

Original Article

Bottle Feeding in Children under Two Years of Age in Multan; A hospital based study

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ABSTRACT

Objective: To explore the factors responsible for bottle-feeding practice among mothers of children less than two years of age in Multan region.

Design: An observational cross-sectional study.

Duration & Setting: The patients who were admitted in Pediatric ward and/or attending OPD at Children Hospital and The Institute of Child Health Multan from 1 January 2010 to 26 June, 2010

Materials and Methods: 450 mothers, feeding their children with bottle, were interviewed about their infant feeding practices. A predesigned questioner was used to get detailed information.

Results: Bottle feeding was more prevalent in illiterate 98(48%) and poor education class mothers, lower social class women 109(45%), Multigravida 159(54%) and in the mothers between 26 to 30year of age 78(61%). More common causes of bottle feeding were complaint of insufficient milk by mothers 89(41%) and early baby illnesses 42(39.2%).

Conclusion: In my study major determinants of bottle feeding are related to poverty and lack of education about breast feeding and proper weaning practices.

Key words: Bottle feeding practices, children less than two years, determinants of bottle feeding

INTRODUCTION

Breast-feeding is the natural and physiological way of feeding the infants and young children¹. WHO recommends exclusive breast feeding up to 6 months of age². Human milk is the natural milk made for human infants, it is the only food the baby needs till four months of age and most of the babies do very well on breast milk alone for six months of age^{3, 4}. It decreases infections, diabetes mellitus, enterocolitis, asthma^{5, 6} and enhances cognitive development.^{7, 8}

There is no advantage of adding other foods or milk to breast milk before 4-6 months, except under unusual or extraordinary circumstances^{9, 4}. Despite increasing medical research showing benefits of breast feeding for both mothers and babies, many women opt bottle-feeding for their infants.^{10 11} A rising number of women in developing countries like Pakistan are supplementing breast milk with formula and fresh animal milk and stop breast feeding earlier^{12, 13, 14}. The use of bottle for feeding started initially in the west, soon became a widespread phenomenon globally¹⁵. As a result, bottle-feeding is now a socially and culturally accepted norm in underdeveloped countries including Pakistan¹⁶. The bottle is used not only to give milk but all other types of fluids e.g. water, tea, juice.¹⁷ Much harm is associated with bottle feeding, especially in areas where sanitation is poor, because it requires a sterilized water supply,

both to mix the formula and to sterilize the bottle, even small amounts of polluted water can radically increase the risk of diarrhea.^{14, 18} There is a higher risk of childhood morbidity and mortality, malnutrition, GIT infections, ear infections,^{19, 20, 21} allergic tendency²² and dental caries in bottle fed infants.²³ It does not provide immunological protection as breast milk does, so putting the child more prone to infections²⁴. Recently a detailed comprehensive report, using data both from developed and developing countries highlighted the increased relative risk of infant mortality in formula fed versus breast-fed infants²⁵.

MATERIALS AND METHODS

This study was conducted at Children Hospital and The Institute of Child Health Multan from 1 January 2010 to 26 June, 2010. The infants (from birth to the age of 2 years) who were admitted in the pediatric ward and attending OPD for different illnesses were recruited, mothers of these infants (450) were interviewed about their feeding practices. A questionnaire was used to record the information regarding, age of the baby, age of the mother, mother's education, monthly income, feeding patterns including; exclusive breast feeding, exclusive bottle feeding or receiving both bottle and breast-feeding, parity and reasons for bottle-feeding. Those babies receiving both (bottle and breast feeding) were also considered bottle fed. Socio-economic class

of the infant's family was defined as: monthly income of Rupees 7000 was considered as lower social class, Rupees 20000 as middle and above Rupees 20000 as upper social class. Mothers were also classified according to their educational status into illiterate, primary, middle, matric and intermediate and above. All the data was analyzed

RESULTS

In this study, out of 450 infants 232(51%) were on exclusive breast feeding, and 218 (49%) were on bottle feeding. **Table 1** shows that bottle feeding increases with age, only 30% of the infants under the age of 4 month were offered bottle, it was 39% between 5 to 6 months and increased to 73% in infants from 7 to 12 months. Bottle feeding was more common in illiterate women 205 (48%) as compared to educated mothers shown in **table 2**. The mothers belonging to lower social class were giving more bottle feeding 109 (45%) as compared to middle 63(33%) and higher classes 5(33%) given in **table 3**. Bottle feeding was more common among multipara women 159 (54%) shown in **table 4**. The mothers in age group between 26 to 30 years, showed preference for using bottle, mentioned in **table 5**. The important causes of bottle feeding were inadequate mother's milk 89(41%), refusal of baby to take breast milk 35 (16%), baby illness 50(23%), maternal illness 16 (7%), pregnancy in mothers 24(11%) and maternal employment 4(2%) as given in **Table 6**

Table 1: Ages of the babies and bottle feeding

age	Total	Exclusive breastfeeding	Bottle feeding
<1month	39	27 (70%)	12(30%)
1 to 4month	127	89(70%)	38 (30%)
5 to 6month	94	58(61%)	36(39%)
7 to 12 month	149	41(27%)	108(73%)
13 to 18 month	41	17(41%)	24(59%)
Total	450	232(51%)	218(49%)

Table 2: Education level and bottle feeding

Education level	Total	Exclusive breastfeeding	Bottle feeding
Illiterate	205	107(52%)	98(48%)
Primary	80	45(56%)	35(44%)
Middle to matric	118	77(65%)	41(35%)
Intermediate and above	47	33(70%)	14(30%)
Total	450	262	188

DISCUSSION

Early introduction of formula and animal milk results in earlier termination of breast-feeding; very rapidly happening in third world countries including Pakistan,

which is not a safe way of feeding^{12, 13, 14}. In poor communities of Pakistan, the leftover bottle milk is often given for subsequent feeds due to lack of awareness and poverty in poorly sterilized feeding bottles, causing increased prevalence of infections²⁶.

Table 3: Family income and bottle feeding

Social status	Income	total	Exclusive breastfeeding	Bottle feeding
Lower class	< 7000	245	136(55%)	109(45%)
Middle class	7000 to 20000	190	127(67%)	63(33%)
Higher class	> 20000	15	10(67%)	5(33%)

Table 4: Parity and bottle feeding

	Primarigravida	Multigravida
Total	157	293
Exclusive breast feeding	92(59%)	134(46%)
Bottle feeding	65(41%)	159(54%)

Table 5: Maternal age and Bottle feeding

Maternal age	Total	Exclusive breastfeeding	Bottle feeding
<25 years	258	147(57%)	111(43%)
26 to 30	127	49(39%)	78(61%)
31 to 35	44	32(73%)	12(27%)
>35	21	9(43%)	12(57%)

Table 6: causes of bottle feeding

Causes	N=babies
Insufficient milk	89(41%)
Infant illness	50(23%)
Refusal by baby	35(16%),
Mother illness	16(7%)
Maternal employment	4(2%)
pregnancy	24(11%)

Out of 450 infants in this study, 218(49%) babies were bottle fed, the studies from Karachi and Lahore reported use of bottle in 68% and 82% infants^{25, 13}. Similar results have also been shown in a study from Bangladesh⁵. In our study there is an increasing trend of bottle feeding with advancing age, it increased from 30% (in below 4 month) to 73% between the ages of 7 to 12 months, also seen in other Pakistani studies^{27, 28}. In this study illiterate mothers and mothers with primary education were practicing more bottle feeding 98(48%) and 35(44%) respectively as compared to educated mothers. This pattern has also been shown in a study from karachi²⁵ and Bahawalpur²⁹. The lower incidence of bottle-use in educated mothers in the present study could be due to better awareness and understanding of the advantages of breast-feeding. The mothers between 26 to 30 years of age showed preference for bottle-feeding (61%) in our study, similarly prevalence of increased bottle-feeding

amongst mothers around 30 years, have also been reported in a study from Karachi.²⁵ Bottle use was high in multipara mothers (54%) in this survey, similar findings are seen in studies from Karachi.²⁵ and Malaysia.³⁰ This may be due to impaired nutritional reserves, lack of understanding in the mothers and they find their own milk insufficient. In large families mothers are usually busy with household working and bottle feeding may be convenient. In our study bottle feeding, is more common in lower class families, other studies also mentioned the similar results.^{25, 31, 15} The increased incidence of bottle-use in lower class mothers could be due to lack of knowledge about the advantages of breastfeeding, poor nutrition, economical and social stresses. The main reasons for bottle feeding were inadequate mother's milk 89(41%), baby illness 50(23%) and refusal by baby in 35(16%). Similar main causes of bottle feeding are shown in studies from India³² and Saudi Arab.³³

CONCLUSION

In my study, many factors like weak socioeconomic status, poor education of mothers, increasing age of mothers, multiparity, early baby illnesses and complaint of insufficient milk by mothers resulted in early supplementation and bottle use. These determinants of bottle feeding should be evaluated and intervened, so an educational program about infant feeding may be started both at community and hospital level to discourage bottle use for infant feeding in parallel with promotion of breast-feeding practices which may reduce infant morbidity and mortality in our country. Mothers should be encouraged to continue breast feeding for as long as possible.

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