



Prevalence and Factors Affecting the Intention of Women to Limit Childbearing in Bangladesh: A Cross-Sectional Study

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Abstract

Women's intention to limit childbearing is a leading issue in developing countries like Bangladesh. This study tries to identify which factors are associated with limiting childbearing intention among reproductive-aged women in Bangladesh. We used the most recent Bangladesh Demographic and Health Survey 2017-18 data to analyze this study. The outcome variable was women's intention to limit childbearing. Individual, household and community-level factors were used as the explanatory variables. Descriptive statistics were used to describe the background characteristics of the study. To check the association between the outcome variable and explanatory variable, we used two-level logistic regression model. The result of this study showed that women's age, education, wealth index, and use of modern methods had significantly associated with women's intention to limit childbearing. According to the two-level logistic regression model, the likelihood of women's intention to limit childbearing was found to be increased with the increased age of respondents. Higher-educated women were 83% lower likelihood of limiting childbearing compared to illiterate women. Women who came from middle wealth index had a 40% lower likelihood to limit childbearing than the poorest women. Women who had used modern methods were 1.52 times more to limit childbearing than women who had not used modern methods. So, improving access to women's age, wealth index, education and contraceptive use will pay more attention to achieving desired fertility rate.

Keywords: *Women; Limit Childbearing; Bangladesh: A Cross-Sectional Study*

Introduction

Women's intention to limit childbearing means women's perception of controlling their fertility in future. It is the most important component that directly affects fertility (Ayazi et al., 2021). The

population is one of the most predominant resources for the development of any country. Since fertility rate plays a significant role to affect long-term consequences for the economic growth and social development of a developing country, its size and growth are crucial components of economic development (Sethy & Sahoo, 2015). Childbearing is performed to determine increasing or reducing fertility patterns.

Bangladesh is facing high birth rates that turn into overpopulation. It is the eighth-most populous country in the world and more than two million people are being added to the Bangladeshi people every year (Acharjee et al., 2020). The population density of Bangladesh is higher than any other mega country (Streatfield & Karar, 2008). Its density exists three times and thirty-six times more than India and the USA respectively (Chowdhury & Hossain, 2019). But this overpopulation can bring harmful effects on overall development, especially in developing countries like Bangladesh. Actually, high population growth may slow economic growth in low-income countries (Peterson, 2017) and can result in unrest among people and mental health disturbances (Razzaq et al., 2021). On the contrary, unintended pregnancy is very high in low and middle-income countries and Bangladesh due to the failure of modern contraceptive methods (Khan et al., 2022) and more than one-third of maternal and child death of global mortality occurs in the South-East Asia region (Bhandari, 2012).

Bangladesh is currently facing a double burden of malnutrition due to overpopulation (Tanwi et al., 2019) and the levels of child mortality rate remain high (Huq & Tasnim, 2008). However, the transition from high fertility to moderate or low level of fertility plays a crucial role to bring out the overall development and modernization of developing countries like Bangladesh (Kamal, 2011). The fertility intention of women to limit childbearing is an essential factor to control rapid population growth. Although many factors have been identified in developing countries as well as in Bangladesh, still additional factors need to be investigated like division. Most of the previous studies were conducted to determine fertility preference among reproductive-aged women (Kodzi et al., 2010; Rabbi, 2014; Roy et al., 2008; Short & Kiros, 2002) but it was not clear which factors are more responsible to limit childbearing. Measuring fertility intention is important for population policy and the implementation of family planning programs. To develop effective strategies for fertility control, it is necessary to identify those factors that are related to high fertility. For this reason, the aim of this study focuses on identifying factors that influence women's intention to limit childbearing among reproductive-aged women in Bangladesh.

Methods

Data Sources

The data for this study was obtained from Bangladesh Demographic and Health Survey (BDHS) 2017-18. It was a nationally representative household survey conducted under the Ministry of Health and Family Welfare (MOHFW). The National Institute of Population Research and Training (NIPORT)- a national organization that works under the MOHFW conducted this survey along with Mitra and Associates. The sample of this survey was selected by using two-stage stratified random sampling methods. At the first stage of sampling, total of 675 clusters (250 in urban areas and 425 in rural areas) were selected as part of the Bangladesh National Population Census 2011. Of them, data were collected from 672 clusters and the remaining three were excluded because of extreme flood. A fixed number of 30 households were selected at the second stage from each selected cluster. For this, a systematic random sampling approach was used after performing the household listing operation. This produced list of 20,160 households of them data collection was undertaken in 19,457 households with a response rate of 99.4%. There were 20,376 women in the selected households who were eligible for the survey. 20,127 of them were included in the survey.

Analytical Sample

Total of 19033 women who met the inclusion criteria were analyzed in this study. The inclusion criteria were: (i) women or their husbands who were using modern contraceptive methods and (ii) recorded that the participants were women of reproductive age (15-49 years) in Bangladesh. The exclusion criteria were women who reported that they were sterilized, declared in-fecund, widowed, divorced and separated.

Outcome Variable

The outcome variable for this study was women's intention to limit childbearing. A dummy variable was created from the question of desire for another child. The BDHS asked whether a woman wants to have child soon, later or no more child. On the basis of responses to these questions, respondents were divided two categories. We categorized responses to these questions as either yes or no. The first category consisted of those women who did not want any more children which was considered as intention to limit childbearing. The second category consisted of those women who want a child soon or later.

Explanatory Variables

In this study, the independent variable covered demographic and socio-economic factors. By reviewing relevant study (Araban et al., 2020; Berrington & Pattaro, 2014; Hashemzadeh et al., 2021; Khadivzadeh et al., 2018; Lith et al., 2013), we considered all possible explanatory variables. After that, we run forward regression model and the variables who were found insignificant were deleted. Finally, the selected socioeconomic and demographic factors were extracted from the BDHS data. We categorized these variables as individual, household and community level factors. Individual level factors were women's age (<25, 25-34, and 35-49 years), women's education (no education, primary, secondary, and higher secondary education), religion (Muslim, non-Muslim) and respondent's current working (no, yes). Household level factors were wealth index (poorest, middle, richest), access to media (no, yes) and use of modern method (no, yes). Community level factors were region (Barisal, Chittagong, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, Sylhet) and respondent's place of residence (rural, urban).

Statistical Analyses

Descriptive statistics involving percentage and 95 percent confidence interval were computed to describe the background characteristics of the sample. To assess the association between independent and dependent variables, odds ratios and confidence intervals were used for this study. Multilevel Logistic regression analysis was used to identify which factors were associated with women's intention to limit childbearing among reproductive-aged women in Bangladesh. The data were analyzed using STATA version 13.

Ethical Approval

We used secondary dataset from the Demographic and Health Survey, which was available to the public domain, therefore, ethical approval was not required for this study. All methods were performed in accordance with the relevant guidelines and regulations.

Results

The background characteristics of the respondents were presented in Table 1. Around 37% of the total respondents were aged 35-49 years at the time of the survey and 35% women were aged 25-34 years. Almost 40% of the total respondents had secondary education and 17% had no formal education at the

time of the survey. Seven in ten of the total women were included from the rural area and over 25% of the total respondents were included from the Dhaka division. Almost 42% of the total respondents were included from the richest wealth quintile and 38% of the total respondents were included from poorest wealth quintile. The majority of respondents (90.68%) were Muslim religion. Around two third of the total respondents reported the used mass media. Modern family planning was found to be used by 58% of the total women.

Table 1. Percentage distribution of selected characteristics, Bangladesh Demographic and Health Survey, 2017-18.

Covariates	Percentage	Confidence Interval (CI)	
		Lower	Upper
Woman's age			
<25 years	27.92	27.16	28.68
25-34 years	35.02	34.22	35.83
35-49 years	37.06	36.28	37.85
Women's education			
No education	16.56	15.72	17.44
Primary	31.25	30.32	32.19
Secondary	39.62	38.59	40.65
Higher Secondary	12.57	11.8	13.39
Division			
Barisal	5.59	5.28	5.92
Chittagong	17.99	17.33	18.68
Dhaka	25.46	24.61	26.32
Khulna	11.61	11.17	12.06
Mymensingh	7.68	7.17	8.22
Rajshahi	13.92	13.34	14.53
Rangpur	11.83	11.27	12.4
Sylhet	5.92	5.65	6.21
Place of residence			
Urban	28.46	27.64	29.3
Rural	71.54	70.7	72.36
Wealth index			
Poorest	38.26	36.38	40.17
Middle	20.17	19.14	21.23
Richest	41.57	39.75	43.42
Religion			
Muslim	90.68	88.85	92.23
Non-Muslim	9.32	7.77	11.15
Respondent currently working			
No	52.28	50.44	54.11
Yes	47.72	45.89	49.56
Access to media			
No	34.02	32.19	35.91
Yes	65.98	64.09	67.81
Use of Modern Method			
No	41.66	40.66	42.66
Yes	58.34	57.34	59.34

Regional variations in the women's intention to limit childbearing were represented in Figure 1. Sylhet division had the highest prevalence (15.97%) compared to other divisions; on the contrary, only 8.35% were in the Rajshahi division.

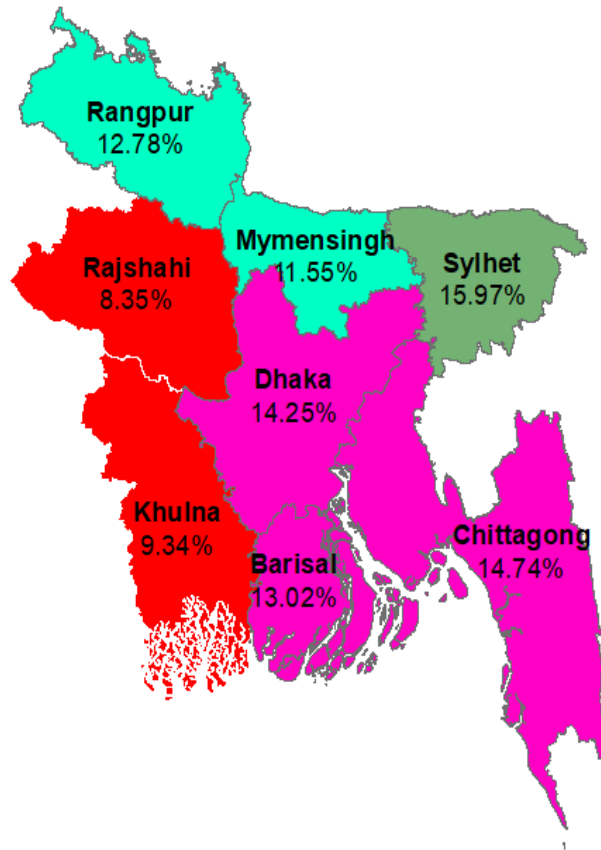


Fig 1. Prevalence of women's intention to limit childbearing by division

The association between women's intention to limit childbearing and individual, household, and community level factors are determined by multilevel logistic regression model. The results are presented in Table 2. The likelihoods of women's intention to limit childbearing was found to be increased with the increased age of the respondents from age <25 years, 9.23 times higher among women aged 25-34 years and 31.32 times higher among women aged 35-49 years. Around 46% (OR, 0.54, 95% CI, 0.36-0.82) and 83% (OR, 0.17, 95% CI, 0.09-0.31) lower likelihoods of women's intention to limit childbearing had compared to the women with no education. Women belonging to the middle wealth index had a 40% lower likelihood to limit childbearing as compared to the poorest women. Women who had intention to limit childbearing were 1.52 times more likely to use contraception than women who had no intention to limit child bearing.

Table 2. Results of two-level logistic regression on women’s intention to limit childbearing according to some socio-demographic covariates

Women’s intention to limit childbearing		
Covariates	Odds Ratio (OR)	P-value
Age		
<25	1.00	-
25-34	9.23 (6.55-13.0) ***	0.000
35-49	31.32 (20.63-47.57) ***	0.000
Education		
No	1.00	-
Primary	0.81 (0.55-1.19)	0.284
Secondary	0.54 (0.36-0.82) ***	0.004
Higher Secondary	0.17 (0.09-0.31) ***	0.000
Division		
Barisal	1.00	-
Chittagong	0.71 (0.45-1.13)	0.149
Dhaka	0.72 (0.45-1.16)	0.174
Khulna	0.70 (0.40-1.22)	0.213
Mymensingh	0.65(0.40-1.05)	0.080
Rajshahi	0.59 (0.35-1.01)	0.053
Rangpur	0.83 (0.52-1.33)	0.440
Sylhet	0.77 (0.46-1.27)	0.306
Place of residence		
Urban	1.00	-
Rural	0.88 (0.65-1.18)	0.393
Wealth Index		
Poorest	1.00	-
Middle	0.60 (0.42-0.84) ***	0.003
Richest	0.75 (0.53-1.06)	0.105
Religion		
Muslim	1.00	-
Non-Muslim	0.70 (0.43-1.13)	0.140
Respondent currently working		
No	1.00	-
Yes	1.11 (0.88-1.41)	0.380
Access to media		
No	1.00	-
Yes	0.99 (0.76-1.29)	0.929
Use of modern method		
No	1.00	-
Yes	1.52 (1.18-1.95) ***	0.001

Note: ***P ≤ 0.001.

The forest plot (Figure 2) was used to show the significant odds ratio of women's intention to limit childbearing in a graphical way.

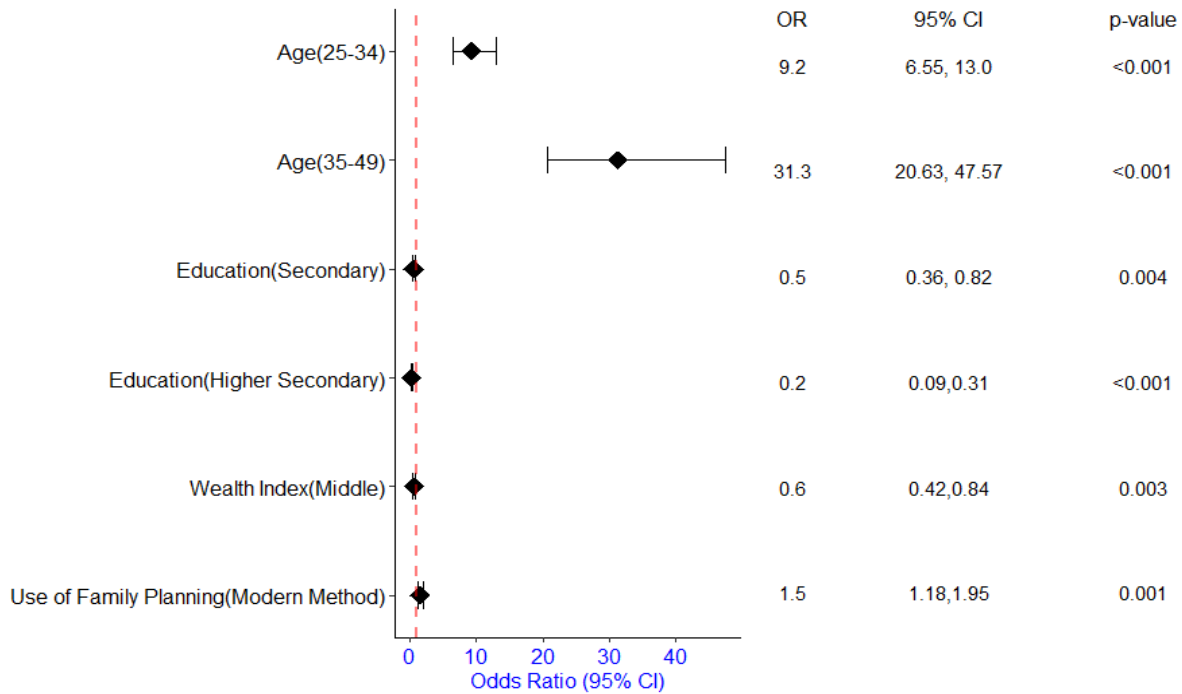


Fig 2. Forest plot of significant odds ratios of women's intention to limit childbearing in Bangladesh

After adjusting for the individual, household and community level factors in the full model (Table 3), the result of random effect revealed that the between-cluster variation for women's intention to limit childbearing was substantial. The between-cluster variations in the empty model were 6% and increased by 2% in the full model. It indicated that the variations in the probability of women's intention to limit childbearing might be related to the variations between clusters.

Table 3. Parameter estimates of two-level logistic regression model with intra class correlation coefficient (ICC).

Random effect Variance	Model 1 (Null model)	Model 2 (Full model)
Variance at the cluster level	0.21***	0.28***
ICC	0.06	0.08

Notes: ***P < 0.001; Model 1 is the null model without any explanatory variable. Model 2 is the full model adjusted for individual, household and community level factors.

Discussion

This study aims to determine the factors associated with limiting childbearing. For this, we analyzed nationally representative data of 19033 women. We found that socioeconomic and demographic

factors including women's age, education, wealth index, and use of modern method had the significant covariates of the desire to limit childbearing among reproductive-aged women.

In this study, women's age was one of the factors positively associated with limiting childbearing intention. Older women had more likely to restrict childbearing than younger women. Similar to our study, findings had been reported in Ethiopia (Dibaba, 2009). Another study conducted in Bangladesh observed that women aged 15 to 24 were more likely to want children compared to other age groups (Acharjee et al., 2020). Parents decide to take more children for future support in developing countries (Nargund, 2009). Women's education is also another important factor related to the childbearing intention. There is a positive association between education and fertility intention (Testa, 2014). The present study revealed that respondent education had played a key role in limiting childbearing intention. Women who had more education decreased fertility intention than those who did not have education. This was also observed in previous studies whereas women with no education had more children than those with more education (Alcaraz et al., 2022; Axinn & Barber, 2001; Bongaarts, 2003; Kravdal, 2002; Kravdal & Rindfuss, 2008; Lutz & KC, 2011). Another study showed that women's education was associated with the transition from high fertility rate to low fertility rate at both the population and individual levels (Yoo, 2014).

Another socioeconomic variable wealth index was strongly associated with the desire to limit childbearing. It was a crucial element to influence the fertility rate among reproductive-aged women (Olatoregun et al., 2014). As the women's economic condition increased, the women's intention to restrict childbearing decreased. Findings revealed that women who belonged to the middle wealth quintal had a lower chance to limit childbearing intention than women who belonged to the poorest wealth quintal. A study conducted in Rwanda where it was found that the richest women were more associated limiting childbearing than the poorest women (Ndaruhuye et al., 2009).

Family planning programs played a vital role to decline the high fertility rate in less developed countries (Saha & Bairagi, 2007). Contraceptive use is another variable that is directly influenced to limit childbearing among reproductive-aged women in Bangladesh. It helps women to achieve their health and desired family size. On the contrary, poor modern contraceptive knowledge can negatively affect women's sexual and reproductive health outcomes (Iyanda et al., 2020). There is a significant association between contraceptive use and women's intention to limit childbearing. Our study revealed that women who were not using contraceptives were more likely to desire children compared to women who were using the contraceptive. Another study had been conducted on Malawian women showed that modern contraceptives had more useful to decline the rapid fertility rate, improve women's health, reduce poverty, and empowering women (Adebowale et al., 2014).

There are some strengths and limitations of this study. Firstly, we analyzed BDHS data which is nationally representative dataset. Secondly, we used statistical modeling including two level logistic regressions which gave more precise results, and these findings could be helpful and applicable for policymakers. Moreover, we adjusted socio-economic covariates with the individual, household and community level factors and it was another important strength of this study. As we utilized cross-sectional dataset, the results were co-relational only, not causal. Another limitation was that we used some health-related confounding factors since it was not available in the dataset.

Conclusions

Women's intention to limit childbearing is an important indicator affecting fertility in developed and less developed countries. This study will help the policymaker to understand the situation of fertility intention among reproductive-aged women in Bangladesh. By focusing on women's age, wealth index, education and contraceptive use among women, we can achieve desired fertility rate.

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Data Availability

The dataset is available in the Demographic and Health Survey assortment (<https://dhsprogram.com/data/available-datasets.cfm>).

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Author Contributions

MR and TK conceptualized the study. MR performed the data analysis and wrote the initial manuscript draft. TK and MMR critically reviewed and edited the study. Finally, all authors approved the manuscript.

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Competing Interests

The authors have declared that they have no competing interests.

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