Women's Autonomy as a Determinant of Contraceptive Use and Method Choice among Women in Bangladesh

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Abstract

This study examined the association between women's autonomy and contraceptive use and method choice among women in Bangladesh using data from the nationally representative 2011 Bangladesh Demographic and Health Survey. Simple cross tabulation, multivariable binary and multinomial logistic regression models were constructed to examine the association between women's autonomy and contraceptive use and method choice. Almost one-fourth of the women had higher level of decision-making autonomy. Overall, 62% of the currently married women were using any contraceptive method; reporting with 52% were modern method users. The women with higher autonomy were significantly (P<0.001) more likely to use any contraceptive method ($OR_{adj.}$=2.30, 95% CI=2.10-2.52); and were more preferred to adopt modern methods ($OR_{adj.}$=2.29, 95% CI=2.09-2.52) and traditional method ($OR_{adj.}$=2.33, 95% CI=2.00-2.72) over non-use, than women with low autonomy. Thus, women's household decision-making autonomy needs to be considered as an important barrier for the use of family planning method and method choice.

Key words: Bangladesh, Contraceptive use, Method choice, Patriarchal society, Seclusion, Women's autonomy

Introduction

Since the International Conference[1] on Population and Development held in Cairo in 1994, women's autonomy and its association with their reproductive behaviour have emerged as focal point of investigations and interventions in the male dominated settings. Women's role has been a priority area not only for sustainable development, also for reproductive health care including family planning (FP).[2] As because, in many societies women's substandard social status and status within their household adversely affect their health and that of their children.[3] The health of women and their children is mostly blighted by social culture and socially determined roles for women.

Women almost everywhere are disadvantaged compared to men in terms of their access to assets, employment, health care, and education.[3] In most of the developing countries in South Asia, and elsewhere, women contain by far lower social status and autonomy than men.[4] Wide gender disparity is a prominent feature of many South-Asian societies, which are characterized by patrilineal descent, patrilocal residence and patriarchal decision-making.[4,5] Their low status and autonomy within household as well as in society appear to be associated with lower fertility control.[6,7] Although, fertility and contraceptive use in developing countries are associated with various socioeconomic, demographic and cultural factors, a growing body of literature shows strong significant association between female autonomy and contraceptive adoption.[8,9,10]

Women's autonomy and contraceptive use

Women's autonomy –defined by their decision-making abilities within their household and their mobility outside of their home is strongly influenced by kinship and marriage relationship, by age, by religion, and by division of labour within traditional patriarchal societies.[7] It is widely accentuated that increased gender equality is a prerequisite for achieving improvements in maternal health and reproductive behaviour. Studies point that, decision autonomy remains significantly associated with contraceptive use, even after controlling for a battery of socio-demographic variables.[2,8,9,10,12]

In the context of FP, inter-spousal communication is strongly associated with contraceptive use and method choice.[13,14,15,16,17] It has been suggested that, the balance of power in sexual relationships had an influence on the use of health services, which in turn could be linked to reproductive health outcomes.[2] In male-dominated patriarchal society like Bangladesh, women face many obstacles in taking familial decisions, particularly of their reproductive preference including contraceptive use. In such a setting, women's inferior position and lack of negotiation power between couples substantially limit communication on FP as well as reproductive preferences.[15]

Given the centrality of childbearing in most societies, women's status is often tied to the number of children that women bear. At the same time, increases in women's education and labour force participation can enhance women's status vis-a-vis men, by offering women opportunities to control their own resources as well as their power to make decisions about reproductive behaviour.[18] Women's education is believed to increase their employment opportunities and their ability to make decisions in the household, which in turn, may also influence lowering fertility through fertility

regulation. Education leads greater autonomy providing women with more opportunities to delay their age at first marriage, increased use of FP method, and thereby fertility controlling.

Increasing evidence points that intimate partner violence is associated with a reduced likelihood of modern method use[19,20], and decreased probability of current contraceptive use[21]. Freedom and ability of mobility is also reported to be strongly associated with reproductive health service utilization among women in Bangladesh[22], Pakistan[23] and India[24]. This could be explained by the fact that constraints on physical mobility and say on decision-making power may restrict their ability to make independent decisions about their own health care. In an environment where women and men believe that childbearing and contraceptive decisions should be determined ultimately by the husbands, and some women fear that defiance may lead to domestic violence, women may not be willing to risk the adverse consequences of trying to negotiate fertility decisions like the discussion of FP or contraceptive use.[18]

Women's status in Bangladesh

In Bangladesh, women are inferior to men in many ways and are mainly dependent on family. Although the constitution promotes equal rights to women, they still suffer from various discriminations at workplace and in society. Even, they are discriminated in every public sphere and private life by men.[25] Men are presumed to be responsible for earning the living for the family, while women will take care of the household activities including child-bearing and child-rearing. The women of Bangladesh, particularly rural women, perform various types of household work from dawn to mid-night. Despite this, women's contribution to the family is not recognized to the same extent as men do. These are the women of Bangladesh who are, however, involved in many household activities, such as post harvest activities, farming, collecting fuel, rice husking, making, manufacturing and selling handicrafts, and rearing domestic animals.

Although women's work is hard and time-consuming, such work does not provide them equal status to men. A woman seldom earns money for her own, but she is financially dependent on her father before marriage, then on husband after marriage and thereafter on her son for old age security. Men's role being more visible earns them the recognition of being the catalysts of family welfare, which lays a fine line of demarcation between the perceived status of women and men in the society against women.[26]

To improve the women's status in Bangladesh, the subsequent Governments of Bangladesh have taken various initiatives including women's participation in local as well as national Government. Education has a significant impact on the overall well-being of a woman, starting from mere household decisions, encompassing economic decisions to the highest level of decision-making, i.e. reproductive choices.[5] Since education is the key factor of women's status in a society, to improve the literacy and education among girls and women, the Bangladesh Government has enacted female stipend progamme in the early 1990s for the first ten years of schooling as because the families often are reluctant to pay for their daughter's education.

Bangladesh is predominantly a Muslim country and belongs to a patriarchal society. Family and kinship relations in Bangladesh are organised along corporate patriarchal lines, with authority vested in the senior male household head.[27] In a highly patriarchal society like Bangladesh and elsewhere, where traditional gender paradigms prevails, women in custom and practice remain subjugated to men in almost all aspects of their lives. Their devalued status within the family is further reinforced by *purdah* (seclusion) norms which restrict their mobility in the public domain, confining them to reproductive responsibilities and those forms of productive work that can be carried out within the home.

Women are absorbed into their husbands' patrilineage after marriage but their position within family is not secured until they have borne sons to carry on the family line and act as insurance in parents' old age.[27] In Bangladesh, male supremacy and prevailing traditional Islamic views and cultural restrictions on women restrain them from decision-making in many aspects of their lives, including education, employment, use of FP method, maternal health care seeking from skilled male personnel and other economic and social activities. Thus, if a woman has little say on decision-making process in household, her husband discourages her from using contraceptive method.

Early marriage, particularly child marriage among girls, and adolescent childbearing are deeply embedded in Bangladeshi culture[14,28], reveals poor status of women. Not surprisingly, Bangladesh has been characterised by a culture of strong son preference and by the high levels of fertility necessary to assure the survival of a minimum number of sons[27]. In essence, the origins of gender bias are social norms and traditions, which still prevail in most of the families.[25] Differential treatment of female begins at childbirth. While a son is welcomed to the world with a loud audible prayer of "God is great" in the presence of members, a daughter receives only the "whisper of Quranic prayer".[25] The overall consequence of these interacting constraints has been to restrict women's access to material resources of their own.

Despite facing many challenges, Bangladesh had made remarkable progress in Gender Inequality Index (GII) since its independence in 1971. The GII reflects gender-based inequalities in three dimensions: reproductive health, empowerment, and economic activity. According to the most recent United Nations Development Programme's (UNDP's) Human Development Index (HDI), Bangladesh has a GII value of 0.518, ranking it 111 out of 148 countries in the 2012 index. For every 100,000 live births, 240 women die from pregnancy related causes; and the adolescent fertility rate is 68.2 births per 1,000 live births. Female participation in the labour market is 57.2% as compared to 84.3% for men. In comparison, Pakistan and Nepal are ranked at 123 and 102 respectively on this index.[29]

Fertility and contraceptive prevalence rate in Bangladesh

Bangladesh, the most populous nation on earth, has been experiencing fertility decline since the mid-1970s and the process became faster since the mid-1980s.[30] Undeniably, the country has made significant progress in controlling the Total Fertility Rate (TFR) over the last four decades. The TFR has declined dramatically from a high level of 6.3 births per woman in the mid-1970s to 2.3 births per woman in 2011.[31] Figure I shows

that, the TFR was static almost at 3.3 births per woman in the 1990s, while the contraceptive prevalence rate (CPR) has increased from a low level of 7.7% in 1975 to a high level of 61.2% in 2011. The use rate of modern CPR has increased from 5.0% in 1975 to 52.1% in 2011 (Figure II). The striking decline of TFR and rapid increase of CPR is partly attributed to the successful FP programme in Bangladesh which was initiated in the early 1960s.

Indeed, Bangladesh is the one among the world's poorest countries where such a change has occurred despite the absence of conditions that is believed to be necessary for such reproductive changes.[32] The reproductive revolution that has begun in Bangladesh is particularly remarkable when it is seen against the backdrop of persistent poverty, high mortality, low literacy (particularly among the women) and such patriarchal social norms like early marriage for girls, seclusion of women and adolescent girls and preference for sons.[33] Some argues that, improvements in the status or position of women relative to men are critical elements, and possibly even necessary conditions, for significant fertility declines to occur in parts of the world that remain patriarchal and poor.[34]

Population control is one of the foremost agenda of Bangladesh. Thus, social status and level of autonomy or empowerment of Bangladeshi women needs to be further explored in terms of their position within household, which has a direct impact on reproductive behaviour such as contraceptive use and method choice. This relationship clearly warrants further attention, particularly in settings like Bangladesh, where FP is the viable means of population controlling through fertility reduction. A substantial body of research has examined the factors affecting contraceptive use in Bangladesh These studies are confined to examine the relationship between socioeconomic status[35,36], inter-spousal communication[15], husband's approval[37] of contraceptive use, sex preference[38], mass media[39] and contraceptive use.

Where studies to examine the association between women's autonomy and contraceptive use are enormous[2,10,12,40,41], much less is known about the subject among Bangladeshi women. To our knowledge, there has been no systematic study on the women's autonomy and its implications for contraceptive adoption and method preference in Bangladesh. In this study it is our aim to explore women's autonomy in household and its effect on contraceptive use and method choice among married women in Bangladesh. We hypothesized that women's autonomy influences contraceptive use and preference of modern method and traditional method versus non-use of any method independent of socio-demographic characteristics.

Data and methods

Data

This study used data from the most recent and nationally representative 2011 Bangladesh Demographic and Health Survey (BDHS). The survey gathered information from 17,749 ever married women of age 15-49 and 3,997 men aged 15-54 from rural as well as urban areas covering all regions of the country. It utilized a two-stage cluster sample based on the 2011 Bangladesh Population Census. The survey

obtained detailed information on fertility levels, age at marriage, age at first birth, fertility preferences, awareness and use of FP methods, breastfeeding practices, nutritional status of women and young children, childhood morbidity and mortality, maternal and child health, prevalence of sexually transmitted diseases (STDs) and sexually transmitted infections (STIs), knowledge and attitudes regarding HIV/AIDS etc. The survey was conducted by the National Institute for Population Research and Training (NIPORT) under the Ministry of Health and Family Welfare and was implemented by Mitra and Associates –a non-Government research organization in Bangladesh. The financial support was provided by USAIDs. The details of the survey have been described in the survey report.[31]

Ethical consideration

The data set used in this study has been taken from the 2011 BDHS. The survey was conducted under the authority of the Ministry of Health and Family Welfare, Bangladesh and was conducted by the Government organization. The survey maintained all protocols prescribed by the World Health Organization (WHO) and MEASURE DHS+ as a part of global DHS programme. A written consent was taken from all of the respondents prior to starting the interview and was assured that their information would be kept confidential. Thus the participation of the women in the interview was voluntary. These data are nationally representative and are internationally used for research related to demographic and public health issues. So, ethical approval was not necessary for this study.

Outcome measure

The outcome measures of the study are two: (i) "current use of any contraceptive method"; and (ii) "contraceptive method choice". "Current use of any contraception" includes both modern and traditional methods, whereas "contraceptive method choice" includes "modern method" and "traditional methods".

Exposure variables

The exposure variables included for analysis are women's autonomy and some other selected socioeconomic indicators of women. The autonomy index used in this study as a proxy measure of women's autonomy and was assessed through four different indicators: (i) women's employment and economic decision-making power; (ii) health care and FP decision-making power; (iii) freedom of movement; and (iv) women's attitude toward partner's violence. We included several socioeconomic and demographic variables theoretically and empirically linked[10,24] to women's autonomy and contraceptive use and method choice[2,35,42]. The socio-demographic factors included for analysis are: current age, age at first marriage, sex composition of surviving children, experience of child loss, women's education, place of residence, region, religion and wealth index. The wealth index was measured by luxurious materials used in the households. The definition, measurement and categorization of the variables have been provided in Table 1.

Measuring women's status and autonomy

Until recently, women's autonomy is often measured by proxies, such as education, employment, involvement in decision-making and knowledge. While there is consensus on the importance of the issue, the literature has yet to come up with a precise definition or any unique set of indicators that can be used to judge improvements or deteriorations in women's empowerment or women's autonomy. In essence, women's empowerment is a multi-dimensional concept[2], that embraces a wide range of factors such as social customs, cultures and mores, religion, caste, family type, etc. which may not be amenable to any "objective" scale of measurement.[43] Although improvements in gender inequality in terms of employment, earnings, education and other indirect indicators do not by themselves imply a simultaneous improvement in women's empowerment at the household level, women's participation in paid jobs in particular is viewed as an important determinant of their individual choices.[44] Women's empowerment at the household level is ultimately an empirical issue that calls for a careful assessment of women's own views on relevant facts.[26]

Defining and measuring 'women's status' and 'autonomy' are prominent issues in the literature.[45] Given the wide variation, women's empowerment is difficult to measure consistently.[46] The use of such terms often refers to a range of behaviours or attitudes.[18] Control over household decisions, or lack thereof, is an important and more direct measure of gender relations and of women's autonomy within their families.[18] Studies often assess women's autonomy with an index measuring participation in decision-making about various household issues, which represents women's degree of control over their environment.[46]

Several studies in South Asia have reported that socio-demographic variables are not reliable indicators of women's position; rather, investigation of the impact of women's position on demographic and health outcomes should use direct measures reflecting women's degree of control in their lives.[4,24,47] Women's autonomy thus can be conceptualized as their ability to determine events in their lives, even though men and other women may be opposed to their wishes.[4,24] In this study we used the term autonomy or interpersonal control or decision-making power as defined by these authors.

The 2011 BDHS has gathered limited information on the involvement of women in familial decision-making process and their working status. To collect information on women's employment and economic decision-making process, the survey asked the following questions: (i) whether the respondent was involved in paid job? (ii) person who usually decides how to spend respondent's earnings? (iii)) person who usually decides on large household purchases? To measure the familial health care and FP decision-making autonomy, the following questions were asked: (i) who had final say on the respondent's own health care? (ii) who had final say on child health care? and (iii) who was the decision maker for using contraception? To measure the extent of freedom of movement autonomy, the following questions were asked: i) who had final say on visits to family or relatives? and (ii) whether respondent could go to health center alone or with younger children? The responses to each of the questions were given as: (1) respondent alone; (2) respondent and husband/partner jointly; (3)

respondent and someone else; (4) husband/partner; or (5) someone else/other in the household. To assess respondent's autonomy, we assigned values "2" if the respondent had authority "alone", "1" for joint decision with husband/partner/someone else and "0" for having no participation in decision-making. Only those women who had paid jobs were asked, who decided how the money the women earned would be used. The women who did not have formal jobs were considered as not having decision-making power. The currently employed women were assigned the value "1" and "0" for non-employed women.

In addition to these, we included women's attitude toward partner's violence to assess gender role norms among the subjects. The BDHS asked the respondents five questions regarding gender role norms through women's attitude towards domestic violence inflicted by husband/partner. The questions were as follows: "In your opinion, is a husband justified in hitting or beating his wife if: (1) wife goes out without telling husband? (2) wife neglects the children? (3) wife argues with husband? (4) wife refuses to have sex with husband? and (5) wife burns the food". For each of these questions, responses were coded as "yes" or "no". These questions are valuable information to measure women's self-esteem. The speculation to these questions is that the women with higher self-reliance would not accept such obvious gender inequalities in power and would not agree with any justification for a husband beating his wife. Thus, we assigned a value "0" for positive response and "1" for the negative one.

Statistical analyses

Simple cross tabulation, bivariate and multivariable statistical analyses were employed in this study. Differences of contraceptive use by socioeconomic, demographic, cultural environments as well as women's autonomy were assessed by *chi*-square (χ^2) tests. These were followed by multivariate logistic regression analyses. A series of multivariate binary and multinomial logistic regression models were constructed to assess the effect of women's autonomy on contraceptive use after confounding with other selected socio-demographic, cultural and environmental factors. The outcome measure "use of any contraceptive method" was made a binary response. If a woman was currently using any contraceptive method then she was coded as "1" and "0" for otherwise. The choice of modern and traditional method over non-use was assessed by multinomial logistic regression analysis.

The Multinomial logistic model is the extension of the logistic regression model to the outcome measures with $j = 1, 2, 3, ..., k$ nominal outcomes. In its general form the probability of an actor i belonging to category j is given by[48]:

$$\Pr\left(y_i = j \mid x_i\right) = \frac{\exp\left(x_i \beta_j\right)}{\sum_{k=1}^{j} \exp\left(x_i \beta_j\right)}$$

where X_i is a vector containing the values of m covariates for respondent i and β_k is a vector of $m+1$ parameters $(\beta_{0k}, \beta_{1k}, \beta_{2k}, \ldots, \beta_{mk})$ for each $k = 1, 2, 3, ..., j$. In order to identify the parameters it is common to choose one reference category and set the corresponding vector of parameters equal to a vector of zeroes. We calibrated a model with three categorical contrasts: traditional, modern and non-use by considering non-use as the reference.

Multicollinearity in the logistic regression analyses was checked by the standard errors (SEs) for the regression coefficients. In logistic regression analysis, a SE greater than 2.0 indicates multicollinearity among the independent variables. However, in our study all of the independent variables in all fitted models for outcome variable had a SE of less than 0.10, indicating the nonexistence of multicollinearity. To reproduce the national population, the analyses were weighted using individual household sampling weights provided by the BDHS. The results of the logistic regression analyses have been presented by Odds Ratios (OR) with 95% confidence interval (CI). The level of significance was set at 0.10. The all of the statistical analyses employed in this study were performed by IBM SPSS v21 (SPSS Inc., Chicago, IL, USA).

We created four individual dimensions of autonomy: (i) employment and economic decision-making index (EEDI); (ii) familial health and FP decision-making index (FHFPI); (iii) freedom of mobility index (FMI); and (iv) index of women's attitude toward domestic violence (WADVI). Each of the indices was constructed by summing the weight assigned to the responses. Performance in each indicator has been expressed into a unit-free index between 0 and 1 according to construction method of the HDI[29] as follows:

$$\text{Development Index} = \frac{\text{Actual value-minimum value}}{\text{Maximum value-minimum value}}$$

The scores obtained for each of the indices were then recoded as tertiles with categories labeled as: low, medium and high autonomy. The overall women's autonomy index was then computed by averaging the factor scores of these four indices recoded as: $\text{Overall Autonomy Index (OAI)} = \frac{1}{4}(\text{EEDI+FHFPI+FMI+WADVI})$.

Likewise, the total scores obtained were then recoded as tertiles with categories labeled as: low, medium and high autonomy. To assess the internal reliability of the overall autonomy index, we used Cronbach's alpha coefficients. The estimated Cronbach's alpha of these 13 sub-questions was found to be 0.73, suggesting quite acceptable internal consistency.

Results

Profile of the respondents

Table 1 shows the weighted percentage distribution of women by their background characteristics. Less than one-third of the women were young (aged 15-24), over one-

third were aged 25-34 and slightly over one-third were aged 35 or above. More than three-fourths were married-off before age 18 –the minimum legal age at first marriage for females in Bangladesh. One in ten had no child at the time of survey, almost one-fifth had only daughter(s), over one-fifth had only son(s) and about half had both daughter(s) and son(s). Almost one-fifth had have experienced child death at least for once. One-fourth had no formal education, 30% had primary education, 37% had secondary and only 9% had higher education. About two-thirds were rural residents and the vast majorities were Muslims by religion. Over one-third were poor, almost one-fifth were from middle class and the rests were from rich households.

Table 2 shows weighted percentage distribution of women by various autonomy indices. When overall autonomy index is concerned, almost one-fourth had high autonomy, more than one-third had medium autonomy and almost two-fifths had low autonomy. Of the respondents, only one in ten had high autonomy in terms of employment and economic decision-making index and 15% enjoyed high autonomy in terms of familial health and FP decision-making index. More than one-third enjoyed high autonomy in freedom of mobility and over two-thirds had high self-esteem attitudes towards wife beating.

Differentials of current contraceptive use and method choice

Overall, the contraceptive prevalence rate (CPR) in the study women was 62%, reporting with 52% were modern methods users. Table 3 reveals that current use of any contraceptive method was significantly (P<0.001) higher among women aged 25-34, who got marriage before age 18, who had both daughter(s) and sons(s), who had never experienced child loss, the women with higher level of education, and among the urban residents. Wealth index did not show significant difference in contraceptive use as well as method choice. The CPR was significantly higher among those who enjoyed high autonomy in household decision-making ranging from 50% to 75% in the women with low and high autonomy. When autonomy indices were broken down by EEDI, FHFPI, FMI and WADVI, current use rate of any contraceptive method was also significantly higher among women with high autonomy.

The practice of modern methods was significantly higher among women aged 25-34, who were married-off before age 18, who had only son(s), who had never experienced child loss, those who were higher educated, among the urban, poor and the non-Muslims. Besides, the prevalence of traditional method use was more frequent among the elder cohort and who had both daughter(s) and son(s). It is remarkable that, the use rate of traditional method was also higher among women who enjoyed higher autonomy than were those who enjoyed low autonomy in their household campus.

Multivariate analysis

Table 4 shows the results of a series of multivariate logistic regression analyses of contraceptive use and method choice by the selected autonomy indices. When other variables were controlled for, the odds of being any contraceptive method user was significantly higher among women with high autonomy than were those with low autonomy. For instance, the likelihood of current contraceptive use was 38% and 16%

higher among women who enjoyed high and medium autonomy than those with low autonomy in employment and economic decision-making. As compared to women with low autonomy in family health and FP decision index, the women with medium and high autonomy were more likely to use any FP method. When freedom of mobility index and index of women's attitude towards domestic violence are concerned, only the women with high autonomy were significantly ($P<0.05$) were more tended to use any FP method than their counterparts with low autonomy.

The multinomial logistic regression analysis revealed significant positive association between high autonomy and traditional method use for the indices of employment and economic decision-making as well as familial health and FP decision-making process. The women with high autonomy regarding women's attitudes toward domestic violence showed negative association with traditional method use, whereas women's autonomy for freedom of mobility had no longer significant effect on traditional method use. When other socioeconomic factors were held constant, the women with higher autonomy for all indices showed significant positive relationship with the use of modern method.

Table 5 shows the results of logistic regression analysis of contraceptive use and methods choice among currently married women by socioeconomic characteristics and overall autonomy index. On the whole, the higher the autonomy, the higher the odds of being any FP method user. The likelihood of traditional method use and modern method practices increased significantly with women's autonomy. For instance, the women with medium and high autonomy as compared to those who enjoyed low autonomy were 1.61 times and 2.33 times as likely to use traditional method respectively and 1.48 times and 2.29 times more preferred to use modern method respectively, relative to non-use of any FP method. The odds ratios have been shown in Figure III.

The likelihood of use of any method was significantly higher among women aged 25-34 than the reference category. After controlling for women's autonomy and other factors, the odds of any FP method use was higher among women who got marriage before age 18, who had both daughter(s) and son(s), who had never experienced child loss, women with higher education, rural residents and among non-Muslims. The women married-off at age 18 or above were more likely to be traditional method use and less preferred to use modern method, relative to non-use of any method, than were those who married-off as children.

The odds of traditional and modern method use were significantly higher among those who had at least one child than those who had not. Experience of child loss had no longer significant effect on traditional method use, but was negatively associated with modern method use. The women with higher education were more preferred to use both traditional and modern method, relative to non-use, than their non-educated counterparts. The effect of secondary education was assorted. As compared to women who had no formal education, the women who had secondary education were significantly less preferred to use traditional method and were more likely to be modern method users. The rural women as compared to their urban counterparts were less preferred to use both traditional and modern method. The non-Muslim women as

compared to their Muslim sisters were more tended to use both modern and traditional methods, relative to non-use of any contraceptive method.

Discussion

In this study we examined the effect of women's autonomy on contraceptive use and method choice among Bangladeshi women using the most recent and nationally representative 2011 BDHS data. Overall, almost one-fourth of the women enjoyed high autonomy, a slightly over one-third had medium autonomy and two-fifths had low autonomy in their household campus. The CPR among the study women was 62%, reporting with 52% was modern method users. The both bivariate and multivariate statistical analyses revealed that the higher the autonomy the higher the likelihood of FP method use and preferred both traditional and modern methods.

The main focus of this study was on women's autonomy and to examine its association with FP method use and method choice. The allotment of women's autonomy reveals poor status of Bangladeshi women in their household campus as the score level was twisted towards low autonomy. Given the restrictions by patriarchal social system and the male supremacy in household campus and society as a whole limit woman's involvement in decision-making process, resulting in the observed low levels of autonomy, which is not surprising. This is also reflected from their education status and lower rate of engagement in formal jobs. Only 9% of the study women had higher education, suggests that these proportion women had completed only ten years of schooling. Presumably, girls are often singled out against supporting to complete secondary level of schooling. They are also restricted to their houses and given marriage at early age as revealed from the age at first marriage. Previous work has shown that women who have a significant say in reproductive matters tend to be more educated, spend more time on household economic activities and marry later.[49] These findings are consistent with other studies in developing countries focusing on the influence of women's socioeconomic status on their autonomy.[10,50]

Consistent with earlier studies conducted elsewhere[2,10,12,40,41,50], ours also show strong positive association between women's level of autonomy and contraceptive use and both modern and traditional method practices, over non-use. Improving the status of women have been advocated in the past few decades as one of the enabling factors to ensure reproductive and sexual health of men and women. Patriarchal gender norms and unequal power relations between men and women may function as a barrier to contraceptive use by supporting pronatal attitudes and control over women by men, limiting women's decision-making power and inhibiting their access to resources, information and services.[51]

The findings show that, the factors that influence contraceptive use and method choice include the current age of women, age at first marriage, sex composition of surviving children, women's education, place of residence and religion. In this study, history of child death had negative influence on contraception use and modern method preference, even after adjustment for all the independent variables. This finding conforms to the previous studies findings that documented vicious cycle of poor child survival, low practice of fertility regulation and high fertility.[52]

Employment and education always empower women and bring a positive impact on decision-making.[53] Our findings reveal that, though Bangladesh has taken a large number of schemes to educating women, only a few proportions of them had higher level of education and were engaged in formal jobs. Most of the educated women act as a simple wife with little say in decision-making process. Gender-based power inequalities can confine inter-spousal communication about reproductive health decisions as well as women's access to reproductive health services including contraceptive use.[15] Women's ability to make household decisions is enhanced while they are working.[54] Population and development programmes are most effective when steps have simultaneously been taken to improve the status of women in the decision-making process.[6]

The decreased likelihood of contraceptive use among women married at age 18 or above may be attributed to shorter duration of exposure to conjugal life. Presumably, these women are intended to initiate childbearing or to have more children, resulting in reluctance of contraceptive use. In contrast, the women aged 25-34 are more likely to use more effective FP method either to limit or making a space between births than women aged less than 25 years. Besides, the lower probability of modern method use and increased use of traditional method among the elder women may be attributed to their low level of knowledge regarding modern contraception. The low prevalence of contraceptive use among the young as compared to their elder counterparts is likely to their intention of early childbearing soon after marriage. Contraceptive use within marriage during the first few years of family formation is very low. However, our findings are consistent with earlier studies.[14]

Consistent with earlier studies[14,15], ours show that rural women as compared to their urban counterparts are less likely to use any FP method and also less preferred to use modern and traditional method. Generally, rural areas are associated with early marriage and early childbearing. The rural Bangladesh is a class-ridden society, hierarchally organized and strongly patriarchal than urban society. The urban people are exposed to an assorted life style and are subjected to a weaker social control than those of rural areas and have better access to reproductive health care services. Rural areas tend to have institutional and normative structures such as the kinship and extended family that promote early marriage; and hence, early childbearing and larger completed fertility due to low use rate of contraception. Moreover, rural women as compared to their urban counterparts are less informed about modern contraceptives and alternatives, results in decreased use of modern as well as traditional methods.

The sex of surviving children is an important determinant of reproductive behaviour in South Asia in general.[55] Son preference over daughter is a well known phenomenon in South Asian countries like Bangladesh, India and Pakistan. The reasons for gender preference are deeply embedded in the social, cultural, and religious tradition of this region. Our findings reveal that when parents already have one child, particularly son, they are more likely to use FP method. The findings of this study is quite in a good agreement of those conducted elsewhere.[55,56] In addition, the low use rate of contraceptives and modern method practice among the Muslim women as compared to their non-Muslim sisters are also partly attributed to cultural norms, traditional beliefs and social custom. Thus, in order to make a substantial impact on contraceptive

adoption among women in patriarchal societies like Bangladesh, there is a need to expand the focus beyond recommendations about improving female education, autonomy, and to undertaking a critical examination of the existing social structure.

Some limitations should be considered when interpreting the findings of this study. First, the cross-sectional nature of this study may have reporting error. Recall bias is possible in reporting age and age at marriage in Bangladesh as in other developing countries where vital registration systems are not properly followed. Second, findings from this study were based on self-reported outcomes and may, therefore, differ from actual behaviour, particularly women's attitude towards domestic violence inflicted by husband. Women may have over reported their attitudes towards domestic violence to show their high autonomy and self-esteem as well as to making pleased the interviewers. Finally, the measurement of women's status is complex with no general consensus on definition and most important autonomy dimensions. Women's autonomy is a sensitive issue that is often hidden by the women and underreporting or overexploiting is possible.[22] The major strengths of the study are its nationally representativeness, large sample size and comprehensive information on participating women and their households. Despite the limitations as mentioned, the results have elicited important information that could serve as a basis to improve the status of Bangladeshi women as well as the impact on female autonomy on contraceptive use and method choice.

In conclusion, our study documents low female autonomy among Bangladeshi women, but strong association between female autonomy and contraceptive use. Women's autonomy is also associated with modern as well as traditional contraceptive method choice, over non-use. The autonomy indices created for employment and earning as well as family health and FP showed stronger influence on contraceptive use and method choice than those of ability and freedom of movement as well as women's attitude towards domestic violence. Programmes should aim to retain girls in schooling to complete higher education and to provide higher educated women formal jobs. It has been reported that, improving girls' education and women's employability and providing opportunities for women to work to become more economically independent and hence empower women.[23] Women's participation in familial decision-making should be ensured not only to increase their autonomy and to be contraceptive users but also for their improved reproductive health and overall well-being of their family and the development of society as a whole.

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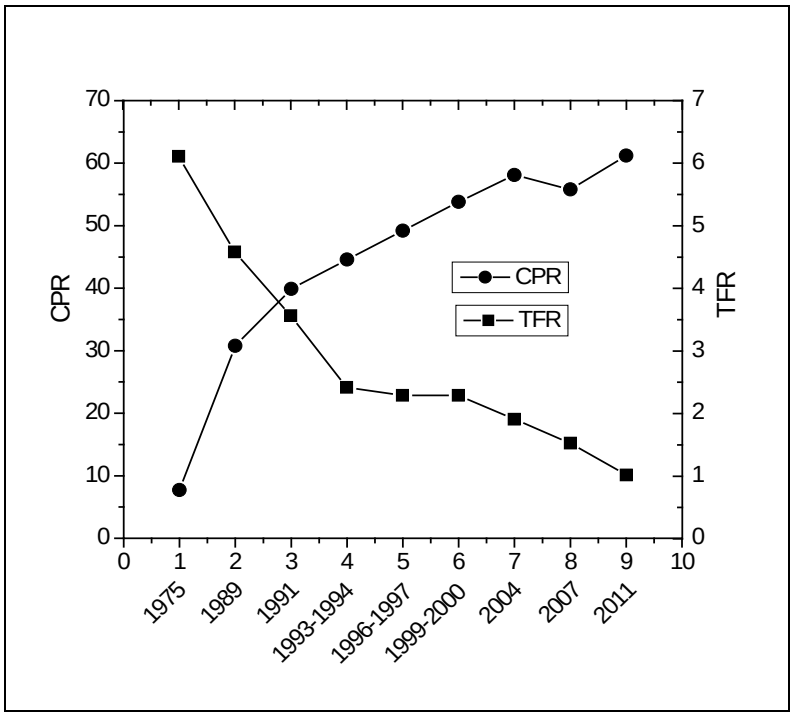

Figure I: Trends in contraceptive prevalence rate (CPR) and total fertility rate (TFR) of married women of reproductive age by survey year, Bangladesh, 1975-2011.

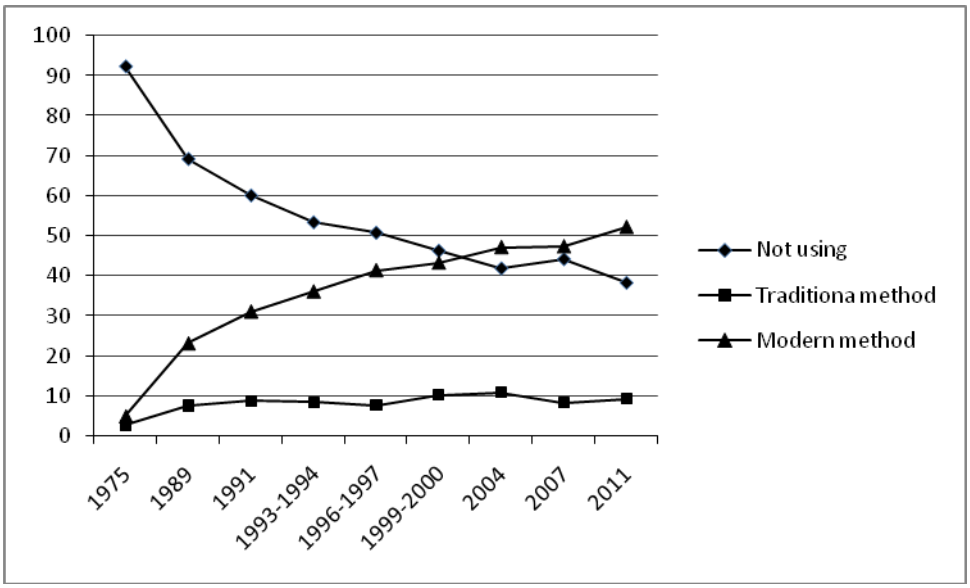

FIGURE II: Trends of modern and traditional method use among married women of reproductive age in Bangladesh, 1975-2011.

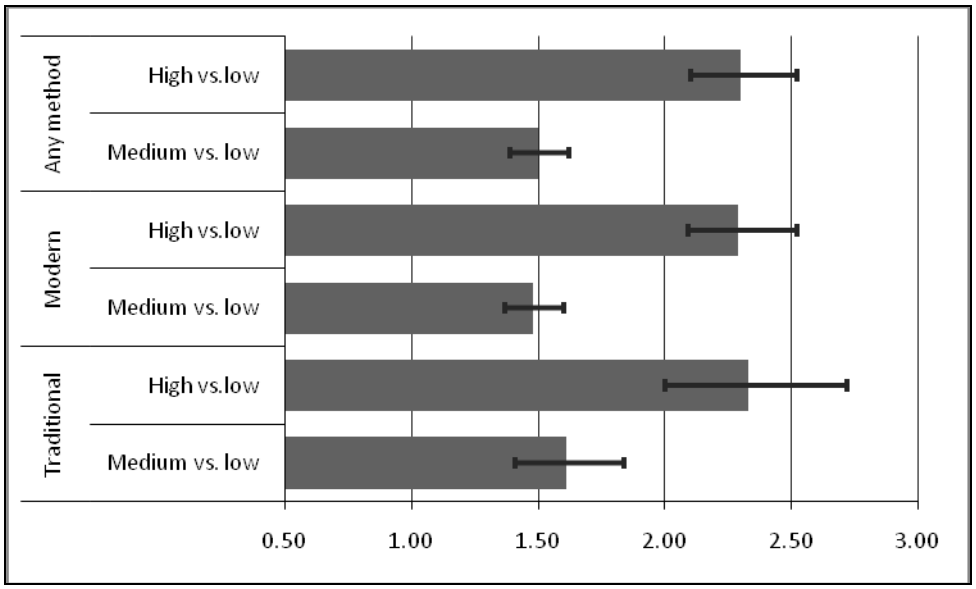

FIGURE III: Binary and Multinomial logistic regression analysis showing the Odds Ratios (OR) with 95% Confidence interval of use of any contraception and method choice by women's level of autonomy.

Table 1: Frequency distribution of currently married women by background characteristics, BDHS 2011

Background characteristics	N	%
Current age		
15-24	5160	31.3
25-34	5790	35.1
35-49	5530	33.6
Age at first marriage		
<18	12774	77.5
18+	3706	22.5
Sex composition of living children		
No child	1648	10.0
Only daughter	3132	19.0
Only son	3686	22.4
Both	8014	48.6
Experience of child loss		
No	13346	81.0
Yes	3134	19.0
Women's level of education		
No education	4046	24.6
Primary	4946	30.0
Secondary	6070	36.8
Higher	1418	8.6
Place of residence		
Urban	5700	34.6
Rural	10780	65.4
Religion		
Islam	14633	88.8
Other	1847	11.2
Wealth index		
Poorest	2779	16.9
Poorer	3084	18.7
Middle	3199	19.4
Richer	3506	21.3
Richest	3912	23.7
Total	16480	100.0

Table 2: Frequency distribution of currently married women by autonomy measures, BDHS 2011

Autonomy measures	N	%
Employment and economic decision making index		
Low	6026	36.6
Medium	8871	53.8
High	1583	9.6
Familial health and family planning decision making index		
Low	4722	28.7
Medium	9271	56.3
High	2487	15.1
Freedom of mobility index		
Low	6950	42.2
Medium	3866	23.5
High	5664	34.4
Index of women's attitude toward domestic violence		
Low	1828	11.1
Medium	3521	21.4
High	11131	67.5
Overall autonomy index		
Low	6421	39.0
Medium	6063	36.8
High	3996	24.2
Total	16480	100.0

Table 3: Percentage distribution of currently married women by current use of any contraceptive method and method choice by socioeconomic factors and autonomy index, BDHS 2011

Background Characteristics	Using any FP method		Method choice	
	No	Yes	Traditional	Modern
Current age		*P*<0.001		*P*<0.001
15-24	44.8	55.2	4.6	50.6
25-34	31.7	68.3	7.7	60.6
35-49	39.3	60.7	15.3	45.4
Age at first marriage		*P*<0.001		*P*<0.001
<18	37.3	62.7	9.0	53.7
18+	42.0	58.0	10.2	47.8
Sex composition of living children		*P*<0.001		*P*<0.001
No child	75.4	24.6	4.5	20.1
Only daughter	40.7	59.3	7.4	51.9
Only son	34.5	65.5	7.7	57.7
Both	31.6	68.4	11.7	56.7
Child loss		*P*<0.001		*P*<0.001
No	37.4	62.6	8.6	53.9
Yes	42.3	57.7	12.1	45.6
Women's level of education		*P*<0.001		*P*<0.001
No education	38.7	61.3	11.3	50.0
Primary	37.5	62.5	9.9	52.6
Secondary	40.0	60.0	6.8	53.2
Higher	33.8	66.2	11.8	54.4
Place of residence		*P*<0.001		*P*<0.001
Urban	35.3	64.7	9.9	54.8
Rural	40.0	60.0	8.9	51.1
Religion		*P*<0.001		*P*<0.001
Islam	39.0	61.0	9.1	51.9
Other	33.1	66.9	10.6	56.3
Wealth index		*P*=0.653		*P*=0.189
Poorest	38.6	61.4	8.3	53.1
Poorer	37.4	62.6	8.9	53.7
Middle	38.5	61.5	9.3	52.1
Richer	39.2	60.8	9.3	51.6
Richest	38.1	61.9	10.3	51.7
Employment and economic decision making index		*P*<0.001		*P*<0.001
Low (0.00)	43.3	56.7	8.3	48.4
Medium (0.20-0.40)	36.1	63.9	9.7	54.2
High (0.60-1.00)	32.3	67.7	10.8	56.9
Familial health and family planning decision making index		*P*<0.001		*P*<0.001
Low	50.8	49.2	7.6	41.6
Medium	33.6	66.4	9.8	56.6
High	32.4	67.6	10.7	56.9
Freedom of mobility index		*P*<0.001		*P*<0.001
Low	41.9	58.1	8.7	49.4
Medium	36.1	63.9	9.4	54.5
High	35.6	64.4	9.9	54.5
Index of women's attitude toward domestic violence		*P*<0.01		*P*<0.05
Low	41.0	59.0	8.6	50.4
Medium	39.6	60.4	9.1	51.3
High	37.5	62.5	9.4	53.0
Overall autonomy index		*P*<0.001		*P*<0.001
Low	49.7	50.3	7.3	43.0
Medium	35.5	64.5	10.0	54.5
High	24.6	75.4	11.3	64.1

Total	38.4	61.6	9.3	52.3

Table 4: Results of logistic regression analysis[§] of contraceptive use and methods choice among currently married women by autonomy index, BDHS 2011

Autonomy index	Using any FP method	Method choice	
		Traditional vs. non-use	Modern vs. non-use
Employment and economic decision making index			
Low	Ref.	Ref.	Ref.
Medium	1.16(1.08-1.24)***	1.18(1.04-1.33)**	1.15(1.07-1.24)**
High	1.38(1.22-1.57)***	1.41(1.15-1.73)***	1.38(1.21-1.57)***
Familial health and family planning decision making index			
Low	Ref.	Ref.	Ref.
Medium	2.01(1.87-2.17)***	1.93(1.68-2.21)***	2.03(1.88-2.19)***
High	2.08(1.88-2.31)***	2.14(1.78-2.56)***	2.07(1.85-2.31)***
Freedom of mobility index			
Low	Ref.	Ref.	Ref.
Medium	1.04(0.95-1.13)	1.01(0.88-1.15)	1.01(0.94-1.10)
High	1.08(1.02-1.16)*	1.04(0.90-1.20)	1.07(1.03-1.17)*
Index of women's attitude toward domestic violence			
Low	Ref.	Ref.	Ref.
Medium	1.04(0.92-1.11)	0.96(0.85-1.08)	1.15(1.07-1.30)*
High	1.11(1.00-1.24)*	0.90(0.81-1.11)*	1.19(1.11-1.41)*

Note: [§] Adjusted for current age, age at first marriage, sex combination of living children, child loss, women's level of education, place of residence and wealth index.

Level of significance *** $P<0.001$; ** $P<0.01$; and * $P<0.05$.

Table 5: Results of logistic regression analysis of contraceptive use and methods choice among currently married women by socioeconomic characteristics and overall autonomy index, BDHS 2011

Background characteristics	Using any FP	Method choice	
		Traditional vs. non-use	Modern vs. non-use
Current age			
15-24	Ref.	Ref.	Ref.
25-34	1.43(1.32-1.56)***	1.95(1.63-2.31)***	1.39(0.75-0.90)***
35-49	1.01(0.93-1.10)	3.09(2.61-3.65)***	0.82(1.27-1.51)***
Age at first marriage			
<18	Ref.	Ref.	Ref.
18+	0.81(0.74-0.88)***	1.20(1.03-1.40)**	0.77(0.70-0.84)***
Sex composition of living children			
No child	Ref.	Ref.	Ref.
Only daughter	3.92(3.41-4.49)***	2.65(2.01-3.51)***	4.20(3.63-4.86)***
Only son	5.09(4.44-5.82)***	3.25(2.48-4.28)***	5.50(4.76-6.35)***
Both daughter and son	6.22(5.46-7.08)***	5.40(4.17-7.01)***	6.39(5.56-7.34)***
Experience of child loss			
No	Ref.	Ref.	Ref.
Yes	0.69(0.63-0.75)***	0.97(0.84-1.12)	0.64(0.58-0.70)***
Women's level of education			
No education	Ref.	Ref.	Ref.
Primary	1.09(0.99-1.19)*	0.99(0.86-1.15)	1.11(1.01-1.22)*
Secondary	1.11(1.01-1.22)*	0.76(0.65-0.89)***	1.18(1.07-1.30)***
Higher	1.60(1.37-1.87)***	1.55(1.22-1.98)***	1.61(1.37-1.89)***
Place of residence			
Urban	Ref.	Ref.	Ref.
Rural	0.90(0.83-0.96)**	0.84(0.74-0.95)***	0.91(0.84-0.98)***
Religion			
Islam	Ref.	Ref.	Ref.
Other	1.31(1.17-1.46)***	1.39(1.17-1.66)***	1.29(1.16-1.45)***
Overall autonomy index			
Low	Ref.	Ref.	Ref.
Medium	1.50(1.39-1.62)***	1.61(1.41-1.84)***	1.48(1.37-1.60)***
High	2.30(2.10-2.52)***	2.33(2.00-2.72)***	2.29(2.09-2.52)***

Note: Level of significance *** $P<0.001$; ** $P<0.01$; and * $P<0.05$.