

**A Retrospective Approach to Determine the
Household Factors Associated with the
Breastfeeding Practice in Bangladesh:
Evidence from BDHS 2017-2018**

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Declaration

I hereby declare that the thesis project titled “**A Retrospective Approach to Determine the Household Factors Associated with the Breastfeeding Practice in Bangladesh: Evidence from BDHS 2017-2018**” has been written and submitted by me, Akash Ahmed and has been carried out under the supervision of **Dr. S. M. Raysul Haque**, Assistant Professor, Department of Public Health, School of Pharmacy and Public Health, Independent University, Bangladesh.

It is further declared that this thesis has been composed solely by me and it has not been submitted, in whole or in part, in any previous institution for a degree or diploma. All explanations that have been adopted literally or analogously are marked as such.

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Abstract

Introduction: Breastfeeding is a unique source of nutrition that plays an important role in the growth, development, and survival of infant. Breastfeeding is promoted internationally as the preferred method of feeding infants up to 6 months and continuing up to 2-3 years with the addition of weaning food. Unfortunately, the breastfeeding initiation and duration rate was quite low in both developed and developing countries and particularly in Bangladesh. This study analyzes the impact of several household factors that influence breastfeeding practice.

Methods: This study uses data from the Bangladesh Demographic and Health Survey (BDHS) 2017-2018. Mother's having at least one child aged more than 6 months living with them and currently non-breastfeeding and non-pregnant were included in this study. The sample size used in this study is 3057. Descriptive statistics was observed and bivariate analysis was done to examine the association between individual independent variables and dependent variable followed by multivariate to evaluate the household characteristics contributing factors.

Result: The overall sample consisted of 3750 respondents where 2419 (79.13%) mothers were breastfeeding more than one month and 638 (20.87%) mothers were not. Among the respondents the highest percentage, which is 18.78%, belong to Chittagong division and lowest is 10.30% belong to Rangpur. In case of place of residence among the respondents, it is observed that, 61.27% women lived in rural area and 38.73% women lived in urban area. From the analysis it is found that, the odds of breastfeeding practice for a woman living in urban area is 125% higher than the woman living in rural area, p-value is **0.027**. The odds of breastfeeding practice for a woman from richer family is 82% lower than for a woman from poorest family and a woman from richest family has 92% lower odds of breastfeeding practice than a woman from poorest family, p value is **0.009** and **0.003** respectively.

Conclusion: This study is able to explore some really important findings including residence in rural area, wealth index richer and richest, having secondary education and increase in age of mothers decrease the breast-feeding practice.

A Retrospective Approach to Determine the Household Factors Associated with the Breastfeeding Practice in Bangladesh: Evidence from BDHS 2017-2018

Background:

Breast milk is the primary food for an infant after birth which has a perfect combination of vitamins, minerals, fat, and protein. Breastfeeding plays an important role in a woman's life to recover from the pregnancy stage and nourishes maternal health for her later stage of life.(Ciampo & Lopes, 2018). The benefits of breastfeeding for children have long been known and reported, although the frequency of this practice and the presentation of its advantages to nursing mothers have been found to be inadequate in various regions of the world, (Ciampo & Lopes, 2018). Breastfeeding duration is shorter in high-income countries than in low- and middle-income countries. Even in low- and middle-income countries, however, only 37% of infants under 6 months are exclusively breastfed. (Victora et al., 2016). South Asia, parts of Latin America, and Sub-Saharan Africa have the highest rates of breastfeeding prevalence at 12 months. Most high-income countries have a prevalence of less than 20%; for example, there is a significant difference between the United Kingdom (12%), the United States (27%), and Norway (35%). (16 %). (Bonnet et al., 2019). Both developed and developing nations experience specific influences on breastfeeding practices.

Feeding a baby at 12 months was common in low- and lower-middle-income families, but uncommon elsewhere. (Victora et al., 2016). Many distal-level variables, including maternal age and educational attainment, the number of children, and family income, showed strong correlations with the continuation of breastfeeding for 12 months or longer. (Santana et al., 2018). Breastfeeding duration is significantly influenced by socioeconomic and demographic factors. The

factors most frequently linked to this practice, such as maternal occupation, pre- and postpartum counseling, maternal knowledge of breastfeeding, and type of delivery, are those most closely related to the outcomes when exclusive breastfeeding is measured in the first six months of life. (Santana et al., 2018). Cohabitation with the husband/partner may result in more work for the woman, especially if he does not share household duties with her, so it has been suggested that it protects against early weaning. (Santana et al., 2018).

In China, mothers who had more than 98 days of maternity leave were 10% more likely to exclusively breastfeed than mothers who had fewer days. (Li et al., 2021). The preparation of infant formula before delivery, maternal and child characteristics, health facility practices, and the prevalence of EBF have all been found to be significantly related. However, breastfeeding customs have been impacted by modernization as well as aggressive marketing and advertising campaigns for infant formula and other baby food. As a result, mothers used infant formula more frequently. (Radwan, 2013). Additionally, women are more likely to stop breastfeeding within 24 months, regardless of whether they work as professionals (28.3 %) or as housewives (26.3 %). (Motee et al., 2013).

It has been reported that exclusive breastfeeding was inversely related to premature birth in terms of child characteristics. This may be because mothers of premature infants receive inadequate support for starting and maintaining breastfeeding during their hospital stay, which makes it difficult for them to continue breastfeeding after being released. (Li et al., 2021). While about 24.4% (n=57) of the mothers stopped breastfeeding because they claimed they did not have enough breast milk and this reason, may also be connected to the child's refusal to continue breastfeeding because there was not enough breastmilk to fully satiate his hunger. (Radwan, 2013). Breast issues like sore nipples or the mother's belief that her milk production is insufficient are some of the main

factors that influence the exclusivity and duration of breastfeeding. (Motee et al., 2013). The mother's lack of knowledge of effective methods to increase breastmilk may account for her worries about a lack of milk supply. Contrary to popular belief, most mothers are still able to produce enough breastmilk for their infants' proper growth, even in societies where the mother's diet is subpar. (Radwan, 2013). In general, breastfeeding mothers breastfeed their kids every two hours during the day, which causes exhaustion and back pain. The challenges with breastfeeding (low milk supply, engorged breasts, and cracked nipples) lead to a bad breastfeeding experience, which is followed by a decline in mothers' confidence to wet-nurse their babies, leading to an early end to breastfeeding. (Waldenstro & Aarts, 2004).

Following a previous study conducted in Indonesia, mothers with higher levels of education may also practice exclusive breastfeeding because they are more informed about its definition and advantages. (Laksono et al., 2021). In a similar vein, a study conducted across multiple European regions found that mothers who were younger and less educated were more likely to wean their children before they reached the age of six months. In other words, they did not exclusively breastfeed their infants. Socioeconomic status, parity, and educational attainment can all affect whether mothers choose to breastfeed or not. (Bonnet et al., 2019). In some American studies, the variable of self-efficacy was included to determine the relationship between maternal education and the practice of exclusive breastfeeding. Higher education levels were linked to higher self-efficacy scores. Exclusive breastfeeding was positively correlated with the mother's education level. (Laksono et al., 2021).

The higher prevalence of caesarean deliveries, which have been linked in some studies to delayed and unsuccessful breastfeeding, maybe the cause of the lower prevalence of early breastfeeding initiation. Early breastfeeding prevalence was 14.6 percent among mothers who gave birth to their

babies via caesarean sections, which was much lower than the prevalence of 60.5 percent among mothers who gave birth to their babies naturally. (Li et al., 2021). When compared to 23.9 percent of those who had a caesarean delivery, it was found that 42.6% of women who gave birth normally via vaginal delivery started breastfeeding as soon as possible after giving birth. (Motee et al., 2013). Additionally, it has been reported that mothers and babies are kept apart for a long time after a caesarean section due to anesthesia, the baby is kept in the nursery, or the mother is sedated for pain and unable to feed. (Motee et al., 2013).

A decrease in the practice of breastfeeding is likely to be the cause of the rise in diseases like diabetes, obesity, and CVD, according to several systematic reviews published in the last few years. (Radwan, 2013). Recent studies have shown that formula-fed women have higher rates of depression than breastfed women, and other studies have demonstrated that mothers who experience postpartum depression are more likely to stop breastfeeding early. (Pope & Mazmanian, 2016). In fact, compared to mothers without depressive symptoms, mothers with depressive symptoms were less likely to continue breastfeeding for two to four months after delivery. (Pope & Mazmanian, 2016). A significant prospective study of postpartum women discovered a link between the cessation of breastfeeding at 12 weeks after delivery and having higher depressive symptoms at two weeks after delivery. (Taveras et al., 2003). Women in a research group were also more likely to report breastfeeding challenges, lower self-efficacy, and dissatisfaction with their infant-feeding technique. (Taveras et al., 2003). Correspondingly, a shorter period of exclusive breastfeeding was linked to a mother's pre-existing health problems, multiple pregnancy complications, or giving birth to a premature child. (Arif et al., 2021). A singleton pregnancy, a birthing facility that welcomes breastfeeding mothers, the baby's proper

weight gain during breastfeeding, and the baby's calmness are additional factors that significantly increase the duration of exclusive breastfeeding. (Arif et al., 2021).

One of the most potent and reliable risk factors for early breastfeeding weaning is smoking. Women who smoke continuously during pregnancy are more likely to fall into smoking within the first six months after giving birth and smoking while breastfeeding is linked to both shorter duration and lower milk production. Nicotine passes into breastmilk, changing the composition and flavor and reducing milk production. (Cohen et al., 2018).

To encourage the practice of breastfeeding, it is important to identify the various factors that influence women's feeding decisions. In study areas in Pakistan, India, Bangladesh, Nepal, and Vietnam, a common problem with pre-lacteal feeding and supplemental feeds is the delayed initiation of breastfeeding. (NS et al., 2018). Due to mothers' cultural beliefs, overworked clinics, subpar treatment from medical staff, undertrained hospital staff, and overburdened clinics, women do not attend antenatal care appointments. As a result, they are less informed about the proper duration and practice of breastfeeding. (NS et al., 2018) . There are no disparities in exclusive breastfeeding rates between wealthy and poor mothers in lower-middle-income countries. (Victora et al., 2016). The reason for this, according to research, is that wealthy mothers are adopting exclusive breastfeeding at a much faster rate than poor mothers. Only 20 years ago, poorer mothers had significantly higher rates of exclusive breastfeeding. Even though continued breastfeeding is still more common among poor mothers than wealthy mothers, these rates appear to be declining while remaining stable among wealthy mothers. (Victora et al., 2016).

According to several qualitative studies, a barrier to exclusive breastfeeding is women's belief that breastmilk "is not enough" for a child. This included worries about the composition and quality of breastmilk, which prompted mothers and other caregivers to feed or hydrate their infants by giving

them food or other liquids. Additionally, numerous studies revealed that women questioned whether their breastmilk production was adequate for the first six months, which led them to give water or additional feeds and reduce the exclusive breastfeeding duration. (Review, n.d.).

One of the best methods and investments for raising the caliber of human capital is exclusive breastfeeding for infants, but this practice is expected to face significant difficulties in the future. (Haryanto & Asthyka, 2020). Around 54 nations around the world do not currently have laws that protect breastfeeding practices. At least 50 nations have no laws governing maternity leave or the practice of breastfeeding for six months. According to estimates, the percentage of infants who are exclusively breastfed for the first six months of their lives only increased from 38 to 41 percent globally between 2000 and 2012. The anxiety of breastfeeding in a public setting is influenced by cultural or social environments. (Amir, 2014). Some women opt not to start breastfeeding or plan to breastfeed for a shorter period of time because they feel uncomfortable breastfeeding in public. (Amir, 2014).

Overall the choice of mothers to breastfeed their children is influenced by several factors, including economic, environmental, social, cultural, and political factors. (Saqib & Qazi, 2018). In this instance, the government has a duty to enhance the laws, regulations, and programs that support breastfeeding practices. Studies pertaining to this matter are still relevant, particularly those that have a significant impact on determining elements related to the practice of breastfeeding. In the meantime, there is a significant correlation between the social support variable and breastfeeding behavior. (Haryanto & Asthyka, 2020). This study attempts to evaluate the breastfeeding practice among Bangladeshi women and the factors associated with the continuation of breastfeeding.

Research Hypothesis: Household characteristics play a crucial role in breastfeeding practice.

Objective:

General Objectives:

1. Enumerate the frequency of breastfeeding practice among Bangladeshi Women.
2. Explore the household characteristic of women who practice breastfeeding.

Specific Objectives:

1. Evaluate the impact of household characteristics on breastfeeding practice
2. To find out potential determinants for breastfeeding practice in Bangladesh

Methodology:

Source of Data:

This study uses data from the Bangladesh Demographic and Health Survey (BDHS) 2017-2018. The BDHS 2017-18 survey was performed under the authority of the National Institute for Population Research and Training (NIPORT) of the Ministry of Health and Family Welfare. DHS Bangladesh-2017-18 covered a nationally representative sample of 20100 ever-married women of age 10–49 years and their children born 0–59 months prior to the survey date. The survey used a list of enumeration areas (EAs) from the 2011 Population and Housing Census of the People's Republic of Bangladesh, provided by the Bangladesh Bureau of Statistics (BBS), as a sampling frame (BBS 2011). The primary sampling unit (PSU) of the survey is an EA with an average of about 120 households. The survey is based on a two-stage stratified sample of households. In the first stage, 675 EAs (250 in urban areas and 425 in rural areas) were selected with probability proportional to EA size.

Inclusion Criteria: Mother's having at least one child aged more than 6 months living with them and currently non-breastfeeding and non-pregnant were included in this study. The sample size used in this study is 3057

Dependent Variable: Women having at least one child aged more than six months who practiced breastfeeding but currently stopped (using the duration of breastfeeding data: more than 1 month) was the dependent variable for this study.

Independent Variable: This study used the following independent variables-

1. Place of Residence
2. Division
3. Parity
4. Wealth Index
5. Age
6. Mother's Education
7. Partner's Education
8. Working Status
9. Number of Household Members
10. Sex of Child
11. Mode of Delivery
12. Total Children Ever Born
13. Age of Mother at First Birth
14. BMI of Mother

Data Analysis:

Data was analyzed using statistical software package Stata 16. Firstly, descriptive statistics was observed and bivariate analysis was done to examine the association between individual independent variables and dependent variable. Finally, multivariate analysis was done by fitting a logistic regression model for breastfeeding practice to evaluate the household characteristics contributing factors.

Result

Table 1 outlines both dependent and independent variables. The overall sample consisted of 3750 respondents where 2419 (79.13%) mothers were breastfeeding and 638 (20.87%) mothers were not. Among the respondents the highest percentage, which is 18.78%, belong to Chittagong division. In case of place of residence among the respondents, it is observed that, 61.27% women lived in rural area and 38.73% women lived in urban area. The highest number (1847; 60.42%) of respondents belong to 20-29 age group and 24.83% respondent holds the highest wealth index (richest), which is the highest frequency in this category. Within level of education, 7.59% falls under no education group, 27.12% are in primary education group, 42.72% belongs to secondary education group and higher education group consists of 22.57% of respondents also in case of occupation, 52.83% women are not working and 47.14% women are working. Among the respondents, 91.79% people are Muslim, while 8.21% respondents belong to other religion. Here, 15.18% of the respondents have less than 3 household members, 43.34% of the respondents have 4-5 household members and 41.48% have more than 5 household members. In case of sex of the child, we found that, 53.25% respondents have male child, while 46.75% respondents have female child. 91.69% mothers had normal delivery whereas 8.31% mothers had caesarian. Further, 68.43% mothers gave their first birth at the age of less than 20, 30.68% mothers gave their first birth at the age of 20-30 whereas only 0.33% mothers gave their first birth at the age of more than 30. Approximately half of the respondents (51.49%) have normal BMI, while 12.79% were underweight, 28.79% were overweight and 6.93% were obese. Among the respondents, 19.53% mothers visited ANC during pregnancy, however, 80.47% mothers have not visited ANC during their pregnancy.

Table 2 shows the outcome obtained from the bivariate analysis for breastfeeding practice with selected independent variables. Among all the selected variables two seems insignificant as p-value is greater than 0.05. These two variables are sex of the child (p-value 0.842) and BMI (p-value 0.961). To begin with the significant variables, 'division' shows that, Rangpur holds the highest percentage of breastfeeding mothers, which is 92.6% and the lowest percentage of breastfeeding mother is found to be in Chittagong, where 65.1% mothers practice breastfeeding while 34.9% mothers do not practice breastfeeding (p-value 0.000). Next, with the increase of parity the breastfeeding practice seems to increase, the result shows that, the first birth order group have 74.3% breastfeeding mothers, 2-3rd birth order group have 79.7% of breastfeeding mother and 4th and more birth order group have the highest breastfeeding mothers, which is 82.6% (p-value 0.001). Then, with a p-value of 0.006, it is found that, breastfeeding practice is slightly higher in the mothers residing in rural areas (79.7%) compared to the mothers residing in urban areas (75.2%).

Evidently, the highest percentage (85.5%) of breastfeeding mother belongs to the lowest wealth index (poorest) and the 'richest' group have the lowest breastfeeding mothers (70.4%), however, the poorer, middle class, richer group have 81.9%, 78.6%, 77.3% breastfeeding mothers respectively (p-value 0.000). Considering the age of mother, breastfeeding practice is highest (89.4%) in the 40+ age group and lowest (59.3%) in the less than 20 age group. Interestingly, breastfeeding practice is slightly higher in working mothers (84.4%) compared to not working mothers (73%), with a p-value of 0.006. Further, under the level of education, no education group has highest breastfeeding mothers that is 87.9% and the primary and secondary group have 81.4% and 77.6% breastfeeding mothers respectively. Higher education group has the lowest breastfeeding mothers which is 72.1% (p-value 0.000). In addition, within religion, breastfeeding

practice is slightly lower in Muslim mothers (77.1%) compared to other religion (92.3%), with a p-value of 0.000. Again, with a p-value of 0.013, breastfeeding practice is found highest in the group of 4-5 household members (81%), while 77.7% and 75.5% is found in the group of less than 3 household members and more than 5 household members respectively.

‘Husband’s education’ is also found to be significantly associated with breastfeeding practice of mothers, within this category, ‘no education’ group has highest breastfeeding mothers that is 85.6% and the primary and secondary group have 80.4% and 74.5% breastfeeding mothers respectively. ‘Higher education’ of husband group has the lowest mothers who practice breastfeeding, which is 74.2% (p-value 0.000). Also, those who have undergone normal delivery have higher breastfeeding practice (85.2%) rather than those who have gone through caesarian (3.8%), here, 96.2% mothers does not practice breastfeeding, who have undergone caesarian (p-value 0.000). Age of mother at first birth is also significantly associated with breastfeeding practice, women who gave their first birth at the age of less than 20 have the highest breastfeeding practice 79.3%, while women who gave their first birth at 20-30 and more than 30 consist 76% and 73.3% women who practice breastfeeding respectively (p-value 0.047). Finally, it is found that, women who visited ANC holds only 0.6% mothers who practice breastfeeding whereas group of women who did not visited ANC holds 98.1% mothers who practice breastfeeding (p-value 0.000).

Table 3 represents a logistic regression model (multivariate analysis) for breastfeeding practice. From the analysis it is found that, the odds of breastfeeding practice for a woman living in urban area is 125% higher than the woman living in rural area provided respondents other covariates are constant. This finding could be considered as statistically significant since p-value is **0.027** (<0.05).

Here, the ‘parity’ variable has three categories. These are 1st, 2-3rd, 4th and more birth order. 1st birth order is considered as reference. Provided all other covariates are constant data suggests that, women who falls under 2-3rd birth order group bears 165% higher odds of breastfeeding practice compared to a woman who falls under 1st birth order group. This finding can be considered significant as the p-value is less than 0.05 (p-value **0.020**).

Further, the variable wealth index has five categories, these are, poorest, poorer, middle, richer, and richest. Here, ‘poorest’ category is considered as reference. Keeping all other covariates constant, a woman belonging to a poorer family has 84% higher odds of breastfeeding practice than a woman belonging to a poorest family and a woman from middle class family has 2% lower odds of breastfeeding practice than a woman from poorest family, however, these are not statistically significant since p-value is 0.128 and 0.981 respectively for poorer and middle class category. However, provided all other covariates are constant, this table indicates that, the odds of breastfeeding practice for a woman from richer family is 82% lower than for a woman from poorest family and a woman from richest family has 92% lower odds of breastfeeding practice than a woman from poorest family, and these findings can be considered as statistically significant as p value is **0.009 and 0.003** (<0.05) respectively.

Moreover, the ‘age of mother’ variable has four categories. These are age less than 20, 20-29 age group, 30-39 age group and age more 40. ‘Age more than 40’ group is considered as reference. Provided all other covariates are constant data suggests that, women who belongs to <20 age group bears 2076% higher odds of breastfeeding practice compared to a woman belongs to 40+ age group. This finding can be considered significant as the p-value is less than 0.05 (p-value **0.026**). In addition, keeping all other covariates constant, women who belongs to 20-29 age group bears 815% higher odds of breastfeeding practice compared to a woman belongs to 40+ age group and

women who belongs to 30-39 age group bears 134% higher odds of breastfeeding practice compared to a woman belongs to 40+ age group, however, these cannot be considered as statistically significant as p value is greater than 0.05.

Again, 'the number of household members' variable has three categories. These are <3, 4-5 and more than 5 household members. <3 household members is considered as reference. Provided all other covariates are constant it is observed that, women who have 4-5 household members bears 72% lower odds of breastfeeding practice compared to a woman who has less than 3 household members and women who have more than 5 household members bears 67% lower odds of breastfeeding practice compared to a woman who has less than 3 household members. These findings can be considered significant as the p-value is less than 0.05 for both 4-5 household member group (p-value **0.005**) and more than 5 household member group (p-value **0.009**).

Also, the variable BMI has four categories, these are, underweight, normal, overweight and obese. In this case, 'underweight' category is considered as reference. Considering all other covariates constant, a woman having normal weight has 48% lower odds of breastfeeding practice than a woman being underweight, however, this is not statistically significant since p-value is 0.090 (can be considered significant at 10% level of significance). However, provided all other covariates are constant, this table indicates that, a woman being overweight has 83% lower odds of breastfeeding practice than a woman being and the odds of breastfeeding practice for a woman being obese is 86% lower than for a woman being underweight, these findings can be considered as statistically significant as p value is **0.002** and **0.050** for overweight and obese group respectively.

However, in this logistic regression analysis, among all the selected variables, nine variables were not found to be significant for breastfeeding practice as p-value is more than 0.05 for all of these variables. These variables are, division of mother, occupation of mother, education of mother, mother's religion, the sex of child, husband's education, mode of delivery, total children ever born and age of mother at first birth.

Table 1: Frequency Distribution of Selected Independent & Dependent Variables

Variables	Frequency	Percentage (%)
Currently Breastfeeding		
Yes	2419	79.13
No	638	20.87
Total	3057	100
Division		
Barisal	320	10.47
Chittagong	574	18.78
Dhaka	499	16.32
Khulna	342	11.19
Mymensingh	312	10.21
Rajshahi	346	11.32
Rangpur	315	10.30
Sylhet	349	11.42
Parity		
1	1025	33.53
2-3	1610	52.67
4+	422	13.80

Variables	Frequency	Percentage (%)
Place of Residence		
Rural	1873	61.27
Urban	1184	38.73
Wealth Index		
Poorest	579	18.94
Poorer	524	17.14
Middle	557	18.22
Richer	638	20.87
Richest	759	24.83
Age in group		
<20	155	5.07
20-29	1847	60.42
30-39	958	31.34
40+	97	3.17
Occupation		
Not Working	1615	52.83
Working	1441	47.14
Education		
No Education	232	7.59
Primary	829	27.12
Secondary	1306	42.72
Higher	690	22.57
Religion		
Islam	2806	91.79
Others	251	8.21
Number of Household Members		
<3	464	15.18
4-5	1325	43.34
5+	1268	41.48

Variables	Frequency	Percentage (%)
Sex of Child		
Male	1628	53.25
Female	1429	46.75
Husband's Education		
No Education	532	17.40
Primary	935	30.59
Secondary	998	32.65
Higher	592	19.37
Mode Of Delivery		
Normal	2803	91.69
Caesarian	254	8.31
Total Children Ever Born		
1-3	2612	85.44
3+	445	14.56
Age of Mother at First Birth		
<20	2092	68.43
20-30	938	30.68
30+	27	0.88
ANC Visit During Pregnancy		
No	2460	80.47
Yes	597	19.53
BMI		
Underweight	391	12.79
Normal	1574	51.49
Overweight	880	28.79
Obese	212	6.93

Table 2: Examining the association between breastfeeding practice and selected independent variable: A bivariate Analysis

<i>Variables</i>	<i>Breastfeeding (%)</i>		<i>P-value</i>	
	Yes	No		
Division				
Barishal	79.2	20.8	0.000	
Chittagong	65.1	34.9		
Dhaka	77.2	22.8		
Khulna	87.4	12.6		
Mymensingh	80.3	19.7		
Rajshahi	83.8	16.2		
Rangpur	92.6	7.4		
Sylhet	81.6	18.4		
Parity				
1	74.3	25.7		0.001
2-3	79.7	20.3		
4+	82.6	17.4		
Place of Residence				
Rural	79.7	20.3	0.006	
Urban	75.2	24.8		
Wealth Index				
Poorest	85.5	14.5	0.000	
Poorer	81.9	18.1		
Middle	78.6	21.4		
Richer	77.3	22.7		
Richest	70.4	29.6		
Age in group				
<20	59.3	40.7	0.000	
20-29	76.3	23.7		
30-39	84.8	15.2		

<i>Variables</i>	<i>Breastfeeding (%)</i>		<i>P-value</i>
40+	89.4	10.6	
Occupation			
Not Working	73	27	0.006
Working	84.4	15.6	
Education			
No Education	87.9	12.1	0.000
Primary	81.4	18.6	
Secondary	77.6	22.4	
Higher	72.1	27.9	
Religion			
Islam	77.1	22.9	0.000
Others	92.3	7.7	
Number of Household Members			
<3	77.7	22.3	0.013
4-5	81	19	
5+	75.5	24.5	
Sex of Child			
Male	78.4	21.6	0.842
Female	78.1	21.9	
Husband's Education			
No Education	85.6	14.4	0.000
Primary	80.4	19.6	
Secondary	74.5	25.5	
Higher	74.2	25.8	
Mode Of Delivery			
Normal	85.2	14.8	0.000
Caesarian	3.8	96.2	
Total Children Ever Born			
1-3	77.4	22.6	0.006
3+	83.5	16.5	

<i>Variables</i>	<i>Breastfeeding (%)</i>		<i>P-value</i>
Age of Mother at First Birth	78.3	21.7	
<20	79.3	20.7	0.047
20-30	76	24	
30+	73.3	26.7	
ANC Visit During Pregnancy			
No	98.1	1.9	0.000
Yes	0.6	99.4	
BMI			
Underweight	78.3	21.7	0.961
Normal	78.6	21.4	
Overweight	77.9	22.1	
Obese	77.3	22.7	

Table 3: Logistic Regression Coefficients for Breastfeeding Practice after controlling other factors: A multivariate Analysis

Variables	Odds Ratio	p- value
Division		
(Ref: Barisal)		
Chittagong	3.30	0.073
Dhaka	.56	0.443
Khulna	.36	0.298
Mymenshing	.75	0.734
Rajshahi	.94	0.937
Rangpur	.16	0.096
Sylhet	.92	0.928
Parity		
(Ref: 1)		
2-3	2.65	0.020
4+	1.81e+07	0.982
Place of Residence		
(Ref: Rural)		
Urban	2.25	0.027
Wealth Index		
(Ref: Poorest)		
Poorer	1.84	0.128
Middle	.98	0.981
Richer	.18	0.009
Richest	.08	0.003
Age in group		
(Ref: 40+)		
<20	21.76	0.026

Variables	Odds Ratio	p- value
20-29	9.15	0.066
30-39	2.34	0.457
Occupation		
(Ref: Not Working)		
Working	.58	0.092
Education		
(Ref: No Education)		
Primary	1.13	0.810
Secondary	.70	0.565
Higher	2.26	0.280
Religion		
(Ref: Others)		
Islam	1.29	0.677
Number of Household Members		
Ref: <3		
4-5	.28	0.005
5+	.33	0.009
Sex of Child		
(Ref: Male)		
Female	1.19	0.551
Husband's Education		
(Ref: No Education)		
Primary	.62	0.245
Secondary	.98	0.982
Higher	.32	0.161
Mode Of Delivery		
(Ref: Normal)		
Caesarian	5.39	0.075
Total Children Ever Born		

Variables	Odds Ratio	p- value
(Ref: 1-3)		
3+	3.35e-07	0.984
Age of Mother at First Birth		
(Ref: 30+)		
<20	.48	0.818
20-30	1.06	0.984
BMI		
(Ref: Underweight)		
Normal	.52	0.090
Overweight	.17	0.002
Obese	.14	0.050

Discussion:

In this study we evaluated the impact of different household characteristics on the breastfeeding practice. The breastfeeding practice increases when the mother has more than one child, lives in urban area, maternal age is less than 20 years and the child is female. This result was found to be statistically significant and independent of other variables. A similar study from Vietnam (Thu et al., 2012) and Bangladesh (Rahman et al., 2020) stated that breastfeeding initiation was found to be higher among mothers living in urban areas and the child is female. This study finds the highest percentage (34%) of breastfeeding mother's age is in between 20-29 years and a previous study (Rahman et al., 2020) found highest breastfeeding practice among age group 25-29. This study also reveals that when mother's age is increased, the breast-feeding practice also decreases gradually. A study from Australia (Forster et al., 2006) revealed that when maternal age increases, breastfeeding practice also increases up to a certain point; however, our study found the highest

breastfeeding practice among mother aged less than 20 years. Occurrence of early marriage in Asian countries might be a key factor behind this result.

Mother's education has both positive and negative impact on breast-feeding practice according to this study. It is found that mother's having primary and higher education practice more breast-feeding than any other education group. Women having secondary education are found to be lower in number who practice breast-feeding. It can be associated with the recent societal and community-level changes in Bangladesh. For example, women's education enrollment and participation in the labor force (mostly in garments industry) have increased manifolds in Bangladesh even much faster than the growth of male participation in the labor force(Tanaka, 2020.). Along with enrolment in education and involvement in labor force, women also have to deal with several factors such as increased work pressure, travel time, and availability of breastfeeding facility in the institution and workplace. As a result, all these factors negatively affect mothers' behaviours towards practising breast-feeding.

It is found in our study that working women less practice breastfeeding compare to not working women. A study from Nigeria (Okafor et al., 2013) claimed that aligned with other developing countries (e.g. Nigeria, Brazil, Ghana, and Ethiopia) private sectors including industrial and manufacturing companies are the place of 67% women's job, which are do not cater favourable environment for mothers to breastfeed their children.

It is demonstrated in our study that when the number of household members increases, the breastfeeding practice negatively affected and it is statistically significant. On the other hand, when Body Mass Index of the mother increases, the breastfeeding practice gets diminished and it is

statistically significant. A study (Hashemi-Nazari et al., 2020) found that women with high body mass index (BMI) have delays in establishing lactation after giving birth. This might be a cause of not practicing breastfeeding among overweight and obese mother.

Conclusion:

This study is able to explore some really important findings and around 79.13% children aged more than 6 months were being breast-fed. Residence in rural area, wealth index richer and richest, having secondary education and increase in age of mothers decrease the breast-feeding practice. Though this study is carried out with four years back data and limited number of independent variables, it can be a baseline study for further investigation and policy implementation. Greater community awareness program, breast-feeding corner at job place should be introduced to increase the breast-feeding practice.

References:

- Amir, L. H. (2014). *Breastfeeding in public : “ You can do it ? .”* 7–9. <https://doi.org/10.1186/s13006-014-0026-1>
- Arif, S., Khan, H., Aslam, M., & Farooq, M. (2021). Factors influencing exclusive breastfeeding duration in Pakistan: a population-based cross-sectional study. *BMC Public Health*, *21*(1), 1–10. <https://doi.org/10.1186/s12889-021-12075-y>
- Bonnet, C., Gortner, L., Rodrigues, C., Karin, A., Bonamy, E., Draper, E. S., Cuttini, M., & Zeitlin, J. (2019). *Low breastfeeding continuation to 6 months for very preterm infants : A European multiregional cohort study. July 2018*, 1–11. <https://doi.org/10.1111/mcn.12657>
- Ciampo, L. A. D., & Lopes, I. R. (2018). Aleitamento materno e seus benefícios para a saúde da mulher. *Rev Bras Ginecol Obstet*, *40*, 354–359.
- Cohen, S. S., Alexander, D. D., Krebs, N. F., Young, B. E., Cabana, M. D., Erdmann, P., Hays, N. P., Bezold, C. P., Levin-Sparenberg, E., Turini, M., & Saavedra, J. M. (2018). Factors Associated with Breastfeeding Initiation and Continuation: A Meta-Analysis. *Journal of Pediatrics*, *203*, 190–196.e21. <https://doi.org/10.1016/j.jpeds.2018.08.008>
- Haryanto, S., & Asthyka, D. C. (2020). *Factors Associated with Breastfeeding Practice*. 20(1).
- Laksono, A. D., Wulandari, R. D., Ibad, M., & Kusriani, I. (2021). *The effects of mother ' s education on achieving exclusive breastfeeding in Indonesia*. 1–6.
- Li, J., Zhao, C., Wang, Y., Wang, Y. P., Chen, C. Y., Huang, Y., Gao, Y. Q., Fang, J., & Zhou, H. (2021). Factors associated with exclusive breastfeeding practice among mothers in nine community health centres in Nanning city, China: a cross-sectional study. *International Breastfeeding Journal*, *16*(1), 1–14. <https://doi.org/10.1186/s13006-021-00416-x>
- Motee, A., Ramasawmy, D., Pugo-gunsam, P., & Jeewon, R. (2013). *An Assessment of the Breastfeeding Practices and Infant Feeding Pattern among Mothers in Mauritius*. 2013.
- NS, M., MS, S., & MS, S. (2018). Barriers to Breastfeeding in South-Asia: A Systematic Literature Review. *Journal of Contraceptive Studies*, *03*(02). <https://doi.org/10.21767/2471-9749.100048>
- Pope, C. J., & Mazmanian, D. (2016). *Breastfeeding and Postpartum Depression : An Overview and Methodological Recommendations for Future Research*. 2016. <https://doi.org/10.1155/2016/4765310>
- Radwan, H. (2013). Patterns and determinants of breastfeeding and complementary feeding practices of Emirati Mothers in the United Arab Emirates. *BMC Public Health*, *13*(1), 1. <https://doi.org/10.1186/1471-2458-13-171>
- Review, A. C. L. (n.d.). *Factors Influencing the Practice of Exclusive Breastfeeding and Other Infant Feeding Practices in the First Six Months of Life in West and Central Africa*.

- Santana, G. S., Giugliani, E. R. J., Vieira, T. de O., & Vieira, G. O. (2018). Factors associated with breastfeeding maintenance for 12 months or more: a systematic review. *Jornal de Pediatria*, *94*(2), 104–122. <https://doi.org/10.1016/j.jpmed.2017.06.013>
- Saqib, N., & Qazi, M. (2018). Factors associated with exclusive breastfeeding in the first six months of life in Northern India. *International Journal of Contemporary Pediatrics*, *5*(4), 1479. <https://doi.org/10.18203/2349-3291.ijcp20182550>
- Taveras, E. M., Capra, A. M., Braveman, P. A., Jensvold, N. G., Escobar, G. J., Lieu, T. A., & Objective, A. (2003). *Breastfeeding Discontinuation*. *112*(1).
- Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., & Walker, N. (2016). Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *The Lancet*, *387*(10017), 475–490. [https://doi.org/10.1016/S0140-6736\(15\)01024-7](https://doi.org/10.1016/S0140-6736(15)01024-7)
- Waldenstro, U., & Aarts, C. (2004). *Duration of breastfeeding and breastfeeding problems in relation to length of postpartum stay: a longitudinal cohort study of a national Swedish sample*. *4*, 669–676. <https://doi.org/10.1080/08035250410023755>
- Forster, D. A., McLachlan, H. L., & Lumley, J. (2006). Factors associated with breastfeeding at six months postpartum in a group of Australian women. *International Breastfeeding Journal*, *1*(1), 18. <https://doi.org/10.1186/1746-4358-1-18>
- Hashemi-Nazari, S.-S., Hasani, J., Izadi, N., Najafi, F., Rahmani, J., Naseri, P., Rajabi, A., & Clark, C. (2020). The effect of pre-pregnancy body mass index on breastfeeding initiation, intention and duration: A systematic review and dose-response meta-analysis. *Heliyon*, *6*(12), e05622. <https://doi.org/10.1016/j.heliyon.2020.e05622>
- Okafor, I., Olatona, F., & Olufemi, O. (2013). Breastfeeding practices of mothers of young children in Lagos, Nigeria. *Nigerian Journal of Paediatrics*, *41*(1), 43. <https://doi.org/10.4314/njp.v41i1.8>
- Rahman, Md. A., Khan, Md. N., Akter, S., Rahman, A., Alam, Md. M., Khan, Md. A., & Rahman, Md. M. (2020). Determinants of exclusive breastfeeding practice in Bangladesh: Evidence from nationally representative survey data. *PLOS ONE*, *15*(7), e0236080. <https://doi.org/10.1371/journal.pone.0236080>
- Tanaka, T. (2020). *Increasing female education, stagnating female labor force participation, and gains from marriage: The case of rural Bangladesh*. *59*.
- Thu, H. N., Eriksson, B., Khanh, T. T., Petzold, M., Bondjers, G., Kim, C. N. T., Thanh, L. N., & Ascher, H. (2012). Breastfeeding practices in urban and rural Vietnam. *BMC Public Health*, *12*(1), 964. <https://doi.org/10.1186/1471-2458-12-964>