

Influence of socio-demographic factors on the breastfeeding period of women in Bangladesh: a polytomous logistic regression model

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Summary Background. In Bangladesh, terrible degradation in the breastfeeding period has occurred with rapid urbanization in recent years that is causing a shortage of child nourishment. Identifying the risk factors of breastfeeding duration is important for planning nutritional programs and strategies.

Objectives. This study tries to identify influential demographic and socio-economic factors that affect the breastfeeding period for reducing child nutrition deficiency.

Material and methods. The study attempts to proceed with data collected from an observational study entitled the Bangladesh Demographic and Health Survey (BDHS) 2014. The breastfeeding period (Ordinal exogenous variable) is classified into three groups: 0–5-months, 6–23 months and at least 24 months. Gamma, chi-square and linear-by-linear statistics are used to identify the associated factors that have an impact on the breastfeeding period. A test of parallelism is conducted to evaluate the proportional odds. The polytomous logistic regression (PLR) model and the proportional odds (PO) model are used to find the marginal effect of demographic and socio-economic predictors that affect the breastfeeding period.

Results. Parental educational attainment, wealth index, division, religion, mother's BMI, drinking water source, household members, amenorrhea and abstaining, respectively, are the most significant factors that influence the breastfeeding period. The PLR model is also more precise than the PO model for indicating the marginal effect among those vital factors for the breastfeeding period.

Conclusions. PLR is an appropriate model to recognize the effect of predictors of breastfeeding duration instead of the PO model and other measures.

Key words: chi-square distribution, logistic models, breastfeeding, milk, Bangladesh, odds ratio.

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Background

Lack of Breastfeeding practices has become one of the key issues that occur in the world. Almost half of the mortality rate in children under 5 years old in Asia and Africa, is caused by lack of breastfeeding. Bangladesh is an overpopulated country (around 164 million people), situated under the south Asian subcontinent [1]. Deficiency of breastfeeding practices is one of the obstacles in shaping the optimal growth and progress of infants here. In Bangladesh, according to the record of BDHS 2014 survey, the mean duration of any breastfeeding children among Bangladeshi children was 28.6 months and mothers breastfed 91% of children for the first 24 months of their life [2]. Although there was a reduce percentages of these factors allied to the previous facts and figures of BDHS 2011 and these consequences are still felt below the WHO and UNICEF approvals that all children should be breastfed until 24 months of their time of life. Continual breastfeeding along with suitable complementary foods from 6 months to around 24 months of age or more than that, developed the infant's brain, mental health, physical growth and dietary status of children [3]. WHO researchers have defined breastfeeding as the regular way of providing nutrients to newborns for their vital progress. Infant

formula may not perform as a replacement in supplies of breast milk. Furthermore, enough amount of breastfeeding provides positive effects on the IQ and cognitive development of humans [3, 4]. Breastfeeding offered health assistance to women as well [5]. WHO and UNICEF conjointly have always motivated mothers to breastfeed their infants with proper complementary food at least 24 months and more to reach optimal healthiness [6].

With observing these consequences, health-governing bodies have documented the requirements for breastfeeding children with the goal of being able to help identify optimal breastfeeding times. They suggested one crucial element of such reappearance is to increase the breastfeeding period, this helps in dropping newborn death [7]. Hence, a decisive step in identifying problems connecting to breastfeeding applications is taken, in particular, socio-economic, maternal-related, and child characteristics that substantially correlated with the breastfeeding period. It also able to count their influences on children breastfeeding.

Numerous research studies focused on explaining the causes of the lack of breastfeeding and suggest their effects on breastfeeding period of at least six months [8–16]. Moreover, with breastfeeding period being documented in BDHS in the number of months subject to the recollection of the respon-



dents, an accurate measure of the period may not be obtainable through the probable presence of recall bias. Hence to report on these circumstances, the present study attempts to investigate the major socio-economic and demographic determinants that influenced the breastfeeding period as well as use two ordinal regression model such as Polytomous Logistic Regression and Proportional Odds model to compare the significant effects. The results of this study would help both government and private organizations in planning, designing, as well as implementing to reduce the lack of breastfeeding period throughout the country.

Objectives

This study attempts to detect significant demographic and socioeconomic predictors that affect breastfeeding period in Bangladesh. Another goal is to compare Polytomous Logistic Regression (PLR) model and Proportional Odds (PO) model for showing the marginal effects of factors related to breastfeeding periods.

Material and methods

Data and variables

Data sources

Our study is based on the nationally organized data (secondary data) of BDHS 2014, which was conducted through a joint effort of the National Institute of Population Research and Training (Bangladesh), ICF International (USA) and Mitra and Associates (Bangladesh). All actions organized in this study involving human participants have maintained the ethical standards of the national research committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Information of these surveys is collected at the personal level (reproductive-aged ever-married women), and at the communal level using a two-stage stratified sampling that contains 17,989 chosen households [17]. Among them, in this study, we used information about 2781 mother of children between 0 and 24 months of age, who have an experience of taking milk from their mothers [6].

Dependent variable

In this study, the reason behind the deficiency of breastfeeding length is required to identify the factors. So, breastfeeding length is classified into three groups: 0–5 month, 6–23 month, and at least 24 months. For this reason, breastfeeding length is considered as a response variable.

Independent variables

In BDHS 2014, Division (Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Sylhet) place of residence (urban, rural), mother's education level (Illiterate, primary, secondary or higher), father's level of education (Illiterate, primary, secondary or higher), religion (Muslim, Non-Muslim), wealth index (poor, middle, rich), Body mass index (BMI) are selected as the primary factors that influenced mother's breastfeeding length. Also, BMI (kg/m²) as underweight (BMI < 18.5), normal (18.5–24.99), overweight or obese (≥ 25), drinking water source (improved, non-improved), toilet facility (improved, non-improved), child's sex (male, female), household member (< 5, 5–8, ≥ 9), currently amenorrhea (yes, no), currently abstaining (yes, no), child twin (yes, no) are also categorized as influential variables for breastfeeding length on the basis of literature review [1, 2, 6–10, 12–16].

Statistical methods

Descriptive statistics are outlined as the related features of the respondents where chi-squared test and gamma measure are used to check the associations between sociodemographic

factors and a breastfeeding status variable. To get the adjusted effects of factors, under multivariate analysis, two regression models are considered: (i) PO model, (ii) PLR model. Independent effect on study variables on the total duration of breastfeeding is obtained by odd ratio and *p*-value. Data analysis is done through R-3.2.4 software and SPSS 20. The statistical significance level is set at *p* < 0.05.

Polytomous Logistic Regression (PLR)

If the response variable is more than binary, then usual binary logistic regression model is not applicable. In that situation, polytomous logistic regression is the more desired method to articulate categorical response by means of generalized logits [18]. Suppose that *Y* has *J* categories and the probability of category *J* is given by $P(Y = j|X) = \pi_j(x)$ for $j = 1, 2, \dots, j$. Then the generalized logits are defined as:

$$\log \left(\frac{\pi_j(x)}{1 - \pi_j(x)} \right) = \alpha_j + \beta_j x \text{ for } j = 1, 2, \dots, j - 1.$$

Since our study is based on breastfeeding status, according to BDHS (2014), months of breastfeeding level can be measured on three nominal levels [6].

Proportional odds model (POM)

The proportional odds (PO) model, is proper when initially continuous response variable is later categorized. Therefore, for any *i*th subject in the sample, the response variable y_i , $i = 1, 2, \dots, n$ is defined by:

$$y_i = \begin{cases} 0 & 0-5 \text{ months} \\ 1 & 6-23 \text{ months} \\ 2 & \geq 24 \text{ months} \end{cases} \quad (1).$$

Since the formula of the response variable y_i in (1) as well as the hierarchical features of the data, a PO model was formed. The OLR model is of the form:

$$\text{Odds}(Y_i) = \frac{P(Y_i \leq j)}{1 - P(Y_i \leq j)} = \exp(\alpha_j + \beta_j x) \quad (2).$$

Or equivalently

$$\text{logit}(Y_i \leq j) = \ln \frac{P(Y_i \leq j)}{1 - P(Y_i \leq j)} = \alpha_j + \beta_j x \quad (3),$$

where, $P(Y_i \leq j) = 1 - P(Y_i > j)$. By model (2) or (3), at any ordered level *j* of response variable, the odds($Y_i \leq j$) is computed. Therefore, the model provides the odds in the set of categories $Y_i \leq j$ versus $Y_i > j$, $j = 1, 2, \dots, j - 1$. Hence, a set of *j* - 1 different regression equations would be fitted simultaneously on predictor vector *X*, each equation with its own estimated regression parameters.

Results

According to Table 1, 16 paper were analyzed to select the list of explanatory variables with their descriptions, outcomes, and their corresponding measurement scales [1, 5–10, 12–16]. Only 27.3% of the children get chance to complete their full lifetime (at least 24 months) of breastfeeding.

The consequences of the bivariate analyses are testified in Table 2. It is clearly seen that division, drinking water sources, toilet facility, amenorrhea and abstaining have significant monotone relation with the breastfeeding duration through chi-square test. Linear-by-linear and gamma test also find out significant impact on parental educational accomplishment and household members for breastfeeding duration. Gamma estimates show that there exist significant weakly negative association with parental education level and household members.

Variable	Category	Measurement scale	Frequency	Percentage
Division	Barisal	nominal	497	12.1
	Chittagong		778	19.0
	Dhaka		720	17.6
	Khulna		487	11.9
	Rajshahi		502	12.3
	Rangpur		520	12.7
	Sylhet		593	14.5
Place of residence	urban	nominal	1311	32.0
	rural		2786	68.0
Mother's education level	illiterate	ordinal	553	13.5
	primary		1116	27.2
	secondary		1956	47.7
	higher		472	11.5
Father's education level	illiterate	ordinal	925	22.6
	primary		1229	30.0
	secondary		1320	32.2
	higher		623	15.2
Religion	muslim	nominal	3771	92.0
	non-muslim		326	8.0
Wealth Index	poor	ordinal	1627	39.7
	middle		806	19.7
	rich		1664	40.6
Mother's body mass index	low weight	ordinal	1017	24.8
	normal weight		2397	58.5
	over weight		683	16.7
Source of drinking water	improved	nominal	3579	87.4
	non-improved		518	12.6
Toilet facility	improved	nominal	2618	63.9
	non-improved		1479	36.1
Household member	less than 5	ordinal	1247	30.4
	5–8		2251	54.9
	greater than or equal 9		599	14.6
Currently amenorrhea	no	nominal	3375	82.4
	yes		722	17.6
Currently abstaining	no	nominal	3661	89.4
	yes		436	10.6
Month of breastfeeding	0–5 month	ordinal	649	15.8
	6–23 month		2330	56.9
	at least 24 months		1118	27.3
Sex of child	male	nominal	2121	51.8
	female		1976	48.2
Child is twin	single	nominal	4077	99.5
	twin		20	0.5

Table 2. Association between selected variables and Month of breastfeeding status using gamma measure and chi-square test

Variable	Category	Measurement scale	0–5 month	6–23 month %	at least 24 months	Gamma (p)	χ^2 (p)	Linear-by-Linear (p)
Division	Barisal	nominal	18.30	54.90	26.80	–	15.726 (0.027)*	–
	Chittagong		16.10	58.90	25.10			
	Dhaka		16.50	59.40	24.00			
	Khulna		15.20	54.80	30.00			
	Rajshahi		14.30	57.60	28.10			
	Rangpur		14.80	53.70	31.50			
	Sylhet		15.30	56.70	28.00			
Place of residence	urban	nominal	16.30	55.90	27.80	–	0.756 (0.685)	–
	rural		15.60	57.30	27.10			

Table 2. Association between selected variables and Month of breastfeeding status using gamma measure and chi-square test

Variable	Category	Measurement scale	0–5 month	6–23 month %	at least 24 months	Gamma (ρ)	χ^2 (p)	Linear-by-Linear (p)
Mother's education level	illiterate	ordinal	14.30	55.00	30.70	-0.073 (0.001)*	–	11.216 (0.001)*
	primary		15.10	56.80	28.10			
	secondary		15.10	58.30	26.60			
	higher		22.50	53.40	24.20			
Father's education level	illiterate	ordinal	11.90	55.10	33.00	-0.095 (0.000)*	–	20.459 (0.000)*
	primary		16.10	57.80	26.10			
	secondary		17.00	58.00	25.00			
	higher		18.80	55.20	26.00			
Religion	Muslim	nominal	16.00	57.10	26.90	–	3.067 (0.216)	–
	non-Muslim		14.10	54.60	31.30			
Wealth Index	poor	ordinal	15.20	56.40	28.40	-0.030 (0.207)	–	1.621 (0.203)
	middle		15.90	58.10	26.10			
	rich		16.50	56.70	26.80			
Mother's body mass index	low weight	ordinal	11.60	63.70	24.70	-0.028 (0.263)	–	2.148 (0.143)
	normal weight		16.30	55.80	28.00			
	over weight		20.60	50.50	28.80			
Source of drinking water	improved	nominal	14.30	57.60	28.10	–	53.388 (0.000)*	–
	non-improved		26.60	51.70	21.60			
Toilet facility	improved	nominal	14.80	57.60	27.60	–	6.107 (0.047)*	–
	non-improved		17.70	55.50	26.80			
Household member	less than 5	ordinal	13.30	56.50	30.20	-0.107 (0.000)*	–	20.016 (0.000)*
	5–8		15.90	57.30	26.80			
	greater than or equal 9		20.70	56.10	23.20			
Currently amenorrhea	no	nominal	8.80	59.10	32.10	–	774.072 (0.000)*	–
	yes		48.60	46.70	4.70			
Currently abstaining	no	nominal	11.40	59.40	29.20	–	521.351 (0.000)*	–
	yes		53.40	35.30	11.20			
Sex of child	male	nominal	16.70	56.20	27.10	–	2.681 (0.262)	–
	female		14.90	57.60	27.50			
Child is twin	single	nominal	15.80	56.90	27.30	–	0.614 (0.736)	–
	twin		15.00	50.00	35.00			

* p -value < 0.05.

Table 3. PO and PLR model based estimated effects of selected covariates

Variable	Category	PO model		PLR model			
		Odds ratio	Estimate (p)	"6–23" month vs "0–5" month		"at least 24 months" vs "0–5" month	
				Odds ratio	Estimate (p)	Odds ratio	Estimate (p)
Division	Barisal (Ref.)	–	–	–	–	–	–
	Chittagong	1.12	0.11 (0.35)	1.51	0.42 (0.02)*	1.32	0.27 (0.19)
	Dhaka	0.95	-0.05 (0.69)	1.23	0.21 (0.27)	0.97	-0.03 (0.89)
	Khulna	1.23	0.20 (0.12)	1.38	0.32 (0.13)	1.48	0.39 (0.09)
	Rajshahi	1.04	0.04 (0.78)	1.25	0.22 (0.29)	1.16	0.15 (0.52)
	Rangpur	1.45	0.13 (0.29)	1.05	0.05 (0.80)	1.19	0.17 (0.45)
	Sylhet	1.17	0.16 (0.21)	1.38	0.32 (0.11)	1.39	0.33 (0.14)
Place of residence	urban (Ref.)	–	–	–	–	–	–
	rural	1.01	0.014 (0.85)	1.13	0.12 (0.31)	1.07	0.07 (0.61)
Mother's education level	illiterate (Ref.)	–	–	–	–	–	–
	primary	1.03	0.03 (0.80)	1.15	0.14 (0.42)	1.12	0.11 (0.57)
	secondary	1.02	0.02 (0.88)	1.22	0.20 (0.27)	1.12	0.11 (0.59)
	higher	0.75	-0.28 (0.08)	0.79	-0.24 (0.33)	0.67	-0.39 (0.16)
Father's education level	illiterate (Ref.)	–	–	–	–	–	–
	primary	0.67	-0.41 (0.00)*	0.63	-0.46 (0.00)*	0.45	-0.79 (0.00)*
	secondary	0.68	-0.39 (0.00)*	0.7	-0.36 (0.04)*	0.48	-0.73 (0.00)*
	higher	0.73	0.31 (0.03)*	0.73	-0.32 (0.16)	0.53	-0.63 (0.01)*

Table 3. PO and PLR model based estimated effects of selected covariates

Variable	Category	PO model		PLR model			
		Odds ratio	Estimate (ρ)	"6–23" month vs "0–5" month		"at least 24 months" vs "0–5" month	
				Odds ratio	Estimate (ρ)	Odds ratio	Estimate (ρ)
Religion	Muslim (Ref.)	–	–	–	–	–	–
	non-Muslim	1.33	0.28 (0.01)*	1.43	0.36 (0.07)	1.77	0.57 (0.01)*
Wealth Index	poor (Ref.)	–	–	–	–	–	–
	middle	0.99	-0.02 (0.98)	1.11	0.10 (0.49)	1.04	0.04 (0.80)
	rich	1.13	0.12 (0.22)	1.28	0.25 (0.10)	1.31	0.27 (0.12)
Mother's body mass index	low weight (Ref.)	–	–	–	–	–	–
	normal weight	0.99	-0.01 (0.89)	0.58	-0.54 (0.00)*	0.76	-0.28 (0.06)
	over weight	0.99	-0.02 (0.89)	0.44	-0.82 (0.00)*	0.7	-0.36 (0.05)*
Source of drinking water	improved (Ref.)	–	–	–	–	–	–
	non-improved	0.63	-0.46 (0.00)*	0.48	-0.73 (0.00)*	0.43	-0.85 (0.00)*
Toilet facility	improved (Ref.)	–	–	–	–	–	–
	non-improved	1.12	0.11 (0.18)	1.17	0.16 (0.23)	1.23	0.21 (0.16)
Household member	< 5	–	–	–	–	–	–
	5–8	0.89	-0.12 (0.09)	0.93	-0.07 (0.57)	0.83	-0.19 (0.15)
	≥ 9	1.24	0.21 (0.04)*	0.83	-0.19 (0.23)	0.68	-0.39 (0.03)*
Currently amenorrhea	no (Ref.)	–	–	–	–	–	–
	yes	0.13	-2.05 (0.00)*	0.18	-1.74 (0.00)*	0.03	-3.43 (0.00)*
Currently abstaining	no (Ref.)	–	–	–	–	–	–
	yes	0.25	-1.38 (0.00)*	0.2	-1.63 (0.00)*	0.17	-1.80 (0.00)*
Sex of child	male (Ref.)	–	–	–	–	–	–
	female	0.99	-0.004 (0.95)	1.06	0.06 (0.54)	1.02	0.024 (0.83)
Child is twin	single (Ref.)	–	–	–	–	–	–
	twin	1.28	0.24 (0.59)	0.86	-0.15 (0.84)	1.31	0.27 (0.73)
AIC		7045.996		7011.95			

* p -value < 0.05, Ref. – reference category.

Therefore, with the increase in parental education, people tend to fall into the '0–5 months' category. Majority of the children whose mothers didn't have the opportunity of schooling (33%) are breastfed for a minimum of 24 months. No potential evidence of association is observed for the place of residence, religion, sex of child and child is twin or not respectively. The prevalence of at least 24 months breastfeeding is highest in Khulna (30%) as well as Rangpur (31.5%) and least in Dhaka division (24%). Then, for multivariate analysis, Proportional Odds (PO) model and Polytomous Logistic Regression (PLR) model were fitted to the data.

Table 3 includes estimates of the fitted ordinal regression model via the PO and PLR respectively. After implementing a backward selection process, significantly affected variables that influence breastfeeding time are exhibited in the first column. Also, the significant covariates are divided according to parental characteristics and child characteristics.

From the table, it is observed that strong evidence of reverse undertone between advanced educated mother's (-0.28) and breastfeeding status is observed via PO model. For breastfeeding length, as clarified by the parent's educational level, the probabilities of a child being breastfed for 24 months by mothers attaining advanced schooling are almost [exp (0.67)-exp (0.53)] = 25% lower than those kids whose mothers are illiterate. As a result, mothers who finished the advanced level of education are more likely to terminate breastfeeding at an earlier time. The notorious outlines relating to maternal characteristics find parallelisms to those of Jesper et al., which exposed that for Pilipino mothers, the tenure of advanced educational attainment usually leads to early termination of breastfeed-

ing [19]. The prevalence of at least 24 months breastfeeding is higher [odds ratio = 1.07] in the rural area than urban. To be specific, the odds of a minimum 24 months of breastfeeding is [exp (0.39) -1] = 47% higher for Khulna compared to Barisal. In addition, the odds of wealth status from '0–5 months' is [exp (0.27) -1] = 31% higher for rich people as compared to the poor. Because of this, mothers fitting in the minimum wealth class are same as to breastfeeding former as associated with those fitting in the higher prosperity class. Regarding amenorrhea and abstaining status of mothers, the prevalence of at least 02 years breastfed is lower in this status. Model fitting results showed that children from big households have 24% higher odds of at least 02 years breastfed. Moreover, longer breastfeeding duration by mothers inhabited in urban residences and progenies delivered in hospitals also show that increased modernism is related to reduced breastfeeding duration. An interesting result concerning femininity of a child, it is observed that male children are probably provided longer breastfeeding than their female complements. Odds of being longer breastfed are 31% more among twin children as compared to an only child. This result suggests that only children are more deceptively involved in shorter breastfeeding duration than twins. Also, girls are less possibly to obtain positive breastfeeding activities than males. In addition, the deviance-based chi-squared test exposes strong indication that the proportional odds assumption has been violated (Chi-square Statistic = 86.1, $df = 26$, $p < 0.00$). Consequently, we are unable to use a single outcome for explanatory variables to model separate logits of cumulative probabilities. So, PLR is normally used to model categorical response with more than two categories, and we can estimate this model. The

PLR-based approximations two columns as well as estimates the data with the smallest AIC (7011.95) value rather than the PO model (7045.996).

Discussion

This study is focused with the secondary data source (BDHS 2014). Based on BDHS 2014, the study attempts to identify the factors that influence the breastfeeding duration of children aged at least 24 months. The number of studies that are related with breastfeeding duration that deals with identifying the same issue and factors in Bangladesh is very limited. Upon accosting this issue, the discoveries of the study unfold that a number of factors affect the breastfeeding duration of children, which includes division, religion, toilet facility, mother's BMI, drinking water source and wealth index. It is evident from existing literature that those factors affect the breastfeeding duration of a child [20–24]. Moreover, non-improved drinking water has negative impact on breastfeeding duration. This study also reveals that the level of the mother's education has an inverse relationship to children's breastfeeding duration. The higher the mother's years of schooling, the lower the odds for a child of being breastfeed. The illiterate mothers of children are more exposed to being breastfeeding than children of mothers having primary, secondary and higher education. This finding complies with other studies, suggest that children with mothers having higher education have lower odds of being breastfeeding duration than those with mothers having no education [23, 25]. As an educated mother possesses to terminate breastfeeding at an earlier time due to her daily duties. This finding, particularly, calls for greater attention on the part of the government for framing policies to launch lactating station at the work places. Besides this, the relationship between a mother's BMI and the odds of being taken to a child exposed to being breastfeeding duration is found significant in this study, which is supported by earlier work [26]. A contribution to the prevailing frame of knowledge is the resulting of this study, which reveals that children of both normal weight and overweight mothers have a lower probability of breastfeeding. Children from families with higher income and resources tend to have better diets and improved nutritional status, leading to lesser odds of having the full breastfeeding period [27]. Studies reveal that children of undernourished mothers are more expected to be less milk for breastfeeding [28, 29]. The findings of this study confirm this argument in the sense that due to inadequate income, children from poor income families have higher odds in terms of switching from more to less breastfeeding status in comparison to children from middle income and rich families. Although literature suggests that the prevalence of breastfeeding in the rural area was higher than in the urban area, the findings in this study reveal that the place of residence had a noteworthy effect on the breastfeeding duration of children [30]. Why this finding is different it goes beyond plausible explanation and demands further investigation. The same can be said for the district-wise breastfeeding status of children. Why the prevalence of breastfeeding duration is higher in Khulna and Rangpur compared to Barisal needs further research, which is beyond the scope of

this study. Whether amenorrhea and abstaining are being made use of or not has been an important factor on determining the breastfeeding duration of children. From this perspective, a key policy suggestion for the government would be expansion of amenorrhea and abstaining care services to the far-reaching corners of the country. Moreover, twin child, religion, toilet facility, wealth index and sex of child have no such impact on breastfeeding duration.

Limitations of the study

This study is conducted in the BDHS-2014 dataset where lots of missing values were present, the authors are aware of this limitation. Moreover, the survey relies on self-reported information in which recall bias can be an important issue, as interviewees are required to recollect events as far back as 3 years. As a result, the responses of some demographic and socioeconomic groups may affect differently. In addition, this study is unable to provide comprehensive information, as detailed statistics were unavailable in the BDHS reports. Another limitation of this analysis that only the PO model and PLR model are considered.

Conclusions

Lack of breastfeeding is one of the burning issues that is being studied deeply now-a-days in the world. Using BDHS 2014, this study identified some of the significant factors that have higher probabilities of being attached to the breastfeeding period of children in Bangladesh. Further research might be initiated to make sense of exactly why these certain factors influence the breastfeeding period of children and why other factors, for instance higher household member or urban-rural, which were thought to have an influence, could not be found influential. Moreover, the study peruses shine upon some probable policymaking in dealing with breastfeeding period that might positively affect the odds of breastfeeding period of children, as a rising worry among the governments of both developing and underdeveloped countries, including participation of mother's education and enhancement of care services for peaceful motherhood. Research on breastfeeding period can also be conducted for seeking explanations of why the breastfeeding period of children varies across different divisions within Bangladesh. Moreover, to encourage breastfeeding and to increase the breastfeeding length, the following measures are recommended for the family doctors.

- After delivery, influence mother's for early breastfeeding and breastfeeding continue till 2 years.
- Encourage mother's for exclusive breastfeeding and trained mother's properly.
- Advise working mother to take a baby with them during office hours and set up lactating station in their working location and breastfed their child regular time interval.

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