ISSN : (2347-498X)

Journal of Comprehensive Health

Official Publication of The Indian Association of Preventive and Social Medicine, West Bengal Chapter

Original Article

Infant and Young Child Feeding Practices among Tribal Population of a Tea Estate in Darjeeling District, West Bengal, India

Basundhara Chakraborty[1], Sharmistha Bhattacherjee [2],Kuntala Ray[3], Abhijit Mukherjee[4]

[1]Ex intern, [2-4] Assistant Professor, Community Medicine, North Bengal Medical College, Sushrutanagar, Darjeeling

Corresponding author:

Dr. Sharmistha Bhattacherjee, Assistant Professor, Community Medicine,North Bengal Medical College, Sushrutanagar, Darjeeling

E mail:sharmistha.bhattacherjee@gmail.com

Abstract

Background: Infant and Young Child Feeding (IYCF) practices play an instrumental role in the social and in turn the individual aspect of human life for promotion of good growth, health, behaviour and cognitive development of the child. **Objectives:** To find out the current Infant and Young Child Feeding Practices and their correlates among tribal children aged 0-23 months residing in a tea garden of Darjeeling district, West Bengal. **Methods:** A community-based cross-sectional descriptive study was undertaken among 109 children aged 0-23 months belonging to tribal parents. The mothers of the selected children were interviewed at their home with the help of a pre-tested pre-designed schedule and information on socio-demographic profile, feeding history and feeding practices of the study children was collected. In addition, anthropometric measurements were also done. **Results:** Among the infants aged below 6 months, breastfeeding was found to be universal. Initiation of complementary feed in the form of semi-solid/solid food was done before and after 6 months in 9.5% and 90.5% respectively among children aged 6-23 months. 44 % of the study population was found to have age-appropriate feeding practices. **Conclusion:** Infant and young child feeding practices were found to be quite poor in the tribal children. Interventions are needed to improve the knowledge of the mothers regarding the same.

Key words: Infant, young child, feeding practices, tribal

Introduction:

The concept of child health and nutrition has been an indispensable component of human development since time immemorial. Starting from the old ages to the contemporary era, proper Infant and Young Child Feeding (IYCF) practices has continued to play an instrumental role in the social and in turn the individual aspect of human life. This is because the period from birth up to two years of age is considered the 'critical period' for the promotion of good growth, health, behaviour and cognitive development of the child.[1]

According to the World Health Organization (WHO), optimal breastfeeding

practices; including immediate postpartum initiation of breastfeeding, exclusive breastfeeding with no additional fluid or food for 6 months,[2] and continuation of breastfeeding thereafter up to 24 months and beyond with age appropriate complementary feeding; have great potential to reducing under-five mortality rate.[3-5] It has been seen that if in 90% of infants, proper IYCF guidelines are implemented, almost 1/5th of under-five mortality can be avoided.[6]

Despite this well recognized importance of optimal IYCF practices, the worldwide figures are quite dismal with much room for improvement. As far as breastfeeding practices are concerned, only 38% infants are exclusively breastfed and 36% experience early initiation of breastfeeding globally while for India, the figures are 46.4% (less than six months of age) and 24.5% respectively.[4]Studies show that sub-optimal breastfeeding accounts for an estimated 800,000 deaths in children under five years annually[7] and that a non-breastfed child is 14 times more likely to die in the first six months than an exclusively breastfed one.[1]

These figures may be quite different in tribal populations who inhabit widely varied ecological and geo-climatic conditions and are plagued by various social factors like ignorance, illiteracy, poverty, lack of development in the inaccessible areas and exploitation. In India, the Scheduled Tribes constitute about 8.6% of the total population[8] which are scattered throughout the country.

In this context, the present study was conducted in a tribal population of northern part of West Bengal exploring the current feeding practices of children as compared to the IYCF guidelines.

Objectives:

To find out the current Infant and Young Child Feeding Practices among tribal children aged 0-23 months residing in a tea garden of Darjeeling district, West Bengal.

To determine the socio-demographic factors associated with age-appropriate feeding practices.

Materials and methods

A community-based cross-sectional descriptive study was undertaken from August to September 2014 in Kiranchandra Tea Estate of Darjeeling district, West Bengal, which falls under the rural field practice area of North Bengal Medical College. The inhabitants of the tea garden comprise of mixed tribe Adivasis with Sadri as the predominant language. The study population consisted of all children aged 0-23 months whose parents are tribals and residing in the study area for more than1 year were considered. Children whose parents refused to give consent and children who were severely ill were excluded

In the absence of any previous study in the area, the proportion of children breastfed within one hour of birth in Darjeeling district as reported in the District Level Household Survey-3 (i.e. 44.3%)[9]are used for calculating the sample size. Considering 10% absolute precision (L), sample size is computed by using the formula $n=4P(1-P)/L^2$. The yielded sample size comes out to be 99. Considering 10% non-response, the final sample size became 109.

First, line listing of all the children aged 0-23 months who were permanent residents of the tea garden was done by house-to-house visits with the help of the local health worker. A sampling frame was chosen and all the houses were visited during the study period of 2 months to select 109 children by simple random sampling. In the absence of child in a particular house, it was visited for a maximum number of 2 times; after which the child was excluded from the study.

The mothers of the selected children were interviewed at their home with the help of a pre-tested pre-designed schedule and data on age of child, birth weight, gender of child, socio-economic status, educational status and occupation of the mother; feeding history and feeding practices of the study children were collected. Birth weight was also checked from the immunization card and/or discharge certificate from the hospital.

The child's weight was measured using standard guidelines with the help of weighing machine in which reading was obtained by subtracting the mother's weight from the weight of the mother and child combined. The observed weight of the child was then plotted on the WHO growth chart for weight-for-age separately for males and females by a dot.

After data collection, data entry was done in Microsoft Excel. Data was organized and presented by applying principles of descriptive statistics. Further statistical analyses were done using SPSS version 20.

From the responses, the following IYCF indicators were calculated as per definitions formulated by the WHO:[10][Box 1]

Indicator	Interpretation
Early initiation of breastfeeding	Proportion of children born in the last 24 months who were put to the breast within one hour of birth
Exclusive breastfeeding under 6 months	Proportion of infants 0–5 months of age who are fed exclusively with breast milk
Introduction of solid, semi-solid or soft foods	Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods
Continued breastfeeding at 1 year	Proportion of children 12–15 months of age who are fed breast milk
Minimum dietary diversity	Proportion of children 6–23 months of age who receive foods from 4 or more food groups
Minimum meal frequency	Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.
Children ever breastfed	Proportion of children born in the last 24 months who were ever breastfed
Continued breastfeeding at 2 years	Proportion of children 20–23 months of age who are fed breast milk
Bottle feeding	Proportion of children 0–23 months of age who are fed with a bottle.
Age appropriate feeding practice	Proportion of children aged 0-23 months who receive food according to age i.e. as no pre-lacteal feed for all infants; frequency of breastfeeding, night feeding (≥ 8 times /day), not giving other food/drink apart from breast milk during the first six months; and minimum meal frequency, exclusive breastfeeding and number of ingredients used to prepare the child's food for children aged 6 months and above

Ethical issues:

Permission of the local authority and Institution Ethics Committee were obtained. Before starting the study, the mothers were sensitized about the study. The houses of the children selected were visited on a thrice weekly basis. Informed consent was taken from the mothers after ensuring confidentiality and anonymity; and data were collected with the help of the prepared schedule.

Results:

Background variables:

Among the 109 study children aged 0-23 months, 45 were found to be of less than 6 months and 64 to be 6 months to 2 years of age. The males comprised of 44% and the females 56% of the study population respectively. As for religion, it was seen that majority (78%) of the study population were Hindu whereas 10% and 12% were Muslims and Christians respectively. While calculating socio-economic status, it was seen that

majority of the children (60.6%) belonged to families with per capita income of Rs. 1000 or above. Among the 109 mothers 68 were tea garden workers and the rest were housewives.

.

As far as education of the mothers was concerned, majority of them (69.7%) were educated less than primary level

Feeding practices:

For infants < 6 months:When the current feeding practices for infants aged below 6 months (45 out of 109) were analyzed, breastfeeding was found to be universal. However, it was seen that 22.2% were breast-fed less than 8 times a day; but night-feeding was almost universal (93.3%). It was seen that 7 (15.6%) of the 45 infants were given other food or drinks apart from breast milk.

For children> 6 months:Initiation of complementary feed in the form of semi-solid/solid food was done before and after 6 months in 9.5% and 90.5% respectively among children aged 6-23 months. For children who had completed 6 months of age, it was seen that out of a total of 64, 59 (92.2%) were still breastfeeding out of which 67.8% were breastfed less than 5 times a day. It was found that 81.3% children were exclusively breastfed, which was continued for six months in 73.1% and beyond six months in 26.9%.

As far as amount of food was concerned, 73.8% children aged 6-23 months received 1 bowl (1 bowl=150 ml) and only 26.2% received 2 bowls of food per day.

Among the studied children, 22.9% were put to breast within one hour of birth. 38 of the 45 children in 0-5 months age group were exclusively breast fed, as elicited by taking only breast milk 24 hours prior to the survey. Among the 9 children aged 6-8 months, 8 received solid, semi-solid or soft foods the previous day. Of those in the age-group 6-8 months, who were presently breastfeeding, 87.5% were getting 2 or more meals per day and 68% of the age-group 9-23 months were getting 3 or more meals per day while those who were not breastfeeding presently (6-23 months) were also getting less than 4 meals/day. Therefore the minimum meal frequency comes out to be 64.1%.

The proportion of continued breastfeeding reduced from 100% at one year to 83.3% at two years. Among the 109 children, 18 had been exposed to bottle feeding and 48 had age appropriate feeding practices. (Table 1)

Table 1: IYCF indicators among the study population

IYCF Indicator	Frequency	Percentage
Early initiation of breastfeeding (n=109)	25	22.9
Exclusive breastfeeding under 6 months (n=45)	38	84.4
Introduction of solid, semi-solid or soft foods (n=9)	8	88.9
Continued breastfeeding at 1 year (n=7)	7	100.0
Minimum dietary diversity (n=64)	35	54.7
Minimal meal frequency (n=64)	41	64.1
Children ever breastfed (n=109)	109	100.0
Continued breastfeeding at 2 years (n=18)	15	83.3
Bottle feeding (n=109)	18	16.5
Age appropriate feeding (n=109)	48	44.0

Table 2: Socio-demographic corrrelates of age appropriate feeding practices among the studied population. **N=109**

	Age appropriate feeding practice		Total	AOR (95% CI)
	Absent	Present		
Age group				
< 6 months	23 (51.1)	22 (48.9)	45 (41.3)	1.47 (0.66 - 3.28)
6 months to 23 months	38 (59.4)	26 (40.6)	64 (58.7)	
Gender				
Male	29 (60.4)	19 (39.6)	48 (44.0)	0.73 (0.33 - 1.62)
Female	32 (52.5)	29 (47.5)	61 (56.0)	
Religion				
Hindu	49 (57.6)	36 (42.4)	85 (78.0)	0.78 (0.30 - 2.01)
Others	12 (50.0)	12 (50.0)	24 (22.0)	
Educational status of mother				
Less than primary	45 (59.2)	31 (40.8)	76 (69.7)	0.95 (0.37 - 2.41)
Primary and above	16 (48.5)	17 (51.5)	33 (30.3)	
Occupation of mother				
Tea garden labour	41 (60.3)	27 (39.7)	68 (62.4)	0.66 (0.27 - 1.61)
Stay at home	20 (48.8)	21 (51.2)	41 (37.6)	
Per capita income of the family				
Rs. 1000 and above	32 (48.5)	34 (51.5)	66 (60.6)	2.16 (0.94 - 4.96)
Less than Rs. 1000	29 (67.4)	14 (32.6)	43 (39.4)	
Total	**61 (56.0)**	**48 (44.0)**	**109 (100)**	

Data in parenthesis represent percentages.

Table 2 shows the association of age appropriate feeding practices with different socio-demographic variables as analysed by binary logistic regression. Higher proportions of age appropriate feeding practices were found to be present in children less than 6 months, of female gender, belonging to families following religions other than Hinduism and having per capita monthly income of Rs. 1000 or above. Higher odds of age appropriate feeding practices were found in children whose mothers were housewives and educated more than primary level.

Table 3: Other correlates of age appropriate feeding practices among the studied population. **N=109**

	Age appropriate feeding practice		Total	AOR (95% CI)
	Absent	Present		
Weight for age				
Normal	26 (44.1)	33 (55.9)	59 (54.1)	2.75 (1.14 - 6.63)
Malnourished	35 (70.0)	15 (30.0)	50 (45.9)	
Low birth weight				
Absent	45 (52.3)	41 (47.7)	86 (78.9)	1.32 (0.44 - 4.01)
Present	16 (69.6)	7 (30.4)	23 (21.1)	
Any illness within last 15 days				
Yes	26 (50.0)	26 (50.0)	52 (47.7)	1.69 (0.76 - 3.74)

No	35 (61.4)	22 (38.6)	57 (52.3)	
Total	**61 (56.0)**	**48 (44.0)**	**109 (100.0)**	

Data in parenthesis represent percentages.

Table 3 shows the relationship between independent variables, namely weight for age, low birth weight and history of any illness within last 15 days and practice of age appropriate feeding. It can be seen that the children who had normal weight for age had significantly higher odds of age appropriate feeding. The study children who had a history of low birth weight and any illness within last 15 days had lower proportion of age appropriate feeding.

Discussion:

Infant and young child nutrition has continued to draw the attention of professionals including doctors, health workers and nutrition specialists since long for decades. Infant feeding practices in the form of breastfeeding and complementary feeding have a substantial role in shaping the future health and nutritional status of the child.[11]

Though breastfeeding was started within one hour of birth in only 22.9% of the children, it was found to be universally practised in the study population. Growing evidence points to the impact of early initiation of breastfeeding on neonatal mortality. A 2006 study in rural Ghana[5] showed that early initiation within the first hours of birth could prevent 22% of neonatal deaths, and initiation within the first day, 16% of deaths, while a study in Nepal[12] found that approximately 19.1% and 7.7% of all neo-natal deaths could be avoided with universal initiation of breastfeeding within the first hour and first day of life respectively. The proportion of initiation of breastfeeding within 1 hour of birth for rural West Bengal according to DLHS 4 is 50.4%.[13]

For infants < 6 months:Breastfeeding was a universal practice in infants aged <6 months and 77.8% of the 0-5 months age group infants were found to breastfed 8 or more times; which was better than 68.8% in a study by Khan et.al in East Delhi[14] but lower (93.6%) as compared to Bankura[15].

The practice of giving other food or drinks in this age is completely against the IYCF guidelines. Studies show that about one-fourth of study children who received liquids and solids, along with breastfeeding at 0–6 months of age, remained at risk for infectious diseases and under nutrition.[4,16]

For children > 6 months:Inspite of the WHO recommendation of starting complementary feeding after 6 months, the age of complementary feeding varies in different studies.[15,17,18, 19] The major concerns about complementary feeding throughout the globe are late introduction and deterioration in both quality and quantity of food given to the child.

IYCF indicators:

Very few children (22.9%) were put to breast within one hour of birth. This may be due to the fact that immediately after giving birth, it is not necessarily the mother who decides when the child is put to her chest, but the family members who are influenced by different socio-cultural factors .The corresponding figure was 48.3% in a study done among tribals of Bhatar block of Burdwan district by Mondal et al.[20] However, a study done among Paroja tribals reported the figure as only 8%.[21]

Exclusive breastfeeding up to six months of age and breastfeeding up to 12 months was ranked number one among the top 15 preventative child survival interventions in preventing under-five mortality according to the 2003 landmark Lancet Child Survival

Series.[4]The goal is to achieve a target of improvement in exclusive breastfeeding till six months by 50% of the current level in the 12th year plan.[23] The present study has shown the proportion of exclusive breastfeeding practices as 84.4% among children less than 6 months and 46.15% among tribals of Bhatar block.[22]

The proportion of continued breast-feeding at 1 year and 2 years was 100% and 83. 3%. This was comparable to the study done by Sinhababu et al[16] and lower than the study among Hakkispikkis tribals in Mysore district, Karnataka.[23]

Coming to the ingredients used to prepare food, 54.7% (in children aged 6-23 months) received food prepared from four or more groups out of the seven food groups as mentioned in the 'minimum dietary diversity' indicator of IYCF. Minimum dietary diversity reveals whether the child between 6 and 23 months age is receiving a complete and balanced diet or not. This indicator is quite less in tribals of Bhatar block (30.85%) and is quite good in urban Meerut (79.6%).[18,20]The discrepancy may be may be the effect of the lower socio-economic conditions of the tribal people as compared to the urban dwellers and also the scarcity of food in the tea gardens which are at a higher altitude than the plains.

After computing the number of meals taken by the children of various age groups, the 'minimum meal frequency' was found to be 64.1%. This was more as compared to 43.4% in Meerut[19] but less than 67% in Delhi[18] and 95.6% as reported by Chandwaniet al.[24]

Bottle-feeding is bacteriologically dangerous to the infants and the use of feeding bottles only adds further to the risk of infection as they are difficult to clean properly. The International Code of Marketing of Breast milk Substitutes recommends that Governments enact legislation that will prohibit the advertising and all other forms of promotion of breast milk substitutes, feeding bottles and teats.[25]Among the 109 study children, only 16.5% have been bottle-fed. This value is less than 28.1% and almost one-fourth (of the total population) as seen in rural West Bengal by Das et.al[26] and Khan et al in Delhi[17] respectively. However, in the study by Sinhababu et al, 10.2% of the study children were bottle-fed.[17]

The proportion of age appropriate feeding practice denotes children aged 0-23 months who receive food according to age. In the present study, only 48 children (44%) received food appropriately according to their age. Appropriate feeding was more prominent in younger age i.e., less than 6 months. This can be explained by the fact that after 6 months of age, it becomes progressively more complex for breastfed infants to meet up their nutrient needs from human milk alone and this may not be possible to provide by these financially weaker families.

In our study, factors influencing the feeding practices were the mother's educational level and the employment of the mothers. The higher educated the mothers were, the more likely they were to practice correctly. Quite understandably, it was seen that the mothers who stayed at home and cared for their children were better in practising age appropriate feeding recommendations.

Income was found to be an important predictor of feeding as children belonging to families with per capita income of Rs. 1000 and above had a greater likelihood of having appropriate feeding practice. This can be explained by the fact that higher per capita income would translate into better accessibility to food.

In the present study, 45.9% of the children were found to be malnourished. The likelihood of malnutrition was found to be significantly more in children with age appropriate feeding practice. Globally, studies have establishedthat inappropriate feeding practices can have adverse consequences on growth, development, and survival of infants and children.[27,28]

Appropriate feeding during and after illness is important to avoid weight loss and nutrient deficiencies and the cycle of infection and malnutrition can be broken if appropriate feeding is ensured.[29] Though temporality could not be proven, it was found that children with inappropriate feeding had suffered from illness in the last 15 days. It can be explained by the prevalent practice of giving less food to the sick infant.

Conclusion:

Optimum infant and child feeding practices have a colossal impact on the country's social and economic status as the child population forms the backbone of any nation's future. Amidst the various ethnic and cultural communities, the tribal population studied had quite poor feeding practices which are aggravated by the scarcity of basic amenities and social problems like illiteracy, poverty etc. The feeding practices can be improved to a great extent by extensive IEC efforts and proper education of mothers during their ante-natal visits. It should be remembered that the dissemination of proper knowledge to the mothers and family members can play an enormous role in improving the present feeding practices.

References:

1. Infant and Young Child Feeding [Internet]. Available from:http://www.unicef.org/nutrition/index_breastfeeding.html [Last accessed on July 30, 2016]
2. WHO. Global strategy for infant and young child feeding, the optimal duration of exclusive breastfeeding; 2001.
3. Black RE, Allen LH, Bhutta ZA, Caufield LE, de Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. *The lancet* 2008; 371(9608): 243-260.
4. Jones G, Skeketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year? *The Lancet* 2003; 362(9377): 65-71
5. Edmond KM, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR. Delayed breastfeeding initiation increases risk of neonatal mortality. *Pediatrics* 2006; 117(3): e380-e386.
6. WHO. The WHO Global Data Bank on Infant and Young Child Feeding. Available at: http://www.who.int/nutrition/databases/infantfeeding/countries/en/index.html[Last accessed on July 30, 2016]
7. 2013 Lancet Series (on nutrition) Launch and Roundtable Meeting [Internet] 2013, August 29.Available from: http://scalingupnutrition.org/wp-content/uploads/2013/09/06-Nigeria-Lancet-Full-Summary.pdf[Last accessed on July 30, 2016]
8. Tribal profile at a glance. May 2013. Data available from:http://tribal.nic.in/WriteReadData/CMS/Documents/20130606100114 6927823STProfileataGlance.pdf[Last accessed on July 30, 2016]
9. International Institute for Population Sciences (IIPS), 2010. District Level Household and Facility Survey (DLHS-3), 2007-08: India: India: Key Indicators: States and Districts. Mumbai: IIPS. Available from: http://213.175.223.95/dmdocuments/DLHS_3_Key_indicators_by_ states.pdf] [Last accessed on23rd August 2013].
10. World Health Organization . Indicators for assessing infant and young child feeding practices: conclusion of a consensus meeting, held on 6–8 November 2007 in Washington, DC, USA. Geneva: World Health Organization; 2008. p. 19.
11. National Guide on Infant and Young Child Feeding. Ministry of human resource development department of women and child development (Food and Nutrition Board) Government of India; 2004
12. Mullany LC, Katz J, Li YM, et al. Breast-Feeding Patterns, Time to Initiation, and Mortality Risk

among Newborns in Southern Nepal,. *The Journal of nutrition*. 2008;138(3):599-603.International Institute for Population Sciences. National family health survey (NFHS-3), 2005-06:India.V.I. Mumbai: International Institute for Population Sciences; 2007. 540 p.

13. International Institute for Population Sciences (IIPS), 2016. District Level Household and Facility Survey (DLHS-4), 2012-13: India. West Bengal: Mumbai: IIPS. Available at: http://rchiips.org/pdf/dlhs4/report/WB.pdf. [Last accessed on July 30, 2016].

14. International Institute for Population Sciences (IIPS), 2016. District Level Household and Facility Survey (DLHS-4), 2012-13: India. West Bengal: Mumbai: IIPS. Available at: http://rchiips.org/pdf/dlhs4/report/WB.pdf. [Last accessed on July 30, 2016]

15. Khan AM, Kayina P, Agarwal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. *Indian journal of public health* 2012; 56(4): 301.

16. Sinhababu A, Mukhopadhyay DK, Panja TK, Saren AB, Mandal NK, Biswas AB. Infant and young child-feeding practices in Bankura district, West Bengal, India. *Journal of health, population, and nutrition* 2010; 28(3): 294.

17. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *The Lancet* 2003; 361(9376): 2226-2234.

18. Taneja DK, Saha R, Dabas P, Gautam VP, Tripathy Y, Mehra M. A study of infant feeding practices and the underlying factors in a rural area of Delhi. *Indian Journal of community medicine* 2003; 28(3): 107.

19. Singhal P, Garg SK, Chopra H, Jain S, Bajpai SK, Kumar A. Status of Infant and Young Child Feeding Practices With Special Emphasis on Breast Feeding in an Urban Area of Meerut.Available from: http://iosrjournals.org/iosr-jdms/papers/Vol7-issue4/B0740711.pdf[Last accessed on July 30, 2016]

20. SBK Research and Development.Infant and Young Child Feeding Practices in selected provinces of the kingdom of Cambodia. Ministry of Health; 2006 April 17.

21. Mondal TK, Sarkar AP, Shivam S, Thakur RP. Assessment of infant and young child feeding practice among tribal women in Bhatar block of Burdwan district in West Bengal, India. Int J Med Sci Public Health 2014;3:324-326.

22. Patro S, Nanda S, Sahu R. Infant Feeding Practices of Paroja: A Tribal Community of Orissa. Stud Home Com Sci. 2012;6(1):21-25.

23. Planning Commission. Report of the Working Group on Nutrition for the 12th Five Year Plan (2012-17). *New Delhi* ; 2012.

24. Dakshayani B, Gangadhar MR. Breast Feeding Practices among the Hakkipikkis: A Tribal Population of Mysore District, Karnataka. Ethno-Med. 2008, 2(2): 127-129.

25. Chandwani H, Prajapati A, Rana B, Sonaliya K. Assessment of infant and young child feeding practices with special emphasis on IYCF indicators in a field practice area of Rural Health Training Centre at Dabhoda, Gujarat, India. Int J Med Sci Public Health 2015;4:1414-9

26. Infant and Young Child Feeding Programming guide. New York: Nutrition section UNICEF; 2011 May. 173p.Available from: www.unicef.org/nutrition/files/Final_IYCF_programming_guide_2011.pdf [Last accessed on July 30, 2016]

27. Das N, Chattopadhyay D, Chakraborty S, Dasgupta A. Infant and young child feeding perceptions and practices among mothers in a rural area of West Bengal,

India. *Annals of medical and health sciences research* 2013; 3(3): 370-375.

28. Saha KK, Frongillo EA, Alam DS, Ariffen SE, Persson LA, Rasmussen KM. Appropriate infant feeding practices result in better growth of infants and young children in rural Bangladesh. Am J ClinNutr 2008;87:1852-9.

29. Hop LT, Gross R, Giay T, Sastroamidjojo S, Schultink W, Lang NT. Premature complementary feeding is associated with poorer growth in Vietnamese children. J Nutr 2000;130:2683-90

30. National Guide on Infant and Young Child Feeding. Ministry of human resource development department of women and child development (Food and Nutrition Board) Government of India; 2004