



Exclusive Breastfeeding the most cost-effective intervention- An evidence from rural community of Haryana

Authors

Dr Sunidhi Karol¹, Dr Pardeep Khanna², Dr Mohit Karol³

¹Junior Resident, Department of Community Medicine, PGIMS, Rohtak

²Senior Professor & Head, Department of Community Medicine, PGIMS, Rohtak

³Senior Resident, Department of Pediatrics, IGMC, Shimla

Abstract

Background: Exclusive breastfeeding during the first six months is the most cost-effective intervention for the survival of a child.

Material & Methods: A community based cross-sectional study was conducted in Community Development Block, Beri, district Jhajjar, Haryana over the period of one year. In the present study 400 mothers of children aged 6-23 months were selected with multistage random sampling method and interviewed using structured questionnaire for Infant and Young Child Feeding (IYCF) practices. Data were analyzed with using SPSS-20.0, Chi-square, bivariate and multivariate logistic regression tests.

Results: Exclusive breastfeeding for six months was observed to be 59.2%, Colostrum given almost universally to all infants (95%). 33% infants were given pre-lacteal feeds in the form of sweetened water, ghutti, honey, water etc. around 86% infants were breastfed adequately and on demand. Bottle feeding was observed in 26% of which more than half among 6-23 months age group. Only 6% were given artificial pacifiers in form of teats.

Conclusion: compliance to IYCF practices has shown slight improvement since the last NFHS survey in 2015-2016 but still well below the WHO recommended guidelines for Infant and Young Child Feeding.

Keywords: exclusive breastfeeding, pre-lacteal feeding, colostrum, bottle feeding, IYCF.

Introduction

Exclusive breastfeeding during the first six months is the most cost-effective intervention for the survival of a child. Breastfeeding in early infancy is a common practice in all societies as it is the most natural process, and is considered ideal for achieving optimal health and nutrition of infants.¹ During the course of human history, infants should be fed with human milk in order to assure survival. From the ancient past until today, the importance of breast-feeding has been well

appreciated. In 21st century, breast-feeding increased over the last years, beginning in the 1970s. Especially, in later years paediatric clinics informed mothers about the advantages of breast-feeding. It is widely accepted now, that breastfeeding decreases the risk of many serious diseases as acute otitis media, non-specific gastroenteritis, severe lower respiratory tract infections, atopic dermatitis, asthma, obesity, type 1 and 2 diabetes, childhood leukaemia, sudden infant death syndrome (SIDS) and

necrotizing enterocolitis. The great impact of breastfeeding is obvious for the world health and the economy, as the rates of hospitalization and morbidity have decreased. Finally, children who are fed with breast milk during infancy are reported to present with a higher IQ. Exclusive breastfeeding prevents 13% of estimated under-five mortality, hence present study was planned with objective to assess exclusive breastfeeding practice and factors affecting it in a rural community.²

Material & Methods

A community based cross-sectional study was conducted in Community Development Block, Beri, district Jhajjar, Haryana over the period of year from April 2016 to March 2017 by house to house visit. Mothers having children aged 6-23 months were included in the study. Mothers who did not consented, mentally unsound, migrants residing for less than one year in study area during the data collection period were excluded from the study. Sample size was calculated, considering prevalence of exclusive breastfeeding to be 50%, using formula $4PQ/L^2$ taking precision to be 5% and level of confidence to be 95%. Thus, total 400 mothers were studied using random sampling technique. A predesigned, pretested semi-structured schedule mainly based on the standard IYCF indicators given by WHO was used for data collection. The pre-test was done in similar settings but not included in the main study of 5% of the sample size. Data was analyzed by using Statistical Package for Social Sciences (SPSS) version 20.0

Results

Socio-demographic characteristics

The age of mothers ranged from 18 years to 40 years with mean age of 24.97 ± 3.41 years. 98.6% study subjects were Hindus by religion. Other Backward Classes and Scheduled Castes/Tribes together constituted 45.2%. Joint Family was the dominant family type, with 66 % respondents living in joint family and only 34% were living in

nuclear family. The family size of the study subjects ranged from 1 to 8 children with mean of 1.77 ± 0.84 children. 93.3% of study participants were married and living together with their spouses while 6.5% were married but not living together and only 0.3% of study subjects were divorced. 9% were married under 18 years of age. Regarding mothers' occupation, 94.5% mothers were homemakers followed by 5% working in an organized sector and 0.5 % mothers were completing their education. On the basis of education status, 13.3% mothers were illiterate.

The majority of children were in the age group of 13-23 months (58.5%), out of which, 29.75% were males and 28.75% were females. In 6-12 months slab there were 41.5% infants in which 21.75% were males and 19.75% were females. The majority of infants (93.8%) were born at term gestational age (≥ 37 weeks), 68(17%) of them were of low birth weight weighing less than 2.5 kg, in which 37(9.25%) males and 31(7.75%) females.

MCH services availed by Study Subjects

The mean age for registration of pregnancy was 2.74 ± 1.04 months among study participants, means most of study subjects (86.3%) got themselves registered with in first trimester. The majority of study subjects (75.5%) availed more than four antenatal check-ups during antenatal visits. The majority of the study subjects (96.4%) had institutional delivery of which 71.3% delivered in government institution while 25.5% delivered in private hospitals and only 3.5% delivered at home. 85.5% of the study participants delivered by normal vaginal delivery while 14.5% delivered by caesarean section. In 71.8% of the study subjects' delivery was attended by doctors followed by 25.3% nurses and 3% by traditional birth attendants. More than half (61.6%) of the study subjects had 48 hours hospital stay in case of normal delivery and 7 days stay in case of caesarean section delivery.

More than two-third of the study participants (67.8%) received information about optimal breast-feeding in new-borns during antenatal

while (69%) during hospital stay. However, 32% did not get any information regarding optimal breastfeeding from any of the health worker before and after delivery. Nearly two-third (65.8%) mothers received breastfeeding knowledge from Anganwadi workers.

Exclusive breastfeeding and related practices

Exclusive breastfeeding for six months was observed to be 59.2% of which 31.75% among males and 27.5% among females. Colostrum given almost universally to all infants (95%). 33% infants were given pre-lacteal feeds in the form of sweetened water, ghutti, honey, water etc. around 86% infants were breastfed adequately and on demand. Bottle feeding was observed in 26% of which more than half among 6-23months age group. Only 6% were given artificial pacifiers in form of teats.(Table 1)

Exclusive breastfeeding & associated factors

Exclusive breastfeeding was found to be statistically significant with maternal education

status, mode of delivery and breastfeeding knowledge during antenatal period. With increase in mothers education rate of exclusive breastfeeding increases. Mothers who gave birth by normal vaginal delivery are more likely to feed their babies exclusively than caesarean counterparts. Pre-lacteal feeding found to be significantly interfering with exclusive breastfeeding. Also, mothers having breastfeeding knowledge during antenatal period fed their babies exclusively for 6 months. However, no significant association was observed for other variables like age, age at marriage, type of family, parity, socio-economic status, gestational age and birth-weight. On applying multivariate logistic regression on significant variable pre-lacteal feeding and knowledge during ANC was found significant with adjusted odds of 1.5 & 1.8 respectively p value less than 0.05.(Table 2)

Table: 1 Exclusive breastfeeding and related practices

IYCF Practices	Frequency	Percentage
Colostrum Feeding		
Yes	379	94.8
No	21	5.2
Pre-lacteal Feeds given		
Yes	133	33.3
No	267	66.7
No. of times baby breastfed (8-10 times per day)		
Adequate	343	85.8
Inadequate	57	14.2
Demand Feeding		
Yes	332	83
No	68	17
Bottle Feeding		
Yes	104	26
0-6 months	49	47
6-23 months	55	53
No	296	74
Artificial Pacifiers/Teats		
Yes	24	6
No	376	94
Exclusive Breastfeeding		
Yes	237	59.2
No	163	40.8

Table 2 Exclusive breastfeeding & associated factors

Characteristics	Exclusive breastfeeding n (%)		p value
Age group(yrs)	Yes	No	
15-19	05(83.3)	01(16.7)	0.05
20-24	101(53.7)	87(46.3)	
25-29	106(65)	57(35)	
30-34	23(63.9)	13(36.1)	
≥ 35	02(28.6)	05(71.4)	
Type of family			
Nuclear	158 (59.8)	106(40.2)	0.11
Joint	79(58.1)	57(41.9)	
Education			
Illiterate	31 (53.4)	27 (46.6)	0.04
Primary school	30 (56.6)	23 (43.4)	
Middle school	60 (69.7)	26 (30.3)	
Secondary school	62 (63.9)	35 (36.1)	
Graduate & above	54 (50.9)	52 (49.1)	
Socio economic status			
Upper	38 (55.9)	30 (44.1)	0.05
Upper middle	56(60.9)	36(39.1)	
Middle	54(51.9)	50(48.1)	
Lower middle	65(73)	24(27)	
Lower	24(51.1)	23(48.9)	
Age at marriage			
< 18 years	22(61.1)	14(38.9)	0.81
>18 years	215(59.1)	149(40.9)	
Parity			
P=1	93(39.2)	78(47.9)	0.08
P≥ 2	144(60.8)	85(52.1)	
Mode of delivery			
Normal	211 (61.6)	131(38.4)	0.01
Caesarean	26 (44.8)	32(55.2)	
Gender			
Male	127(53.6)	79(48.4)	0.36
Female	110(46.4)	84(51.6)	
Gestational age			
Term	221(93.2)	154 (94.5)	0.67
Preterm	16 (6.8)	09 (5.5)	
Birth weight			
<2.5 kg	37 (15.6)	28(17.2)	0.68
>2.5kg	200(84.4)	135 (82.8)	
Pre-lacteal feeds			
Yes	11(4.6)	122(74.8)	0.00
No	226(95.4)	41(25.2)	
Breastfeeding knowledge during antenatal visits			
Yes	173(73)	98(60.1)	0.00
No	64(27)	65(39.9)	

Discussion

The recommendation to exclusively breastfeed babies for the first six months of life was formulated after a meta-analysis and review of the evidence by a WHO Expert Committee. Exclusive breastfeeding was observed to be higher in our study area when compared with National Family Health Survey (NFHS-4)^{3,4} data for India (54.9%)

and Haryana (52.4%) and lower when compared to District Level Household Survey (DLHS-4)⁵ for district Jhajjar (76.1%). Similar findings for exclusive breastfeeding rates have been reported from studies done by Garget al⁶ in Karnataka and Khan et al⁷ in New Delhi. However, higher rates have been reported in studies conducted by Prashar et al (94.9%)⁸ and Chandwani et al (95%)⁹

in Gujarat. Another study done by Padmanabhan & Mukherjee¹⁰ in Tamil Nadu showed this figure to be as low as 33.6%. The reason for higher exclusive breastfeeding could be because of the fact that information regarding optimal breastfeeding practices was given to mothers during antenatal (68%) and postnatal periods (69%) through frontline workers like ASHAs, MPHWs (F) and AWWs with 1.8 times higher odds. And also, every year Global Breastfeeding Week (1-7 August) is observed in collaboration with Women and Child Development Department to spread awareness regarding optimal IYCF practices among mothers. Infants who were given pre-lacteal feeds at birth had 1.6% lesser odds to be exclusively breastfed for 6 months. This finding is consistent with studied done by Tewabe¹¹ and Reddy et al¹². Thus, the practice of pre-lacteal feeding is a risk factor for early cessation of breastfeeding. Policies to promote exclusive breastfeeding are necessary to enable infants to attain optimal health and for attainment of Sustainable Development Goals. The gender of the child was not among the significant factors affecting exclusive breastfeeding in the present study. The association between baby's gender and exclusive breastfeeding was not consistent in the literature. (Bulk-Bunschoten et al., Lande et al., Duong et al., Batal et al.)¹³⁻¹⁶ Bottlefeeding observed among 26% of children of which 12.25% in the first 6 months of life and the remaining 13.75% after 6 months. A study from Madhya Pradesh done by Jain et al¹⁷ in 2014 had shown this to be around 14% whereas 28.1% mothers used bottles for feeding as observed in a study conducted by Dasgupta et al¹⁸ in West Bengal. The feeding bottle is a vital factor in the viciousmal nutrition-infection cycle, often reported to be a major cause of infant and child mortality. Main reason for this practice was observed to be the milk insufficiency. To achieve optimal growth, development and health, the World Health Organization recommends that infants should be exclusively breastfed for the first six months of life.

Thereafter, to meet their nutritional requirements, infants should receive adequate and safe complementary foods while breastfeeding continues up to two years of age and beyond. It is further recommended that a feeding bottle with a nipple should not be used at any age.¹⁹

Conclusion

The study concluded that compliance to IYCF practices has shown slight improvement in feeding practices since the last NFHS survey in 2015-2016 but still well below the WHO recommended guidelines for Infant and Young Child Feeding. Mother's educational status, mode of delivery, pre-lacteal feeding and breastfeeding knowledge during ANC are significant factors interfering exclusive breastfeeding. There is large need to improve mothers' education status and empower mothers with adequate knowledge of breastfeeding regarding benefits and harms of pre-lacteal feeding through community based activities like village health nutrition days (VHND). Thus exclusive breast feeding is the most cost effective intervention to decrease infant mortality.

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