

# Influence and Determinants of Early Conception Among Women of Reproductive Age in Perspective Survey of Bangladesh

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## Abstract

Early pregnancy is the most primitive factors on fertility transition in Bangladesh. Fertility is directly changed through the women involved with early conception in her reproductive life. This study explores the Influence and Determinants of socio-demographic associated with early conception take place before 18 years of age among ever-married women of reproductive age in Bangladesh by utilizing the information extracted from the 2014 Bangladesh Demographic and Health Surveys (BDHS). To examine the interaction between the outcome variable and independent variables we conducted chi-squared test. Popular Binary logistic regression model is also used here to identify the risk of factors for early conception before 18 years of age in 2014. The findings of the study reveal that the practice of early conception is very common in Bangladesh. This study show that majority of the participants had experienced teenage marital pregnancy. Findings suggest that current age, women's education, husband education, place of residence, socioeconomic status, religion, and regions are important determinants of early pregnancy in Bangladesh. The results of the study strongly suggested that Govt. should accord female education again with Increase the in and out of school girls' knowledge about the consequences of early marriage and empower them girls to actively control their sexuality. Furthermore, government programs in television, radio and print media need to scream out loud the ills of dowry, child marriage and early pregnancy. Finally, there is a need to increase community awareness about the dangers of teenage pregnancy through a mass media campaign.

## Keywords

Teenage Pregnancy, Early Conception, Sexual Intercourse, Age at Cohabitation, Media Exposure, SDG3, MDG

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## 1. Introduction

Teenage pregnancy is strongly associated with the fertility transition. In developing countries, every day 20,000 girls under age 18 give birth. This amount to 7.3 million births adds to the existing birth a year [1]. The numbers of adolescent pregnancies are much higher if all pregnancies are included according to the study revealed by [1]. According to the study revealed by [2] worldwide, about 1.2 billion adolescents of aged 10-19 were join in our current population, comprehend more than 16 percent of the total

population. The study revealed by [2] and estimated 250 million adolescent girls live in developing countries which is accounting for about one-sixth of all women of reproductive age. Almost one quarter adolescent girls are currently married or in a union, and 3 per cent are unmarried but sexually active. Adolescent girls will rise from 15.3 million in 2015 to 19.2 million in 2035 if current patterns remain unchanged [2].

Increasing trend use of contraception among adolescent girls but current levels is still appreciable lower than for other age groups all over the world [2]. About 15 per cent of adolescent

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girls who are married or in a union are using modern contraception in across the world. In 2015, 12.7 million adolescent girls have an unmet need for family planning. This number will increase to 15.1 million by 2035 if current trends continue. About 303,000 women died during pregnancy or childbirth and 5.9 million children under age 5 died worldwide in 2015 was observed by [3]. The study revealed by [3] observed that children and adolescents from the richest 20 percent of households achieved greater proficiency in reading than those from reside the poorest 20 percent of households between 2007 and 2015 survey period in selected countries.

Pregnancies among girls less than 18 years of age have irreclaimable consequences. It violates the rights of girls and again with life-threatening consequences in terms of sexual and reproductive health. In the study conducted in developing world, [4] observed that the problem of poor pregnancy outcomes among teenagers is further enhanced by poor maternal health care among teenage mothers. This is especially so in cases of unintended premarital pregnancies [5-6]. According to the study conducted in sub-Saharan Africa, the incidence of adolescent pregnancies is highest, mainly due to lack of effective contraception for adolescents [7]. Younger adolescents aged less than 18 years have been observed to have the highest proportions of pre-term birth, low birth weight and infant mortality rate due to lack of possible organic greenness [8-9].

The 2014 BDHS showed that 33 percent of women age 20-49 had sexual intercourse by age 15, which compares with 69 percent by age 18, and 83 percent by age 20 [10]. Five percent of women age 20-49 had never experienced sexual intercourse [10]. The 2014 BDHS data show that 78 percent of ever-married women age 15-49 were sexually active during the four weeks preceding the survey [10]. Women in the oldest group (45-49), are the least likely to have had their last sexual intercourse in the past four weeks (64 percent) compared with the youngest women. More than 8 in 10 married women age 20-24, 25-29, and 30-34 had their last sexual intercourse in the four weeks preceding the survey [10]. Early marriage also known as child marriage is defined as marriage carried below the age of 18 years, "before the girl is physically, physiologically and psychologically ready to shoulder the responsibilities of marriage and childbearing"[11]. Early marriage also has impacts for the well-being of families, and for society as a whole. It extends a women's potential childbearing capacity [12]. The trend of the effects of typical demographic and socio-economic factors does not show a substantial change on childbearing pattern among the women in Bangladesh [13].

The importance of reproductive health and access to family planning (FP) in particular are now well recognized to not

only improve women's probability of surviving pregnancy and childbirth but also to contribute to gender equality, better child health, decreased HIV, increased education and poverty Ebb in the world. This report profiles existing data around the main MDG5b indicators to identify progress achieved, and old and new challenges that could be addressed under the SDGs, particularly the nine targets under SDG3. While the MDGs are close to an end, through the SDGs, it is critical for the international community to reaffirm the promise of universal access to reproductive health and family planning and special attention needs to go to those countries lagging behind and making little or slower progress in reproductive health issue particularly adolescents health.

The aim of the study is to examine the determinants of early pregnancy among ever-married in Bangladesh, using the data from the 2014 Bangladesh Demographic Health and Survey.

## 2. Methodology

### 2.1. Data Sources

The research examined data from 2014 Bangladesh Demographic and Health Survey (BDHS). The BDHS is a nationally representative stratified self-weighting proportional sample survey of women 15 to 49 years of age. A total of 17863 ever-married women of childbearing age were successfully interviewed in 2014 [10]. By using the list of 2011 population and housing census enumeration area, this survey was conducted on 600 EAs across the country; including 207 clusters from urban areas and 393 from rural areas of Bangladesh [10].

### 2.2. Dependent Variable

Respondent's age at first conception was considered as the dependent variable, classified as early pregnancy if occurred in <18 years old by following international and national classification. Conception after 18 years old was not reported as early pregnancy.

### 2.3. Independent Variables

Different individual-, household- and community- level characteristics were considered as independent variable. Individual level characteristics were respondents education (No Education, Primary, Secondary and above) and respondents partner education (No Education, Primary, Secondary and above), respondents current age (15-19, 20-24 ..., 45-49), respondent current working status (Not working and working outside), and respondents religion (Islam, Others). Respondent's household socio-economic condition measured by wealth index (Poor, Middle, Rich) and mass media exposure of the respondents (Exposed, Not

exposed) were considered as household level characteristics. Finally, region (Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur and Sylhet) and place of residence (Urban, Rural) were considered as the community level characteristics.

## 2.4. Statistical Analysis

Frequency distribution was used to describe the background characteristics of the respondents. We used Chi square test to determine the associated factors of early pregnancy. Finally, a multivariate technique named as logistic regression analysis is used for determining the impact of factors on early conception of the respondents. The result was presented as odds ratio (ORs) and 95% confidence interval (CI). The Statistical Package for Social Science (SPSS v20.0, IBM Corporation, Armonk, New York, USA) software was used for data analysis.

## 3. Results

Basic characteristics of the respondents are presented in Table 1. Results indicates that, majority of the respondents (48.4 percent) is under age 30. The majority of the respondent's lives in rural areas, almost seven in ten respondents (72 percent of women) reside in the rural areas. More than one-third (35 percent) of the respondents live in Dhaka, 19 percent reside in Chittagong, 12 percent each in Rajshahi and Rangpur, 10 percent in Khulna, 7 percent in Sylhet, and 6 percent in Barisal. The vast majority of the respondents (90 percent) are Muslim rest of them are other religions. The wealth index is a composite measure of a household's cumulative living standard. In this study, respondent's economic status has been categorized into three types: poor, middle and rich. In terms of respondents economic status, a slightly over one-third women were from poor households (37.9 percent) while a slightly over two-fifths were from rich households. Among the study population, almost one-quarter have no formal education. More than one-quarter had a primary education (i.e about 29.2% women are attending their primary education), while the majority of the respondents are secondary and higher levels of education. Furthermore, almost 63 percent (62.5%) of ever-married women age 15-49 had been exposed to mass media. In case of husband's education, 43.6 percent have secondary and higher education followed by no education (29.0 percent), and 27.0 percent have complete their primary education. Table 1 shows that the overwhelming majority (88.8 percent) of the household head was males, whereas about 11.2 percent were found to be females. Of the respondents, 67 percent women do not work outside at home and only 33 percent are working outdoors. It is observed from Table 1 that, 74 percent women's age at first conception

were less than 18 years. The percentage of women, whose age at first conception was 18 years and above was only 26.0 Percent.

**Table 1.** Percentage distribution of ever-married women by selected socio-economic characteristics BDHS 2014.

Characteristics	Sample women	
	No.	%
Age (Years)		
15-19	2029	11.4
20-24	3224	18.0
25-29	3390	19.0
30-34	3047	17.1
35-39	2315	13.0
40-44	2092	11.7
45-49	1766	9.9
Residence		
Urban	5047	28.3
Rural	12816	71.7
Division		
Barisal	1111	6.2
Chittagong	3301	18.5
Dhaka	6223	34.8
Khulna	1838	10.3
Rajshahi	2103	11.8
Rangpur	2056	11.5
Sylhet	1232	6.9
Religion		
Islam	16096	90.1
Other	1767	9.9
Wealth Status		
Poor	6767	37.9
Middle	3560	19.9
Rich	7536	42.2
Women's Education		
No education	4455	24.9
Primary	5209	29.2
Secondary +	8199	45.9
Mass Media Exposure		
Not exposed	6693	37.5
Exposed	11170	62.5
Husband Education		
No education	5189	29.0
Primary	4289	27.3
Secondary+	7795	43.6
Sex of Household Head		
Male	15854	88.8
Female	2009	11.2
Respondent Currently Working		
No	11947	66.9
Yes	5912	33.1
Age at first sex		
<18	13226	74.0
18+	4637	26.0

### Bivariate analysis

Table 2 demonstrates the association between early conception of women and different socio-economic and demographic variables. All of the independent variables except sex of household head included for analyses showed highly ( $p < 0.001$ ) significant association with the outcome variables. There exists highly significant ( $p < 0.001$ ) association between age group and age at first intercourse. For instance, the incidence of early conception was 79.0

percent among women aged 45-49 years, which consistently decreased to 66.2 percent among those aged 20-24 years. The prevalence of conception before 18 years of age was significantly higher in rural than in urban areas. Urban women usually get better facilities than rural women. The incidence of early conception was more prevalent in Rangpur division, followed by Rajshahi, Khulna, Barisal, Dhaka, Chittagong and Sylhet division and the differences are statistically significant ( $p < 0.001$ ). Table 2 also shows that overall age at first conception of non-Muslim respondents is later than the Muslim respondents and the difference is statistically significant ( $p < 0.001$ ). Early conception was more prevalent among the Muslim than the non-Muslim women in Bangladesh. Wealth index showed negative association with age at first conception. In other words, respondents with poor family's consists higher tendency of early conception and the differences are statistically significant ( $p < 0.001$ ). Education is regarded as being the prime catalyst in this process, because increase in educational attainment is significantly affect the age at first conception. Women's education apparently showed negative association with early conception. Simply, age at first conception has been increase with the increase of education level of respondents. Mass media exposure showed to have significant association with the age at first conception. Like the respondent's education all of the categories of husband's education have almost similar effect on age at first conception and the differences are also statistically significant ( $p < 0.001$ ). Women whose husband were lower educated or uneducated, were more likely to desire early intercourse than others women.

**Table 2.** Association between age at first conception and some selected socio-economic and demographic variables.

Background characteristics	Age at first sex <18		Chi-square	P-value
	Yes	No		
Age (Years)				
15-19	87.1	12.1		
20-24	66.3	33.7		
25-29	69.3	30.7		
30-34	71.5	28.5	380.535***	0.000
35-39	75.8	24.2		
40-44	78.7	21.3		
45-49	79.0	21.0		
Residence				
Urban	66.2	33.8		
Rural	77.2	22.8	227.717***	0.000
Division				
Barisal	77.6	22.4		
Chittagong	67.4	32.6		
Dhaka	72.2	27.8		
Khulna	80.3	19.7	428.227***	0.000
Rajshahi	81.6	18.4		
Rangpur	83.8	16.2		
Sylhet	59.7	40.3		
Religion				
Islam	75.4	24.6		
Others	61.3	38.7	165.461***	0.000

Background characteristics	Age at first sex <18		Chi-square	P-value
	Yes	No		
Wealth Status				
Poor	81.6	18.4		
Middle	77.6	22.4	504.924***	0.000
Rich	65.6	34.4		
Women's Education				
No education	83.9	16.1		
Primary	81.1	18.9	775.414***	0.000
Secondary+	64.2	35.8		
Mass Media Exposure				
Not Exposed	81.4	18.6		
Exposed	69.7	30.3	298.689***	0.000
Husband Education				
No education	83.5	16.5		
Primary	78.5	21.5	632.662***	0.000
Secondary	64.9	35.1		
Sex of Household Head				
Male	73.8	26.2		
Female	76.1	23.9	6.603*	0.010
Respondent Currently Working Status				
No	72.3	27.7		
Yes	77.6	22.4	57.294***	0.000

Level of significance \*\*\* $P < 0.001$

#### Results of logistic Regression Analysis on Early Conception

To assess the net effect of the covariates, all the factors identified to have significant association with the age at first intercourse, were included in the multivariate binary logistic regression model. Results based on multivariate logistic regression analysis for the early conception are presented in Table 3. All independent variables included in the analyses showed to have significant relationship with outcome variables.

Logistic regression model is also used here to identify the risk of factors for early age at first conception. The results of the regression analysis revealed that, the women aged 20-24 and the aged 25-29 were 72.5 percent and 71.5 percent less likely to conception at very young age as compared to women aged 15-19 years. Women aged 30-34 years compared to the young women aged 15-19 years were 71.1 percent negatively significant and less likely and those aged 35-39 years were also 68.6 percent less likely and prefer to conceive before age 18 years than those are aged 15-19. There exists significant association between early conception and type of residence. The Rural women were 1.25 times significantly and more likely prefer to conceive before 18 years of age than their Urban counterparts. The women of Chittagong, Dhaka and Sylhet division were less likely and those of Khulna, Rajshahi and Rangpur division were more likely to get conceive before 18 years of age compared to those of Barisal division. Non-Muslim respondents are 48.5% negatively significant and less likely prefer to conceive before 18 years of age than their Muslim counterparts. Respondents with rich families are 13.5% less likely to conceive before 18 years of age as compared to

those of from poor family.

Women's education showed a significantly negative relationship with the timing of conceive when other socio-demographic covariates were kept constant. For instance, women with primary, secondary and above education, compared to those with no formal education, were respectively 12.8%, and 55.9% less likely to be conceived at very young age (Table 3). Educated husbands are more conscious as compared with those have no education about the age at conception of their wives. Secondary and higher educated husbands are 38.7 percent negatively significantly and less likely to prefer conceive before 18 years of age than those are illiterate. Female household head are 1.25 times more preferable to conceive before 18 years of age than their male counterparts. Working respondents are 1.11 times more preferable to conceive before 18 years of age than their non-working counterparts.

**Table 3.** Determinants factors of early conception (multivariate logistic regression analysis).

Characteristics	Age at first sex <18		
	$\beta$	Odds Ratio	95% CI
Age (Years)			
15-19 (r)	-	1.000	
20-24	-1.291	0.275***	0.236-0.321
25-29	-1.256	0.285***	0.244-0.332
30-34	-1.277	0.279***	0.238-0.327
35-39	-1.158	0.314***	0.365-0.373
40-44	-1.058	0.347***	0.290-0.415
45-49	-1.051	0.350***	0.290-0.421
Residence			
Urban (r)	0.223	1.000	
Rural		1.249***	1.147-1.360
Division			
Barisal (r)	-	1.000	0.497-0.699
Chittagong	-0.528	0.590***	0.587-0.815
Dhaka	-0.368	0.692***	0.975-1.433
Khulna	0.167	1.182	0.934-1.368
Rajshahi	0.123	1.131	
Rangpur	0.290	1.337**	1.101-1.624
Sylhet	-1.171	0.310***	0.255-0.377
Religion			
Islam(r)	-	1.000	
Others	-0.663	0.515***	0.461-0.577
Wealth			
Poor(r)	-	1.000	
Middle	0.068	1.070	0.956-1.199
Rich	-0.145	0.865*	0.773-0.968
Women's Education			
No education(r)	-	1.000	
Primary	-0.136	0.872*	0.777-0.979
Secondary+	-0.818	0.441***	0.391-0.498
Mass Media Exposure			
Not Exposed(r)	-	1.000	
Exposed	-0.093	0.911	0.827-1.004
Husband Education			
No education (r)	-	1.000	
Primary	-0.119	0.888*	0.795-0.991
Secondary	-0.490	0.613***	0.548-0.686
Sex of Household Head			
Male (r)	-	1.000	
Female	0.219	1.245***	1.108-1.399

Characteristics	Age at first sex <18		
	$\beta$	Odds Ratio	95% CI
Respondent Currently Working Status			
No (r)	-		
Yes	0.101	1.106*	1.021-1.197

Level of significance \*\*\*P<0.001;\*\*P<0.01;\*P<0.05

## 4. Discussion

This study aimed at examining the decline in early pregnancy in Bangladesh and investigating the effect of early conception on various reproductive behaviors. The findings of the study reveal that the practice of early conception is very common in Bangladesh. Findings suggest that current age, women's education, husband education, place of residence, socioeconomic status, religion, and regions are important determinants of early pregnancy in Bangladesh. This study found that majority of the participants had experienced teenage marital pregnancy. Most of the pregnancies occurred between the age 15 and 19 [14]. The finding of the current study is consistent with earlier study conducted in rural areas of Bangladesh, where mean age at first birth was relatively lower [15]. In USA, Teenage pregnancy was also reportedly higher within this age group 15-19, i.e., 94 pregnancies per 1000 teens [16].

The results of the regression analysis revealed that, the women aged 20-49 were less likely to start childbearing before age 18 compared to the women aged 15-19. The women in Bangladesh become mother at their very early ages (less than 20 years) [17]. The finding of the study is consistent with other study conducted in Bangladesh [14-15]. This study is not consistent earlier study conducted in Bangladesh [18]. The rate of adolescent childbearing among women aged 45-49 had slightly increased compared to the women aged 20-44 [18].

Current place of resident showed to have no significant effect of teenage childbearing. The rural women were significantly and more likely prefer to conceive before 18 years of age than their urban counterparts. Women born in urban area were less likely to experience teenage pregnancy compared to their rural counterparts [14]. This finding is similar to the earlier study [19]. This study is not consistent earlier study conducted in Bangladesh [18].

The women of Chittagong, Dhaka and Sylhet division were less likely and those of Rangpur division were more likely to get conceive before 18 years of age compared to those of Barisal division, while other two divisions Khulna and Rajshahi did not show substantial variation in early childbearing. Earlier Study conducted in those regions in Bangladesh observed that the higher and lower risks of adolescent childbearing in the regions are partly due to lower



and higher age at first marriage of women [18].

Non-Muslim respondents are less likely preferred to conceive before 18 years of age than their Muslim counterparts. Muslim women were also more likely to have childbirth earlier than non-Muslim [18, 28, 29]. Non-Muslim respondents are 1.37 times more preferable to conceive at age 18 years and above than their Muslim counterparts [20]. Respondents with rich families are less likely to conceive before 18 years of age as compared to those of from poor family. The richest compared to the poorest were less likely to be adolescent mother [18]. This is partly attributed to the fact that the women from richest family are more educated, more conscious regarding the timing of childbearing and also better informed of adverse effect of early motherhood compared to women of other wealth quintiles. The finding of the study is not consistent with earlier study conducted in Bangladesh [21]. The effect of economic status on teenage first birth is contrary to our expectation.

Women's education showed a significantly negative relationship with the timing of conceive when other socio-demographic covariates were kept constant. Overall, women's secondary or higher education acted as catalyst toward postponed childbearing in Bangladesh. The result of current study Consistent with other studies [22-23, 26, 27, 30]. Women who had at least secondary education have postponed substantial times during their schooling and married at later ages compared to their less educated counterparts [18]. Education and monthly income are the major problems from the respondent's point of view for the early age at marriage and early conception [20]. Education could play a significant role in increasing age at first sexual intercourse and delaying marriage [24]. Secondary or more than secondary education helps women to delay first birth compared to women with no education [21, 27].

Educated husbands are more conscious as compared with those have no education about the age at conception of their wives. Secondary and higher educated husbands are negatively significantly and less likely to prefer conceive before 18 years of age than those are illiterate. It is not only women's education but also that of their husbands, which can help women to delay teenage birth [21]. This study Consistent with other studies conducted in Bangladesh [14, 20].

While exposure to media is another important factor in explaining fertility behavior, we did not find a positive effect of media exposure to decrease the chance of having a teenage birth in Bangladesh. This study Consistent with other study conducted in Bangladesh [21]. Female household head are more preferable to conceive before 18 years of age than their male counterparts. Adolescent women who live in households with their husbands or themselves as the head of

the household are more likely to have early births compared to those who live under the headship of other people such as parents, parents-in-law, or others [21]. This may be because adolescents in adolescent-headed households tend to be older compared to adolescents living with others [25]. Consistent with other studies [14]. This study identified that working respondents are more preferable to conceive before 18 years of age than their non-working counterparts.

## 5. Conclusion

Bangladesh has made a remarkable progress in decreasing overall fertility through control early pregnancy in recent decades. The findings of the study suggest that adolescent childbearing and motherhood are common and still deeply embedded among Bangladeshi women. Higher incidents of early marriage of Bangladeshi girls' result higher prevalence of teenage motherhood. Current study also identified several factors, contributed to the higher teenage pregnancy, such as women's age, residence, division, religion, women education, husband education, sex of household head and working status. Based on the findings of the present study, we recommend that education has significantly negative effect on early conception. Govt. should accord female education again with Increase the in and out of school girls' knowledge about the consequences of early marriage and empower them girls to actively control their sexuality. For that, enhancing education and employment opportunities for girls will improve their worth beyond 'wives' and 'mothers'. Furthermore, government programs in television, radio and print media need to scream out loud the ills of dowry, child marriage and early pregnancy. Finally, there is a need to increase community awareness about the dangers of teenage pregnancy through a mass media campaign.

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## Author's Contributions

I am only contribution for this study.

## Consent for Publication

Not applicable

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