

Feeding Practices and Nutritional Status of Children under Five Years Attending at Selected Child Welfare Centre, Dhaka Cantonment

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Abstract

Introduction: Malnutrition is one of the catastrophes on human life and a major public health problem. Children below five years of age are at-risk population and hence malnutrition is the leading cause for morbidity and mortality among them. Feeding practices play a pivotal role in determining the nutritional status of Children.

Objectives: To find the nutritional status of under-five children and to assess whether infant feeding practices are correlated with nutritional status.

Materials and Methods: This cross-sectional study was carried out from 01 March to 30 June 2012 among 110 conveniently and randomly selected children and their mothers as respondents attending selected child welfare centre (CWC) of Dhaka Cantonment. An electronic weighing scale, a standard height scale and a predesigned structured questionnaire were used. All data were analyzed by SPSS. Association was assessed with Chi square test. The prevalence of malnutrition was assessed by different indices of nutritional status based on Weight for Age Z-score (WAZ), Height for Age Z-score (HAZ) and Weight for Height Z -Score (WHZ).

Results: Mean age of study population was 31.3±16 months. Out of total 110 mothers as respondents 62 (56.4%) mothers fed their child colostrum. Majority of the mothers (81.7.0%) exclusively breastfed their child. Most of the mothers (59.1%) did not provide proper complementary feeding and 37.3% mother fed their child pre lacteal feeding. Total underweight children were 32 (29%), total stunted children were 44(40.0%) and total wasted children were 26(23.6%). The prevalence of Stunting was higher among children who had not exclusively breastfed. This study showed that the relationship of pre-lacteal feeding and complementary feeding with WAZ, HAZ and WAZ were statistically significant.

Conclusion: This study might serve as an initiative to identify the influences of feeding practices on children's nutritional status to promote and protect the optimal feeding practices for improving nutritional status of children under five years.

Key-words: Feeding practice, Exclusive breast feeding, Nutritional status, Wasting, Stunting, Underweight.

Introduction

Child welfare, especially child health, continues to be one of the core issues of development and therefore has featured prominently in the Millennium Development Goals (MDGs) and its successor, the Sustainable Development Goals (SDGs). Good nutrition is an essential factor in children wellbeing. Nutrition of pre-school children (0-5 year's age group) is of paramount importance because the foundation for lifetime health, growth and development, strength and intellectual vitality, a strong immune system, neurological and cognitive development all are laid during this period. Nutritional status of children is one of the major predictors of child survival¹.

Malnutrition is one of the catastrophes on human life and a major public health problem in most of the developing countries. It has been recognized by UNICEF (2010) as one of the major causes of morbidity and mortality among the children less than five years². Poor nutrition among children manifests itself in underweight, stunting, and wasting leading to lifelong complications. Stunting, a sign of chronic under nutrition, about one in four children less than 5 years old are globally stunted (26% in 2010)². About 90% of the developing world's chronically undernourished (stunted) children are living in Asia and Africa and the highest prevalence of wasting is in South Asia, where approximately one in six children (16%) are moderately or severely wasted³. Globally undernutrition contributes to nearly half of all death in children under five³.

Children under five years are more vulnerable and susceptible partly due to their feeding practices and habits. Nutritional status of children under age five is highly influenced by feeding practices. To assess feeding practice precisely and to compare within and across nations, UNICEF (2011) recommends using eight infant and young child feeding (IYCF) core indicators: early initiation of breastfeeding; pre-lacteal feedings, exclusive breastfeeding for six months; continued breastfeeding at one year; low dietary diversity; infrequent and inadequate complementary feeding and consumption of iron-rich or iron-fortified foods⁴. This study was aimed to assess the nutritional status and feeding practices of children below five years of age attending a selective CWC in Dhaka Cantonment in terms of height, weight and age.

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Materials and Methods

This cross-sectional study was carried out among 110 conveniently and randomly selected children and their mothers as respondents attending Malabika CWC from 01 March to 30 June 2012. An electronic weighing scale to measure the weight, a standard height scale to measure the height was used. All data collected were analyzed by SPSS version 19 to determine the mean, frequencies and their relationships. Association among the study parameters was assessed with Chi square and Pearson Chi square test. *p* value of less than 0.05 was taken as significant level with 95% confidence intervals. A predesigned and pretested structured questionnaire was used to record information on anthropometric measurements. The prevalence of malnutrition assessed by different indices of nutritional status based on Weight for Age Z-score (WAZ), Height for Age Z-score (HAZ) and Weight for Height Z -Score (WHZ). Anthropometry was done by standard scales and was compared with reference NCHS standard. Study was approved by Institutional Review Boards (IRB) at Armed Forces Medical Institute under BUP. Informed consent was obtained from each study participant.

Results

Among male, the highest (37.8%) age group is 37-48 months and among female, highest (50%) age group is 37-48 months. Mean age of study population was 31.3 ± 16 month (Table-I). Out of total 110 mothers as respondents 62 (56.4%) mothers fed their child colostrum Majority of the mothers (81.7.0%) exclusively breastfed

their child. Most of the mothers (59.1%) did not provide their children proper complementary feeding and 37.3% mother fed their child pre lacteal feeding (Table-II). According to Weight for Age z-score, total underweight children were 32 (29%), according to Height for Age z-score total stunted children were 44(40.0%), according to Weight for Height z-score total wasted children were 26(23.6%) (Table-III). The association with pre-lacteal feeding and complementary feeding with underweight, stunting and wasting was statistically significant. The prevalence of Stunting was found to be higher among children who had not exclusively breastfed (Table-IV).

Table-I: Distribution of children by age and sex (n=110)

Age (months)	Sex		Total (n,%)
	Male (n,%)	Female (n,%)	
01-24	10(15.1)	05(11.4)	15(13.6)
25-36	21(31.9)	14(31.8)	35(31.8)
37-48	25(37.8)	22(50.0)	47(42.7)
48-60	10 (15.1)	03(6.8)	13(25.5)
Total	66(100)	44(100)	110(100)

Table-II: Distribution of children by of different types of feeding (n=110)

Indicator	Yes (n,%)	No (n,%)
Colostrum feeding	62 (56.4)	48(43.6)
Exclusive breast feeding	90 (81.7)	20 (18.2)
Proper complementary feeding	45(40.9)	65 (59.1)
Pre-lacteal feeding	41(37.3)	69(62.7)

Table-III: Distribution of children by Weight for Age (WAZ), Height for Age (HAZ), Weight for Height (WHZ) (n=110)

Degree of Malnutrition	Normal -1SD to +2SD n(%)	Mild -2SD to -1SD n(%)	Moderate -3SD to -2SD n(%)	Severe <-3SD n(%)
Weight for Age (WAZ)	78(71)	10(9)	17(15)	05(4.5)
Height for Age (HAZ)	66(60)	13(11.8)	22 (20)	09(0.8)
Weight for Height (WHZ)	84 (76.3)	5(4.5)	12(10.9)	09(8.2)

Table-IV: Association of nutritional status with feeding practices (n=110)

Feeding Practices		WAZ			HAZ			WHZ		
		Under wt n(%)	Normal n(%)	Statistics	Stunted n(%)	Normal n(%)	Statistics	Wasted n(%)	Normal n(%)	Statistics
Pre-lacteal feeding	Given	18(43.9)	23(56.1)	$\chi^2 = 6.95$ df = 1 p < .01	07(17.1)	34(82.9)	$\chi^2 = 14.32$ df = 1 p < .001	19(46.3)	22(53.7)	$\chi^2 = 18.67$ df = 1 p < .001
	Not given	14(20.3)	55(79.7)		37(53.6)	32(46.4)		07(10.1)	62(89.9)	
	Total	32(29.1)	78(70.9)		44(40.0)	66(60.0)		26(23.6)	84(76.4)	
Exclusive breast-feeding	Yes	23(25.6)	67(74.4)	$\chi^2 = 2.99$ df = 1 p > .05	36(40.0)	54(60.0)	$\chi^2 = 0$ df = 1 p > .05	18(20.0)	72(80.0)	$\chi^2 = 3.63$ df = 1 p > .05
	No	09(45.0)	11(55.0)		08(40.0)	12(60.0)		08(40.0)	12(60.0)	
	Total	32(29.1)	78(70.9)		44(40.0)	66(60.0)		26(23.6)	84(76.4)	
Complementary feeding started	<6 months	14(21.5)	51(78.5)	$\chi^2 = 4.39$ df = 1 p < .05	36(55.4)	29(44.6)	$\chi^2 = 15.67$ df = 1 p < .001	20(30.8)	45(69.2)	$\chi^2 = 4.48$ df = 1 p < .05
	≥ 6 months	18(40.0)	27(60.0)		08(17.8)	37(82.2)		06(13.3)	39(86.7)	
	Total	32(29.1)	78(70.9)		44(40.0)	66(60.0)		26(23.6)	84(76.4)	
Colostrum feeding	Given	11(17.7)	51(82.3)	$\chi^2 = 8.87$ df = 1 p < .01	13(20.9)	49(79.1)	$\chi^2 = 21.44$ df = 1 p < .001	08(12.9)	54(87.1)	$\chi^2 = 9.07$ df = 1 p < .01
	Not given	21(43.8)	27(56.2)		31(64.6)	17(35.4)		18(37.5)	30(62.5)	
	Total	32(29.1)	78(70.9)		44(40.0)	64(60.0)		26(23.6)	84(76.4)	

Discussion

Malnutrition leads to underweight, wasted and stunted growth and also decreased the survival chances of adult later in life. The objective of this study was guided by the study- hypothesized that, "children with poor and faulty feeding practices are likely to be malnourished compared to children with proper feeding practices". Therefore, the chi-square independent test was used to assess the association between feeding practices and nutritional status. The results of this study showed that the prevalence of malnutrition among the under-five-year-old children attending selected CWC is significant. According to WHO (2011), this is precipitated by many factors such as unfavorable breastfeeding practices, deprivation of colostrum, poor complementary feeding practices, pre-lacteal feeding and the general low socio-economic status⁵.

The mean age of the children of this study was 31.3±16.0 months. Out of 110 children 66(60%) were male and 44(40%) were female children. These study findings were in similar to the findings of another study conducted by Yazdani among the 2-5 years children of Armed Forces Personnel of Dhaka Cantonment⁶. It was evident from the present study, according to Z-scores total 29% of children were underweight, 40% were stunted and 23.6% were wasted. In general, prevalence of stunting was high (40%) but the prevalence of wasting (23%) was low. This study finding was dissimilar to the study findings conducted by Yazdani where 31.5% children were under weight, 13% were stunted and 18.5% were wasted⁶. Global Nutrition Report (Bangladesh Chapter, 2010) revealed 40% of the children were underweight, 46% stunted, and 25% were wasted⁷. This difference with the current study was due to that, these studies conducted couple of years back and by this time nutritional status of overall children has improved, moreover children of population of Bangladesh Army enjoys a comparatively better economic status and health care facilities.

Breast-feeding is one of the most important factors for child nutrition. Present study has detected that; 81.7.0% of the children had a history of exclusive breast feeding. Huq et al have found the rate of exclusive breast feeding is 72.3% in Bangladesh which is much lower⁸. This difference is probably due to the fact that the mothers are comparatively much educated and enjoys a better ante natal care. A large portion of children (37%) had their pre-lacteal feeding. Huq et al, have found the rate of pre-lacteal feeding is 41.3% at rural area of Bangladesh which is almost similar to present study⁸. Giving of colostrum significantly affected the nutritional status of children. Relating colostrum feeding in this study most of the respondents (56.4%) fed their child colostrum. According to Global Nutrition Report (Bangladesh Chapter, 2010), it was 62% which is higher than this study. 'Status of complementary feeding' at the age of 6 months affects the nutritional status of children significantly. In this study 60% of children did not get proper complementary feeding. Yasmeen (2006) conducted a study at BSMMU where the rate was found 59.8%, among the children attended pediatric OPD, which is similar to present study⁹.

This study shows that the relationship of pre-lacteal feeding and complementary feeding with WAZ ($p=.008$ and $p=.05$), HAZ

($p=.001$ and $p=.002$) and WAZ ($p=.015$ and $p=.008$) were statistically significant. Colostrum feeding was not found statistically significant with nutritional status of the study population. This could be explained by the fact that as a child grows older, he/she has access to breast milk. Exclusive breast feeding practices was statistically significant with stunting ($p=.048$). Similar findings were found in the study of Faruque¹⁰ and Roy¹¹ held in Bangladesh. So analysis at the bivariate level showed significant chi-square values with p -values which means that, feeding practices is significantly associated with child nutritional status.

Conclusion

This study examined the influences of feeding practices on children's nutritional status. Wasting was the commonest type of malnutrition followed by underweight and stunting. Pre-lacteal feeding and improper weaning are significant risk factors for undernutrition among under-fives. There is need of promotion and protection of optimal infant and child feeding practices, quality antenatal care, motivation and appropriate weaning for improving nutritional status of children. The study concludes that; improvement of feeding practices of preschool children will reduce the malnutrition status.

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