ISSN 1022-8594
JUJS

Vol. 42, No. 2, pp. 27-44

Prevalence, Patterns, and Determinants of Contraceptive Practices among Married Women in Bangladesh

Md. Abdus Sobhan[1] and Md. Moyazzem Hossain[2,*]
[1]*Chief Economist's Unit, Bangladesh Bank, Head Office, Dhaka-1000, Bangladesh*
[2]*Department of Statistics, Jahangirnagar University, Savar, Dhaka-1342, Bangladesh*

Abstract

To assess the prevalence, patterns and identify the determinants of contraceptive usage among married women in Bangladesh. This study considers a country representative 2014 BDHS dataset. The results reveal that 68.9 percent and 63.4 percent of married women aged between 15 and 49 years used different contraceptive methods in urban and rural areas respectively. In the case of rural areas, respondent's education, age, religion, region, number of living children, respondent's employment status, husband's occupation, and fertility preference are the most important indicators of using contraceptives. However, Age, religion, residency, number of living children, age at first sex, number of living children, husband's desire for children, and hearing about family planning on radio/TV/magazine are all major factors in urban settings. There is less tendency of using contraceptive methods in rural areas than in urban areas. The government and non-government organizations who are concerned about family planning in Bangladesh should be taken an action in rural areas in order to increase the rate of contraceptive use.

Keywords : Contraceptives, Chi-square Test, Logistic Regression, BDHS

Introduction

Bangladesh is a densely populated Southeast Asian country with resource scarcities [1]. However, recently it is included in the list of the lower-middle-income country from the list of least developed countries. To keep in this progress consistently, it should take into consideration the high population growth rate as one of the developing world's most pressing economic and social issues. The population growth rate is highly associated with the lack of using contraceptive methods. According to the most recent BDHS report, 62 percent of married women in Bangladesh aged 15-49 years use contraceptive methods, with 54 percent using a modern method

*Author for correspondence e-mail: hossainmm@juniv.edu

and 38 percent of currently married women were not adopted with any kind of contraceptive methods [2]. Moreover, nearly 25 percent employed women and about 30 percent unemployed women were in vulnerable condition because they wanted no children but do not use any contraceptive method [1]. The use of any modern contraceptive method is higher in urban than rural areas [3,4] in addition, it is observed that 47% of currently married women between 15–19 years of age use any kind of contraceptive method and the highest percent (65%) is observed among the age group 30–34 years and after this age group, there is a steady decrease in the percent of contraceptive use and reached at 25% for the age group 45–49 years [5].

Understanding contraceptive method utilisation and factors impacting contraceptive choice was important for programmatic and policy reasons in order to minimise a country's total fertility rate (TFR) [6]. Any future decline of fertility rate in Bangladesh may be heavily reliant on increased adoption of efficient birth control techniques [7]. The total fertility rate (TFR) of Bangladesh in 2016 was 2.1 per woman [8]. Nevertheless, this is the replacement level of fertility but Bangladesh has a long way to achieve the other targets of SDGs. The significant percentage of the variation in the number of children ever born in the populations was explained by demographic characteristics such as age at first marriage and duration of marriage [9,10]. The variation in age-specific fertility, whether in developed or developing countries, is largely related to women’s age at marriage [10]. Among the socio-economic determinants of fertility, women’s education, employment status, and income are considered as the most three important determinants of fertility [11–13]. However, the development of couples' educational status as well as the growth in societal value of the girl child are both important factors in contraceptive use that lessen the high fertility rate. A household visit by a family planning worker was also a significant factor in contraceptive use [7]. Couples use contraception for a variety of reasons, including the desire to limit their family size, the desire to prevent childbearing due to the negative impact of a pre-existing condition on pregnancy, or vice versa [14].

A previous study pointed out that more than half of the women (57.40%) used contraception [15] and several studies mentioned that age, education, employment status, religion, place of residence, husband's education, number of living children, sexual activity in the past year, woman's desire for children, number of children born in the last five years, and visits of health workers have a significant effects on the use of contraception [3,15,16]. The husband's desire for a child also had a significant positive effect on contraception use. Based on the previous studies it is observed that different factors influence the contraceptive practice in Bangladesh. Thus, the aim of this paper is to assess the prevalence, patterns, and identify the important socio-economic and demographic determinants of contraceptive use among married women in their reproductive age in Bangladesh.

Methodology

This research uses a nationally representative secondary dataset from the Bangladesh Demographic and Health Survey (BDHS) 2014 to determine the most important characteristics that influence the use of various contraceptive methods. The survey utilized a sampling frame from the listing of enumeration areas (EAs) of the "2011 Population and Housing Census of the People's Republic of Bangladesh", supported by the Bangladesh Bureau of Statistics (BBS).The 2014 BDHS sample was stratified and selected in two stages. In the first stage, 600 EAs were selected with probability proportional to the EA size. In the second stage of selection, a fixed number of 30 households per cluster will be selected with an equal probability systematic selection from the newly created household listing. For the 2014 BDHS survey, 17,989 household were selected. The details of the sampling procedure are available on the report of Bangladesh Demographic and Health Survey 2014 [2].

The chi-square test has been performed here for examining the association between the status of contraceptive use and different socio-economic and demographic variables. However, unadjusted and adjusted logistic regressions are carried out separately to analyze the data in the urban and rural contexts. For the regression analysis, if a woman uses any contraceptive method, is coded as "1" and "0" for otherwise and used as the dependent variable. Moreover, in a multiple logistic regression analysis,

women are compared based on the factors that may influence their contraceptive use. The Odds Ratio (OR) is determined in the individual characteristics, factors linked to fertility and in other contextual circumstances along with crude OR. The Hosmer Lemeshow test is applied in the process of model fitting.

Results

Firstly, the percentage distribution of the status of contraceptive use among currently married women is performed according to their place of residences (urban/rural). The overall prevalence of current contraceptive use among women aged 15-49 years is 61.0 percent, while the estimates are 63.5 percent and 59.9 percent in urban and rural areas respectively, and observe a significant difference ($p<0.001$). The status of contraceptive use among married women is 68.9 percent and 63.4 percent in urban and rural areas respectively and there is no significant difference at 5% level of significance between urban and rural areas ($p=0.205$).

The results presented in Figure 1 discloses that the rate of contraceptive use is higher (68.0%) in the urban area of the Rangpur division and (68.6%) in the rural area of the Rajshahi division. The lowest use of the contraceptive practice is in Sylhet division in both urban and rural areas that are 57.3 percent and 48.9 percent respectively compared with other divisions. Also, in rural areas, the contraceptive use rate in Barishal and Chattagram is less than 60 percent. There is a significant ($p<001$) difference of users between Muslim and non-muslim respondents. The non-muslim use more (71.3% and 64.7% respectively) contraceptives than their Muslim counterparts in both urban and rural areas. The average age of the respondents in both urban and rural areas was almost similar (33.6 and 33.8 years respectively) and the age of the highest user group is 30 to 34 years (79.9% and 72.2% respectively). Furthermore, contraceptive use rate is gradually decreasing less or more in other age groups than that of the highest user group in both urban as well as rural areas. The results also depict that more educated women practice more contraception. However, educational qualification makes a significant difference in the case of using contraception. The respondents with higher education, 71.7 percent of urban women are using contraception while their rural counterpart is 67 percent (Figure 1).

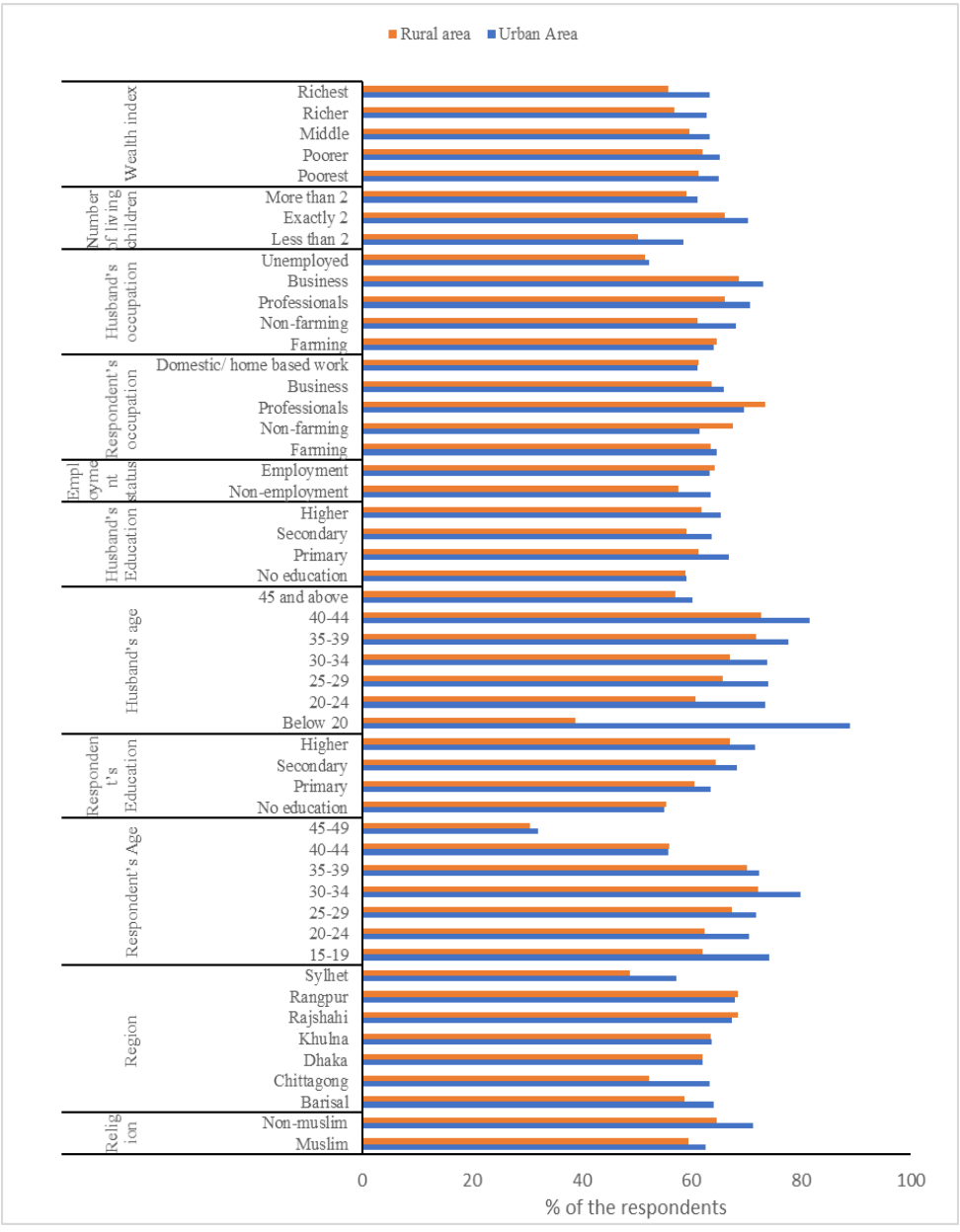

Figure 1. Percentage distribution of background characteristics of currently contraceptive users by place of residence, BDHS 2014

The results reveal that the highest use of contraceptives is recorded among the urban women who are non-muslim, residing in Rangpur division, aged 30-34, higher educated, whose husband's age below 20 years, husband's education is primary level and businessman, who has exactly two children and do not want more children (Table 2), having first intercourse at more than 21 years of age, and heard about family planning (FP) on Radio/TV/magazine. On the other hand, in the rural area, the prevalence of contraceptive use is upmost among women who are residing in the Rajshahi division, non-muslim, aged 30-34, higher educated and employed, whose husband's age 40-44, husband higher educated and businessman, having exactly two children and do not want more children, having first intercourse at more than 21 years of age, and heard about FP on Radio/TV/magazine (Table 2).

Table 2. Distribution (%) of respondents according to their contraceptive use status by place of residence, BDHS 2014

Demographic Indicators	**Overall (N=43772)**		**P value**	**Urban area (N=13515)**		**P value**	**Rural area (N=30257)**		**P value**
	Non-user	**User**		**Non-user**	**User**		**Non-user**	**User**	
Age at first sex									
Less than 18 years	39.2	60.8		37.3	62.7		40.0	60.0	
18 to 21 years	38.6	61.4	<0.001	35.2	64.9	<0.001	40.7	59.3	0.438
More than 21 years	33.1	66.9		29.6	70.5		37.8	62.2	
Fertility preference									
Want another	41.5	58.5		35.0	65.0		44.6	55.4	
Undecided	50.1	49.9	<0.001	40.5	59.5	<0.001	54.6	45.4	<0.001
No more	33.6	66.4		30.2	69.8		35.1	64.9	
Number of currently married respondents	41045			12452			28593		
Heard about FP on Radio/TV/magazine									
No	39.7	60.3	<0.001	38.0	62.1	<0.001	40.4	59.6	0.002
Yes	35.2	64.8		32.4	67.6		37.8	62.2	
Wanted last child									
Wanted then	35.5	64.5		28.8	71.2		38.4	61.6	
Wanted later	26.0	74.0	<0.001	18.9	81.1	<0.001	28.8	71.2	<0.001
No more	32.5	67.5		26.2	73.8		34.6	65.4	
Husband's desire for children									
Both wanted same	37.3	62.7		33.2	66.8		39.1	60.9	
Husband wanted more	40.6	59.4	<0.001	38.7	61.3	<0.001	41.3	58.7	0.009
Husband wanted fewer	34.5	65.5		27.6	72.4		37.4	62.6	

Demographic Indicators	Overall (N=43772)		P value	Urban area (N=13515)		P value	Rural area (N=30257)		P value
	Non-user	User		Non-user	User		Non-user	User	
Reason for discontinuation									
Became pregnant	23.4	76.6		20.3	79.7		24.9	75.1	
Wanted to become pregnant	33.4	66.6		29.8	70.2		35.2	64.9	
Husband disapproved	34.0	66.0		51.5	48.5		25.6	74.5	
Side effects	19.5	80.5		14.4	85.6		22.1	78.0	
Access, availability	16.5	83.5		20.9	79.1		15.0	85.0	
Wanted more effective method	1.4	98.6		3.1	96.9		0.6	99.4	
Inconvenient to use	10.2	89.8	<0.001	11.4	88.6	<0.001	9.6	90.4	<0.001
Infrequent sex, husband away	85.1	14.9		88.6	11.4		83.5	16.5	
Cost	14.3	85.7		0.0	100.0		15.8	84.2	
Fatalistic	69.2	30.8		0.0	100.0		78.3	21.7	
Difficult pregnancy, menopause	91.7	8.3		93.8	6.2		90.8	9.2	
Marital dissolution	95.6	4.4		94.1	5.9		97.3	2.7	
Others	63.4	36.6		68.0	32.0		61.7	38.4	

It is observed that there is no significant difference in average age (42.7 and 43.1 years respectively) of respondent's husband between urban and rural areas. Among the respondents, whose husband's age was below 20 years and lived in the urban area about 90 percent use any method of contraception, while in the rural area the highest (72.8%) proportion is in the age group of 40 to 44 years. The proportion of contraceptive users in the rural area is remarkably lower than that of the urban area at each level of husband's education except the category of no education. In the urban area, women's employment status does not show any difference in the contraceptive users however, a significant difference is exhibited in the rural area. The present study also unveiled that about 70 percent of respondents who were involved in professional work and lived in urban areas use contraception while in rural areas the percentage is 73.5. Moreover, 73.2 percent of respondents whose husbands is a businessman and lived in urban areas used contraception and in the case of rural areas, the percentage of using contraception is 68.7 percent. Though there is no significant difference in contraceptive practice in the urban areas in terms of wealth index, whereas a significant difference ($p<0.001$) is observed in rural areas. The highest (70.3%) use of contraception in the urban area is

practiced by those people who had exactly two children whereas it is 66.1 percent in the rural area (p<0.001). Results indicate that the maximum proportion of respondents use contraception among those who have first sexual intercourse after 21 years old (70.5 percent and 62.2 percent in urban and rural areas respectively). About 70 percent of the respondents use contraception in an urban area who do not want more children and that figure is 65 percent in rural areas. A significant difference exists in contraception use between respondents who heard about family planning (FP) and who did not hear about FP on Radio, Television, or Magazine in both urban (p<0.001) and rural (p=0.002) areas. Around three-fourths (72.4%) of the respondents in the urban area use contraception whose husband wants fewer children while it is 62.6 percent in the rural area. From the results of unadjusted logistic regression analysis, it is observed that the use of contraception is influenced significantly by some variables viz. respondent's education, age, husband's education, religion, region, number of living children, respondent's employment status, fertility preference, heard about FP on Radio/TV/Magazine. However, among these variables, respondent's education and husband's education, are not found to be significant in the adjusted logistic regression but in addition, age at first sex is found to be significant (Table 3).

Table 3: Predictor of contraceptive users among all respondents, BDHS 2014

Background characteristics	Contraceptive users (N=43772)			Contraceptive users (N=35085)		
	Crude OR	p value*	Confidence Interval	Adjusted OR	p value*	Confidence Interval
Religion						
Muslim	Ref			Ref		
Non-muslim	1.32	<0.001	(1.23, 1.41)	1.20	<0.001	(1.10, 1.32)
Region						
Barisal	1.44	<0.001	(1.34, 1.55)	2.03	<0.001	(1.85, 2.23)
Chittagong	1.21	<0.001	(1.13, 1.29)	1.35	<0.001	(1.24, 1.46)
Dhaka	1.56	<0.001	(1.45, 1.67)	1.91	<0.001	(1.75, 2.08)
Khulna	1.67	<0.001	(1.55, 1.79)	2.45	<0.001	(2.23, 2.69)
Rajshahi	2.05	<0.001	(1.90, 2.21)	2.81	<0.001	(2.55, 3.09)
Rangpur	2.06	<0.001	(1.91, 2.21)	2.70	<0.001	(2.46, 2.97)
Sylhet	Ref			Ref		
Respondent's Age						
15-19	4.25	<0.001	(3.73, 4.84)	14.84	<0.001	(12.45, 17.68)
20-24	4.15	<0.001	(3.83, 4.50)	9.20	<0.001	(8.19, 10.32)
25-29	4.94	<0.001	(4.60, 5.30)	7.62	<0.001	(6.93, 8.38)
30-34	6.55	<0.001	(6.11, 7.03)	8.48	<0.001	(7.78, 9.24)

Background characteristics	Contraceptive users (N=43772)			Contraceptive users (N=35085)		
	Crude OR	p value*	Confidence Interval	Adjusted OR	p value*	Confidence Interval
35-39	5.41	<0.001	(5.04, 5.80)	6.56	<0.001	(6.03, 7.14)
40-44	2.83	<0.001	(2.65, 3.03)	3.33	<0.001	(3.07, 3.61)
45-49	Ref			Ref		
Respondent's Education						
No education	Ref			Ref		
Primary	1.28	<0.001	(1.22, 1.34)	1.03	0.316	(0.97, 1.10)
Secondary	1.56	<0.001	(1.48, 1.64)	1.06	0.161	(0.98, 1.14)
Higher	1.88	<0.001	(1.71, 2.07)	1.09	0.263	(0.94, 1.26)
Husband's age						
Below 20	Ref					
20-24	1.44	0.363	(0.66, 3.14)			
25-29	1.72	0.166	(0.80, 3.68)			
30-34	1.80	0.130	(0.84, 3.86)			
35-39	2.25	0.037	(1.05, 4.81)			
40-44	2.47	0.020	(1.15, 5.29)			
45 and above	1.11	0.793	(0.52, 2.37)			
Husband's Education						
No education	Ref			Ref		
Primary	1.17	<0.001	(1.12, 1.23)	1.03	0.429	(0.96, 1.09)
Secondary	1.08	0.002	(1.03, 1.14)	0.96	0.303	(0.89, 1.04)
Higher	1.22	<0.001	(1.14, 1.31)	1.05	0.451	(0.93, 1.18)
Number of living children						
Less than 2	Ref			Ref		
Exactly 2	1.81	<0.001	(1.69, 1.94)	1.82	<0.001	(1.65, 2.01)
More than 2	1.29	<0.001	(1.21, 1.37)	2.10	<0.001	(1.89, 2.34)
Wealth index						
Poorest	Ref			Ref		
Poorer	1.02	0.515	(0.96, 1.08)	1.11	0.007	(1.03, 1.19)
Middle	0.94	0.048	(0.89, 1.00)	1.06	0.134	(0.98, 1.15)
Richer	0.90	0.001	(0.85, 0.96)	0.99	0.833	(0.91, 1.08)
Richest	0.97	0.287	(0.91, 1.03)	1.15	0.004	(1.05, 1.27)
Respondent's employment status						
Employment	1.21	<0.001	(1.16, 1.26)	1.29	<0.001	(1.22, 1.36)
Non-employment	Ref			Ref		
Respondent's occupation						
Farming	Ref					
Non-farming	1.06	0.206	(0.97, 1.16)			
Professionals	1.42	<0.001	(1.19, 1.70)			
Business	1.03	0.635	(0.91, 1.16)			
Domestic/ home based work	0.90	0.040	(0.82, 1.00)			

Background characteristics	Contraceptive users (N=43772)			Contraceptive users (N=35085)		
	Crude OR	p value*	Confidence Interval	Adjusted OR	p value*	Confidence Interval
Husband's occupation						
Farming	1.04	0.134	(0.99, 1.09)	1.18	<0.001	(1.11, 1.25)
Non-farming	Ref			Ref		
Professionals	1.24	<0.001	(1.13, 1.37)	1.28	<0.001	(1.12, 1.46)
Business	1.35	<0.001	(1.28, 1.43)	1.43	<0.001	(1.34, 1.53)
Unemployed	0.61	<0.001	(0.50, 0.74)	1.02	0.854	(0.80, 1.31)
Age at first sex						
15-24	Ref			Ref		
25-34	1.03	0.337	(0.97, 1.08)	1.25	<0.001	(1.17, 1.33)
35-49	1.30	<0.001	(1.14, 1.48)	1.65	<0.001	(1.40, 1.95)
Fertility preference						
Want another	Ref			Ref		
Undecided	0.71	<0.001	(0.60, 0.83)	0.68	<0.001	(0.57, 0.81)
No more	1.40	<0.001	(1.32, 1.49)	1.59	<0.001	(1.46, 1.74)
n	**41045**					
Heard about FP on Radio/TV/magagine						
Yes	1.21	<0.001	(1.15, 1.28)	1.09	0.011	(1.02, 1.16)
No	Ref			Ref		
Wanted last child						
Wanted then	Ref					
Wanted later	1.57	<0.001	(1.37, 1.79)			
No more	1.14	0.017	(1.02, 1.27)			
Husband's desire for children						
Both wanted same	1.15	<0.001	(1.08, 1.22)	1.06	0.073	(0.99, 1.14)
Husband wanted more	Ref			Ref		
Husband wanted fewer	1.30	<0.001	(1.18, 1.43)	1.14	0.017	(1.02, 1.27)

Note: OR "Odds Ratio" **Ref** "Reference Category"

The study reveals that region is an important factor of contraception practices in both adjusted and unadjusted logistic regression models ($p<0.001$). The findings depict that the use of contraception among respondents is the lowest in Sylhet division and it is almost double in Rajshahi (OR=2.05 for unadjusted; OR=2.81 for adjusted) and Rangpur division (OR=2.06 for unadjusted; OR=2.70 for adjusted). Respondent's intention of practicing contraception is 6.5 times higher ($p<0.001$) at their age of 30 to 34 years than that of the highest age group (45-49 years) of childbearing age. In the results of adjusted logistic regression, it is seen that younger women are more intended to use contraceptive methods. Furthermore, the use of contraception is about 15 times higher ($p<0.001$) in

the lowest age group than that of the highest age group. The unadjusted analysis also explains that respondent's education has been played an important role in to use of contraception. The respondents with higher educational levels are 1.88 times more ($p<0.001$) likely to use contraception than those who had no formal education. The effect of husband's educational level on contraceptive use is found to be significant ($p<0.001$). Results also discovered that respondent's employment status is one of the most important factors for practicing contraception. Women who are involved in jobs used 1.21 ($p<0.001$) times and 1.29 ($p<0.001$) times more contraception for unadjusted and adjusted respectively than that of those who are unemployed. Furthermore, the respondents who have exactly two living children had 1.8 times higher likelihood to use contraception than those who have fewer than two children. In the adjusted analysis, women with more than two children have more than 2 times higher intention to use contraception rather than women with less than two children. Respondents who want no more children are about 1.5 times (OR=1.4 for unadjusted; OR=1.6 for adjusted) likely to be more contraceptive users than women who want another child. It is remarkably observed that women are less likely to use contraception when they are not able to decide whether they wanted more children or not. Another important variable is heard about family planning on radio/TV/magazine that affects significantly the contraceptive practice ($p<0.001$).

The results of the present study examine that the status of contraceptive use among married women aged 15-49 years is 68.9 percent and 63.4 percent in urban and rural areas respectively. It shows a significant difference in using contraceptive methods between urban and rural areas [4]. The middle age group (30 to 34 years) of the respondents are the highest user of contraceptives; that is, 79.9 percent in urban and 72.2 percent in rural areas. Contraceptive use rate has been gradually decreasing less or more age group than that of the highest user group in both areas. This is reliable with the results of a previous study [1,3]. The results of the present study also reveal that the respondent's educational qualification makes a significant difference in the case of exhausting contraception which is supported by the findings of previous research [1,3,4,16]. The respondents with higher education, 71.7 percent of urban women are using contraception while their rural counterpart is 67 percent. Women's employment status shows a

significant difference ($p<0.001$) in using contraception in the rural area but no significant difference exhibit in urban counterparts. These results are consistent with the results of the previous studies [1,3,13]. About 70 percent of respondents who are involved in professional work use contraception in the urban area and in rural areas it is 73.5 percent. About two-thirds of respondents who had first sexual intercourse [16] after 21 years old use contraception as the highest proportion (70.5 % in urban and 62.2 % in rural areas). Moreover, about 70 percent of the respondents use contraception in an urban area who do not want more children and that figure is 65 percent in a rural area [17]. A significant difference exists in contraception use between respondents who heard about Family Planning [1] and who do not hear on Radio, Television, or Magazine in both urban ($p<0.001$) and rural ($p=0.002$) areas. In addition, around three-fourths (72.4%) of the respondents in the urban area use contraception whose husband want fewer children while it is 62.6 percent in the rural area. The highest (70.3%) use of contraception in the urban area is seen who has exactly two children [3] whereas in the rural area it is 66.1 percent ($p<0.001$) [Table 4].

Table 4. Predictor of contraceptive users according to place of residence by background characteristics, BDHS 2014

Background characteristics	Contraceptive user from rural area				Contraceptive user from urban area			
	COR	**CI**	**Adjusted OR**	**CI**	**COR**	**CI**	**Adjusted OR**	**CI**
Religion								
Muslim	Ref		Ref		Ref		Ref	
Non-muslim	1.25	(1.15, 1.36)	1.19**	(1.07, 1.32)	1.48***	(1.30, 1.68)	1.28**	(1.09, 1.50)
Region								
Barisal	1.49***	(1.37, 1.62)	1.96***	(1.76, 2.18)	1.33***	(1.15, 1.53)	1.82***	(1.52, 2.19)
Chittagong	1.15**	(1.06, 1.24)	1.28***	(1.16, 1.41)	1.28***	(1.13, 1.45)	1.38***	(1.18, 1.61)
Dhaka	1.70***	(1.57, 1.85)	2.14***	(1.92, 2.37)	1.22**	(1.08, 1,38)	1.38***	(1.18, 1.61)
Khulna	1.82***	(1.67, 1.99)	2.48***	(2.22, 2.77)	1.31***	(1.15, 1.50)	2.04***	(1.70, 2.44)
Rajshahi	2.28***	(2.09, 2.50)	2.92***	(2.61, 3.27)	1.55***	(1.35, 1.77)	2.14***	(1.79, 2.56)
Rangpur	2.27***	(2.08, 2.47)	2.72***	(2.45, 3.04)	1.58***	(1.37, 1.83)	2.16***	(1.80, 2.60)
Sylhet	Ref		Ref		Ref		Ref	
Respondent's Age								
15-19	3.72***	(3.19,	9.39***	(7.34,	6.12***	(4.73,	14.48***	(9.63,

Background characteristics	Contraceptive user from rural area				Contraceptive user from urban area			
	COR	CI	Adjusted OR	CI	COR	CI	Adjusted OR	CI
		4.33)		12.02)		7.92)		21.75)
20-24	3.81***	(3.46, 4.19)	6.40***	(5.37, 7.62)	5.12***	(4.41, 5.95)	7.86***	(5.94, 10.38)
25-29	4.75***	(4.36, 5.17)	5.89***	(5.10, 6.80)	5.43***	(4.78, 6.18)	7.03***	(5.58, 8.86)
30-34	5.93***	(5.46, 6.45)	6.96***	(6.17, 7.85)	8.48***	(7.45, 9.66)	9.71***	(7.98, 11.81)
35-39	5.35***	(4.92, 5.81)	6.22***	(5.60, 6.90)	5.59***	(4.92, 6.35)	6.73***	(5.71, 7.93)
40-44	2.91***	(2.68, 3.15)	3.31***	(3.00, 3.65)	2.69***	(2.39, 3.02)	3.38***	(2.93, 3.90)
45-49	Ref		Ref		Ref		Ref	
Respondent's Education								
No education	Ref		Ref		Ref		Ref	
Primary	1.24***	(1.17, 1.30)	1.06	(0.99, 1.14)	1.42***	(1.30, 1.56)	1.02	(0.90, 1.16)
Secondary	1.46***	(1.38, 1.55)	1.19***	(1.08, 1.31)	1.76***	(1.61, 1.93)	0.95	(0.82, 1.11)
Higher	1.63***	(1.40, 1.90)	1.46***	(1.19, 1.80)	2.08***	(1.82, 2.37)	1.00	(0.80, 1.26)
Husband's age								
Below 20	Ref		Ref		5.27	(0.66, 42.2)	2.25	(0.25, 20.09)
20-24	2.43	(0.92, 6.43)	2.33	(0.87, 6.26)	1.83**	(1.24, 2.70)	1.61	(0.98, 2.65)
25-29	3.01*	(1.16, 7.81)	2.82*	(1.07, 7.45)	1.87***	(1.58, 2.22)	1.74***	(1.31, 2.30)
30-34	3.20*	(1.24, 8.29)	2.56	(0.97, 6.77)	1.85***	(1.62, 2.11)	1.31*	(1.04, 1.65)
35-39	4.03**	(1.56, 10.4)	2.50	(0.94, 6.62)	2.30***	(2.04, 2.59)	1.22*	(1.01, 1.48)
40-44	4.21**	(1.63, 10.9)	2.19	(0.82, 5.82)	2.92***	(2.58, 3.29)	1.24*	(1.05, 1.46)
45 and above	2.09	(0.81, 5.40)	2.04	(0.77, 5.42)	Ref		Ref	
Husband's Education								
No education	Ref		Ref		Ref		Ref	
Primary	1.10**	(1.04, 1.17)	1.07	(1.00, 1.15)	1.39***	(1.26, 1.53)	0.92	(0.81, 1.05)
Secondary	1.01	(0.95, 1.07)	1.00	(0.92, 1.10)	1.22***	(1.11, 1.34)	0.90	(0.79, 1.04)
Higher	1.13**	(1.03, 1.25)	1.19*	(1.03, 1.39)	1.30***	(1.17, 1.44)	0.94	(0.78, 1.14)
Number of living children								
Less than 2	Ref		**Ref**		Ref		Ref	
Exactly 2	1.92***	(1.76, 2.10)	1.86***	(1.65, 2.10)	1.68***	(1.50, 1.88)	1.84***	(1.55, 2.17)
More than 2	1.43***	(1.32, 1.54)	2.11***	(1.85, 2.41)	1.12*	(1.01, 1.24)	2.27***	(1.88, 2.75)
Wealth index								
Poorest	Ref		Ref		Ref			

Background characteristics	Contraceptive user from rural area				Contraceptive user from urban area			
	COR	**CI**	**Adjusted OR**	**CI**	**COR**	**CI**	**Adjusted OR**	**CI**
Poorer	1.03	(0.96, 1.10)	1.11*	(1.02, 1.20)	1.01	(0.85, 1.19)		
Middle	0.93*	(0.87, 0.99)	1.01	(0.92, 1.10)	0.93	(0.81, 1.07)		
Richer	0.83***	(0.77, 0.89)	0.85**	(0.77, 0.94)	0.91	(0.80, 1.03)		
Richest	0.80***	(0.73, 0.87)	0.83**	(0.73, 0.95)	0.93	(0.82, 1.05)		
Respondent's employment status								
Employment	1.32***	(1.25, 1.38)	1.21***	(1.14, 1.29)	Ref			
Non-employment	Ref		Ref		1.00	(.93, 1.08)		
Respondent's occupation								
Farming	**Ref**				1.14	(0.96, 1.36)		
Non-farming	1.20**	(1.07, 1.34)			Ref			
Professionals	1.60**	(1.20, 2.12)			1.44**	(1.12, 1.84)		
Business	1.01	(0.88, 1.16)			1.21	(0.95, 1.54)		
Domestic/ home based work	0.92	(0.80, 1.04)			0.98	(0.84, 1.15)		
Husband's occupation								
Farming	1.17***	(1.11, 1.24)	1.35***	(1.26, 1.44)	Ref		0.92	(0.79, 1.06)
Non-farming	Ref		Ref		1.20**	(1.06, 1.35)	Ref	
Professionals	1.24**	(1.08, 1.43)	1.45***	(1.21, 1.74)	1.36***	(1.15, 1.60)	1.21*	(1.00, 1.46)
Business	1.40***	(1.31, 1.50)	1.52***	(1.40, 1.65)	1.52***	(1.34, 1.74)	1.37***	(1.23, 1.52)
Unemployed	0.68**	(0.55, 0.85)	1.03	(0.78, 1.37)	0.62*	(0.39, 0.96)	1.29	(0.76, 2.19)
Age at first sex								
15-24	Ref				Ref		Ref	
25-34	0.97	(0.91, 1.04)			1.10*	(1.00, 1.20)	1.21**	(1.07, 1.36)
35-49	1.10	(0.91, 1.33)			1.42***	(1.18, 1.70)	1.55***	(1.23, 1.97)
Fertility preference								
Want another	Ref		Ref		Ref		Ref	
Undecided	0.67***	(0.55, 0.81)	0.60***	(0.49, 0.75)	0.79	(0.60, 1.05)	0.82	(0.59, 1.13)
No more	1.49***	(1.39, 1.60)	1.62***	(1.47, 1.80)	1.24***	(1.12, 1.38)	1.52***	(1.29, 1.78)
Heard about FP on Radio/TV/magazine								
Yes	1.12**	(1.04, 1.20)	1.06	(0.97, 1.15)	1.27***	(1.17, 1.38)	1.11*	(1.01, 1.23)

Background characteristics	Contraceptive user from rural area				Contraceptive user from urban area			
	COR	**CI**	**Adjusted OR**	**CI**	**COR**	**CI**	**Adjusted OR**	**CI**
No	Ref		Ref		Ref		Ref	
Wanted last child								
Wanted then	Ref				Ref			
Wanted later	1.54***	(1.32, 1.80)			1.73***	(1.31, 2.29)		
No more	1.18**	(1.04, 1.34)			1.14	(0.91, 1.43)		
Husband's desire for children								
Both wanted same	1.09*	(1.02, 1.17)	1.00	(0.92, 1.08)	1.27***	(1.13, 1.42)	1.26**	(1.11, 1.43)
Husband wanted more	Ref		Ref		Ref		Ref	
Husband wanted fewer	1.18**	(1.05, 1.32)	0.98	(0.86, 1.11)	1.65***	(1.37, 2.00)	1.67***	(1.36, 2.05)

Note: *** p<0.001, ** p<0.01, * p<0.05; **COR** "Crude Odds Ratio" **OR** "Odds Ratio" **CI** "Confidence Interval" **Ref** "Reference Category"

Conclusions

From the evidence, it can be seen that the use of contraception is significantly lower among women in rural areas than in urban areas. This study suggests that the influential factors of using contraception in the urban area during the childbearing age are education level, age, living area (division), employment status, number of living children of respondents and heard about family planning on different media. However, in the context of contraception use, the rural areas of Barisal, Chattogram, and Sylhet division are more vulnerable. More than half of the respondents in rural areas and 43 percent in urban areas in the Sylhet division do not use any contraception methods during sexual intercourse; thus, they are at high risk of becoming pregnant. Thus, government and non-government organizations who are concerned about family planning in Bangladesh should be taken effective actions in rural areas, particularly in the Sylhet division in order to improve the use of contraception rate. It may also be a focus on increasing women's education level, employment opportunities, and husband's awareness in any profession. The notable progress in the country's family planning program must be continued and strengthened to reach its goal of replacement level fertility.

Ethical Approval

Not applicable.

Conflicts of Interest

The authors declares no conflict of interest.

Funding

No funding received form any individuals or organizations.

References

1. Islam AZ, Mondal MNI, Khatun ML, Rahman MM, Islam MR, Mostofa MG, et al. Prevalence and Determinants of Contraceptive use among Employed and Unemployed Women in Bangladesh. Int J MCH AIDS [Internet]. 2016;5(2):102. Available from: file:///pmc/articles/PMC5187648/

2. National Institute of Population Research and Training (NIPORT), Associates M, International I. Bangladesh Demographic and Health Survey 2014. Dhaka, Bangladesh; 2016.

3. Haq I, Sakib S, Talukder A. Sociodemographic Factors on Contraceptive Use among Ever-Married Women of Reproductive Age: Evidence from Three Demographic and Health Surveys in Bangladesh. Med Sci [Internet]. 2017;5(4):31. Available from: file:///pmc/articles/PMC5753660/

4. Al Kibria MG, Hossen S, Barsha RAA, Sharmeen A, Paul SK, Uddin SMI. Factors affecting contraceptive use among married women of reproductive age in Bangladesh. J Mol Stud Med Res [Internet]. 2016;02(01):70–9. Available from: http://www.journalbinet.com/jmsmr-journal.html

5. Huda FA, Robertson Y, Chowdhuri S, Sarker BK, Reichenbach L, Somrongthong R. Contraceptive practices among married women of reproductive age in Bangladesh: a review of the evidence. Reprod Health [Internet]. 2017;14(1):69. Available from: file:///pmc/articles/PMC5461624/

6. Malhotra A, Thapa S. Determinants of contraceptive method choice in Sri Lanka: An update of a 1987 survey. Asia-Pacific Popul J [Internet]. 1991;6(3):25–40. Available from: https://www.un-ilibrary.org/content/journals/15644278/6/3/3

7. Mohsena M, Kamal N. Determinants of Contraceptive Use in Bangladesh. Ibrahim Med Coll J [Internet]. 2014;8(2):34–40. Available from: http://www.imcjms.com/registration/journal_full_text/68

8. O'Neill A. Bangladesh - fertility rate 2019 [Internet]. Statista. 2019 [cited 2019 Jan 29]. Available from: https://www.statista.com/statistics/438186/fertility-rate-in-bangladesh/

9. Ahmad S. Factors affecting fertility in four Muslim populations: a multivariate analysis. J Biosoc Sci [Internet]. 1985;17(3):305–16. Available from: https://pubmed.ncbi.nlm.nih.gov/4030811/

10. Bangladesh Bureau of Statistics (BBS), Department of Population Sciences-University of Dhaka. Fertility Differentials in Bangladesh: Trends and Determinants [Internet]. Dhaka, Bangladesh; 2015. Available from: https://www.researchgate.net/publication/290740460_Fertility_Differentials_in_Bangladesh_Trends_and_Determinants

11. Kabir M, Amin R, Ahmed AU, Chowdhury J. Factors affecting desired family size in Bangladesh. J Biosoc Sci [Internet]. 1994;26(3):369–75. Available from: https://www.cambridge.org/core/journals/journal-of-biosocial-science/article/abs/factors-affecting-desired-family-size-in-bangladesh/F969626138F2E8C17557A17BDEB9DA55

12. Nath DC, Land KC. Sex preference and third birth intervals in a traditional Indian society. J Biosoc Sci [Internet]. 1994;26(3):377–88. Available from: https://www.cambridge.org/core/journals/journal-of-biosocial-science/article/abs/sex-preference-and-third-birth-intervals-in-a-traditional-indian-society/7D6AAA3ED02CD0CF8D7925E20BBAEF9C

13. Hoq MN. Factors affecting on current contraception use among currently married women in urban and rural areas of Bangladesh. IOSR J Humanit Soc Sci [Internet]. 2016;21(4):22–30. Available from: http://www.iosrjournals.org

14. Loriaux DL, Wild RA. Contraceptive choices for women with endocrine complications. Am J Obstet Gynecol. 1993;168(6):2021–6.

15. Rahman MM, Mondal MNI, Ali MK. A study on the factors affecting the use of contraception in Bangladesh. Int Res J Biochem Bioinforma [Internet]. 2011;1(7):178–83. Available from: http://www.interesjournals.org/IRJBB

16. Hossain MB, Khan MHR, Ababneh F, Shaw JEH. Identifying factors influencing contraceptive use in Bangladesh: evidence from BDHS 2014 data. BMC Public Health [Internet]. 2018;18(1):192. Available from: file:///pmc/articles/PMC5789662/

17. Akhter HH, Ahmed S. Determinants of contraceptive continuation in rural Bangladesh. J Biosoc Sci [Internet]. 1992;24(2):261–8. Available from: https://www.cambridge.org/core/journals/journal-of-biosocial-science/article/abs/determinants-of-contraceptive-continuation-in-rural-bangladesh/20744D77BC5D77B610FD66B0AB5067F3