# Effects of Socio-demographic Variables on Breastfeeding Practices

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**Citation**

M Hossain, M Islam. *Effects of Socio-demographic Variables on Breastfeeding Practices*. The Internet Journal of Family Practice. 2008 Volume 7 Number 2.

**Abstract**

Infant and child are the assets of a country. Women are the heart of development because they bear children and they are nearly half of the total population in the country. The aim of this study is to identify the effects of socio-demographic variables on breastfeeding in rural area of Charghat Thana of Rajshahi District, Bangladesh. For this a total number of 800 rural women have been interviewed through a structured questionnaire by purposive sampling technique. In this study, a sophisticated multivariate technique, multiple classification analysis (MCA) is employed to determine which factors are strongest on breastfeeding practices in rural area of Bangladesh. In this study, it is found that mother's education is one of the most important factors, which are consequence the strongest for explaining the variability on duration of breastfeeding and birth order is the second strongest determinants among the included variables.

## INTRODUCTION

Bangladesh is one of the most density-populated countries in the world. Bangladesh is a small country of 147570 square kilometers area with a population of around 147 million people in 2006 (934 people per square kilometers) [8] and 150 million population in 2007 [3] . Breastfeeding could potentially be confounding factors, since it affects both child survival and the length of the birth interval. Children with short preceding birth interval are less likely than others to have ever born breastfeed, the main demographic factors are age of mothers at birth of child, sex, multiplicity of birth, parity, previous birth intervals, birth order, miscarriage and still birth. Nutrition and economic factors may explain the differential mortality by birth order. A mother's poor health and poor nutritional status may also have post-neonatal consequences, such as impaired location [6] and render her unable to give adequate care to her children. Thus children who are either never breastfed or weaned early in infancy are at a much higher risk of becoming ill and being malnourished. Because of the synergism between illness/disease and malnutrition as underlying cause of infant mortality, children experiencing both are at a much higher risk of dying. Feeding practices are important determinants of children's nutritional status and many studies are important determinants of children's breastfeeding on the nutritional status, morbidity and infant mortality [42] .

It was revealed that breastfeeding status of the mothers placed a considerable role in the determination of fertility. The mean number of live births was lower in case of mothers who gave full breastfeeding compared to others. The relationship between the duration of breastfeeding and mean number of live births was direct and negative. A significant change in the breastfeeding pattern was observed by parity and age of mothers [5] . Breastfeeding combat against infectious disease and it also impact on mortality differential. The effects of breastfeeding on infant survival seem to be greater during the early months of life [7] .

Therefore, the purpose of the present work is to identify the factors affecting on breastfeeding practicesin rural areas of Charghat Thana of Rajshahi district, Bangladesh.

## SOURCE OF DATA OF THIS STUDY

In this study, a total number of 800 female respondents were questioned during survey period in 2007. The respondents were randomly interviewed by some selected questions from several villages in the rural area of Charghat Thana of Rajshahi district, Bangladesh by purposive sampling technique. Various socio-economic and demographic variables were considered at the time of data collection.

## METHODS

Multiple classification analysis (MCA) was considered as an appropriate mathematical tool to analyze data in this study.

In 1934, Yates developed the MCA and, it was later expanded and detailed by Anderson and Bancraft in 1952. The computerized MCA program was prepared by a group of researchers at the survey Research Center of the University of Michigan [1] . Since then, the MCA program has been widely used not only in social science research but also all disciplines of applied knowledge. MCA requires one dependent variable and two or more independent variables.

Mathematically, the model can be expressed by the following equation:

**Figure 1**

$$Y_{ijk} = \bar{Y} + a_i + b_j + c_k + \ldots\ldots\ldots\ldots\ldots\ldots + e_{ijk}$$

Where, $Y_{ijk}$ is the value or score of an individual who falls in the ith category of the factor A, j-th category of the factor B and kth category of the factor C.

$\bar{y}$ is the grand mean of Y.

$a_i$ is the effects due to the ith category of the factor A, which is equal to the difference between Y and the mean of its category of factor A.

$b_j$ is the effect due to the j-th category of the factor B, which is equal to the difference between Y and the mean of its category of factor B.

$c_k$ is the effect due to the k-th category of the factor C which is equal to the difference between Y and the mean of its category of factor C.

$e_{ijk}$ is the error term related with $Y_{ijk}$ score of the individual.

In this analysis, duration of breastfeeding is considered as dependent variable and independents variables are mother's age, age at marriage, mother's education, husband's education, mother's occupation, family income, birth order and religion. MCA carried out using the software SPSS7.5.

## RESULTS AND DISCUSSION

Distribution of respondents based on background characteristics is demonstrated in Table 1. Table1 showed that (22.4 %) fewer percentages of mothers age under 20 years, the lowest percentage (2.5%) of mother's age (35 years and above) and the highest percentage (75.1%) of mother's age 20-34 years. The lowest proportion mothers (4.8%) are age at marriage 18 years & above and the highest proportion of mothers (95.2%) are age at marriage less than 18 years. The distribution relating to birth order indicates that a larger proportion (67.3%) of the mother's 2-3 birth order. Among others groups, nearly 24.3% reported to have one of first birth order and 8.5% mothers to have 4 and above birth order or multiple birth order. The results in the Table1 provide that (2000-5000 T.K) family income contains the highest proportion of family (79.0%) and others (<2000 T.K) family income (10.9%) and (5100 and over T.K) 10.1% respectively. The mother's occupation may be a reasonable indicator of broad socio-economic status, but it is only loosely related to income. In this study, the main mothers occupation is working such as housewife, servant, jobs, street worker etc, with percentage was 80.1, occupation are non-working with mothers was 11.9%. From the Table1, it is observed that only 13.1 percent mothers had received secondary and above education where as 17.1% mothers had completed primary education and 69.8% mothers had not received any formal education. Husband's education is also important variable generally it is likely that higher educated people belong to higher economic status. These studies show that father of children are seem to be better education than their mother. On the based of Table1, 58.5% father's of children are illiterate which the comparable figure for mother's is about 58.5% among other categories 28.4% fathers are primary education while secondary and above level education is successive 13.1%. Religion is very important characteristics in relation to the mortality particularly Islamic believes. It is an important community characteristic. Majority people of Bangladesh are Muslims. Also other people are non-Muslims such as Hindu, Buddha, and Christian. In this study area, 94% mothers belong to Muslim community and 6 percent belongs to non-Muslim community (Table1).

**Figure 2**

Table 1: Distribution of respondents based on background characteristics

| Background characteristics | Number of respondents | Percentage (%) |
|---|---|---|
| **Mothers age** | | |
| <20 | 179 | 22.4 |
| 20-34 | 601 | 75.1 |
| 35+ | 20 | 2.5 |
| **Age at marriage** | | |
| <18 | 762 | 95.2 |
| ≥18 | 38 | 4.8 |
| **Birth order** | | |
| 1 | 194 | 24.3 |
| 2-3 | 538 | 67.3 |
| 4+ | 68 | 8.4 |
| **Family income** | | |
| <2000 | 87 | 10.9 |
| 2000-5000 | 632 | 79.0 |
| 5100+ | 81 | 10.1 |
| **Husband education** | | |
| Illiterate | 468 | 58.5 |
| Primary | 227 | 28.4 |
| Secondary and above | 105 | 13.1 |
| **Religion** | | |
| Muslim | 752 | 94.0 |
| Non-Muslim | 48 | 6.0 |
| **Mothers education** | | |
| Illiterate | 558 | 69.8 |
| Primary | 137 | 17.1 |
| Secondary and above | 105 | 13.1 |
| **Mothers occupation** | | |
| Working | 705 | 80.1 |
| Non-working | 95 | 11.9 |

In this study, the results of MCA are presented in Table 2. Age of mothers positive (r=0.072) significantly effects on duration of breastfeeding (Table 3). The breastfeeding is comparatively higher for old age of mothers. It is observed from the Table 2 that the adjusted mean of breastfeeding is higher (21.062 months) with older age of mothers (35 years and above) and lower of breastfeeding (19.6392 months) with early age of mothers. The early age at marriage than the older age at marriage was higher breastfeeding. The adjusted mean of breastfeeding of women with less than 18 years age at marriage and more than 18 years age at marriage are 20.7526 months and 19.8303 months respectively. It is observed that the adjusted mean of breastfeeding was higher (21.2069 months) for 2-3 birth orders and was lower (19.2574 months) for one birth order. Literate mothers were higher breastfeeding than the illiterate mothers. The adjusted mean of breastfeeding are 20.1384 months, 21.3478 months and 22.9057 months for those children whose mothers with illiterate, primary and secondary & above education completed correspondingly. It is noticed that the adjusted mean of breastfeeding was higher (20.8560 months) for Muslim and was lower (18.4019 months) for Non-Muslim respondents. Another variable that was taken as predictor variable of breastfeeding was mother's occupation. This variable was used in the analysis as dichotomous variables i.e., working and non-working. It is found that the adjusted means of breastfeeding are 20.5037 months and 22.2301 months for working and non-working women.

In Table 2, the proportion of variance of breastfeeding explained by mother's education is the highest value $_2$ =0.116 (unadjusted) and $_2$ =0.119 (adjusted). It is found that the effect of birth orders is found to be the second strongest positive significant influential factor for explaining the variation of breastfeeding among the included socio-demographic variables. The proportion of variance of breastfeeding explained by birth order is the highest value of $_2$ =0.129 and of $_2$ =0.102. It is noticed that the effect of family income is found to be the third strongest influenced factor for explaining variability of breastfeeding among the included variables. The strength of explaining variability by family income is $_2$ =0.075 and $_2$ =0.085. It is observed in Table 2 that the effect of mother's age was found to be the fourth strongest influence factor for explaining the variation of breastfeeding as well as the proportion of variance explained by mother's age is $_2$ =0.074 and $_2$ =0.071. It is identified that the effect of religion is the fifth strongest influenced factor on breastfeeding. It is observed that the others variables such as husbands education and age at marriage strong influenced for explaining the variation on breastfeeding.

**Figure 3**

Table 2: Mean number of duration of breastfeeding by selected socio- demographic variables by using MCA

| Explanatory variables | Predicted mean | | Correlation ratio | |
|---|---|---|---|---|
| | Unadjusted | Adjusted | $\eta^2$ (Unadjusted) | $\beta^2$ (Adjusted) |
| **Mothers age** | | | 0.074 | 0.071 |
| <20 | 19.5866 | 19.6392 | | |
| 20-34 | 21.0233 | 21.0155 | | |
| 35+ | 21.3000 | 21.0620 | | |
| **Age at marriage** | | | 0.025 | 0.024 |
| <18 | 20.7546 | 20.7526 | | |
| ≥18 | 19.7895 | 19.8303 | | |
| **Birth order** | | | 0.129 | 0.102 |
| 1 | 18.8711 | 19.2574 | | |
| 2-3 | 21.2416 | 21.2069 | | |
| 4+ | 21.7353 | 20.9082 | | |
| **Family income** | | | 0.075 | 0.085 |
| <2000 | 20.8161 | 20.7717 | | |
| 2000-5000 | 20.9272 | 20.9644 | | |
| 5100+ | 18.8889 | 18.6462 | | |
| **Husband education** | | | 0.089 | 0.030 |
| Illiterate | 20.1047 | 20.6114 | | |
| Primary | 21.4714 | 21.0742 | | |
| Secondary & above | 21.7524 | 20.3526 | | |
| **Religion** | | | 0.065 | 0.072 |
| Muslim | 20.8418 | 20.8560 | | |
| Non-Muslim | 18.6250 | 18.4019 | | |
| **Mothers education** | | | 0.116 | 0.119 |
| Illiterate | 20.1165 | 20.1384 | | |
| Primary | 21.6423 | 21.3478 | | |
| Secondary & above | 22.6381 | 22.9057 | | |
| **Mothers occupation** | | | 0.030 | 0.069 |
| Working | 20.6149 | 20.5037 | | |
| Non-working | 21.3684 | 22.2301 | | |
| | Proportion of variance explained ($R^2$)=0.046<br>Grand mean= 20.7087 | | | |

**Figure 4**

Table 3: Zero-order correlation co-efficient of duration of breastfeeding by selected socio-demographic variables

| | Y | $X_1$ | $X_2$ | $X_3$ | $X_4$ | $X_5$ | $X_6$ | $X_7$ | $X_8$ |
|---|---|---|---|---|---|---|---|---|---|
| Y | 1.000 | 0.072* | -0.025 | 0.119** | -0.053 | -0.084* | -0.065 | -0.115** | 0.030 |
| $X_1$ | | 1.000 | 0.034 | 0.308** | 0.112** | -0.015 | 0.052 | -0.034 | -0.153** |
| $X_2$ | | | 1.000 | -0.112** | 0.062 | 0.045 | -0.023 | 0.056 | 0.025 |
| $X_3$ | | | | 1.000 | 0.169** | -0.168** | 0.044 | -0.228** | 0.000 |
| $X_4$ | | | | | 1.000 | 0.079* | 0.096** | 0.017 | 0.048 |
| $X_5$ | | | | | | 1.000 | 0.016 | 0.642** | 0.005 |
| $X_6$ | | | | | | | 1.000 | -0.038 | 0.070* |
| $X_7$ | | | | | | | | 1.000 | 0.012 |
| $X_8$ | | | | | | | | | 1.000 |

**Correlation is significant at the 5% levels, **Correlation is the significant at the 1% levels.*

| | |
|---|---|
| Y=Duration of breastfeeding | $X_5$=Husband education |
| $X_1$=Mothers age | $X_6$=Religion |
| $X_2$=Age at marriage | $X_7$=Mothers education |
| $X_3$=Birth order | $X_8$=Mothers occupation |
| $X_4$=Family income | |

## CONCLUSION AND RECOMMENDATIONS

The highest proportion of mothers (95.2%) belongs to age at marriage less than 18 years. Majority respondents are illiterate. Mother's education was one of the most important factors, which is the strongest factor for explaining the variability of duration of breastfeeding by using MCA among the included variables. Mother's education has been positively significant association with duration of breastfeeding. Education may provide better employment opportunities outside home and consequently mother's income could be raised through providing education.

The following recommendations based on the findings of this study should be suggested for policy implications to boost the breastfeeding practices and reducing infant and child mortality as well:

Education of the mothers may be the most important variable because of its

closure link with the proximate determinants of mortality. Educated mothers may provide better health care. They are likely to be a better provider of nutrition and hygiene. Education women are exposed to the outside world and thus improve their perspectives and attitudes. Therefore massive program should be taken to foster educated women in Bangladesh.

ii) Feeding practices play a pivotal role in determining the optimal development of infants and child. Poor breastfeeding practices have adverse consequences for the health and nutritional status of children, which in turn have consequences on the mental and physical development of the child. To encourage mother to breast feed to their children during infant and childhood period. Therefore, it will increase nutritional status and hence it will reduce the infant and child mortality substantially and dramatically.

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