Factors Affecting an Age at First Marriage among Female Adolescents in Bangladesh

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Abstract

The aim of this paper is to study the factors associated with age at first marriage among female adolescents utilizing the nationally representative survey data of Bangladesh Demographic and Health Survey (BDHS), 2007. Logistic regression analyses have been used to study the factors affecting on age at first marriage in Bangladesh. Respondent's educations, husband's education, region and working status of respondents are found to have significant effect on age at first marriage. Findings need to be scientifically utilized in developing suitable programs addressing the case of early marriage, particularly in Barisal, Khulna and Rajshahi.

Keywords: Adolescence, Age at first marriage, Contingency table, Odds ratio.

1. Introduction

Bangladesh has one of the world's highest rates of early marriage. According to (UNICEF's flagship report, 2011) figures, 66 percent of Bangladeshi girls are married before the age of 18 and approximately a third of women were married by the age of 15 although the legal age at first marriage for females in Bangladesh is 18 years. It is generally believed that rural tradition fosters early marriage, while urbanization and other forces of modernization lead to marriage postponement. In recent decades, there has been a general rise in the average age at first marriage in Asia, though the initial age levels and rate of change have varied considerably from country to country. Early marriage which is also referred to as child marriage is common all over the globe and has inflicted dangerous and devastating effects on young children (especially females) who are completed to tie the knot in most cases. While the age at marriage is generally on the rise, early marriage of children and adolescents below the age of 18 is still widely practiced (UNICEF Innocenti Research Centre, Innocenti Digestno. 7, 2001). Early marriage of female children is rampant in Bangladesh, especially in slum areas, where there is a noticeable lack of back infrastructure, services and basic shelter. Those areas are characterized by substandard housing and squalor and lacking in tenure security. For female, the problem of early marriage is acute not only in slum areas but throughout the country as well. State's legal provision on minimum age at first marriage in Bangladesh generally is 18 years for female to access in marriage relationship. The average age at first marriage for female in Bangladesh is 18.7 years (Bangladesh Bureau of Statistics, BBS, 2009).

Early marriage is more frequent for female than their male counterparts. In rural Bangladesh there are many social pressures to marry of pubescent girls (Aziz & Maloney, 1985). If the marriage of a pubescent girl is delayed, her parents and sometimes the girl herself are made to feel guilty. Similar scenario is more common in slum areas. Poverty is one of the major factors under pining early marriages. Where poverty is acute, a young girl may be regarded as an economic burden and parents looking for early marriage of their daughters as an alternative way of reducing the burden. Bangladesh is a developing country where industrialization starts to begin in the recent year and industrialization leads to the urbanization. The growth of cities has been always accompanied with the growth of slums, where a huge number of people live. Deteriorating socio-economic conditions of slum dwellers is a major cause of unstable and fragile life of the women living there. Early marriage also has implications for the well-being of families, and for society as a whole. It extends a women's potential childbearing capacity, which itself represents a risk to mother (Arjun, Ayad, & Kumar, 1991). Late marriage always cut the reproductive span of a woman and marriage at an earlier age gives more time to produce birth throughout her reproductive life span. Under these circumstances, early marriage may bring some physical and mental complexities to the mothers. Progress made by Bangladesh regarding this issue, especially those factors that are related to early marriage and early conception has extremely. However, no systematic effort to slump down rate has been strongly undertaken by civil society organizations (CSOs) and public or private organizations as well. Thus, this study is making a humble effort to make an assessment regarding early marriage, so that, it can have a clear image of the current situation of the regarding matters in adolescent women marriage in Bangladesh.

2. Objectives of the study

In this study, an attempt has been made to examine the predictors of age at first marriage in Bangladesh. There are many factors that influencing on age at first marriage. Thus, a greater attention has to be paid to find out the factors that are influencing on early marriage and ultimately the growth of population. However, the specific objectives of this research are:

i. To find the percentage of age at first marriage of adolescent women by various socio-economic variables;

ii. To determine whether age at first marriage vary among adolescent women of Bangladesh by selected socio-economic and demographic characteristics and

iii. To examine the effects of available socio-demographic factors on age at first marriage.

3. Data and Methodology

This study uses data extracted from the report of Bangladesh Demographic and Health Survey (National Institute of Population Research and Training (NIPORT), 2009). The survey was conducted between 24 March and 11 August 2007, on behalf of the Government of Bangladesh by National Institute for Population Research and Training (NIPORT). The project was funded by the United States Agency for International Development (USAID)/Dhaka. The sampling frame for the survey considered all households in Bangladesh from which a nationally representative sample of 10,819 households was selected; 10,461 were occupied. Of the households occupied, (10400) 99.40 percent were successfully interviewed. In these households, a total of 11,178 ever-married females aged less than 50 years were identified as suitable for individual interview. Of them, 10996 females (or 98.4%) were successfully interviewed.

Among the 10996 ever-married females, the numbers of urban and rural respondents were 4151 (37.75%) and 6845 (62.25%), respectively. The sample had been taken 5 years prior to BDHS-2007 survey (National Institute of Population Research and Training (NIPORT), 2009). Out of 10996 ever-married females, 1348 (12.26%) were found at age under 20, known as adolescents. The associations between age at first marriage and selected explanatory variables have been tested by applying cross-tabulation analysis. The cross-tabulation analysis was important at first step for studying the relationship of age at first marriage with several characteristics. However, such analysis fails to address age at first marriage predictors completely because of ignoring other covariates. Hence, Logistic regression analysis has also been adopted in order to estimate independent effects of each variable while controlled for others. This analysis has considered all the covariates that have found significant in cross-tabulation analysis.

3.1 Linear logistic regression model

For a single variable, the logistic regression model is of the form,

$$\text{Prob (event)} = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}}$$

Or, equivalently, $\text{Prob (event)} = \dfrac{1}{1 + e^{-(\beta_0 + \beta_1 x)}}$

Where β_0 and β_1 are the regression coefficients estimated from the data and X is the independent variable.

For more than one variable, the model is

$$\text{Prob (event)} = \frac{e^{\beta_0 + \beta_1 x_1 + \ldots + \beta_P x_P}}{1 + e^{\beta_0 + \beta_1 x_1 + \ldots + \beta_P x_P}} = \frac{e^z}{1 + e^z}$$

$$= \frac{1}{1 + e^{-z}}$$

Where, $z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_P X_P$

In this model, the parameters are estimated by the maximum likelihood method. Here the probability lies between 0 and 1 while the relationship between the probability and the independent variables is non-linear. The regression coefficients imply that how much change of dependent variable by a one-unit change of independent variables. A statistic that is used to take at the partial correlation between the dependent variable and each of the independent variables is the R statistic. The independent variables are fitted to the logistic model at a time by stepwise selection procedure. The process continues to add new variable to the regression equation at each step until the regression is satisfactory. The list of dependent variable and independent variables is shown by the Table 1.

4. Analysis and Discussion

Percentage and Cross tabulation of adolescent respondents' age at first marriage by different characteristics are presented by Table 2. The dependent variable, age at first marriage is categorized into two classes i.e. one is, before and at median age at first marriage (15 years) and another one is above 15 years. We use χ^2 test for the independency of attributes. From the Table-2, it is seen that all of the independent variable except religion come out significant at bi-variate level. Table 2 reveals that respondent's education has a strong significant relationship with age at first marriage. Adolescent respondents who have no formal education married early. The data show that higher educated respondents have tendency to marry later than that of primary educated adolescent respondents. 43.8 percent higher educated adolescent respondents married after median age following by 25.8 and 25.2 percent of primary and illiterate respondents. Early marriage has highest proportion in Rajshahi division among divisions, i.e. before or at median age 72.0 percent adolescent respondents married and the next higher proportion is in khulna division (71.3 percent). Barisal (66.3 percent), Dhaka (61.6 percent), Chittagong (55.1 percent) and Sylhet (53.2 percent) are the successive descending order of proportions of marriage before or at median age. This regional differentiation is observed because of industrialization, urbanization and education. It is noticed from the table that the respondents who live in rural area have tendency to marry early than urban respondents. 66.1 percent rural respondents married before or at median age with compare to 58.3 urban respondents. Chi-square test at 0.1 percent level of significance shows that there is a strongly positive association between place of residence and age at first marriage.

From the Table 2, we can expatiate on the occupation of husbands, which has significant effect on female adolescents' age at first marriage. Husband who has better occupation usually marry a woman who is conscious about her life. The data reveals that 45.9 percent respondents whose husbands are in service married after median age followed by business (45.7 percent), others (32.4 percent) and agriculture (30.2 percent). Husband's education is not as strong as women's education but has significant association on respondent's age at first marriage. The respondents whose husbands are illiterate, 75.9 percent married on or before median age first marriage than the respondents whose husbands have primary (70.4 percent) and higher (50.9 percent) level of education. Because educated husbands are likely to marry educated females. Respondents' currently working status has also significant effect on age at first marriage. Table 2 shows that the respondents who are not currently working married early than respondents who are working. 73.9 percent adolescent women who are not currently working married before or at median age while 61.7 percent adolescent women who are currently working married at the same interval. Access to mass media has highly significant effect on age at first marriage. The reason is that the respondents who are come from rich family marry later age as compare to other status family. The rich respondent get all the privilege from society like as education, access to mass media and other facilities which directly affect age at first marriage. In this study, 54.2 percent rich adolescent women married before or at median age while the percentages of other status are middle (67.5 percent) and poor (38.6 percent) in the same interval.

Logistic regression model is fitted (Table 3) to the data to examine the effect of those independent variables which are found significant in χ^2 test. Table-3 gives the estimates of the logistic regression coefficients (β) corresponding to the independent variables and relative odds for each categorical variable. Respondent's education is found to be statistically significant on age at first marriage. The odds ratio for the respondents who have secondary and higher education is 1.899. This implies that the likelihood of getting married after 15 years of adolescent women with secondary and higher education is 1.899 times higher than that of getting married below or at 15 years of illiterate adolescent women. The analysis further shows that region has a strong significant effect on age at first marriage. The odds ratio for the Chittagong and Sylhet are 1.686 and 2.438 respectively. It implies that the respondents who lived in Chittagong division are 1.686 times more likely to marry at later ages as compared to the respondents who lived in Barisal division. Moreover, the respondents who lived in Sylhet division are 2.438 times more likely to marry after age 15 years as compared to the respondents who lived in Barisal division. Husband education is found to have a highly significant influence on age at first marriage of respondents. The odds ratio for the husbands who have secondary and higher education indicates that they are 2.116 times more likely to marry after 15 years than the respondents whose husbands have no formal education. It is also observed from the table that occupation of respondent has statistically significant effect on age at first marriage. Regression coefficient indicates that there is a positive relationship between working women and age at first marriage. The odds ratio for working women indicates that they are 1.453 times more likely to marry at later ages with compare to those who are not in working.

5. Conclusion

This study investigates the predictors of age at first marriage in Bangladesh among female adolescents. It has used the national representative data from the Bangladesh Demographic and Health Survey (National Institute of Population Research and Training (NIPORT), 2009). Both cross-tabulation and Logistic regression analysis techniques have been applied to identify the important predictors of age at first marriage. Since age at first marriage is one of the important proximate determinants of population size, the present study also analyzed the age at first marriage by teenage females. Patterns of marriage show that about 63.7 percent respondents were married up to age 15 years. The median age at first marriage is found to be 15 years, which is 3 years less than legal age at first marriage of females in Bangladesh. The result suggests that early marriage among females is a multidimensional phenomenon. Logistic regression analysis exhibits that explanatory variables such as respondent's education, husband's education, region and respondents working status are important in explaining differentials of age at marriage of the Bangladeshi adolescents. Of all the variables, respondent's education and husband's education makes by far the strongest contribution to the variability in age at first marriage of the adolescents. The findings of the present study have clear policy implications. To increase age at first marriage and to check the growth rate of population, highest importance should be attached to education of the respondents. If literacy rate can be increased it would develop a sense of national awareness and wide outlook among them.

Hence, all-out efforts should be taken to weed out female's illiteracy. Initiatives must also be taken to ensure at least secondary education level among girls. In this context, possibility of free education for females up to secondary level can be justified, which will accelerate the females towards higher ages at first marriage. Husband's level of education has impact on age at first marriage. Hence, it can be suggested that male's education must be improved which will help to reduce childhood marriage. Women who are currently working are more aware of their marriage. For this reason, the Government should come forward to create job opportunities for women. Geographical region of residence is found to be a significant predictor of age at first marriage. Therefore, economic disparity should be reduced and uniform distribution of national income must be ensured across the country. If the aforementioned recommendations can be implemented properly, the age of first marriage of adolescent women will be increased at expected level and accordingly the rate of infant and maternal mortality can be reduced, which occur due to conception in early age.

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Table 1: The list of dependent variable and independent variables

Dependent variable	Age at first marriage less than or equal to 15 years is "0" Otherwise (above age 15 years) "1"
Independent Variables	**Categories**
Respondent Education	0 = Illiterate 1 = Primary literate 2 = Secondary and higher
Religion	0= Muslim 1= Non-Muslim
Region	0= Barisal 1= Chittagong 2= Dhaka 3=Khulna 4= Rajshahi 5= Sylhet
Husband's occupation	0= Agriculture 1= Business 2= Service 3= Others
Type of place of residence	0= Rural 1= Urban
Husband's education	0= Illiterate 1= Primary literate 2= Secondary and higher
Access to mass media	0= no access 1= have access

Socio-economic status	0= Poor
	1= Middle
	2= Rich
Working status	0 = Not working
	1 = Working

Table 2: Percentage and Cross tabulation of adolescent respondents' age at first marriage by different characteristics

Background Characteristics	Age at first marriage at median age		Chi-square	Significance Level
	≤ 15 years	>15 years		
Respondent's education				
Illiterate	74.8	25.2		
Primary literate	74.2	25.8	43.069	0.000
Secondary and higher	56.8	43.2		
Religion				
Muslim	64.2	35.8	1.623	0.123
Non-Muslim	57.7	42.3		
Region				
Barisal	66.3	33.7		
Chittagong	55.1	44.9		
Dhaka	61.6	38.4	29.904	0.000
Khulna	71.3	28.7		
Rajshahi	72.0	28.0		
Sylhet	53.2	46.8		
Type of place of residence				
Rural	66.1	33.9	7.519	0.006

Background Characteristics	Age at first marriage at median age		Chi-square	Significance Level
	≤ 15 years	>15 years		
Urban	58.3	41.7		
Husband's occupation				
Agriculture	69.8	30.2		
Business	54.3	45.7	25.892	0.000
Service	54.1	45.9		
Others	67.6	32.4		
Husband's education				
Illiterate	75.9	24.1		
Primary literate	70.4	29.6	70.721	0.000
Secondary and higher	50.9	49.1		
Access to mass media				
No access	72.3	27.7	17.491	0.000
Have access	60.2	39.8		
Socio-economic status				
Poor	72.2	27.8		
Middle	67.5	32.5	38.875	0.000
Rich	54.2	45.8		
Respondent currently working				
No	73.9	26.1	11.844	0.001
Yes	61.7	38.3		
Total	**63.7(859)**	**36.3(489)**		

Table 3: Logistic regression estimates of age at first marriage by different characteristics

Factors	Coefficient (β)	Odds ratio[exp(β)]
Respondent's education		
Illiterate(RC)	-	-
Primary literate	0.109	1.115
Secondary and higher	0.641***	1.899
Region		
Barisal(RC)	-	-
Chittagong	0523**	1.686
Dhaka	0.256	1.291
Khulna	-0.233	0.792
Rajshahi	-0.269	0.764
Sylhet	0.891***	2.438
Type of place of residence		
Rural(RC)	-	-
Urban	0.112	1.119
Husband's occupation		
Agriculture(RC)	-	-
Business	0.094	1.099
Service	0.260	1.297
Others	-0.105	0.900
Husband's education		
Illiterate(RC)	-	-
Primary literate	0.113	1.120
Secondary and higher	0.750***	2.116
Access to mass media		
No access(RC)	-	-
Have access	0.221	1.247
Socio-economic status		
Poor(RC)	-	-
Middle	-0.116	0.890
Rich	0.077	1.080
Respondent currently working		
No(RC)	-	-
Yes	0.374**	1.453
Constant	-2.068***	0.126