

Impact of Maternal Education on Breast Feeding and Complementary Feeding Practices of Infants

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Abstract

Objective: To determine the impact of maternal education on incidence of breast feeding, duration and infant complementary feeding practices.

Methodology: This cross-sectional study was done in the department of Pediatric Medicine, University of Lahore, Teaching Hospital, Lahore from October 2020 to March 2021. Non probability consecutive sampling technique was applied with a total 198 mothers having children between 6 to 12 months of age were enrolled in study after approval of hospital ethical committee and informed consent taken from the mother. Data was entered and analyzed using SPSS 22.

Results: Breast feeding was adopted by 62.8% mothers. Mean duration of breast feeding was 8.52±3.1 months. Regarding initiation of breast feeding 35.1% started immediately after delivery. Regarding introduction of solid feed 27.3% started before 6 months of age. Pre lacteal was given in 35.5% infants. There was no impact of maternal education on frequency of breast feeding (p-value 0.328) but duration of breast-feeding was longer in mother having graduation as compared to mothers having education less than matric i.e. 8.77±2.977 months vs 7.82±3.384 months.

Conclusion: Mothers with higher education have greater duration of breast-feeding as compared to mother with less education.

Keywords: Breast feeding, Maternal education, Complementary feeding

Introduction

Initiation of breast feeding within 60 minutes after birth is defined as early initiation of breast feeding by UNICEF and WHO.¹ For better chance of survival breast feeding should start as early as possible.² International data suggest that 50% of newborn babies that constitute nearly eighty million babies are not put to breast feeding in first hour of life. Giving pre lacteals rather than colostrum in 1st hour of life deprives patients of beneficial effects of richness of anti-effective substances and vitamin A in colostrum. This deprivation of breast feeding leads to increase morbidity and mortality in children less than 5 year of age. The mortality in neonatal periods constitute fifty per-

cent of death of under-five mortality which is preventable to some extent by providing breast feeding to neonate eventually getting benefits of breast feeding.^{3,4} Numerous data on breast-feeding has demonstrated its beneficial effects to newborn babies and on health of mother. The breast milk contains optimal macronutrient to ensure optimal growth and developmental milestone in first six months of infant's life. High Lactose content of the breast milk ensure optimal growth of the brain. The Breast milk is also less immunogenic as breast milk has less protein content and more whey proportion of protein. The breast milk provide protection to the babies against gastrointestinal tract disease by ensuring optimal growth of gastrointestinal tract microbiological flora. The breast milk also has immunomodulating affect that ensure appropriate immune response of a neonate on exposure to an antigen or microbial agent.^{5,6}

Early lactation phase also called as immature phase contain colostrum which is small in quantity but contain large amount of anti-infective substance and vitamin A which provide protection against diseases and second mature phase which is sufficient in quantity and contain sufficient amount of carbohydrate, fats, protein, mineral and micronutrients, to ensure optimal growth and neuronal development in first six month of life of an infant.⁷ The potential beneficial effect of exclusive breast feeding is not enjoyed by infant only but has early and long-term beneficial effect on health of mother. It is not only provides natural contraception during exclusive breast-feeding period but also have protective affect against ovarian and breast malignancy. The beneficial affect continues in post-menopausal phase as it decreases frequency of osteoporosis and related injuries.^{8,9}

There are number of cultural, societal and economic factor which are responsible for initiation and continuation of breast feeding. The most important barrier which prevent initiation and continuation of exclusive breast feeding is socioeconomic barrier. Number of local and international organization have developed policies to promote exclusive breast feeding in first six month of life. There are number of hurdles in implementing and promoting these policies.

These hurdles vary in different communities of the world and include limitation of lactation support program, milk banks, unavailability of educational and interventional program for breast feeding promotion in hospital and at community level. Furthermore, industries providing neonatal and infants formula negatively affect breast feeding initiation and promotion practices.¹⁰

Rapid growth of the child nearly tripling birth weight substantially increases nutritional requirement of the child making breast feeding insufficient to meet nutritional demands of the child both in term of micronutrients like iron and macronutrient by six months of age. This mark increase in requirement necessitates introduction of complementary weaning diet. This introduction of the food other than milk in infants' diet is complementary feeding as per WHO definition.^{10,11}

The introduction of complementary feeding has multiple benefits. It not only fulfils increasing nutritional demands of the babies but also help in development of taste receptors in the babies which will help in acceptance of variety of foods in childhood, prevent infection and malnutrition.^{10,12} There are number of factors which influence initiation, continuation of breast feeding and affect weaning practices. The maternal educational status is one of the most important factors regarding breast feeding and weaning practices of infant.^{10,13} In one of the studies done by Victor Mogre, among different factors maternal level of education was one of the strong reasons of practicing exclusive breast feeding. It was also suggested, that along with health messages, proper counselling by the health provider should be done to educate the mothers.¹⁴

This study was conducted to find impact of maternal education on infant feeding practices. Limited availability of the local data about feeding practices makes it difficult to suggest policies to improve feeding practices to eliminate curse of malnutrition which is mounting to 40% in our country. The policies to promote these feeding practices can be more efficiently communicated to educated mother who herself and as a community worker can help in raising awareness in uneducated mother. This will help us in formulating further action plan in dual way one for promoting female education and secondly enhancing community based female participation for raising awareness in community about feeding practices. The main objective of this study was to determine the impact of maternal education on incidence of breast feeding, duration and practices of infant weaning practices.

Methodology

We conducted this research in University of Lahore Teaching Hospital (ULTH) children ward from October 2020 till March 2021 after permission of hospital ethical committee vide letter no ERC/09/20/20 date 28/09/2020 and written informed consent from participants. Participants were enrolled using non-probability consecutive sampling technique while World Health Organization calculator was used to determine formula for sample size. Confidence level was kept at 95%, margin of error was kept at six percent, and dropout rate was kept at ten percent. Previous reported frequency was twenty one percent.⁸ Sample size was

198 lactating mothers.

Mothers having children up till 1 year of age attending outpatient Pediatrics Department of ULTH were registered under the study after obtaining approval and ethical clearance from the institutional authorities. Verbal consent was taken from the mothers. Demographic details of the study population was recorded. The study population was interviewed with the help of pre-designed and pretested questionnaire which included maternal age, education level, number of children type of feeding in 1st six months, timing of initiation of breast feeding duration of breast feeding, any pre-lacteal if given and type and time of initiation of complementary feeding. Confidentiality of data was ensured. All data was entered and analyzed using SPSS 23. Quantitative variables were presented as mean and standard deviation. Qualitative variables were presented as frequency and percentages.

Results

In our study mean age of children was 9.64±2.3 months. There were 56.3% male children and 43.7% female children. There were 77.1% females from urban area and 22.5% from rural area. Regarding feeding practices 41.6% were breast fed, 19.5% were formula fed, 17.3% were using fresh milk 16.5% were using breast and formula milk 4.8% were using breast milk along with fresh milk and 0.4% were using fresh milk along with formula milk. Breast feeding was adopted by 62.8% mothers. Breast feeding mean duration was 8.52±3.1 months. Regarding initiation of breast feeding 35.1% started immediately after delivery, 19.9% started within 3 days 7.8% started after 3 days of delivery and 37.2% never breast fed their infants. Regarding introduction of solid feed 27.3% started before 6 months of age 62.9% started within 6 to 9 months, 8.7% started after 9 months and 1.3% not started till age of 1 year. Pre lacteal was given in 35.5% infants. There were 11.3% illiterate mothers 5.6% were having primary education, 8.7% had middle education 17.3% mothers were matric pass and 57.1 were graduate. Most of women were having more than 1 child i.e. 66.7% and 33.3% were having first child. There was no impact of maternal education on frequency of breast feeding, p-value 0.328 but duration of breast feeding was longer in mother having graduation as compared to mothers having education less than matric i.e 8.77±2.977 months vs 7.82±3.384 months. There was no impact of maternal age on frequency of breast feeding (p-value 0.138) and on duration of breast feeding (p-value 0.416). Mothers having less than 4 children has lesser duration of breast feeding 7.05±3.248 months as compared to mothers having more than 4 children 8.77±3.023 months, p-value 0.018.

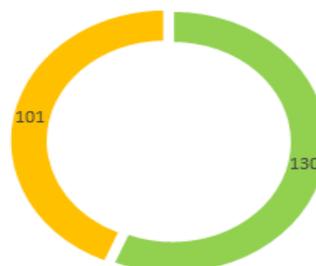


Figure1. Gender of Baby

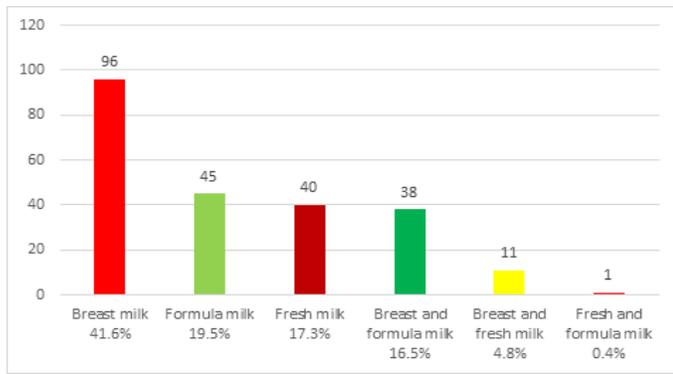


Figure 2. Feeding practices.

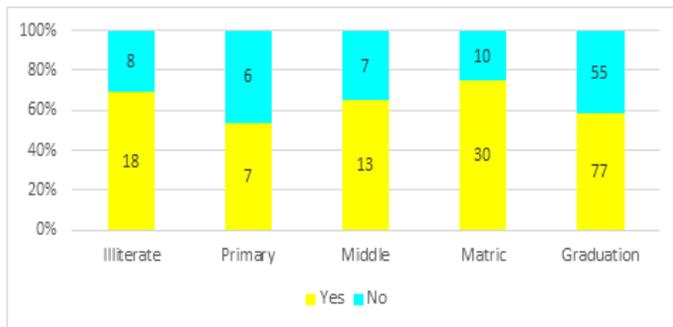


Figure 3. Education of Mother and Breast Feeding.

Discussion

Our study aimed at observing a link of maternal educational level with feeding practices particularly exclusive breast-feeding and timing of initiation of complementary feeding. We saw a positive relationship between maternal educational level and exclusive breast-feeding and timely commencement of weaning practices. The developing countries share more than eighty percent burden of malnutrition globally. Malnutrition, which constitutes both stunting & wasting and intrauterine growth restriction, is responsible for about 21% of global death in children less than five year of age.

The lack of initiation of appropriate weaning diet in first two years of life is commonest cause of stunting and unfortunately is not reversible. WHO 1000 days' initiative is a global recommendation to prevent malnutrition in first 2 years of life.¹⁵ Energy requirement of the child cannot be met with breast-feeding alone after six months of life. Introduction of weaning diet, which is food other than milk, nutritionally optimal and safe for the child age is mandatory. Complementary feeding for an infant refers to timely introduction of safe, nutritional foods in addition to breast-feeding which includes clean and energy rich additional foods introduced at about six months of infant age. Complementary feeding strategies encompass a wide variety of interventions designed to improve not only the quality and quantity of these foods but also improve the feeding behaviors.¹⁴ In this study, we evaluated the impact of maternal education on feeding practices and breast feeding. In our study total 198 mothers were enrolled breast feeding was adopted by 62.8% mothers. Mean

duration of breast feeding was 8.52±3.1 months. Regarding initiation of breast feeding 35.1% started immediately after delivery. Regarding introduction of solid feed 27.3% started before 6 months of age. Pre lacteal was given in 35.5% infants. There was no impact of maternal education on frequency of breast feeding, p-value 0.328 but duration of breast feeding was longer in mothers having graduation as compared to mothers having education less than matric i.e., 8.77±2.977 months vs 7.82±3.384 months. There was no impact of maternal age on frequency of breast feeding (p-value 0.138) and on duration of breast feeding (p-value 0.416). Mothers having less than 4 children has lesser duration of breast feeding 7.05±3.248 months as compared to mothers having more than 4 children 8.77±3.023 months, p-value 0.018.

Our results were consistent with other studies. Klingberg et al. found that timing of starting early complementary feeding, that is, before four months of life has statistically significant differences at different educational level of mother (P<.001). The early introduction of complementary feeding has inverse relation with maternal education as shown by the results of study in which 41%, 29% and 21% of the infant were given early feeding in low, intermediate and highly educated mothers respectively.¹⁰

In meta-analysis it was found that there is a direct relationship between knowledge of mother about complementary feeding and growth of the child which is demonstrated by a gain in height and weight as shown by a documented increase in weight of 0.30kg (+0.26) and height of 0.49cm (±0.50) in one of similar studies.¹⁶

In one study done in Florence about duration and different factors affecting duration of breast feeding in over two thousand of near term and term neonates found that percentage of mother continuing breast feeding at 1st, 3rd, 6th, 9th and 12th month of age were 76.3, 64.7, 42.3, 26.4, and 17 percent respectively. This study also found that factors negatively affecting the continuation of breast feeding were weight of less than 3kgs at birth, lower maternal education or mother working as house wife, or laborer working on daily wagger basis.¹⁷ A study done in Bangladesh showed that Educated mothers were more likely to give colostrum to their babies than illiterate mothers.¹⁸ A local study which also favors our result that mothers who are educated and those who had taken guideline from health care revealed better knowledge and breast-feeding practices.¹⁹ Another local study endorse our result that maternal education has positive correlation on breast and complementary feeding.²⁰ In another study conducted in a government hospital of Pakistan, it was observed that maternal illiteracy and both undernutrition and overweight/obesity were prevalent among the mother of undernourished children under the age of two years. Improper weaning was the major contributing factor in child's malnutrition and improper weaning practice was significantly more in mother of younger age group.²¹

Education brings positive changes in mother behaviors makes them more health seeking which make implementation of feeding practices more feasible, numbers of studies are also sup-

porting this fact.^{22,23,24} Our results were contrary to the Chinese studies where increasing maternal education has found to be a barrier for breast feeding as shown in a systemic review of 31 studies focusing on maternal education as possible barrier to breast feeding in Chinese culture comparing two distinct groups based on year of maternal education, of six Year and 12 year cut off in group one and two respectively. This contrary finding is likely due to difference of culture and employment of mother with higher education.²⁵

Conclusion

Maternal education has a positive impact on feeding practices. The illiterate and women in rural communities have hesitancy in talking about breast-feeding with male gender and secondly scarcity of lactation management services make it more difficulty in initiating and promoting exclusive breast-feeding practices. By promoting female education and enhancing educated female community participation, breast feeding and complementary feeding practices can be improved.

Limitation of Study

Limitation of our study is that its single center study in one city so the results cannot be true reflection, multicenter study in different cities is need to see the true association.

Recommendations

It is recommended to give emphasis on maternal education at the community level. Moreover there is need to have more lactation management programmed at all govt Health care facilitates.

Secondly there is need to have more breast feeding and lactation management programs for pregnant and lactating mother in all health care facilities to cater the need of this segment of society by providing adequate ante natal and post-natal counselling and encouragement of breast feeding.

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Authors' Contribution: BS suggested concept, design and aquation of data, MN did data acquisition and analysis, MR did data analysis, MUR performed data interpretation, SB approved the article.

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