RESEARCH ARTICLE

Complementary feeding practices among mothers of children aged six months to two years at Children's hospital Lahore

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Abstract

Objective: To analyse complimentary feeding practices among mothers of infants.

Method: The cross-sectional study was conducted from September to December, 2015, at The Children's Hospital, Lahore, Pkistan, and comprised children aged 6-24 months. Data was collected regarding demographic profile, breast-feeding, initiation and adequacy of complementary feeding, maternal education and father's monthly income. Children's growth measurements were plotted using the World Health Organisation growth charts. Data was analysed using SPSS 20.

Results: Of the 202 children, 103(51%) were boys. The overall mean age was 14± 5 months. Among the mothers, 133(66%) were literate and 121 (60%) belonged to poor social class. Of the children, 145(72%) were exclusively breast-fed till 6 months of age. Breast-feed was not given in 51(25%) cases. Weaning age was appropriate in 88(44%) children. Overall, 53(26%) children were under-nourished. Lower social class, delayed initiation and inadequate amount of complementary feeding was significantly associated with poor nutritional status ($p<0.05$).

Conclusion: Weaning practices were incorrect in terms of amount and frequency. Children aged 13-18 months belonging to lower social class and having delayed and inadequate complimentary feeding were more malnourished.

Keywords: Complementary feeding, Nutritional status, Breast-feeding.

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Introduction

During infancy and early childhood adequate nutrition is essential to ensure the growth, health and development of children. Under-nutrition is a major public health problem worldwide. Under-nutrition in the first 1000 days of life leads to impaired growth and cognitive ability. Annually, there are around 3.1 million child-deaths or approximately 45% of childhood mortality is related to malnutrition.[1] Child malnutrition is a major challenge faced by developing countries. Globally in 2013, children under 5 years of age estimated to be stunted were 161.5 million, and 50.8 million were estimated to have low weight for height.[2]

According to the Rights of the Child convention, every infant and child has the right to good nutrition. An appropriate diet containing all essential nutrients is important in growth and development, especially in the first two years of life. According to the World Health Organisation (WHO), exclusive breast-feeding is recommended for the first six months of life, with the addition of complimentary feed (CF) at six months along with continued breast-feeding till the age of two. Only few children receive adequate amount of CF, and in many countries only one-fourth infants 6-23 months of age get CF appropriate for age.[2]

More than 50% of infants aged 6-9 months have delayed CF introduction. There is increased risk of malnutrition in infants due to the fact that breast milk alone is no longer sufficient to meet their nutritional demands and CF should be started at six months of age. If CF is started before six months, it can result in displacement of breast milk and increased risk of diarrhoea, which results in under-nutrition.[3] According to a study from Dhaka, 89-93% of infants were given CF at the recommended age, but in inadequate energy content.[4] Another study from India showed that adequate quantity was given in only 37% cases.[5] One study from Pakistan showed that CF knowledge was lacking in mothers.[6]

Starting complimentary feeding at appropriate time and in appropriate quantity is one of the cost-effective strategies for improving health and reducing under-5 mortality. Support from family and healthcare system can help mothers in opting for appropriate CF.[3]

The current study was planned to analyse CF practices among mothers of infants.

Subjects and Methods

The cross-sectional study was conducted at the outpatient department (OPD) of The Children Hospital, Lahore, Pakistan, from September to December, 2015, and comprised mothers of children aged 6-24 months visiting the OPD for immunisation or minor illnesses. Mothers of children aged <6 or >24 months, with known anomalies, whose child was very sick needing emergency care or who failed to provide consent for any reason were excluded. The

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sample size was calculated using OpenEpi software[7] with 90% power of test and 5% level of significance considering 25% prevalence of correct CF practices. Sampling technique used was non- probability convenience.

The study was initiated after getting ethical approval from institutional review board and informed written consent was taken from mothers. The mothers were interviewed with the help of a pre-designed questionnaire. Information about demographic profile, breast-feeding, initiation and adequacy of CF was gathered. Six months was considered the appropriate age of weaning and CF was considered adequate if estimated energy requirement from CF was 200 kcal per day at 6-8 months, 300kcal per day at 9-11 months of age, 550kcal per day at 12-23 months of age, and meal frequency was 2-3 times per day at 6-8 months of age, 3-4 times per day at 9-11 and 12-24 months of age as per WHO recommendations.[2] Maternal education status was categorised as uneducated or educated which included primary, middle, matriculation, intermediate, graduation and professional degrees. Maternal employment (working mother) and unemployment (housewife) status was noted. Father's monthly income was also noted. Anthropometric measurements (weight and height) were plotted on WHO growth charts.[2] Nutritional status was assessed using weight for height Z-score and cut-off point of < -2 standard deviation (SD) was used to classify under-nutrition.

Table-1: Sociodemographic characteristics of study population (n=202).

Variable	n (%)
Age of child	
6 – 12 months	106 (52)
13 – 18 months	58 (29)
19 – 24 months	38 (19)
Sex of child	
Male	103 (51)
Female	99 (49)
Residence	
Rural	44 (22)
Urban	158 (78)
Education of mother	
Illiterate	69 (34)
Primary	19 (10)
Secondary	76 (37)
Intermediate	18 (9)
Graduate	18 (9)
Master	2 (1)
Occupation	
Working	5 (2.5)
Housewife	197 (97.5)
Monthly income	
Lower class	121 (60)
Middle class	77 (38)
Upper class	4 (2)
Nutritional status	
Normal	(73)
Malnourished	(27)

Table-2: Weaning characteristics.

Variable	n (%)
Wearing age	
At < 6 months	20 (10)
At 6 months	88 (44)
At > 6 months	85 (42)
Weaning not strated	9 (4)
Type of weaning food	
Homemade	105 (52)
Prepared	36 (18)
Both	52 (25)

Table-3: Factors associated with under nutrition.

Parameters	p-value
Delayed initiation of weaning	0.04
Inadequate amount of weaning	< 0.001
Lower social class	0.015
Age group (13 – 18 months)	0.02

Data was analysed using SPSS 20. Chi square test was employed and $p<0.05$ was considered significant.

Results

Of the 202 children, 103(51%) were boys. The overall mean age was 14±5 months. Among the mothers, 133(66%) were literate and 121 (60%) belonged to poor social class (Table 1). Of the children, 145(72%) were exclusively breast-fed till 6 months of age and 118(58%) were still on breast-feed at time of the interview. Breast-feed was not given in 51(25%) cases. Weaning age was appropriate in 88(44%) children (Table 2). The quantity of weaning food was inadequate in 107(53.0%) cases, and it was adequate in 113(56%). CF on advice of family members was started in 108 (54%) cases and on the advice of doctors in 54(26%). Unawareness was the major reason for both delayed 60(29%) and early weaning 7(35%). Age group 13-18 months, lower social class, delayed initiation and inadequate amount of CF were factors significantly associated with poor nutritional status (Table 3). Improved CF practices in terms of weaning quantity and frequency was noted in mothers with higher education and with better socioeconomic status ($p<0.05$).

Discussion

In the present study, the prevalence of timely weaning was high 88(44%) which is consistent with studies done in Ethiopia and Iran.[8-10] However, it was in contrast with studies in Bangladesh and India (32.8% and 23%) respectively.[4,11] Delayed weaning was observed in 85(42%) cases which is quite high compared to a study conducted in India (2%).[12] Low prevalence of early weaning 20(10%) in our study is comparable with studies reporting 16.4% and 15.7%, but in contrast with a study done in Ethiopia where the prevalence of early CF initiation was quite high

at 59.6 %.[4,9,10] In our study more girls had early initiation of CF, but gender discrimination does not have any impact in this regard.[13] Reasons for early weaning in our study were unawareness 7(35%), insufficient breast milk 6(30%), family influence 4(20%), doctor's advice 2(10%) and being a working mother 1(5%).

Majority preferred homemade food for weaning 105(52.0%). This is in accordance with a study done in India.[13] According to a local study in Pakistan, the type of food (homemade versus commercially prepared) has significant association with nutritional status. Children having commercially prepared food were more malnourished, but no such association was observed in our study.[5]

Cultural differences may influence breast-feeding and CF practices. According to a study comparing infant feeding practices of Pakistani mothers in Pakistan and England, higher percentage of mothers in Pakistan (73%) were breast-feeding compared to 24% in England.[14] Breast-feeding remains the preferred method of infant feeding by majority of Pakistani women, as in most developing countries.[15] In our study, the prevalence of exclusive breast-feeding (EBF) till 6 months of age was high 145(72%). This finding is similar to studies done in Ethiopia, Zambia and India, but in contrast with a study done in Bangladesh where EBF was only 23%.[1,4,8,16] This high percentage of breast-feeding is encouraging and this might be due to the fact that most of the mothers in our study were housewives and belonged to poor socioeconomic status which increases the likelihood of breast-feeding.

Maternal literacy rate was satisfactory in our study at 133(66%). This is in contrast to a local study done at a tertiary care hospital in Hyderabad where majority 61.5% were illiterate.[6] Most of the children belonged to poor social class 121(60%) similar to other studies done in India and Pakistan.[11,17] This study did not find any relationship between CF initiation time and gender, socioeconomic status, and maternal occupation. Similar findings were observed earlier.[18] However, significant association was found with residence and maternal educational status ($P<0.001$). Majority of mothers who started weaning at appropriate time were educated and belonged to urban areas. Similar findings were reported earlier.[8,12]

Mother's exposure to weaning advice is a significant factor associated with appropriate CF practices.[10] In our study, majority of participants were informed by family members 108(54%) which is in accordance with a local study done in Hyderabad, but in contrast with a study where majority were advised by doctors.[6,13]

Inappropriate feeding practices often result in malnutrition and is a major risk factor compared to non-availability of food. Our study showed that children in age group 13-18 months and lower social class having delayed and inadequate CF were more malnourished. Similar findings were observed earlier.[3]

The current study was limited by its small sample size and selection bias due to its hospital-based nature. Large-scale community-based studies are needed to fully understand the phenomenon.

Health professionals should be encouraged to impart education at every chance they get to meet young mothers to improve weaning practices.

Conclusion

Weaning practices were incorrect in terms of CF quantity and frequency. Only a few mothers got weaning advice from their doctors.

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References

1. Katepa-Bwalya M, Mukonka V, Kankasa C, Masaninga F, Babaniyi O, Siziya S. Infants and young children feeding practices and nutritional status in two districts of Zambia. Int Breastfeed J. 2015; 10:1-8.
2. WHO | Infant and young child feeding. Indian Pediatr. 2010; 47:995-1004.
3. Vyas S, Kandpal SD, Semwal J, Chauhan S, Nautiyal V. Trends in Weaning Practices among Infants and Toddlers in a Hilly Terrain of a Newly Formed State of India. Int J Prev Med. 2014; 5:741–8.
4. Saleh F, Ara F, Hoque A, Alam S. Complementary Feeding Practices among Mothers in Selected Slums of Dhaka City: A Descriptive Study. J Health Popul Nutr. 2014; 32:89-96.
5. Shamim S, Naz F, Jamalvi S W, Ali S S. Effect of weaning period on nutritional status of children. J Coll Physicians Surg Pak. 2006; 16:529–31.
6. Memon S, Shaikh S, Kousar T, Memon Y. Assessment of infant feeding practices at a tertiary care hospital. J Pak Med Assoc. 2010; 60:1010-5.
7. Sullivan M K, Dean A. OpenEpi: A web-based epidemiologic and statistical calculator for public health. Public Health Rep. 2009; 124:471-4.
8. Demilew M Y, Tafere ET, Abitew B D. Infant and young child feeding practice among mothers with 0–24 months old children in Slum areas of Bahir Dar City, Ethiopia. Int Breastfeed J. 2017; 12:26.
9. Abdollahi F, Chareti J Y, Rohani S. Study of complementary feeding practices and some related factors among mothers attending primary health centers in Sari, 2013 Year. Iranian J Health Sci. 2014; 2:43-8.
10. Zeleke L B, Gebremichael M W, Adinew Y M, Gelaw K A. Appropriate weaning practices and associated factors among Infants and young children in northwest Ethiopia. J Nutr Metab. 2017; 2017:9608315.
11. Shukla M, Tyagi S, Agarwal M. Infant and young child feeding practices of mothers attending immunisation clinic at a tertiary care hospital of Lucknow. IAIM. 2016; 3:58-66.

12. Fein S B, Wolfe J L, Scanlon K S, Strawn L M. Selected complementary feeding practices and their association with maternal education. Pediatrics. 2008; 122:91–7.
13. Ambike D, Bhavari V, Poker F, Ahmed K. A study on the awareness of the weaning practices and the determinants affecting them in a rural hospital based pediatric outpatient clinic of Maval Taluka, Maharashtra. Int J Contemp Pediatr. 2017; 4:206-9.
14. Sarwar T. Infant feeding practices of Pakistani mothers in England and Pakistan. J Hum Nutr Diet. 2002; 15:419-28.
15. Badruddin S, Hendricks K M. Weaning practices in the developing countries recommendations and program implications combined program in Pediatric Gastroenterology and Nutrition Harvard Medical School, 1992.
16. Davalgi S, Vidya G. A study to know infant & young child feeding practices of mothers attending mother and child health clinic at a tertiary care teaching hospital, Davangere, India. Int J Community Med Public Health. 2015; 2:478-83.
17. Trivedi Y B, Vyas N S, Dave S B, Desai A K. Complementary feeding practices among mothers of Waghodia Taluka of Vadodara: a knowledge, attitude, and practice study. Int J Med Sci Public Health. 2015; 4:647-51.
18. Nega G, Ejigu T, Molla M. Complementary Feeding Practice and Associated Factors among Mothers Having Children 6–23 Months of Age, Lasta District, Amhara Region, Northeast Ethiopia. [Online] [Cited 2017 Mar 21]. Available from: URL: https://www.hindawi.com/journals/aph/2017/4567829/.