International Journal of Contemporary Pediatrics
Reddy R et al. Int J Contemp Pediatr. 2016 Nov;3(4):1244-1248
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291
DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20163154

Original Research Article

Infant and young child feeding practices: a cross sectional study in Sikkim

Ravichandra Reddy, Gangaraj Subba*, Sudip Dutta

Department of Pediatrics, SMIMS, Gangtok, Sikkim, India

Received: 25 July 2016
Accepted: 28 August 2016

***Correspondence:**
Dr. Gangaraj Subba,
E-mail: raj_subba82@rediffmail.com

ABSTRACT

Background: Positive parental attitudes towards infant feeding are an important component in child nutritional health. The nutritional well-being of a population is both an outcome and an indicator of national development. Nutrition is therefore, an issue of survival, health and development for current and succeeding generations. The purpose of the study was to assess the breast feeding & complementary feeding practices in children between the age group of 6 months-5 years, to determine the nutritional status of children less than 5 years.
Methods: Children between 6 months-5 years who fulfilled the inclusion criteria's were studied and analysed.
Results: 98.0% of the children has received breast fed and 72.5% of cases received exclusive breastfed till 6 months of age. 72.5% of children received complementary feed at 6 months of age appropriately but formula feed was seen in 99.0%. 46.0% of mother used bottle for feeding although literacy among 90.0% of mothers seen.
Conclusions: This study has shown that existence of using bottle for feeding although the most of their mothers were educated with high breastfed rate.

Keywords: Infant and young child feeding, Nutritional status, Sikkim

INTRODUCTION

Positive parental attitudes towards infant feeding are an important component in child nutritional health. The special supplemental women, infants and children (WIC) Program have lower breastfeeding rates and attitudes that do not contribute towards healthy infant feeding in spite of breastfeeding and nutrition education programs targeting WIC participants.[1] Every time an innocent child suffers the curse of malnutrition; the responsibility goes to the mother, the family and to the community due to their faulty or no knowledge regarding the harmful effects of pre-lacteal feeding, benefits of exclusive breast feeding and initiation of proper weaning at the correct time.[2]

Therefore, the present study has been carried out to detect nutritional status among infants and children attending a tertiary level hospital, Gangtok. An attempt is made to unveil certain important aspects of the nutritional status with respect to effect of breast feeding, complementary, and dietary practices. The nutritional status of a community is the sum of the nutritional status of the individuals who form that community.

METHODS

This is a descriptive cross sectional observational study carried out in Central Referral Hospital, SMIMS, Gangtok, Sikkim on 2013-2014 among the 6 months to 5 years of age groups children attending under 5 clinics. Those children who were sick, with gross congenital malformation, history of preterm delivered or with birth weight <1800 grams, known cases of growth and developmental delays, or with chronic diseases were excluded. There were 200 children who were involved in this study whose parents or guardian had willingness to participate and their written consents were taken. The

mothers of these children were interviewed and bio-data of children, immunization, socioeconomic and demographic profiles, breast feeding practices, complementary feeding practices done for those children are recorded. Children who received breast milk from his/her mother, wet nurse, expressed breast milk, nothing else except drops/syrups containing minerals, vitamins or medicines for 6 months are considered as exclusively breast fed. Anthropometrics data of the children were collected. The Z-score or standard deviation score (SDS) charts prepared by WHO is used for evaluating anthropometrics data, so as to accurately classify the individuals with indices below the extreme percentiles. A score of -2SD to -3 SD were indicated as moderate wasting and <-3 SD as severe for weight for height indices. A score of -2 SD to-3 SD as moderate stunting and <-3SD as severe stunting for height for age indices respectively. All the data were entered into excel and appropriately analyzed.

RESULTS

Table 1: Socio-demographic profile (n=200).

Ages	No. of cases	Percentage
6-12 months	60	30.0%
13-24 months	83	41.5%
25-36 months	27	13.5%
37-60 months	30	15.0%
Sex		
Male	91	41.5%
Female	109	54.5%
Birth order		
1st	136	68.0%
2nd	51	25.5%
3rd	07	03.5%
4th & above	06	03.0%
Birth weight		
<2 kgs	02	01.0%
2-<2.5 kgs	28	14.0%
2.5-4 kgs	168	84.0%
>4 kgs	02	01.0%
Siblings		
No siblings	129	64.5%
1-2	63	31.5%
3-5	08	04.04%
Family		
Nuclear	158	78.0%
joints	42	21.0%
Literacy		
Illiterate	20	10.0%
Literate	180	90.0%
Immunization status		
Yes	200	100.0%

In this study, 41.5% and 30.0% of the children were in age group of 13-24 months and 6-12 months respectively. 54.5% were female and 64.5% majority were lone child of the family. 68.0% were 1st child. 84.0% children had birth weight were between 2.5-4 kgs at birth. As far as immunization is concerned, it was 100 % immunized as per National immunization schedule till their age. Majority of the mothers were literate 90.0% and 78.0% were in nuclear family.

Table 2 shows that 98.0% of the children received breastfeed and exclusive breast feeding till 6 months of age were 72.5%. Regarding the time of initiation of breast feeding majority 61.2% received soon within 1 hours of birth and fair numbers of children 34.0% and 48.0% received breast fed for 13-18 months and 19-24 months of their ages respectively.

Table 2: Breast feeding status (n=200).

Breast feeding	No of cases	Percentage
Yes	196	98.0%
No	04	02.0%
Exclusive breast feeding till 6months		
Yes	145	72.5%
No	55	27.5%
Time of initiation of breast feeding		
Within 1st hour	120	61.2%
1-4 hours	26	13.3%
4-24 hours	22	11.2%
>24 Hours	28	14.3%
Duration of breast feeding		
Upto 6 months	04	02.0%
7-12 months	10	05.5%
13-18 months	68	34.0%
19-24 months	96	48.0%

Table 3: Complementary feeding practices (n=200).

Complementary feed	No of cases	Percentage
Initiation time		
Before 6 months	55	27.5%
6 months onwards	145	72.5%
Formula milk		
Yes	198	99%
No	02	01.0%
Bottle feeding		
Yes	92	46.0%
No	108	54.0%
Types of feed		
Rice	135	67.5%
Dal	62	31.0%
Vegetables	20	10.0%
Fruits	79	39.5%
Khole/khicheri	124	62%
Champa	26	13.0%
Ots/biscuits	22	11.0%

The 27.5% of the children had early initiation of complementary feed that is before 6 months of age and remaining majority at appropriate age. The introduction of rice and dal as complementary feed were in 67.5% and 31.0% respectively. The introduction of traditional feed such as khole/khchidi and champa were seen among 61.0% and 13.0% of children respectively. The use of formula feed was found in 99.0% during infancy and 46.0% of the children received bottle feeding also.

As far as the nutritional status of these children are concerned that 05.5% of children were moderately and severely wasted but 10% and 05.0% of the children were moderately and severely stunted.

Table 4: Nutritional status (n=200).

Wasting	Cases	Percentage
Severe	11	05.5%
Moderate	11	05.5%
Stunting		
Severe	10	05.0%
Moderate	20	10%

DISCUSSION

The present study is conducted with the objective of assessing the feeding practices and nutritional status of children in Sikkim. A total of 200 children were enrolled for the period of 6 months. In the present study, 45.5% of children were males and 54.5% were females. Majority (71.5%) of the children belonged to 6-24 months age group who are prone for malnutrition also. The result of which is inconsistent with the findings of Aggarwal et al., New Delhi where 60% were male and 40% female.[3] A study to assess the influence of infant feeding practices on nutritional status of under five children was done by Dinesh Kumar et al., where in 63% of study population were male and 36% were female which is also inconsistent with the findings of present study.[4] Low prevalence of malnutrition in the children of first and second order shows the fact that children born earlier get more attention and care and hence have better health.

In the present study most of the children belongs to birth order 1 which is 68% and 2nd order 25.5%. 64.5% of children were lone child of the family and 31.5% had 1-2 siblings.

In a study by Harishankar et al. showed prevalence of malnutrition increases with birth order i.e., 43.5% in birth order three where as 26.9% in birth order two and 20.38% in birth order one.[5] Likewise a study by Sandip Kumar Ray et al. observed 56.07% children with two or less number of siblings were malnourished on contrary to that 71.33% children were malnourished when number of siblings was three or more ($p<0.05$).[6] Low birth order may contribute to low state of malnutrition in these children in Sikkim.

As far as immunization is concerned, this study has shown 100 % immunized as per National immunization schedule till their age. Majority of the mothers were literate 90.0% and 78.0% were in nuclear family.

In our study that 98.0% of the children received breastfeed and exclusive breast feeding till 6 months of age were 72.5% though 78.0% were in nuclear family. This difference can be attributed to the good educational status in the above study, where 90% of the mothers were literate. This study has shown that there are increased frequencies as compared to previous studies.[3,4,7] According to the NFHS-3 data, exclusive breastfeeding from 0-6 months in rural areas is 47% and in urban areas it is 45%.[8]

Breastfeeding must be continued up to the age of two years or beyond. Continuing BF while giving adequate CF to the baby provides all the benefits of breastfeeding to the baby.[9]

This study has shown that fair numbers of children 34.0% and 48.0% received breast fed for 13-18 months and 19-24 months of their ages respectively. Banapurmath CR et al conducted a study to assess the breastfeeding practices in villages of central Karnataka, where the breastfeeding rate at 12 months was 97.1%, 93.2% at 18 months and 87.2% at 24 months.[7]

Awasthi et al, found that 85.1% of mothers at 12 moths, 72.4% at 18 months and 57.2% at the end of 24 months were breastfeeding their children whereas Gupta et al., found that 71.5% of mothers continued breastfeeding for 1 year or more which is inconsistent with the findings of the present study.[10,11]

Promotion of early initiation of breastfeeding has the potential to make a major contribution to the achievement of the child survival millennium development goal; 16% of neonatal deaths could be saved if all infants were breastfed from day 1 and 22% if breastfeeding started within the first hour.[12] It is important to breastfeed the child right after birth because the first breast milk (called colostrum) is highly nutritious and contains antibodies that help protect the new born child from diseases.[8]

The present study shows time of initiation of breast feeding within 1 hour of life was 61.2% and within 24 hours was 85.7%. Edmond et al in his study found that breastfeeding was initiated within the first day of birth in 71% of infants and by the end of day 3 in all but 1.3% of them.[12] In one study done by Luke C. Mullany, Joanne Katzet al.[13] The median time to breast-feed was 18.4 h and the mean was 22.7±22.1 h. Only 771 infants (3.4%) were breast-fed within the first hour after birth, but breast-feeding within the first 24 (56.6%) or first 48hrs (83.1%) was more common. Breast-feeding was established within 72 hours for 97.2% of breast-fed infants.[13]

In comparison to the above studies, the time of initiation of breast feeding during first day was very high. Most likely cause being majority of deliveries were institutional.

Adequate CF from after six months of age, while continuing breastfeeding is extremely important for sustaining growth and development of the infant. Complementary feeding should be initiated at '6 months' of age using foods that are available at home and acceptable to mothers, appropriate portion size of feeds, optimal meal frequency and food density and encouraging the child to eat.

In the present study, there was a no delay in the initiation of complementary feeding. 72.5% mothers had introduced complementary feeds after 6 months, but 27.5% mothers had started complementary feeding before 6 months of age. In contrast to the present study, a study conducted by Aggarwal et al., in Delhi where in 77% mothers delayed complementary feeding, 34.5% mothers having introduced complementary feeding between 7 mo-1 year, 26.5% mothers having introduced complementary feeding between 1-2 years and 16% of the mothers did not start complementary feeding even at 2 years.[3] A study conducted in the slums of Delhi, only 16.6% of children were given complementary feeds at the right time.[14] Knowledge of people was so high here regarding introduction of complementary feeding.

In the present study 67.5% of mother started giving rice porridge to their children while 62% received khole/ khichdi and 31% of mothers had introduced dal.

This differs from the study conducted by Manan WA to study infant feeding practices in rural and semi-urban communities, wherein 50% had introduced rice porridge+vegetables as complementary food, 47.8% had introduced rice porridge; and 38% of them had introduced cereals.[15]

The present study shows that the rate of bottle- feeding is high i.e., 46%. NHFS-3 data shows the incidence of bottle-feeding to be at 15%.[8] The high incidence of bottle feeding (46%) in this study was found in infants of educated mothers. This may be due to inadequate knowledge of the mothers regarding bottle feeding practices.

This study is similar to the study wherein the practice of bottle feeding was more frequently found in infants of high educated mothers (26%) as noted by Lukman.[16]

This study has also shown that 99% of children had received formula feed during infancy.

In the present study wasting is very low (11%) as compared to other studies. Study by Joseph et al revealed maximum of 60.4% children wasted followed by Rao et al. 32.9%, Subhal Das 21.5%, NFHS-3 20%, Md. Israt Reyhan 11.05% and lowest level of wasting 10.76% was observed by Ginjinder Kaurin Punjab.[17-20,22]

In this study stunting is 19.5% which is very low compared to most of the other studies. Studies by Rao et al. showed highest level of stunting 51.6% followed by NFHS-3 48%, Mittal et al 46.06%, Md. Israt Reyhan 45%, Joseph et al 38.6%, Subhal Das et al 37 %, Madhu B Singh 26% and minimum 11.42% was observed by Ginjinder kaur in Punjab.[17-23]

CONCLUSION

This study has shown that the breastfeeding rate is high in Sikkim as well as the majority of mothers are having appropriate knowledge regarding the complementary feed. Although the immunization schedule are strictly following, the disadvantages regarding bottle feeding need to be address in under five clinics. It is important for the parents to know that feeding a child is a gradual process, which needs continuous trial and support. Misconceptions hindering feeding practices can be overcome only by imparting proper information and knowledge to the parents. This is a cross sectional study without follow-up, so more studies need to be done from this region of India.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Wojcicki JM, Gugig R, Tran C, Kathiravan S, Holbrook K, Heyman MB. Early exclusive breast feeding and maternal attitudes towards infant feeding in a population of new mothers in San Francisco, California. Breastfeed Med. 2010;5(1):91.
2. Chatterjee S. A Study on knowledge and practice of mothers regarding infant feeding and nutritional status of under- five children attending immunisation clinic of a medical college the internet J Nutrit Wellness. 2008;5(1):1937-8297.
3. Aggarwal A, Verma S, Faridi MMA, Dayachand. Complementary feeding-reasons for inappropriateness in timing, quantity and consistency. Indian J Pediatr. 2008;75:49-53.
4. Kumar D, Goel NK, Mittal PC, Misra P. Influence of infant feeding practices on nutritional status of under five children. Indian J Pediatr. 2006;73(5):417-21.
5. Harishankar, Dwivedi S, Dabral SB, Walia DK. Nutritional status ofchildren under 6 years of age. Indian J Prev Soc Med. 2004;35(3-4):156-62.
6. Ray SK. Rapid Assessment of Nutritional Status and Dietary Pattern in Municipal Area. Indian J Comm Med. 2000-01-2000-03;25(1).

7. Banapurmath CR, Nagaraj MC, Banapurmath S, Kesaree N. Breast- feeding practices in villages of central Karnataka. Indian Pediatr. 1996;33:477-9.
8. National Family Health Survey (NFHS-3) India. 2005-2006.
9. National Guidelines on Infant and Young Child Feeding. Ministry of women and Child Development. Food and Nutrition Board. Government of India. 2006;1.
10. Awasthi NN, Kaushik A, Matur BD. Feeding and rearing practices in rural areas of Jhansi - Bundelkhand. Indian J Pediatr. 1983;50:33-7.
11. Gupta A, Sobti J, Rohde JE. Infant feeding practices among patients of paediatricians and general practitioners. Indian J Pediatr. 1992;59:193-6.
12. 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:e380-6.
13. Mullany LC, Katzet J. Breast-Feeding Patterns, Time to Initiation, and Mortality Risk among Newborns in Southern Nepal. 2008;138(3):599-603.
14. Sethi V, Kashyap S, Seth V. Effect of nutrition education of mothers on infant feeding practices. Indian J Pediatr. 2003;70,6:463-6.
15. Manan WA. Breastfeeding and infant feeding practices in selected rural and semi- urban communities in Kemaman, Terengganu. Mal J Nutr. 1995;1:51-61.
16. Lukman H, Kaswadharma KC, Lubis IZ, Manoeroeng SM, Lubis CP. Factors influencing the practice of bottle feeding in infants at the well-child clinic Dr. Pirngadi Hospital, Medan Pediatr Indones. 1991;31(3-4):75-8332.
17. Joseph B, Rebello A, Kullu P, Raj VD. Prevalence of malnutrition in rural karnataka, South India: a comparison of anthropometric indicators. J health Popul Nutr. 2002;20(3):239-44.
18. Rao S, Joshi SB, Kelkar RS. Changes in nutritional status and morbidity over time among preschool children from slums in Pune, India. Indian Pediatr. 2000;37:1060-71.
19. Das S, Bose K. Under nutrition among Bauri Pre-School Children of Nituria Block, Purulia District, West Bengal, India. J Life Sci. 2009;1(2):85-9.
20. Reyhan I. Factors causing malnutrition among underfive children in Bangladesh Pakistan Journal Of Nutrition. 2006;5(6):558-62.
21. Singh MB, Lakshminarayana J, Fotedar R, Anand PK. Childhood illness and malnutrition in under five children in drought affected desert area of Rajasthan, India. Journal of Comm. Disease. 2006;38(1):88-96.
22. Kaur G, Kang HS, Singal P, Singh SP. Nutritional Status: Anthropometric Perspective of Pre-School Children. Anthropologist. 2005;7(2):99-103.
23. Mittal A, Singh J, Ahluwalia SK. Effect of Maternal Factors on nutritional status of 1-5 year old Children in Urban slum population. Indian J Comm Med. 2007;32(4):264-7.

Cite this article as: Reddy R, Subba G, Dutta S. Infant and young child feeding practices: a cross sectional study in Sikkim. Int J Contemp Pediatr 2016;3:1244-8.