

ASSESSMENT OF INFANT AND YOUNG CHILD FEEDING PRACTICES AMONG UNDER-3 YEARS CHILDREN IN URBAN SLUMS OF HUBBALLI CITY

Anjana P¹, Dattatreya D Bant²

ARTICLE INFO

Received: 28th May 2015

Revised: 20th Jul 2015

Accepted: 29th Jul 2015

Authors details: ¹Postgraduate Student, Department of Community Medicine, Karnataka Institute of Medical Sciences, Hubballi, Karnataka

²Professor of Department of Community Medicine & Director of Karnataka Institute of Medical Sciences, Hubballi, Karnataka

Corresponding author: Anjana P¹ Postgraduate Student, Department of Community Medicine, Karnataka Institute of Medical Sciences, Hubballi, Karnataka

Email: anjanagraju@gmail.com

Keywords: Exclusive breastfeeding, Underweight, Urban slum, Dietary diversity, Meal frequency

ABSTRACT

Background: Malnutrition is a serious public health problem affecting the growth and development of children which have detrimental effect in later adolescent and adult life. Although Malnutrition is multifaceted problem, Infant and young child feeding practices by mothers is crucial for optimum growth and development of the children **Objectives:** 1) To Assess the Infant and Young child feeding practices followed by the Mothers. 2) To study the influence of feeding practices on weight of Under 3 years children. **Methodology:** Cross-sectional study conducted in an urban slum of Hubli. 110 mother-child pairs recruited, where the child was between 7 months to 3 years of age. Employed a pre-structured questionnaire as tool and Child's Anthropometry done. Data presented as percentages and proportions. Chi square test is applied to test association between Feeding practices and underweight, P value less than 0.05 considered as significant. **Results:** 22.7 % mothers had Breast fed within recommended time following delivery, prelacteal feeding practices observed in 47.3 % and 37.3% followed Exclusively Breast Feeding. However Timely Initiation of complementary foods was seen only in 34.5%. Breast feeding continued in 47.3 % beyond 6 months. 53.6 % & 86.4% didn't satisfy the Minimum meal frequency and dietary diversity respectively. 50.9% of children were Normal, 49.09% were Underweight. **Conclusions:** Nearly 50% of the children under this study were underweight. Mothers who had not Exclusively Breast fed for 6 months, not continued Breast feeding beyond 6 months and inadequate meal frequency of the child were significantly associated with underweight of the children.

INTRODUCTION

The nutritional status of children in the community is alarming. Prevalence of stunting and wasting in children aged less than 3 years is 44.9 % and 22.9 % respectively [1]. Nutritional status of children is an indicator of nutritional profile of the entire community. Studies conducted worldwide show that 150 million (26.6%) are underweight, while 182 million (32.5%) are stunted all over the world. More than half of the world's undernourished people live in India [2]. Adequate Nutrition is critical to child and its development. The period from birth to two years of age is particularly important because of the rapid growth and brain development that occurs during this time. This period is often marked by growth faltering, micronutrient deficiencies, and common childhood illnesses such as diarrhoea, as transition of diet of children from exclusive breastfeeding to solid foods in addition to breast milk [3]. The urban population is rapidly expanding because of large scale migration to cities for a possible better life. As a result, urban poverty and hunger are increasing in many developing countries. It is projected that more than half of the Indian population will live in urban areas by 2020 and nearly one third of this urban population will be of slum dwellers. The ongoing process of rapid urbanization has deleterious

repercussions on health and nutrition especially for children [4]. Infant and young child feeding practices are an important determinant of nutritional status. Infant and young child feeding practices is a set of well known and common recommendations for appropriate feeding of newborn and children less than 2 years of age [5].

As a global health policy for both developing and developed countries, WHO recommends exclusive breastfeeding for six months, followed by a combination of continued breastfeeding and safe, appropriate and adequate feeding with other foods [6]. Adequate nutrition during infancy and early childhood is critical to the development of children's full human potential [7]. According to the NFHS 3 report of Karnataka, 33% of the under three children are underweight [8]. Malnutrition is a threat to the Child's survival and development as well as social, economic development of family state and Nation at large. Although malnutrition is a multifaceted problem, Infant and Child feeding Practices hold a crucial place in the child's growth and development. The World Health Organization and UNICEF have developed the Global Strategy for Infant and Young Child Feeding which recognizes appropriate infant feeding practices to be crucial for improving nutrition status and decreasing

infant morbidity and mortality in all countries. The diets and nutritional status of Urban Slum children in India is far from satisfactory, being worse among all urban groups and is even poorer than rural average [4]. Therefore this study was undertaken to assess IYCF Practices followed by mothers and its influence on the weight of the children in Urban slums of Hubli with the objectives of Assessing the Infant and Young child feeding practices followed by the Mothers and influence of feeding practices on weight of Under 3 years children.

MATERIALS AND METHODOLOGY

Study design: It was a Cross-sectional community based study.

Place of research: Study was conducted in an Urban Field Practice Area of Department of Community Medicine KIMS Hubballi which is an urban slum.

Ethical approval: Clearance obtained for the study from Institutional Ethics committee KIMS Hubballi. An Informed consent was taken from mothers who were willing to participate in this study.

Study period: Conducted between August to September 2014.

Inclusion criteria: Children between the age group of 7 months to 3 years with their mothers residing in Urban Slum of Old Hubballi were selected.

Exclusion criteria: The children with congenital anomalies or metabolic diseases affecting growth were excluded and those mothers of children who did not consent to participate in the study and who were not available for interviewing after attempting twice to meet them were not included in the study.

Sample size: Considering the Prevalence of Under 3 children in Karnataka as 33 % according to NFHS 3, and taking 9% as margin of error at 95% confidence interval, the sample size calculated by using the formula $n = 4pq / l^2$, works out to be 109.18 approximated to 110. Out of 4 wards coming under Urban Health Training Center, ward No 42 was randomly selected. The total population of children between 6 months to 3 years residing in this area covered by 3 Anganwadis of Ward no.42 is 239. 34, 41, 35 children were proportionately selected from each Anganwadi list and mother and child visited at their homes.

Methodology

A Pre structured questionnaire was used to interview the mothers regarding the socio-demographic and Child feeding practices.

IYCF include following optimal IYCF Practices,

- Early Initiation of Breast feeding , immediately after birth, preferably within one hour.
- Exclusive Breast Feeding for first 6 months of life i.e., 180 days (no other foods or fluids ,not even water ,but allows infant to receive ORS, drops, syrups of vitamins, minerals and medicines when required.
- Timely Introduction of complementary foods (Solid, Semisolid or soft foods) after the age of Six months i.e., 180 days.
- Continued Breastfeeding for 2 years or beyond

- Age appropriate complementary feeding for children 6-23 months, while continuing breastfeeding. Children should receive foods from 4 or More food groups.

Grams, roots and tubers, legumes and nuts, Dairy products, Flesh foods (Meat, Fish, Poultry), Eggs, Vit A rich fruits and vegetables, Other fruits and vegetables and fed for minimum number of times (2 times for Breast fed Infants 6-8 months,3 times for breast fed children 9-23 months,4 times for non breast fed children 6-23 months.

- Active Feeding for children during and after illness [5]

The children were weighed using the salter harris weighing scales available at Anganwadi nearest to 0.5 kg. Before weighing the child it was ensured that there was minimal and light clothing of the child. The Underweight is expressed in standard deviation units (Z scores) calculated Using WHO Anthro software v 3.2.2 2011 [9] . Underweight (mixed acute and chronic malnutrition) is defined as weight for age Z-score (WAZ) of $< -2SD$. Severe underweight is considered if WAZ is $< -3SD$ [10].

Statistical analysis: The data was analysed using MS-Excel 2007 and SPSS version 20. Chi square test was used to assess the association between the feeding practices and underweight of the children. Results with P value < 0.05 was considered as Significant

RESULTS

The Mean Age of the children was 18 ± 7.5 months. Among the selected children, 42.7% were males and 57.3 % were females. The distribution of population according to Standard of living Index is that 69% belonged to moderate and 27% are belonged to Low category. The Literacy status among Mothers of the children enrolled for the study was 68.2%.The Z scores calculated for Weight for Age for overall sample showed 49.1% as underweight. In this, 31.81% belonged to moderately underweight and 17.27% were severely underweight. Age wise distribution showed 11.81 % were moderately and 7.27 % were severely underweight respectively between 7 -12 months and 10.9 % and 5.45 % were moderately and severely underweight between 13 -24 months. In the age group of 25 -36 months, 9.09 % and 4.54 % were moderately and severely Underweight respectively. Exclusively Breast Feeding for 6 months was seen only in 37.3% of the study sample, in which 45 % were females and 55% were males. The history of illness in the past 1 month was found in 69.1%, out of which ARI accounted for 40.9% and diarrhoea constituted 27.3%. The children who were not exclusively breast fed for 6 months, discontinuation of Breast feeding beyond 6 months and inadequate meal frequency of the child were found statistically significant with the underweight of the children.

Table: 1. Socio-Demographic profile of Study Subjects

Socio-Demographic profile			
Variable		Frequency (N = 110)	(%)
Sex	Male	7	42.7
	Female	63	57.3
Religion	Hindu	43	39.1
	Muslim	67	60.9
SES	Class 2	1	0.9
	Class 3	33	30.0
	Class 4	55	50.0
	Class 5	21	19.1
Mothers Education	Illiterate	35	31.8
	Literate	75	68.2
Type of Family	Nuclear	27	24.5
	Joint	66	60.0
	3 generation	17	15.5

Table 2: showing the percentage of practices of age appropriate feeding by mothers in their children

Age appropriate child feeding practices		
Practices	Yes	No
Breast Feeding within 1 hour of Birth	25 (22.7)	85(77.3)
Prelacteal Feeds given after Birth	52 (47.3)	58 (52.7)
Exclusive Breast Feeding of child for 6 months	41 (37.3)	69 (62.7)
Timely Initiation of Complementary Feeding	38 (34.5)	72 (65.5)
Is Breast Feeding continued for Child beyond 6 months	52 (47.3)	58 (52.7)
Adequate Meal Frequency of child in past 24 hours	51 (46.4)	59 (53.6)
Adequate Dietary Diversity of the Child	15 (13.6)	95 (86.4)

*Numbers in the parentheses indicates percentages

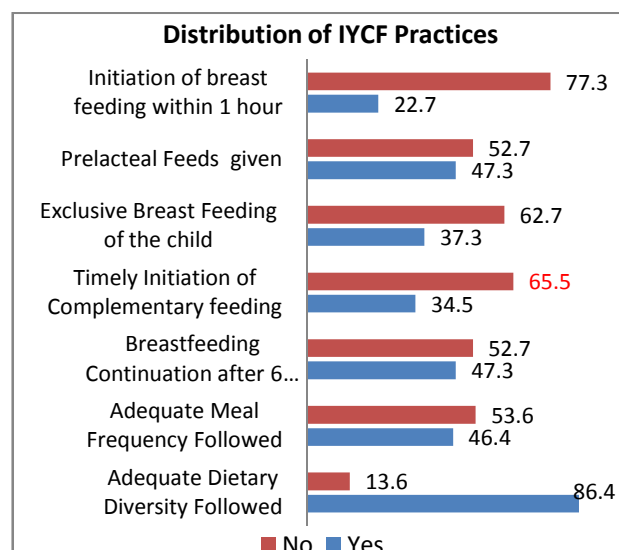


Fig 1: Depicting the distribution of Infant & young child feeding Practices in percentages followed by mothers for their children

Table: 3. showing association of feeding practices with underweight of children

Association of feeding practices with underweight of children			P value *
Nutritional Status	Initiation of BF within 1 hour of Birth		0.136
		Yes	
Normal	16	40	
Underweight	09	45	
Pre-lacteal Feeds given after birth			0.840
	Yes	No	
Normal	27	29	
Underweight	25	29	
Exclusive Breast Feeding of the child for 6 months			0.0049*
	Yes	No	
Normal	28	28	
Underweight	13	41	
Timely Initiation of complementary Feeding			0.06
	Yes	No	
Normal	24	32	
Underweight	14	40	
Breast Feeding continuation after 6 Months			0.034*
	Yes	No	
Normal	32	4	
Underweight	20	34	
Meal Frequency of the child in past 24 hours			0.05*
	Adequate	Inadequate	
Normal	31	25	
Underweight	20	3	
Dietary diversity of the child			0.44
	Adequate	Inadequate	
Normal	9	47	
Underweight	6	48	

*p value < 0.05 is considered significant

DISCUSSION

In the present study, the administration of prelacteal feeds was 47.3% which was slightly less than the study done by Shrivanan Udhyar et al^[7], where it was 60.3%. Similarly the Practice of Exclusive Breast feeding was seen only in 36.3% of the mothers in this study which is similar to that seen in Shrivanan Udhyar study, which is 30%. However in A.Khokhar et al study^[11], only 20% were exclusively breastfed. According to Amir Maroof Khan et al., study^[12], 37.2% of the children were put to breast within 1 hour of birth, whereas in our study it was only 22.7%, which is even lesser than data from NFHS 3 report of Karnataka, where 35.6% had initiated breastfeeding within 1 hour^[8]. 77.3% of the mothers did not initiate Breast feeding within 1 hour of birth which is higher than that observed in a study by Das N et al^[13] which was 65.8%. The Minimum meal frequency was

adequately followed in only 48.6% in a study by Amir Maroof Khan et al^[12] which is almost similar to that found in our study accounting to 46.4 % . In the same study by Amir Maroof Khan et al^[12], 67.4% were not adequately following dietary diversity which is lower than our study where in 86.4% failed to follow adequate Dietary diversity. NFHS-3^[8] finds that only 44% of breastfed children are fed at least the minimum number of times recommended and only half of them also consume food from three or more food groups. In the present study also 36.5% are Exclusively Breastfed and more than half did not consume adequate number of food groups which is recommended. Likewise continued Breast feeding in children beyond 1 year was seen in 72.1% in Amir Maroof Khan et al^[12], study whereas in our study it was only 47.3%. Child undernutrition is internationally recognized as an important public health indicator, for monitoring nutritional status and health in populations^[14]. The prevalence of Underweight in our study was 49.1% which is slightly higher than the prevalence according to NFHS 3 Karnataka data which is 40%. In a study conducted by Mukhopadhyay et al^[15] 43.7% households belong to Medium SLI category whereas in our study Medium SLI amounted to 62.7% higher than Low and High SLI category. In our study, Children who were not exclusively breast Fed, Discontinued Breastfeeding beyond 6 months were found significantly associated with underweight of the children which is similar to the study by Muchina EN and PM Waithaka^[16] where children who had not been Exclusively Breastfed for 6 months were more than twice as likely to be underweight than those who did Exclusively Breast fed and significant association was seen between continuing Breast feeding and underweight. There has been no significant association seen between the exclusively Breastfeeding and occurrence of acute respiratory tract infections and diarrhoea which is in contrast to study by Seema Mirshahi et al^[17] in Chittagong, Bangladesh, where in partially breastfed infants had a higher incidence of acute respiratory infection and diarrheal infection when compared to exclusively breastfed infants and that difference was found to be statistically significant.

CONCLUSION

The Infant and Young child feeding practices in this study area were not satisfactory. Nearly half of the children were underweight which can be attributed to the poor IYCF practices. Although there have been numerous efforts to improve the Mother and Child health by the state as well as central through plenty of national programs, yet persists the problem of malnutrition and inadequate child feeding practices.

As the present study was cross-sectional, temporal association cannot be found out. Hence there is a need for large community based prospective study in this area to determine the benefits of adequate IYCF practices and health and nutrition education measures in improving the nutritional status of children.

Acknowledgement: I extend my gratitude to all the staff of Community medicine Department, KIMS Hubballi for helping and supporting me in one or the way throughout

the study. I thank the Anganwadi workers for their help and the mothers of the children who actively participated and co-operated with us.

Conflicts of Interest: Nil

REFERENCES

1. Sreedhara MS and CR Banapurmath. A study of nutritional status of infants in relation to their feeding practices. *Curr Pediatr Res* 2013;18(1): 39-41
2. 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 Community Med* 2007;32:264-7
3. Mukuria AG, Kothari MT, Abderrahim N. Infant and Young Child Feeding Updates. Calverton, Maryland, USA:ORCMacro;2006. Available from: <http://www.measuredhs.com/pubs/pdf/NUT1/NUT1.pdf>. Last accessed on 25th April 2015.
4. Ghosh S , Shah D. Nutritional problems in urban slums children. *Indian Paediatrics* 2004;41(7): 682-96
5. Government of India . Guidelines for Enhancing optimal infant and young child feeding practices. Ministry of Health and Family welfare: 2013, p. 1-70.
6. WHO/PAHO .Guiding principles for complementary feeding of the breastfed child. Washington, DC: Pan American Health organisation ; 2003.p.1-37
7. Dr.Shravanan Udayar C, Dr. Angadi M , Dr. Rekha Udgiri, Dr. Santhosh Patil D. A community based study of Infant and Young child feeding practices in a rural area of Karnataka. *Journal of Evolution of Medical and dental sciences* 2012;1(3): 231-6
8. National Family Health Survey (NFHS-3), 2005-2006 : India: Vol.1.Mumbai : International Institute for Population Sciences (IIPS) and Macro International ; 2007.
9. WHO Anthro for personal computers version 3.2.2,2011: software for assessing growth and development of the worlds children,WHO2010(<http://www.whowho.int/child/growth/software/en>).
10. Sudarsan Mandal , Ram Prabhakar V , Jayita Pal, R Parthasarathi , Rahul Biswas. An assessment of nutritional status of children aged 0-14 years in a slum area of Kolkata. *Int J Med Public Health* 2014;4:159-62
11. A Khokhar , S Singh , R Talwar ,SK Rasania, SR Badhan, M Mehra.A study of malnutrition among children aged 6 months to 2 years from a resettlement colony of Delhi. *Indian J Med Sci* 2003;57(7):286-9
12. Amit Maroof Khan, Pricilla Kayina , Paras agarwal , Anita Gupta,Anjali Tupil Kannan. A study on Infant and young child feeding practices among Infant and young Child feeding practices among mothers attending an urban Health center in East Delhi. *Indian J Public Health* 2012;56(4):301-4
13. 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. *Ann Med Health Sci Res* 2013;3(3):370-5

14. Anjali B Dhone , Uday B Chitnis , Jitendra S Bhaawlkar , Sudhir L Jadhav . Epidemiological study of undernutrition among under five years children in an urban slum. Med J DY Patil Univ 2012;5(2):110-3
15. Dipta K Mukhopadhyay , Apurba Sinhababu,Asit B Saren , Akhil B Biswas.Association of Child feeding practices with Nutritional status of Under two slum dwelling children-A community based study from West Bengal, India. Indian J Public Health 2013;57(3):169-172
16. Muchina EN and PM Waithaka.Relationship between Breastfeeding practices and nutritional status of children aged 0-24 months in Nairobi Kenya. African Journal of Food, agriculture nutrition and development 2010;10:2358-2378
17. Mihrshahi s, Ichikawa N , Shuaib M, Oddy W, Ampon R , Dibley MJ , Kabir AK , Peat JK. Prevalence of Exclusive Breast Feeding in Bangladesh and its association with diarrhoea and acute respiratory infection. Results of the Multiple Indicator Cluster Survey 2003 J Health Popul Nutr.2007; 25(2)195-204