



Community Based Study on Association of Complementary Feeding and Malnutrition in Rural and Urban Areas of Aligarh

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ABSTRACT

Introduction: Reduction of child malnutrition is one of the prime challenges that India faces. Nearly 60 million Indian children are estimated to be underweight. Timely complementary feeding is one of the important predictors of under nutrition.

Methods: This community based cross-sectional, descriptive study was conducted in the field practice areas of the Rural and Urban health training centres of the Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. A sample of 700 children under two years of age was chosen for the study.

Results: Only 48% children started complementary feeding on time. Total malnourished children in the study population were 82.4%. There were significant rural urban differences in Knowledge, attitude and practices of Complementary feeding.

Conclusion: Grade IV malnutrition was maximum in the age group of 12-24 months, highest percentage of late intake of complementary food was also observed in more than 12 months children.

KEYWORDS : Complementary feeding, malnutrition, knowledge, practice

INTRODUCTION:

According to the WHO only minority of infants worldwide are exclusively breastfed during the first months of life, and complementary feeding is often unsafe, inappropriate and inadequate. Malnutrition is responsible, directly or indirectly, for half of the 10.5 million deaths each year among children under five years of age. Two thirds of these deaths occur during the first year of life, and are closely associated with poor breastfeeding and poor complementary feeding practices. Malnourished children, who survive, suffer from increased morbidity, impaired development and reduced school performance. Thus, poor feeding practices and their consequences are not only a violation of children's rights but they also threaten social and economic development (Pomerleau, 2001).

Mothers start breastfeeding but gradually give up due to many reasons, which may be economic, cultural or social. Together with declining prevalence of exclusive breastfeeding, inappropriate early or late weaning practices are very common and contribute to the high prevalence of malnutrition and early childhood morbidity and mortality (Gupta and Gupta, 2003).

Promotion of optimal infant and young child feeding practices is crucial for preventing and reducing malnutrition; early growth faltering and accelerating reductions of infant and neonatal mortality (Gupta and Gupta, 2003).

Hence the present study was conducted with the objectives of finding the relation of time of starting of complementary feeding and malnutrition, and the knowledge of mothers about complementary feeding. Along with the rural urban differences between the above mentioned practices.

MATERIAL AND METHODS:

This community based cross-sectional, descriptive study was conducted in the field practice areas of the Rural and Urban health training centers of the Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh. The sample size

calculated from $4PQ/L^2$ was 700. A list of all the registered children up to two years of age was obtained from the Rural and Urban health training centers of the D/o Community medicine. J.N.M.C, A.M.U. There were a total of 1200 children up to two years of age.

The required number of study population was obtained by applying the simple random number table for each village/area. Then every identified household was visited and the primary/secondary respondents were interviewed for the study. The primary respondent in the visited family was the mother and if she was not available due to any cause, the secondary respondent was the next closest adult relative of the child.

Definitions used:

Complementary feeding: The child has received both breast milk and solid or semi-solid food (WHO, 1991).

Appropriate feeding: A child being exclusively breastfed during the first six months of life and then being continued with breastfeeding along with supplementary feeding from six months of life till two years of life (We have not considered the adequate caloric intake along with the introduction of timely supplementary feed in our definition).

Indian academy of pediatrics (IAP) classification of malnutrition was used in the study.

OBSERVATIONS & DISCUSSION:

The present study was carried out in the field study areas of the rural and urban health training centres of the Department of Community Medicine, J.N.M.C. Aligarh Muslim University, Aligarh. A total of 700 children were included in the study, which formed the study population.

TABLE1: DISTRIBUTION OF THE CHILDREN ACCORDING TO THE TIME AT WHICH COMPLEMENTARY FEEDING WAS STARTED

Time	RURAL N=320	urban n=305	TOTAL
	No. (%)	No. (%)	No. (%)
Early (3-5 months)	91 (26.0)	41(11.7)	132(18.9)
Timely (6 months)	126(36.0)	210(60.0)	336(48.0)
Late (≥7 months)	103(29.4)	54(15.4)	157(22.4)
Not introduced at the time of interview	30(8.6)	45(12.9)	75(10.7)
Total	350(100)	350(100)	700(100)
Chi square =58.24, df=3, p<0.05, Significant.			

Table 1 describes the distribution of the children according to the time at which complementary feeding was started. In all 18.9% children had started early complementary feeding, 48% were timely fed and 22.4% were late in starting complementary feeding.

Comparing the rural urban differences it can be observed that timely complementary feeding was started by significantly more number of mothers in the urban areas (60%) as compared to the rural areas (36%). While early and late introduction of complementary feeds was significantly more in rural areas i.e. 26% and 29.4% respectively as compared to urban areas i.e. 11.7% and 15.4% respectively. In accordance with our findings Aneja et al, 2001 observed that 11.6% children had not started taking solids in their weaning diets at the time of interview. Likewise, in a study done in several blocks in India, similar to our observation 25.7% of mothers had not initiated any kind of CF of their infants (Gupta and Gupta, 2003).

Early complementary feeding was started in 26% rural children which is significantly higher than the urban counterparts, supporting our finding Pant and Chothia, 1990 reports that top feeding and solid supplements were initiated at 4-6 months. Passi and Shad, 2004 reports. NFHS 2, 1998-99 data depicts that only 24% breastfed children received solid and mushy food at six months of age.

TABLE 2: RELATIONSHIP BETWEEN THE GRADE OF MALNUTRITION AND THE TIME OF INTRODUCTION OF COMPLEMENTARY FOOD

Time of introduction of complementary food	Grade of malnutrition (n=577)				
	I	II	III	IV	Total
	No (%)	No. (%)	No. (%)	No. (%)	No. (%)
<6 months (Early)	22 (16.1)	49 (38.3)	40 (22.9)	21 (15.3)	132 (22.9)
6 months (Appropriate)	62 (45.2)	53 (41.4)	110 (62.9)	63 (46)	288 (49.9)
>6 months (Late)	53 (38.7)	26 (20.1)	25 (14.3)	53 (38.7)	157 (27.2)
Total	137 (23.7)	128 (22.9)	175 (30.3)	137 (23.7)	577 (100)
Chi square =54.46, df=6, p<0.05, Significant.					

The above-mentioned table depicts the relationship between the grades of malnutrition to the time of start of complementary feeding in the study population. The total malnourished children in the study population were 82.4%. Out of them nearly half i.e. 49.9% had started complementary feeding at the appropriate time, while 22.9% had started early and 27.2% were late starters.

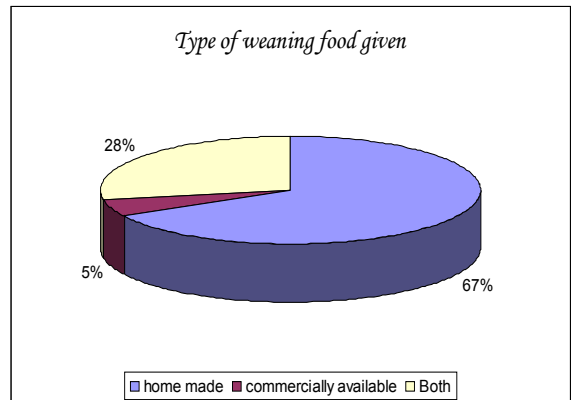
Thus, in spite of timely introduction of complementary feed, 49.9% of the children had malnutrition. It must be remembered that a number of variables affect nutritional status like environment, morbidity pattern, calorie intake etc. As far as our case is concerned probably calorie intake was inadequate.

A prospective study of 264 children (mean age 14 months) in western Kenya for 6 months to investigate the nature of the association between breastfeeding and growth found that only 14 (6.5%) children had been weaned at baseline, and 173 (65.5%) were still breastfed at follow-up (Onyangpo et al, 1999).

Knowledge of complementary feeds:

Out of the rural study population 58% of the respondents knew about the proper time of initiating complementary feeds. While in the urban areas 79% of the respondents knew about it. In support of our study Pant and Chothia, 1990 reported that most of the mothers of their study group in urban Baroda district believed in initiation of solid supplements at 4-6 months of age.

Figure 1: Type of complementary food



The type of complementary foods given to the children were home made in 67% of the cases.28% of the mothers gave both commercially available food and home made food, while 5% gave only commercially available food to their children.

In a study it was found that complementary diets were compromised due to poor food choices, preparation practices and limited variety. The participant's nutrition knowledge regarding specific foods, their functions and recommended quantities were poor. The women adhered to their cultural beliefs regarding food choices and preparation practices (Kruger and Gericke, 2003). In a study of rural Bangladeshi mothers it was found that only 3% knew how to prepare proper weaning foods (Das and Ahmad, 1995).

CONCLUSIONS AND RECOMMENDATIONS:

Timely complementary feeding was started by significantly more number of mothers in the urban areas as compared to the rural areas. Grade IV malnutrition was maximum in the age group of 12-24 months and the highest percentage of late intake of complementary food was also observed in more than 12 months children. More than half of the respondents knew about the correct time of complementary feeding and most of the children were given homemade weaning foods. There were significant rural urban differences in Knowledge, attitude and practices of Complementary feeding. More research needs to be done on finding the reasons and barriers of inappropriate feeding practices both in rural and urban areas. IEC/BCC activities need to be scaled up.

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