)	137	44.63
Group II (Upper middle)	92	29.97
Group III (Lower middle)	71	23.13
Group IV (Upper Lower)	7	2.28
Group V (Lower)	0	0

Feeding of colostrum

As regards to colostrum feeding, we found that 142 (46.25%) of all mothers had fed colostrum to their index child whereas 165 (53.75%) discarded colostrum.

Table 2: Maternal education and feeding of colostrum.

Maternal Education	Feeding colostrum %	Discarding %	Total
HSSC & above	13 (17.47)	4 (23.53)	17
SSC	44 (51.77)	41 (48.23)	85
Secondary	51 (50.50)	50 (49.50)	101
Primary	20 (36.36)	35 (63.64)	55
No Formal Education	14 (28.57)	35 (71.43)	49
Total	142 (46.25)	162 (53.75)	307

 $X^2 = 16.35$, df= 4, P < 0.01

Educational status of mothers and feeding of colostrum

Feeding colostrum to their infants was maximum 13 (76.47%) in hssc and above educated group and lowest 14 (28.57%) among those without any formal education.

In our study out of 307 mothers, 133 (43.3%) aged between 20-25 years, 112 (36.4%) were in age Group 25-30 years, 62 (20.2%) were in age Group 15- 20 years [Table 1]. Regarding the educational status, it was observed that ten mothers were graduate, seven were educated above HSSC, 85 were matriculate, 101 had secondary school level and 49 were illiterate [Table 2]. As per Modified Kuppuswamy's classification, 137 belonged to Group 1 (44.63), 92 in Group II (29.97), 71 in Group III (23.13) and 7 were in Group IV (2.28). There were no mothers in group V [Table 3]. Majority of the mothers were Hindus 253 (82.41%) and the remaining were Catholics 54 (17.59%), 255 (83.06%) belonged to joint families and remaining 52 (16.94%) were from nuclear families.

Table 3: Economic status and feeding of colostrum.

Economic status	Feeding colostrum %	Discarding %	Total
Group I	80 (58.39)	57 (41.61)	137
Group II	34 (36.96)	58 (63.04)	92
Group III	28 (35.90)	50 (64.10)	78
Group IV	0	0	0
Group V	0	0	0
Total	142(46.25)	165 (53.75)	307

 $X^2 = 14.69$, df = 2, P < 0.01

Feeding colostrum was seen in 80 (58.39%) of group I, 34 (36.96%) of group II and 28 (35.90%) of group III.

Table 4: Type of family and feeding of colostrum.

Type of Family	Feeding Colostrum %	Discarding	Total
Joint	115 (45.10)	140 (54.90)	255
Nuclear	27 (51.92)	25 (48.08)	52
Total	142(46.25)	165(53.75)	307

 $X^2 = 0.08$, df = 1, P < 0.05

Table 5: Initiation of breast feeding.

Time (Hours)	Number	Percentage (%)
<1	65	21.17
1-6	122	39.74
6-12	18	5.86
12-24	21	6.84
>24	81	26.38

Most mothers initiated breast feeding within 6 hours after birth.

Types of breast feeding

178 (58%) practiced "on schedule" breast feeding whereas 129 (42%) practiced "on demand" feeding.

Table 6: Duration of breast feeding for index child for mothers who have completed breast feeding.

Duration	Number	Percentage
0-3	11	8.27
3-6	39	29.32
6-9	20	15.04
9-12	15	11.28
12-15	26	19.55
15-18	5	3.76
18-21	12	9.02
21-24	5	3.76
Total	133	100

Average duration of breastfeeding =9.05 months

133 mothers had discontinued breast feeding. Amongst these 50 (37.59%) fed the babies for 0-6 months, 35 (26.32%) fed the babies for 6-12 months and 48 (36.09%) had fed for 12-24 months.

Table 7: Duration of breast feeding for index child for mothers who were currently breast fed.

Duration (months)	Number	Percentage (%)
<6	29	16.67
6-12	71	40.81
12-18	26	14.94
18-24	48	27.59
Total	174	100

Table 8: Age of artificial feeding.

Age (months)	Number	Percentage (%)
No artificial feeding	7	2.38
< 1	97	31.60
1-4	187	60.91
> 4	16	5.21
Total	307	100

Most mothers started giving some form of artificial feeds which were usually begun by 4-6 months.

Table 9: Age at weaning among infants.

Age (months)	Number	Percentage (%)
< 3	22	7.58
3-6	191	65.86
6-9	70	24.14
9-12	1	0.35
12-24	6	2.07
Total	290	100

Table 10: Most commonly given weaning food.

Type of weaning foods	Number
Cereals	271
Fruit juices	193
Vegetable soups	192
Baby formulae	191
Fruit (whole)	172
Cow/buffalo milk	160
Dal	157
Other liquids	116

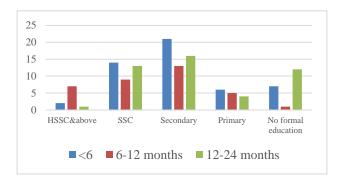


Figure 1: Maternal educational status and duration of breast feeding.

It is evident from the table that there is an association between mother's education and duration of breast feeding. Educational class affected the motivation to breast feed. However the type of family did not have any effect on the duration of breast feeding. Various reasons for stopping breast feeding were child's refusal, working mothers, current pregnancy, breast and nipple diseases and child not tolerated breast feeding.

DISCUSSION

The breast feeding practices prevailing in the community play important role in child's health. In this study it is revealed that 142 (46.25%) of all mothers had fed colostrum to their index child whereas 165 (53.75%) discarded colostrum. In other studies by Mahmood et al 84.6% of the mothers and K Madhu et al Jayant et al (2010), 84.6% of the mothers fed colostrum. ^{5,6} In contrast studied by Agarwal et al and Ghosh et al showed that the percentage of mothers who fed colostrum was only around 10%. ^{7,8}

Our study shows that the higher level of education, socioeconomic status and acceptance of colostrum as a beneficial entity go hand in hand. The other studies show the similar results. These study findings were statistically significant.

Early breastfeeding practices determine the successful establishment and duration of breastfeeding. It is recommended that children be put to the breast immediately or within one hour after birth. When a

mother initiates breastfeeding immediately after birth, breast milk production is stimulated. During the first few days after delivery, colostrum, an important source of nutrition and antibody protection for the newborn, is produced and should be fed to the newborn while awaiting the production of regular breast milk. Prelacteal feeding giving liquids or foods other than breast milk prior to the establishment of regular breastfeeding deprives the child of the valuable nutrients and protection of colostrum and exposes the newborn to the risk of infection. ¹⁰

In our study, although the first hour feeding rates were less (21.17%), almost three quarters of the babies (73.62%) were breastfed with in the first 24 hrs. Similar study by Khan et al showed that 37.2% of the mothers initiated breastfeeding within one hour. A total of 19% of the mothers in the study did not breastfeed even 24 hours after the delivery as reported by Madhu et al. 12

One third of the mothers (36.09%) discontinued breastfeeding before six months of age and 26.32% of the mothers did so between 6-12 months of age. However 36.09% of the mothers continued breastfeeding for a period of 12 to 24 months. A study by Dongre et al showed 50% of mothers had feeding problems like feeding less than eight times in 24 hours and feeding other feeds other than breast milk. ¹³

The exclusive breastfeeding rate was 61.26% at 4 months in the study in Karnataka by Banapurmath et al 17% of the mothers practiced exclusive breastfeeding in a study from Punjab. A study in Haryana only 15% of mothers practiced exclusive breastfeeding at 4 mo. 6

It was found in our study that 300 (97.62%) gave their infants some form of artificial feeds. In a similar study in Uttarakhand by Shaili Vyas et al 82% had started weaning. 17 While corroborative findings like boys being weaned earlier than girls Katara et al in Vadodara. Malek et al higher education correlates with shorter period of breastfeeding.¹⁹ As per WHO and UNICEF guidelines promote Exclusive Breast Feeding for six and nutritionally adequate and complementary food starting from end of six months along with continued breast feeding for two years.²⁰ Complementary feeding term has replaced the term weaning and consist of appropriate, hygienically prepared, homemade mashed food given to a baby after six months of life when breast feeding alone is insufficient for the baby's nutritional needs. The target age for the complementary feeding is 6-24 months.²¹ Nearly 30-40 % calories are derived from breast feeding during second year. Breast milk has larger fat content as compared to the complementary feeds hence breast feeding becomes richer source of energy and fats. Hence continuation of breast feeding along with complementary feeds is essential.

In our study a large number of infants were given cereal based diet in the form of Kanji, soft cooked rice, mashed chapatti, and porridge. Other commonly given liquids were fruit juices, vegetable soups, infant formulae, whole fruit pulps, cows or buffalo's milk, dal and other liquids. Several other studies have made similar observations. Some studies have identified biscuits, sago, eggs and curd as common weaning food. This study reveals that mothers utilize a variety of weaning food. This can be due to the higher economic status of the study population and the availability of the various food items. Studies from different part of India have shown that tradition, cheapness, local availability determines the choice of weaning food.

CONCLUSION

Goa state is having advanced newborn care and low neonatal mortality but the findings from the study suggest the breast feeding and infant feeding practices overall awareness about infant feeding practices such as early initiation of breastfeeding and feeding of colostrum among mothers was low to the current recommendations of healthy practices for care of newborns. Universal practice of breastfeeding along with early initiation of breast feeding and prolonged duration of breast feeding is followed among rural mothers of Goa. Complementary feeding practices are similar to the recommendations. National health program cannot be successful when there is huge gap of knowledge and awareness in the community about neonatal care in the rural area. This indicates the need for promoting correct practices for infant feeding in rural community.

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Institutional Ethics Committee

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