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ORIGINAL ARTICLE

A STUDY ON THE USE OF COMMERCIAL FEEDING FORMULA AMONGST URBAN CHILDREN: A STUDY FROM KATIHAR DISTRICT OF BIHAR

Prawin Chandra[1], Kashif Shahnawaz[2]

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ABSTRACT: INTRODUCTION: Breast feeding is the best way to feed infant and therefore, every effort should be made to promote and protect this salutary traditional practice everywhere. Commercial Feeding Formula (CFF) is liquid or reconstituted powder fed to infants and growing children. They sometimes serve as substitute for human milk. **OBJECTIVES:** The objectives of our study are to assess the prevalence of the use of CFF among mothers having 6 weeks to 6 months aged children, and to study some factors associated with CFF use. **MATERIALS AND METHODS:** A cross-sectional study was conducted between Dec-2014 to Feb-2015, using a pre-designed, pre-structured questionnaire. A total of 145 mothers having children between 6 weeks to 36 months of age were selected for the study. Interview was done using pre-designed questionnaire. Information regarding the use of CFF with special emphasis on reconstitution of formula food and sterilisation process was obtained. Data, thus collected was compiled and analysed by us. **RESULTS:** In our study, CFF was used by 59.3% of total study subjects. 49.2% of the mothers were using it for under 6 month's children. Maximum 76.6% of the children were between 13-24 months of age. CFF was used by mothers of better education group (80%). Mothers belonging to upper and middle socio-economic strata were more users of CFF, i.e 100% & 65% respectively, but CFF was also used by maximum proportion of 59.5% by upper lower socio-economic strata. It was also observed in our study that 46.6% of the mothers were diluting the feeding formula improperly and 32.6% unhygienically. Majority of the CFF users were using it as per advice of their relatives and friends (51.1%). **CONCLUSION:** Human breast milk is the best source of nourishment for human infants. Improper reconstitution of CFF is a significant factor affecting nutritional status of children. Generating proper awareness about CFF is must.

KEYWORDS: Breast feeding, commercial feeding formula, urban children.

INTRODUCTION: The Innocent Declaration states "all women should be enabled to practice exclusive breast feeding and all infants should be fed exclusively on breast milk for the first six months of age." Exclusive breast feeding means that no other food or drink should be given to the baby for the first six months.[1] Breast feeding is the best way to feed infants and therefore, every effort should be made to promote and protect this salutary traditional practice everywhere.[2] Breast milk is still the best nourishment for infants till the age of 6 months. It contains all the essential nutrients for normal growth and development of a baby for the first 6 months. It is least expensive too. In spite of this, unfortunately, commercial feeding formula is being used significantly in urban areas. Commercial Feeding Formulas (CFF) is liquid or reconstituted powder fed to infants and growing children. They sometimes serve as substitute for human milk. CFF becomes inevitable when there is death of mother, prolonged illness of mother, lactation failure, etc. There are many CFF available in India, like powered formulas, ready to fed liquids, Soya formula, etc.

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Decreasing breast feeding and increased use of artificial milk are some of the unfavourable trends observed in the upper strata of Indian society, which is probably picked up also by the poor families. Poor infant feeding practices directly or indirectly contribute to under-nutrition, morbidity and mortality in infants. Sometimes, lack of awareness and not poverty per se may be the likely cause of faulty infant feeding practices.[3]

Successful nursing of infants is dependent not only upon a willing mother and a healthy infant, but also upon various biosocial factors, like increased number of mothers going to work, as a result of mass propaganda that alternative foods are easier to handle, a sense of status symbol or social climbing seems to be associated with the use of formula milk, lack of experience, motivation and support available to urban mothers of nuclear families, getting rid of breast feeding to symbolize the sophisticated women's march towards total emancipation and fear of spoiling the figure and physique during lactation.

Main Objectives of our Present Study are:

1. To assess the prevalence of use of commercial feeding formula among mothers with 6 weeks to 36 months aged children.
2. To study some factors associated with CFF use.

MATERIALS AND METHODS:

Study Design: Cross sectional study.
Study Tools: A pre-designed, pre-structured questionnaire, weighing machine and growth chart.
Techniques: Interview, Measurement
Place of Study: Field practice area of Katihar Medical College, Katihar, Bihar. (Salamat Nagar).
Study Period: Dec-2014 to Feb-2015 (Three months).
Study Population: A total of 145 mothers having children between 6 weeks to 36 months of age.
Study Method: We have gathered information from a total of 145 mothers. The present study was conducted in Salamat Nagar, which is the field practice area of Katihar Medical College, Katihar. Study period was of three months (from Dec-2014 to Feb-2015). A consecutive 145 children between 6 weeks to 36 months of age, their mothers were included in the study. Consent of the mothers was already taken. We interviewed mothers using a pre-designed questionnaire. Information regarding use of CFF with special emphasis on reconstitution of formula food and sterilization process was obtained. The nutritional status of children was assessed using Indian Academy of Pediatrics classification of 'Weight for Age'. Data, thus collected was compiled and analyzed by us.

RESULTS:

Age	Study Subjects	CFF users	
		No.	%
6 weeks-6 months	69	34	49.2
7 months-12 months	37	24	64.8
13 months-24 months	30	23	76.6
25 months-36 months	09	05	55.5
Total	**145**	**86**	**59.3**

Table 1: Age wise distribution of study subjects according to use of CFF

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The table depicts that CFF was used by 59.3% of total study subjects. 49.2% mothers were using it for under 6 month's children. Maximum 76.6% of the children were between 13-24 months of age.

Literacy Status	Study Subjects	CFF users	
		No.	%
Illiterate	45	25	57.7
Primary	39	22	56.4
Secondary	56	35	62.5
Higher Secondary & above	05	04	80
Total	**145**	**86**	**59.3**

Table 2: Literacy status of mothers and use of CFF

From the above table, it's seen that though better-educated group, i.e 80% of the higher secondary and above educated includes more users of CFF, fairly large proportion of less educated mothers, i.e 57.7% illiterate and 56.4% primary educated, respectively, were also using it.

Socio-economic Status	Study Subjects	CFF users	
		No.	%
Upper	03	03	100
Upper middle	40	26	65
Lower middle	46	27	58.6
Upper lower	47	28	59.5
Lower	09	02	22.2
Total	**145**	**86**	

Table 3: Socio-economic status of the study subjects and use of CFF

It is observed from the above table that upper and upper middle socio-economic strata were more users, i.e 100% and 65% respectively, but CFF was also used by maximum proportion of 59.5% by upper lower socio-economic strata.

Nutritional Status	CFF users		CFF Non users		Total
	No.	%	No.	%	
Normal	67	77.9	49	83.1	116 (80)
Grade-I	15	17.5	08	13.6	2.3 (15.8)
Grade-II	02	2.3	02	3.3	04 (2.7)
Grade-III	02	2.3	Nil	00	02 (1.2)
Total	**86**	**100**	**59**	**100**	**145**

Table 4: Nutritional Status of children consuming CFF

Among the children using CFF, 77.9% were normal and among CFF non-users, it was 83.1%, whereas 17.5% of the CFF users were suffering from Grade-I malnutrition in comparison to 15.8% of

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the CFF non-users. Only 2.3% of CFF users were suffering from Grade-III malnutrition, but there was none in CFF non-users.

Reconstitution	Number of users	Percentage
Properly diluted	46	53.4
Hygienically prepared	58	67.4

Table 5: Distribution of CFF users according to its reconstitution (N=83)

It's observed that 46.6% were diluting the feeding formula improperly and 32.6% unhygeinically.

Source	Number	Percentage
TV	13	15.1
Newspapers	02	2.3
Relatives & friends	44	51.1
Health workers	05	5.8
Medical practitioners	26	30.2

Table 6: Distribution of CFF users according to source of advice (N=86)

The above table indicates that majority of the CFF users were using CFF as per advice of their relatives and friends (51.1%) and medical practitioners (30.2%). Television advertisements (15.1%) had also a major share in decision making.

DISCUSSION: Several studies on breast feeding have shown a general decline in breast feeding in urban areas.[4] It was shown in our study that the use of CFF is 59.3% among urban mothers which is comparable to report of similar study from Haryana.[5] Educational status and poverty don't have restricted its use. Das and Ahmed,[6] in their study reported that most of the Bangladeshi rural mothers did not have correct knowledge about exclusive breast feeding. The findings of our study are similar with the findings of Chhabra et al,[7] who reported that use of CFF had no relationship with education of mothers. Chowdary et al[8] also reported in their study that literacy status of mothers had no significant relationship with the pattern of breast feeding and the use of CFF adapted by mothers. There is a high prevalence of CFF use by urban mothers even in better educated families (80%) and also in the families from lower socio-economic status, like upper lower (59.5%) and lower (22.2%). The sources of information for CFF use mainly are – relatives and friends (51.1%) and medical practitioners (30.2%). It was also seen that among the CFF users, there is a lack of proper dilution in 46.6% cases and unhygeinically prepared CFF was provided to children, in 32.6% cases.

CONCLUSION: Human breast milk is the best source of nourishment for human infants, preventing disease, promoting health and reducing health care costs. The World Health Organisation recommends a minimum of two years of breast feeding and exclusive breast feeding at the first six months of life. Improper reconstitution of CFF is a significant factor affecting the attributes of final product and the situation is still more alarming because of the possibility of use of unclean water and

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holding the reconstituted formula for quite prolonged time at room temperature before use. Moreover, use of unsterilized utensils aggravates the problem. This coupled with excessive dilution of commercial foods and inadequate supplementation predisposes for poor nutritional status, which in turn predisposes for infectious conditions.

RECOMMENDATIONS: There is a need for better use of media for promoting traditional foods for weaning. Generating correct awareness about CFF is must. Better educational status does not guarantee about proper reconstitution. That speaks for implementation of specific educational programs targeting the target groups and general public about proper reconstitution of CFF.

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AUTHORS:

1. Prawin Chandra
2. Kashif Shahnawaz

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Community Medicine, Katihar Medical College & Hospital, Katihar, Bihar.
2. Assistant Professor, Department of Community Medicine, MGM Medical College & LSK Hospital, Kishanganj, Bihar.

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NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Kashif Shahnawaz,
Manhar Road, Chhoti Quazipura,
District Darbhanga-846004,
Bihar.
E-mail: kashif.shahnawaz98@gmail.com

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