FEEDING PATTERNS AMONG INFANTS IN URBAN SLUM AREAS OF LAHORE

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ABSTRACT

Objective: The present study was designed to determine the feeding patterns and associated limitations in a cohort of 210 infants.

Design: Cross sectional study through quantitative and qualitative data during their first year of life.

Place and Duration of Study: It was conducted in Govt Kot Khawaja Saeed Teaching Hospital affiliated with King Edward Medical University. Duration of study was 1 year from 1st March 2016 to 28th February 2017.

Patients and Methods: Practices related to the feeding of milk and weaning foods of 210 infants were assessed in a defined community of Lahore; 160 Infants from outdoor (Group 1) and 50 infants from immunization clinic (Group 2).

Results: 98.5 % of mothers started breast feeding. Exclusive breast fed was only 40% among them, 38% percent infants were given supplemental bottle feeding during first month. The most common reason for starting supplemental feed was perceived "insufficiency" of breast milk (60%) and work load of mother. The mean age for weaning was 4.2 months, while 36% could not be weaned up to one year of age. Weaning was earlier in infants of poor socioeconomic class. The main reason of failure of weaning was rejection of semisolid feed by infant.

Conclusion: The exclusive breastfeeding was observed in a small proportion of infants. In most cases, weaning was inappropriate and delayed. There is a great need to educate the mothers for early and exclusive breastfeeding for their infants and the use of proper weaning techniques.

Key words: Exclusive breastfeeding, Weaning, Infant

INTRODUCTION

Pakistan is among the countries who failed to achieve millennium development goals targets (MDGs)[1]. Nutrition is one of the key determinants in influencing the achievement of these goals [1,2]. Appropriate breast feeding and weaning practices are the most effective interventions to improve infant growth, development and ultimate survival[3]. UNICEF and WHO recommend colostrum as newborns' perfect food that should be initiated within the first hour after birth[4]. Colostrum, a mother's first milk or the 'very first food', as the perfect food for every newborn. The sticky, yellowish substance produced by the mother soon after birth is ideal for the newborn - in composition, in quantity and rich in antibodies. Colostrum in addition to nourishment also protects infants[4]. Myths regarding discarding colostrum, introduction of ghutti (no milk substance) and water prevails in developing countries[5,6]. With the launch of the Infant and Young Child Feeding Strategy 2016, "Infants should be exclusively breastfed for the first six months of life, and thereafter should receive nutritionally adequate and safe complementary foods while breastfeeding continues up to two years and beyond as ordained in the Holy Quran. In 2001, World Health Organization (WHO)announced its global recommendation that infants should be exclusively breast fed for six months[7]. Majority of mothers in Pakistan supplement diluted fresh milk, formula milk and water [6]. Studies have shown several consequences of inappropriate feeding[8]. Supplementing breast milk with other milk has been reported to increase childhood mortality tenfold due to poor cleaning of bottles and dilution with unsafe drinking water[8,9]. Food supplements for breast-fed children increase the likelihood of diarrhea by 4 to 13-fold, depending on age when supplementation begins[10]. Inappropriate weaning

practices have also been associated with diarrheal diseases and malnutrition[8]. Finally, delayed weaning can lead to growth failure, poor immunity, micronutrient deficiencies and greater risk of infection[11]. Thus, it is essential that weaning is appropriately timed, nutritionally adequate, hygienically prepared and culturally acceptable. To develop ways to optimize feeding practices for infants and young children, we conducted a cross sectional study to obtain information about prevalent local practices and believes about infant feeding. The study was designed to determine the feeding pattern and associated limitations in a cohort of 210 infants.

SUBJECTS AND METHODS

We conducted a cross sectional study in a defined area in Govt. Kot Khawaja Saeed Teaching Hospital Lahore, King Edward medical University where patients come from areas of Kot Khawaja Saeed, Boghewaal, China Scheme, Shalamar Garden areas, Baghbanpura, Harbanspura and Singhpura. Physicians conducted assisted interviews. All mothers carrying infants in Pediatric Clinic and all healthy babies coming to Immunization Clinic were included in study.

Mothers were surveyed by using a structured questionnaire that allows to gather information on demography of infants, type of feeding, gap between birth and first feed, amount and frequency of feed, added formula or fresh milk, time of administering ghutti, additional water, age of weaning, type of weaning food, weaning problems, diarrheal and respiratory ailments and achievement of milestones. The following definitions were used for feeding categories.

Exclusive breast feeding: The infant received only breast milk and no other feed except vitamins

Predominantly breast feed: The infant's main source of nourishment was breast milk, but this have been supplemented with water and fruit juices and sweetened water. Complementary feeding: The child received both breast and topped milk (fresh or formula milk).

RESULTS

A total of 210 infants were included in the study (there was three twin deliveries).

Pre-lacteal feeds

Although 207(98,5%) children were breast-fed during the first week of life, 197(94%) were given prelacteal feeds prior to initiation of breast milk and 46 infants (22%) did not receive colostrum. In 168 (80%) honey was fed before starting colostrum.

Breast and Top feeding

Breast milk was initiated in 207children (98.5%) in the first week. Half of them were given at birth and in other half breast feeding was delayed for 3-4 days. Three infants were not offered breast milk because of superstitions, as death of previous sibling or some influence of evil spirit on mother. Out of 207 infants, who received breast feeding at beginning, 163 (78.7%) continued receiving and it was discontinued in 44(21.3%) before one year due to insufficient milk or next pregnancy. Milk feeding pattern of study population is given in table 1. Fresh milk alone or along with breast or formula was fed to 82 infants (39%) and dilution was improper.

Weaning

Most of mothers were convinced that solids/semi-solids should be started by age of 3-6 months. The mean age for initiating supplemental feeding with semi-solid food was 4.2 months. In total 103 (49.7%) infants were weaned up to 6 months of age, but 76(36.2%) could not be weaned even at one year. Weaning pattern of infants is given in table 2.

Weaning was earlier in infants of poor socioeconomic class. Most of mothers thought that Cerelac (readymade cereal) was better weaning food. Yogurt and custard were also thought to be good for the infant. Most of the educated mothers told that they follow health care provider's advice. They also desired more counselling in the infant feeding practices.

Weaning foods used by mothers in group 1 included Cerelac (readymade cereal) in 90 infants (60%), rice (16%), khichri (10%), Biscuits (9%), Roti (5%). Weaning foods used by mothers in group 2 included Cerelac (42%), rice (14%), khichri (2%), Biscuits (6%) and Roti (5%).

Infections

In group 1, infants having significant diarrheal episodes were 135(84%) while in group 2, 50% infants had diarrheal episodes. Upper respiratory infections in first group were in 68% infants as compared to 50% in group 2. Pneumonia needing hospitalization was seen in 43% in group 1 compared as compared to group 2, where it was 28%.

Feeding pattern at birth, problem regarding weaning, history of upper and lower respiratory infections, diarrhea and achievement of milestones is given in figure 1(group 1) and figure 2 (group 2).

Table 1: Milk Feeding Patterns of Infants Visiting Pediatric Sick Clinic & Vaccination Clinic

Babies included in study	Total	Group 1 Sick infants attending pediatric clinic	Group 2 Healthy infants visiting immunization clinic
Number of Patients	210	160	50
Exclusively breastfed	83(39.4%)	62(38.7%)	21(42%)
Mixed breastfed & fresh milk fed	52(24.76%)	46(28.7%)	06 (12%)
Mixed Breast & formula fed	28(13%)	22(13.7%)	6 (12%)
Formula Fed only	17(8.1%)	10(6.2%)	7(14%)
Fresh milk only	16(7.6%)	11(6.8%)	5(10%)
Fresh milk and formula milk	14 (6.7%)	9(5.6%)	5(10%)

Table 2: Weaning Pattern of Infants Visiting Pediatric Sick Clinic & Vaccination Clinic

Weaning	Total (210)	Group 1(160)	Group 2 (50)
Weaned at 2 months	01(0.5%)	01(0.6%)	-
Weaned at 3 months	06(2.8%)	06(3.7%)	-
Weaned at 4 months	07(3.3%)	06(3.7%)	01(2%)
Weaned at 5 months	22(10.5%)	15(9.3%)	07(14%)
Weaned at 6 Months	67(32%)	58(36.2%)	09(18%)
Weaned at 7 months	17(8.1%)	12(7.5%)	05(10%)
Weaned at 8 months	10(4.8%)	08(5%)	02(4%)
Weaned at 9 months	02(1%)	02(1.2%)	-
Weaned at 10 months	02(1%)	02(1.2%)	-
Could not be weaned at 1 year	76(36.2%)	50(30.1%)	26(58%)

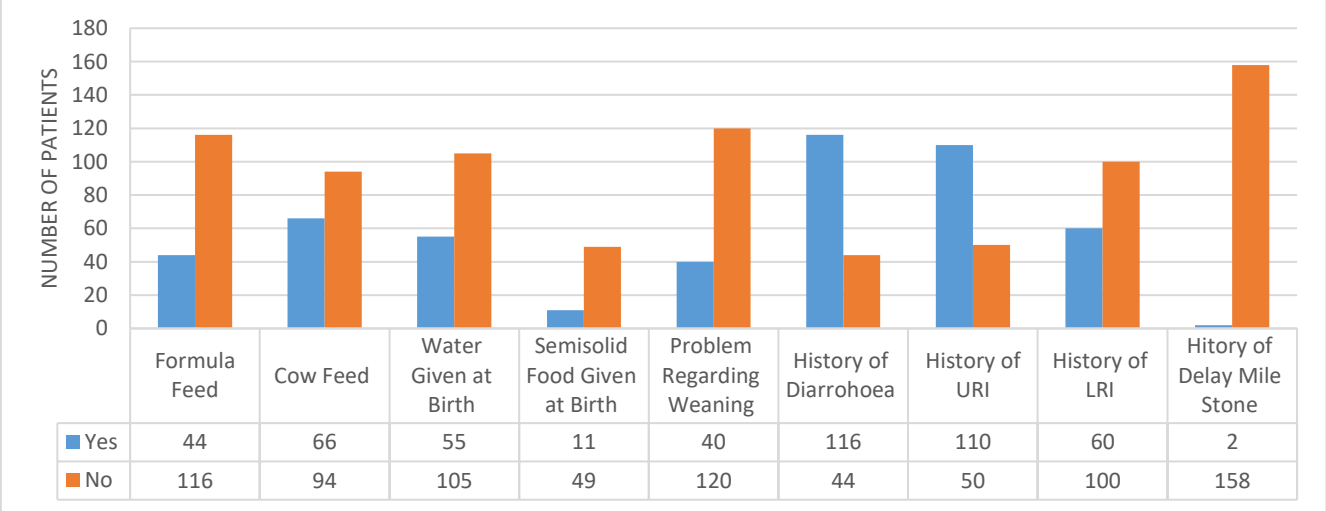

Figure 1: Frequency of study Variable among Patients Visiting Pediatric Sick Clinic

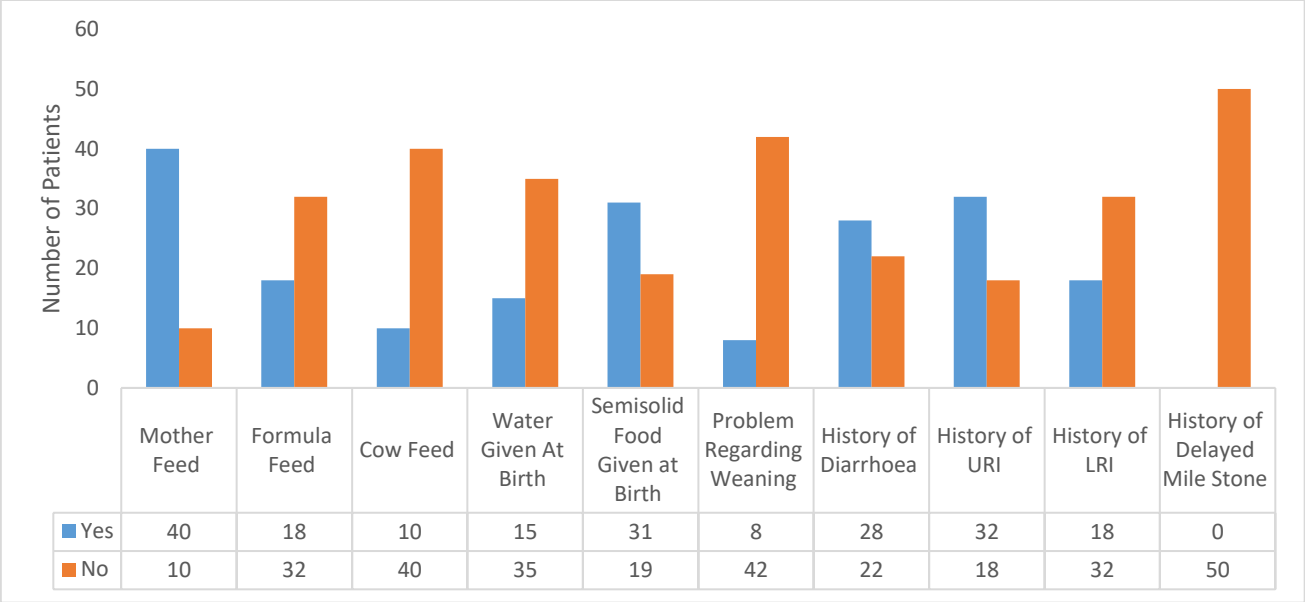

Figure 2: Frequency of study Variable among Patients Visiting Vaccination Clinic

DISCUSSION

This study describes feeding patterns and morbidity in two groups of infants in an urban slum of Lahore. The important observation was that breast feeding was delayed up to 3 to 4 days in 50 % infants. This delay was also reported by others in Pakistan[12,13]. Similar observation has been seen in other parts of world as well[14,15]. Some mothers do not consider colostrum as apart of breast milk [16]. First feed (Ghutti) is given by an important member of the family based on the cultural ground that it will affect the future character of the child. Honey was mainly given as a tradition keeping in mind that personality of newborn will be affected by person giving first feed in almost 100% cases. The common belief for ghutti was related to religious basis and thought to have laxative effect. Prelacteal feed is reported in studies in Pakistan[13] and under developed countries[14,15,17].

Exclusive breast feeding was uncommon in our study, it was seen in 38% and 42% in group 1and 2 of respectively. It is 37%[12] and 54%[13]in studies conducted in Pakistan. Similar study in Kuwait reports that 92% initiated breast feeding but 30% were exclusively breast fed[14], while in Kenya only 2% were exclusively breast fed for 6 months[15]. Despite compelling evidence on the importance of exclusive breastfeeding and sustained efforts to encourage it, progress is patchy. Global rates for exclusive breastfeeding for infants under six months of age range from 32 percent in 1995 to 39 percent in 2010[18]. The commonest reasons for stopping breast milk in our study were next pregnancy (37%) and insufficiency of milk (43%), in other studies, next pregnancy was also reported as the most common reason[15]. It was most important factor for cessation of breast feeding as mothers considered it harmful for baby and mother as well. Moreover, the participants (mothers)felt that after getting pregnant, quantity of breast milk is not enough to meet the requirements of the infant. Breast milk substitutes given on day one due to caesarian section is another important reason for failure of exclusive breast feeding[19].

Use of water and other fluids in fresh milk has become increasingly common in Pakistan and in other developing countries[5,6,20]. The unfortunate thing was that the health professionals in our study were also promoting the use of other fluids and prelacteal feeds, most probably due to their own lack of knowledge. In India, Sachdev et al reported that 97% of nurses and 63% of the doctors believed water supplementation was necessary in summer[21]. The extra cost of both fresh milk and commercial formulas is major factor for this practice. With a low per capita income and a high birth rate, it may be difficult for a poor family to provide other milk to their infants. Minimum cost of providing a 6-month-old infant with half liter of fresh milk as supplement to breast milk will be 1800 rupees per month (1-liter milk= Rs.120). If costs for bottles and fuel needed for boiling are added, the costs exceed Rs.2500 per month. A sixth of family income could go to feeding just one child. In practice, the economic constraints force the family to dilute the milk and not to use appropriate hygienic precautions essential with bottle feeding, thus increasing the risks for infections. Observations regarding age for starting semi-solid foods

in our study differ from those reported by Goosen et al. In our study 17% were weaned before 6 months, 32% were weaned at 6 months and 36% could not be weaned even at one year of age. They report 75% of infants being weaned before 3 months of age[22], while in another study results are similar to ours, 19% weaned early and 39% weaned late[23]. Although about half of infants were weaned from 5-7 months, the appropriate quality and quantity of these supplementary foods remains a problem. Very few mothers prepared the semi-solids specifically for their infants. This last point was also noticed in a study where most of mothers preferred commercial infant cereal[22].

Some limitations of the study must be addressed. Our study is subjected to several limitations, the first is the sample size and inability to follow. Secondly exact birth weight data or specific morbidity data could not be collected. Morbidity data collected in detail would have strengthened the argument about promotion of breast feeding and use ‘of colostrum. Thirdly the urban area data could be quite different from the rural areas where majority of deliveries take place at home and there is little interaction between the mothers and health workers.

Results of the study have some important implications for the national breast feeding programme and nutrition of young children. To promote use of colostrum, exclusive breast feeding and discourage bottle feeding, education strategies should be targeted at mothers during pregnancy and delivery. The optimum way to impart knowledge and change practices requires controlled studies to evaluate different approaches. Design of interventions will need to address perceived “dangers” of using colostrum and perceived “insufficiency” of breast feeding. Health care workers, including physicians, paramedics and traditional birth attendants, need to be educated to promote breast feeding. Breast feeding can also be promoted by modifying hospital policies using social support, providing incentives and initiating legislation and political action to create policies aimed toward healthier infant feeding practices. WHO and UNICEF have already initiated a programme of baby-friendly hospital initiatives (BR-H) and a communication campaign to promote breast feeding, but a lot still needs to be done at the community level.

CONCLUSION

Mothers need education for early and exclusive breast feeding, importance of colostrum, proper weaning as well as preparation of weaning foods.

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