



RESEARCH ARTICLE

THE ROLE OF MATERNAL STATUS AND BREAST FEEDING PRACTICE ON INFANTS IN SOUTH WEST REGION OF BANGLADESH

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ABSTRACT

Maternal status and breastfeeding practices have a major impact on infant health, growth and development. The improvement of mother's socio-economic and socio-demographic characteristic is necessary for proper nursing of infants to ensure normal development of their child. This study aims to determine the effect of mother status and their breast feeding practices on development of their infant aged from zero to twenty four months in south-west region of Bangladesh. It was a comparative cross-sectional study. Six hundred subjects among age group from zero to twenty four months of children were studied in four selected districts in the rural area. The assessed variables in this study include birth weight, breastfeeding practices and other indicators of socio-economic and socio-demographic state, including maternal age, education and family income. This study found the initiation of breastfeeding about 62% and 48.66% ($P < 0.001$) in the rural and urban area respectively within one hour after birth. Prolactal feed was assessed to 48.33% and 41.33% in both the areas respectively. Exclusive breast feed was found to 71.33% and 23.33% in rural and urban area ($P > 0.13$) respectively. It was found that appropriate CF (completion of breast feeding of 6 months) was 50.0% in rural area and 57.66% in urban area. Proper knowledge on colostrum feed in both rural and urban areas were found to 45.0% and 77.0% ($P < 0.049$) respectively. Significance difference was found between rural and urban areas for the initiation of breastfeeding ($P < 0.001$), exclusive breastfeeding ($P > 0.13$), continuous breastfeeding ($P < 0.002$) and complementary feeding practice ($P < 0.01$). Furthermore, this study assessed the birth weight of baby depending on parent's socio-economic and socio-demographic characteristic. The birth weight was found to better with the mature age of mother, proper education and occupation of parents, less number of living children and family member and comparatively higher family income. This study showed that the maternal status and breast feeding practice was better in rural area than urban area. Therefore, the appropriate breast feeding practice plays an important role on their good nutrition status to ensure normal growth of infants.

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INTRODUCTION

Maternal status and Breastfeeding practices have a major impact on infant health, growth and development. Poor nutritional status of mothers and improper breastfeeding is responsible for infant's poor nutritional status. Maternal nutritional status influences infant's birth weight and growth and mental development (Villar *et al.*, 1984; Bergman *et al.*, 1983). In a studies of ICDDR, B report (2011) found 37% infants born with low birth weight in Bangladesh, according to WHO cut off point of < 2500 g. The rate of infant mortality in Bangladesh is 88 deaths per 1000 live births. Breastfeeding is a pivotal factor between life and death for the vast majority of children in developing countries.

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Less than 35.0% of infants worldwide are exclusively breastfed during the first six months of life (WHO/UNICEF, 2003). Breast milk is a natural resource that has a major impact on infant's health, growth and development and it is recommended for at least the first two years of a child's life (WHO/UNICEF, 2003). Breast milk contains the nutrients in the right quantity that a baby needs. The nutrients are quickly and easily digested (King, 1992). Decline in breastfeeding is associated with women's involvement in work force as well as lack of knowledge on the benefits of the practice and management of lactation problems. Bottle-feeding is thus perceived as the modern way and breastfeeding as old fashioned and inconvenient (WHO/FAO, 1992). Breast milk contains various protective factors like immunoglobulin, lysozyme, bifidus factor, complement component and carrier proteins binding vit B₁₂, folate, iron (lactoferrin) and limit their availability for intestinal bacteria. In Bangladesh, incidence of

low birth weight is unacceptably high. Forty five percent low birth weights has been reported in Bangladesh (Canosa, 1989). Data cited in National Food and Nutrition policy (1997) document shows that LBW ranges from 30-50 percent. From different other studies it has been seen that LBW prevalence rate is about 30 percent (Nahar *et al.*, 1998; Karim and Taylor, 1978). The aims of this study were to identify the prevalence of breastfeeding of the women who gave birth at the south west region of Bangladesh, and to report on the breastfeeding exclusivity rates and duration of a sample of breastfeeding women from this population.

METHODS AND MATERIALS

It was a descriptive type of cross-sectional study, done among the lactating mothers and their children. The study period was of twelve months duration from March 2011 to February 2012. Six hundred subjects among age group from zero to twenty four months of children were studied in four selected districts in the rural area. The assessed variables in this study include birth weight, breastfeeding practices and other indicators of socio-economic and socio-demographic state, including maternal age, education and family income. This study was conducted at kushtia, jhenaidah and Jessore sadar upazilla that was an urban area and subject was carried out from four village to each sadar upazilla as an rural areas. Due to the limitations of time and resources it is not possible to conduct the study covering the whole country. Therefore, specific areas are chosen by a multistage sampling procedure. To test the bivariate associations, we conducted the chi-square for categorical variable. In the table, proportions were presented for categorical variables. P- values <0.05 were considered significant.

RESULTS

The family of Bangladesh is usually headed by the male parent and is mainly responsible to ensure the economy of the households. Female parent are mainly responsible to look after the family and the children, and male parents are contribute to the household economy. In this study Socio-demographic characteristics were determined by the assessment of age, sex, religion, number of family member, education, occupation and income of family members. The study was conducted among the children and the ages of children were grouped into 0-5, 6-8, 9-11 and 12-above months. Total number of children was selected to 600 and majority of them were 6-8 months (39.0%) in rural area and 9-11 months (36.66%) in urban area as presented in Table 1 and Fig 1. A significant variation of children in number was found among the different age groups in the rural and urban area. Only 16% children was found in the rural area of the age group 9-11 in contrast to 36.66% in the urban are of the same age group. Table-1 also indicated that an almost similar distribution of sex of children was found in the rural and urban area. 56.66% boys and 43.33% girl was present in rural area in contrast to 48.33% boys and 51.66% girl in the urban area. The association of sex of children is also found significant. In addition this Table also presents the religion distribution of children. Muslin children were found to be very high both in the rural and urban area in contrast to small parentage of Hindus children (10-12%), these result is also significant. However, the family members of the respondent were grouped into 3-4, 5-6 and 7 to above. This study found a

very high number of family members in the group 3-4 (number) which was 75% and 95% for rural and urban area respectively. The number of family members for other groups was moderately reduced in rural area and considerably reduced in urban area. In addition a very significant result was found in the group 5-6 where 23.66% and 4% in number assessed for rural and urban area respectively as presented in the Table 1. Furthermore, most of the family showed a tendency to take one child in urban area and two children in rural area. 16% and 55.66% for rural and urban area respectively are showed the tendency to take one child. But 59% and 39.66% for rural and urban area respectively are showed the tendency to take two children. In addition to take more than two children are higher in rural area than urban area but it is proportionately decreases for both areas. Table 1 also describes the mother ages.

A very high percentage of mothers below 20 years were found in rural area. 61.66% mother of below 20 years was found in rural area in contrast to 3.33% urban area. In contradiction of 55% mother of 26-30 years was found in urban area as compared to 5.66% in rural area. And other age groups of the mother were found to be similar for rural and urban area. So a non significance result was found in different age group of mother in both the areas.

Information about the Knowledge of Colostrums

Normal growth and development of child colostrum is one of the most important elements, but most of the mother has no proper knowledge of colostrums. This research observed that most of the study mothers in rural areas were primary education or illiterate. So they have little idea on the constituents of human or others milk. In this study socio-demographic characteristics were determine by the assessment of the knowledge of colostrums and give colostrums to their child, and indicates that 45.0% of study mother has knowledge of colostrums in rural area but in urban area this percentage was 77.0. In contrast, 88.37% of mother feed colostrums to their child in rural area but in urban areas these percentage were 93.66. So significant results were found in both the characteristics.

Percentage of Infant Feeding Practice and Types as well as Causes of Infant Feeding

In general, mother is not recommended to the feed their child extra food in addition to breast milk upto six month. However, due to the some special cause, such as inadequate milk, sickness of mother and age of mother they cannot meet up their child demand. Therefore, in this case mother or caregivers feed their child many kinds of additional foods. Such as infant formula milk, suji, cow's milk goat milk, infant formula milk with suji etc.

The feeding status of additional foods to the child within six month in the rural area infant formula milk 14.33%, feed suji were 20.33%, feed cow's milk were 23.66%, feed goat milk were 4.0% and feed infant formula milk with suji were 37.66% respectively. In contrast to urban area this percentage was 13.33, 21.33, 43.0, 4.33 and 18.0 respectively. Majority of mothers feed their children anything other than breast milk within 6 months because of inadequate breast milk supply were 56.66% in rural area and 17.33% in urban area.

Table 1. Socio-Demographic Characteristics of the Study Subjects

| Characteristics | Rural area (n=300) | Urban area (n=300) | χ^2 | P value |
|----------------------------------|--------------------|--------------------|----------|---------|
| Age of Children | n (%) | n (%) | | |
| 0-5 | 69(23.0) | 51 (17.0) | 33.34 | 0.01 |
| 6-8 | 117 (39.0) | 93 (31.0) | | |
| 9-11 | 48 (16.0) | 110 (36.66) | | |
| 12-24 | 66 (22.0) | 46 (15.33) | | |
| Sex of Children | | | | |
| Boys | 170 (56.66) | 145 (48.33) | 4.17 | 0.04 |
| Girls | 130 (43.33) | 155 (51.66) | | |
| Religion | | | | |
| Muslim | 266 (88.66) | 249 (83.0) | 7.52 | 0.02 |
| Hindu | 31 (10.33) | 38 (12.66) | | |
| Other's | 03 (1.0) | 13 (4.33) | | |
| Family Member of the Respondents | | | | |
| 3-4 | 225 (75.0) | 286 (95.33) | 90.18 | < 0.01 |
| 5-6 | 71 (23.66) | 12 (4.0) | | |
| 7 and above | 04 (1.33) | 02 (0.66) | | |
| Number of Children | | | | |
| One | 48 (16.0) | 167 (55.66) | 19.83 | 0.004 |
| Two | 177 (59.0) | 119 (39.66) | | |
| Three | 71 (23.66) | 12 (4.0) | | |
| 4 and above | 04 (1.33) | 02 (0.66) | | |
| Age of Mother | | | | |
| Below 20 | 185 (61.66) | 10 (3.33) | 110.40 | 5.69 |
| 21-25 | 95 (31.66) | 109 (36.33) | | |
| 26-30 | 17 (5.66) | 165 (55.0) | | |
| 31 and above | 3 (1.0) | 16 (5.33) | | |

Results were expressed as number (%); χ^2 test was performed as $p < 0.05$ levels of significance.

Table 2. Information about the knowledge of colostrums

| Characteristics | Rural area | Urban area | χ^2 | P value |
|-------------------------------|-------------|-------------|----------|---------|
| | n=300 | n=300 | | |
| | n (%) | n (%) | | |
| Knowledge of colostrums | | | | |
| Yes | 135 (45.0) | 231(77.0) | 56.89 | 0.049 |
| No | 165 (55.0) | 69 (23.0) | | |
| Give colostrums to your child | | | | |
| Yes | 265 (88.37) | 281 (93.66) | 5.20 | 0.02 |
| No | 35 (11.66) | 19 (6.33) | | |

Results were expressed as number (%); χ^2 test was performed as $p < 0.05$ levels of significance.

Table 3. Percentage of Infant Feeding Practice and Types as well as Cause of Infant Feeding

| Characteristics | Rural area | Urban area |
|-------------------------------|-------------|-------------|
| | (n=300) | (n=300) |
| | n (%) | n (%) |
| Types of Infant Feeding | | |
| Infant formula milk | 43 (14.33) | 40 (13.33) |
| Suji | 61 (20.33) | 64 (21.33) |
| Cow's milk | 71 (23.66) | 129 (43.0) |
| Goat milk | 12 (4.0) | 13 (4.33) |
| Infant formula milk with suji | 113 (37.66) | 54 (18.0) |
| Cause of Infant Feeding | | |
| Inadequate breast milk | 170 (56.66) | 52 (17.33) |
| Sickness of mother | 22 (7.33) | 42 (14.0) |
| Age of mother | 108(36.0) | 206 (68.66) |

DISCUSSION

The community based cross sectional study was conducted on six hundred mothers and caregivers and their infants. The target respondents were selecting randomly to assess the effects of maternal status and breastfeeding practices on infant development. In addition, some other factors were also selected randomly to identify the effect of maternal status on infant development. Two types of characteristics of mothers as factors were studied against different ranges of birth weight of infant to identify the effect of maternal status on infant.

However, literature of this similar cross sectional study in Bangladesh was revealed that 45.5% mothers were found to be under 20 years and 8.9% mother were equal or above 31years (Bergt and Mescot, 1973). The present study showed that the age group of below 20 years, 36.3% mothers was delivered low birth weight infants in rural area but in urban area low birth weight percentage in these categories were to 1.0. The inadequate birth weights were found in rural area 16.6% in below 20 years of age but in urban areas 26% were found in 26-30 years age group of mothers. Thus maternal age ranging from 21-30 years was found to be most suitable age group for giving birth to normal birth weight infants.

The findings of the present study are in agreement with many similar studies both in developed and developing countries (Karim and Taylor, 1978; Bergt and Mescot, 1973). The current study specially suggests giving emphasis on maternal nutrition, education of parents, exclusive breast feeding, complementary feeding practice and use of hygienic latrines and improvement of socio-economic status to reduce the burden of childhood under nutrition in this region.

Conclusion

In this study find out the factors that effect on the infants growth and development of rural and urban area in south-west region of Bangladesh. The infants growth and development mainly depend on the following factors: maternal status, breastfeeding practice, family member or number of children, family income, educational status etc. which are varied area to area like rural and urban zone. This study indicate that about 77% children has born by ceser in urban area whereas, only about 34% in rural area, whose mother has taken antibiotic and other medicine. Some mother willingly avoid breastfeeding to their child for their body fitness and most of the mother are bussy with their survices and other works in urban area. As a result, continuous breastfeeding is frequently decreased in urban area. The current study specially suggests giving emphasis on maternal nutrition, education of parents, exclusive breast feeding, complementary feeding practice and use of hygienic latrines and improvement of socio-economic status to reduce the burden of childhood under nutrition in this region. Finally it can be concluded that infants growth and development must be developed by awareness of the social factor that regardless of area.

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