Men and family planning in Bangladesh: a multilevel approach using DHS data

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Abstract

This article investigates men's attitudes and behaviour towards family planning (FP) in Bangladesh and further explores the associated determinants using the 1999-2000 DHS data. Attitudes are measured in terms of inter-spousal communication and subsequent approval of FP whereas behaviour is addressed in terms of current method choices and use. Using the couple dataset, two-level random intercept logistic models were used to identify the determinants of men's FP attitudes and behaviour. Descriptive analyses indicate that despite high FP approval rates among men, only about 10% use male-based methods. Nearly 50% of men seem to have never talked FP with their spouses. Random effects were significant in the regression model which suggests that men's FP values and attitudes vary across communities. Inter-correlations between FP attitudes and behaviour were also established in the regression analysis. The results highlight the need for appropriate community-level interventions to improve men's involvement in FP processes.

Introduction

Men and their role in sexual and reproductive health processes have received inadequate attention among researchers and policy makers. The efforts to focus on men were addressed almost a decade ago when the ICPD goals were formulated (UN, 1995). However, these goals were not properly conceptualised, both in research and practice, particularly in terms of appropriate and effective implementation at the individual and community levels. In Bangladesh, family planning (FP) program personnel are

considering to involve men more directly in the reproductive health and family planning campaign. No successful strategic plan has been finalised yet other than budgetary concerns.

Bangladesh FP program is still women oriented. Historically, the value in soliciting involvement from and providing services to men has been largely overlooked (Neaz and Banu, 1997; Population Council, 1998). Tradition dictates that women are subject to the decisions of men in their lives. This is changing as opportunities for women open through education and employment. However, the multiple decision-making roles of men in reproductive health, particularly family planning, have profound influences on women's health (Piet-Pelon et al., 2000). Until recently, data about men's family planning knowledge, attitudes and practices were scarce (Ezeh et al., 1996; Gallen et al., 1986). The limited evidence to date suggests that the most successful family planning programs which targeted couples have rather skewed towards women (Ezeh, 1993). International studies from various regions have shown that reproductive health programs are likely to be more effective for women when men are involved in some way (Helzner, 1996; Mbizvo and Bassett, 1996; Mistik et al, 2003).

There have been many literature addressing men's role in family planning (Ali et al., 1997; Becker, 1996; Becker and Costenbader, 2001; Berer, 1996; Collumbien and Hawkes, 2000; Drennan, 1998; Ezeh, 1993; Ezeh et al., 1996; Greene and Biddlecom, 1997; Hawkes, 1998; Helzner, 1996; Herdon, 1998; Khan and Patel, 1997; Lee, 1999; Mesfin, 2002; Nzioka, 2002; Piet-Pelon, 1997; Piet-Pelon et al., 2000; Population Council, 2000; Population Council, 1998; RHO, 2004). Many of the researches proposes and tested casual relationships between the components of family planning e.g., approval of family planning, couple communication regarding family planning and contraceptive use. Most of the studies considered contraceptive use as functions of approval of family planning (Cook and Maine, 1987; Islam, 2000; Islam and Kabir, 2000; Islam and Kabir, 1998; Islam et al., 2001; Jato et al., 1999; Joesoef et al., 1988; Kamal, 2000; Khan and Rahman, 1997; Lasee and Becker, 1997; Mesfin, 2002; Odimegwu, 1999; Salway, 1994) and couple communication regarding family planning (Bawah, 2002; Chaudhury, 1978;

DeSilva, 1994; Dodoo, 1998; Feyisetan, 2000; Gage, 1995; Jato et al., 1999; Lasee and Becker, 1997; Odimegwu, 1999; Omondi-Odhiambo, 1997; Oyediran et al., 2002; Oyediran and Isiugo-Abanihe, 2002; Salway, 1994). Furthermore, some researchers argued that couple communication regarding family planning may be considered as functions of contraceptive use (Bawah, 2002; Dodoo, 1998; Robey and Drennan, 1998) and approval of family planning (Jato et al., 1999). We find a few literature that discuss approval of family planning as functions of couple communication regarding family planning (Daodoo et al. 2001; Islam et al., 2004) and contraceptive use (Islam et al., 2004).

In Bangladesh as FP program is women oriented it is likely that husband's approval of, couple communication regarding FP and current use of contraceptives will influence each other along with other socio-economic and demographic variables (Fig. 1). Husbands may approve of FP after a sequence of contraceptive use initiated by wives (especially, female methods) and as a result of frequent couple communication regarding FP. Current use of any contraceptive and consequently experience of any side effects may initiate couple communication regarding FP within couple or if it already exists it may increase the frequency of couple communication. Approval of FP by husbands indicates openness from the husbands' side to discuss various FP related matters and hence may inspire couple communication. Finally, both husband's approval of FP and couple communication regarding FP are likely to influence the current use of contraceptives, which may be translated into efficient use of the current method or switching to another effective method.

This article investigates men's attitudes and behaviour towards FP in Bangladesh and further explores the associated determinants using the 1999-2000 Bangladesh demographic and health survey (DHS) data. Attitudes are measured in terms of inter-spousal communication and subsequent approval of FP whereas behaviour is addressed in terms of current method choices and use. In fact, changes in attitudes and behaviour are gradual processes and these require information about the characteristics and the response variables (approval of, couple communication regarding and current use of FP) in

different time points, i.e., longitudinal data to capture the true relationship. A few of the available literature showed to have considered that matter (For example, Bawah, 2002). As, DHS is the only available nationally representative data for Bangladesh, this data will be used in the ongoing research despite its limitations. The results of this study are expected to provide programme and policy recommendations that encourage men's participation in reproductive health issues, both at the individual and community levels.

Data

The study is based on the couple data set (N=2249) based on the 1999-2000 BDHS (Mitra et al., 2001). The couple data set is generated by linking spouses from the male data set constituting a sample of 2556 currently married men aged 15-59 years and that from females which has a sample of 10,544 ever married women aged 10-49 years. The BDHS data is nationally representative two-stage sample and covers all the six administrative divisions, 64 districts and 490 thanas (sub districts). In urban strata the primary sampling units (PSUs) are *mahalla* and in rural strata these are *mauzas*. Since, the objective of BDHS was to provide separate estimates for each division as well as for urban and rural areas, it was necessary to increase the sampling rate for Barisal and Sylhet divisions, so that DHS sample is not self weighting.

Methods

Couple data set (N=2249) from the 1999-2000 Demographic and Health Survey (DHS) was used to fit logistic regressions for men's approval of FP, discussion of FP with partners (couple communication regarding FP) and current use of contraceptives. Multilevel modelling was further considered to identify the possible community level impact on the outcome variables (attitudes and behaviour).

Most of the demographic research did not consider the plausibility of endogeneity effect in their modelling probably because of the categorical nature of the response variables, as multi-process models would be computationally intensive. A few studies (For example, Doddo, 1998) tried with some exogeneity test suggested by Bollen et al. (1995).

However, any exogeneity test for multilevel models will be computationally intensive. Again, fitting multilevel multi-process models will also be computationally intensive. As, one of our interests is to detect if there is any community level variation in the data, we will not consider fitting single level multi-process models. We will ignore any effect of endogeneity in our study and leave that as part of our future works.

Bangladesh DHS 1999-2000 did not collect information on men's approval of and couple communication regarding FP directly from men, but, provides wife's perception of her husband's approval of FP and information on couple communication regarding FP reported by wives. Information on current use of contraceptives was collected directly from men. Couple data set enables us to use the information of the first two mentioned variables from women's report. We will use this information in our analysis. For the convenience of the readership from now on we will refer the wife's perception of husband's approval of FP as husband's approval of FP and we will use husbands and men interchangeably.

Selection of the independent variables and final models

   Only the significant variables in bi-variate analysis will be considered for the regression analysis, except the variables, **area of residence** and **division** which will be retained in all the models to control for the over enumeration in two divisions (Sylhet and Barisal). Obviously some of the variables that were found to be significant in bi-variate analysis may not be found to have significant effect on the response variable in regression analysis as the effects of these non-significant variables (in regression analysis) may be confounded with other significant variables. Single level models will be fitted using SPSS (version-12.0) considering only the variables significant in the regression analysis stage along with the variables, **area of residence** and **division** and a few other non-significant variables considered to be important for a particular model. Multicolinearity problem will also be considered at this stage. The selected independent variables in the final single level model will be then considered for two-level random intercept model in MLwiN (version-2.0). However, keep in mind that some of the level two units (the primary sampling units) that are regarded as corresponding to communities have very

small numbers of observations which may lead to non-significance of the community level variations in the two-level models in some cases. To better understand the change of community level variation due to the inclusion of different type of independent variables, we will present the results where independent variables will be input phase by phase i.e., first the attitudinal and behavioural variables, then demographic variables and finally the socio-economic and spatial variables. Only the final model will be discussed and discussion of the effects of the variables will follow the phase of input of the independent variables in the models.

Results and discussion

Table 1 reveals that about 85% of the wives reported that their husbands approve of FP, whereas, about 11% disapproves of FP. The rest don't know regarding their husbands' approval of FP. Husband's approval of FP is still far behind than their wives approval of FP (94.7%) (not shown in table). More than 50% of the wives mentioned that they never discussed FP with their husbands within the past year. Slightly more than 8% of the wives recalled that the frequency of couple communication regarding FP were more than twice. About 65% of the husbands reported that they were using contraceptives. Table 2 further shows the contraceptive method mix by husbands. Pill is still the dominating contraceptive method (29.3%), which is followed by periodic abstinence (9.6%) and injectables (7.4%). Prevalence of the reversible modern male method use i.e., condom is still low, with only 6.5% of the husbands reported using it. Other available male methods are not noteworthy, i.e., withdrawal (2.4%) and male sterilization (0.6%).

Regression analyses

Husband's approval of FP

Table 3 reveals two level random intercept binary logistic regression estimates of the effects of different independent variables on husband's approval of FP. The response variable is coded as husband approves of FP=1 and husband does not approve of FP=0.

It is to be noted that wives' indecisive responses 'don't know' regarding their husbands' approval of FP (4.2% of the wives) have been merged with the 'disapproves' category[†]. Distributions of the independent variables considered for this model by husband's approval of FP are presented in Table A1 in the Appendix.

Regression analysis revealed insignificant community level variation indicating that individuals from different communities with similar characteristics will exhibit similar influence on the response variable. Current users of contraceptives have higher odds of approving of FP. Husbands who use to discuss FP matters with their wives have higher odds of approving of FP. Furthermore, the result showed significant positive associations between wives' FP approval and that of husbands (Model 3 in Table 3).

Husbands aged 25-39 years were found to have lower odds of approving of FP than the respondents aged 40 years and above, when the other variables were controlled for. Husbands having 1 or 2 children have higher odds of approving of FP than those having 5 or more living children.

Respondents from Dhaka, Khulna and Rajshahi divisions have higher odds of approving of FP than those from Sylhet division. This indicates that husbands in these divisions have more positive contraceptive attitudes than those in Sylhet. The same model has been tried with different reference divisions. The analysis revealed that Dhaka, Khulna and Rajshahi divisions were not significantly different but Chittagong division was significantly different from Dhaka and Rajshahi divisions (results not shown in the table).

[†] Most of these respondents were illiterate, never discussed family planning with their partners, never used any methods and had spousal age difference of more than 8 years. The last three Demographic and Health Surveys (DHS) conducted in Bangladesh demonstrate almost universal knowledge of FP and a high rate of approval of FP among currently married women. Hence, an attempt to or desire to use FP at least once in their life is likely. Consequently, in a male dominant society it is not very difficult for a wife to judge her husband's attitude toward FP indirectly even if discussion of FP matters between spouses is absent possibly due to the husband's lack of interest. So it can be concluded that most of these respondents (4.2%) who reported the response 'don't know' are probably underreporting their husbands' negative attitudes, which may be attributed to their religious beliefs, individual values, shyness or due to high age differences. Another reason could be that when the respondent herself has never used a method, she may not be able to comprehend her husbands' attitude towards FP. Taking these reasons into account, we decided to consider these indecisive 'don't know' responses in the 'disapproval' category in the regression analysis.

Husbands having higher than secondary education have higher odds of approving FP than those having less education. Husbands who have access to TV have higher odds of approving of FP.

To compare the possible change on the results after combining 'don't know' responses with 'disapproval' we fitted the same model removing the 'don't know' responses but found very similar results (results not shown in table).

Couple communication regarding FP

Couple communication has been modelled by using the random intercept binary logistic regression where the response variable has been coded as discuss FP=1, and never discuss FP=0 (Table 4). Couple education constructed from husband's and wife's education was used because of the strong association between the education levels. Distributions of the independent variables considered for this model by couple communication regarding FP are presented in Table A2 in the Appendix.

Significant community level variations were observed in the model. This indicates that individuals with the same characteristics from different communities may show different practice of couple communication regarding family planning. The odds of couple communication are higher when husband approves of family planning. A similar result is evident for wives' approval of family planning. For current users of contraceptives the likelihood of family planning discussion is higher than their counterparts (Model 3 in Table 4).

Couple communication is significantly high among comparatively young husbands. This is also evident for young wives. The likelihood of couple communication regarding family planning is high among couples who have more living children when adjusted for other variables.

Barisal division has been found to have higher odds of couple communication regarding FP than Sylhet division. The same model was fitted after changing the reference divisions

indicates that Chittagong and Khulna are also significantly different from Barisal division with lower odds (result not shown in the table). Urban couples were found to discuss family planning less than rural couples when controlled for other variables. This result contradicts with the literature that described the opposite result and hence requires further investigation. Likelihood of discussion of family planning matters is high when both the partners in a couple are educated. Husbands in a couple who have access to newspaper once a week have higher odds of family planning discussion within the couple.

Current use of FP methods by husbands

Table 5 shows the regression estimates of the effects of different socio-economic and demographic variables on current use of FP methods by husbands. The response variable has been coded as: currently using FP methods=1, not using any method=0. The distribution of different variables considered for the model fitting by current use of FP by husbands are presented in Table A3 in the appendix.

Significant community variation is found in the model, which indicates that individual from different community with similar characteristics will show different influence on current use status of FP of the respondent. Husbands approving of FP have higher odds of being current users of FP than their counterparts. Couple communication regarding FP positively influences the current use status of husbands, i.e., husbands who use to discuss FP with their wives are more likely to use FP currently.

Husbands with marital duration 5-10 years are significantly less likely to use contraceptives currently than those with marital duration 11 years or more. This may be due to that the later group has already fulfilled their fertility goals and hence more likely to use contraceptives currently. Husbands who have no children have lower odds of using contraceptives than those who have 5 or more children, whereas, husbands having 3-4 children have significantly higher odds of using contraceptives currently.

Husbands from Sylhet division have significantly lower odds of using contraceptives currently than other divisions. Same model with different reference divisions suggest that

husbands from Dhaka and Chottagong divisions have significantly lower odds of being current users of FP than husbands from Rajshahi, Khulna and Barisal divisions (not shown in table). Husbands residing in urban areas are significantly more likely to use contraceptives currently than the rural husbands.

Husbands having education up to primary level or less are less likely to use contraceptives currently than those who have education higher than secondary level. Husbands' access to TV has positive influence on the husbands' current use status of FP.

Two level random intercept binary logistic regressions were also fitted to identify the significant determinants of husbands' current use of female methods against non-use (Model 1, Table 6) as well as husbands' current use of male methods against non-use (Model 2, Table 6). All the variables considered for modelling current use of FP (Model 3, Table 5) have been considered along with wife's age, wife's education and their access to mass media. Variables that are significant in any of the models (Model 1 and Model 2 in Table 6) are kept in both the models for comparison purpose even if they are not significant in the other model. Models are also controlled for divisions and area of residence irrespective of their significance in the models for sampling reasons.

Significant community level variations are found in the model (Model 1, Table 6). Husbands approving of FP are more likely to report current use of female methods within couple when adjusted for other variables. This is similar for wives' approval of FP. Couple communication positively influences the husbands to practice female methods currently within couple.

Husbands aged less than 25 years have higher odds of reporting female method use within couple than those aged 40 years and above. Husbands with wives aged less than 20 years reported less use of female methods within couple than those who have wives aged 35 years and above. Husbands having no children are less likely to use female methods within couple, whereas, husbands having 3-4 children have higher odds of using female methods than husbands those have 5 or more children.

Husbands from Sylhet division have significantly lower odds of using female methods than husbands from other divisions. Husbands whose wives have access to newspapers are less likely to use female methods currently within couple than their counterparts. This may be associated with increased awareness regarding the side effects of female methods learnt from newspapers among wives and consequently among husbands. Husbands with wives having access to TV are more likely to report currently using female methods within couple. This may be due to the access to TV adverts on female methods. Note that in Bangladesh most of the female methods are in the list of TV adverts and for obvious reasons these adverts never disclose the possible side effects of the methods.

Significant community effect has been observed in case of current use of male methods (Model 2, Table 6). Husbands who approve of FP are more likely to use male methods currently than their counterparts. When husbands discuss FP issues with their wives they are more likely to use male methods.

Among the husbands whose wives are younger than 35 years, current use of male methods are significantly lower than the counterparts. Husbands with no children are significantly less likely to use any male method than the husbands with 5 or more children.

Husbands from Barisal, Khulna and Rajshahi divisions have higher odds of using male methods than the husbands from Sylhet division. Husbands with education higher than secondary level are more likely to use male methods. Husbands with primary educated wives are less likely to use male methods than those with wives having higher than secondary education.

Conclusion

Men's involvement in family planning programme has been identified as the main step toward better outcomes of the ongoing programme by the national and international policy planners. This article addressed men's involvement in family planning in terms of their approval of, couple communication regarding and current use of family planning. Men's involvement in FP is still not satisfactory in terms of couple communication and use of male methods. Even though men's approval of family planning seems reasonably high (85%), men are far behind than their wives (95%), which is again variable in different subgroups of population. Fifty percent of the couples do not discuss family planning matters among themselves. This might indicate an adverse situation when women are alone in facing any side effects or complications with their current methods. Lack of couple communication further highlights that men may be less involved in other reproductive health activities, as without being informed men are less likely to offer help in this regard. Current use of any contraceptive is observed among 65.1% of men. Male method use is only 9.5% (condom, male sterilization and withdrawal) which rose up to 19.1% while considering periodic abstinence. Regression analyses identified some important determinants of men's approval of, couple communication regarding and current use of FP that may be of interest to the policy planners and programme managers. This study further extended its analysis to understand the determinants that are influential toward female as well male method use, which is believed to help formulating policies to reduce the gender gap of contraceptive use. Some divisional variation as well as community variation was found in the analysis which requires administrative action for the successful involvement of men in the ongoing family planning programme.

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Figure 1. Conceptual framework of the relationship among approval of, couple communication regarding and current use of FP
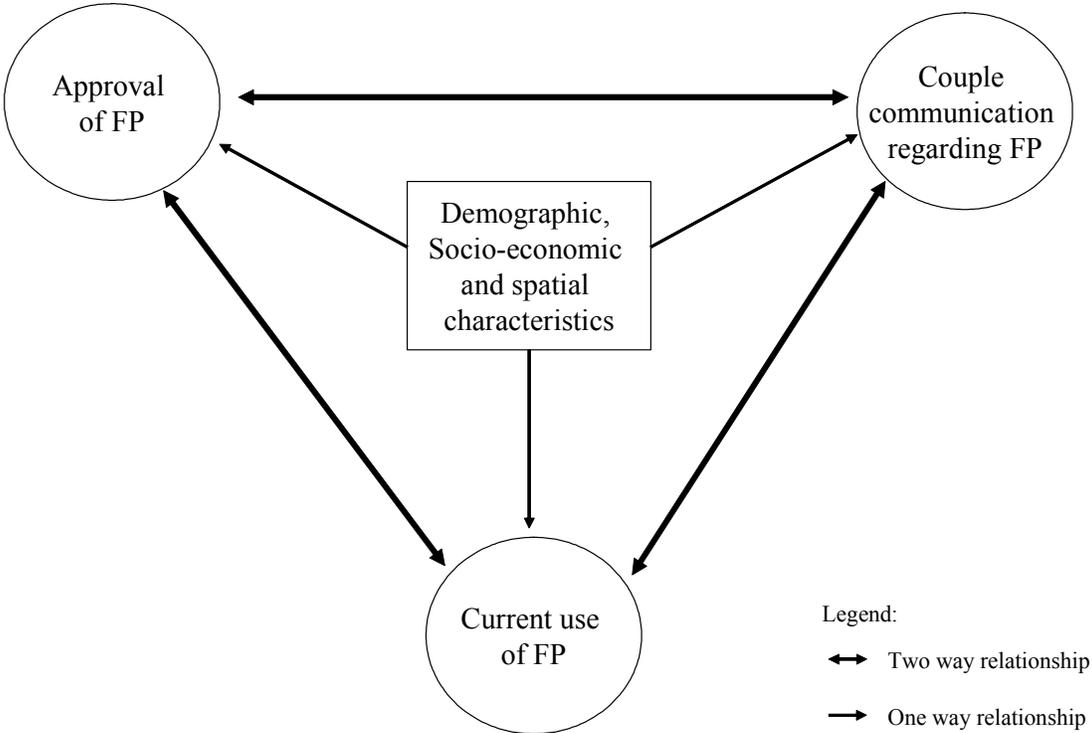
Table 1 FP attitude and practice by husbands

Characteristics	N	%
Husband approves FP[*]		
Approves	1907	84.9
Disapproves	246	10.9
Don't know	96	4.2
Couple communication regarding FP[**]		
Never	1134	50.4
Once or twice	934	41.5
More often	181	8.1
Current use of FP		
Currently using	1463	65.1
Not currently using	786	34.9
Total	2249	100

* wives' perception of husbands' approval of FP
** wives' responses

Table 2 Current use of contraceptives by husbands

Method	N	%
Pill	658	29.3
IUD	33	1.5
Injections	168	7.4
Condom	146	6.5
Female sterilization	150	6.7
Male sterilization	14	0.6
Periodic abstinence	215	9.6
Withdrawal	53	2.4
Norplant	6	0.3
Lactational amenorrhea	3	0.1
Other	17	0.7
Non-use	786	34.9
Total	2249	100.0

Table 3 Two level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on approval of FP by husbands, Bangladesh, 1999-2000

Independent Variables	Model 1 β	Model 1 SE	Model 2 β	Model 2 SE	Model 3 β	Model 3 SE
Intercept	-2.615***	.298	-2.868***	.319	-2.121***	.463
Wife approves of FP† *(r: No)*						
Yes	3.528***	.296	3.481***	.296	3.447***	.302
Discuss FP with partner†‡ *(r: No)*						
Yes	1.633***	.177	1.651***	.178	1.576***	.178
Currently using FP *(r: No#)*						
Yes	1.129***	.145	1.134***	.148	1.005***	.151
Age of husband *(r: 40 and above)*						
Less than 25	NA	-	-.517	.361	-.329	.370
25-39	NA	-	-.413**	.176	-.309*	.180
Number of living children *(r: 5 and more)*						
0	NA	-	.818***	.300	.475	.307
1-2	NA	-	.778***	.223	.470**	.229
3-4	NA	-	.426**	.204	.300	.206
Division *(r: Sylhet)*						
Barisal	NA	-	NA	-	.502	.315
Chittagong	NA	-	NA	-	.167	.247
Dhaka	NA	-	NA	-	.668***	.241
Khulna	NA	-	NA	-	.530**	.264
Rajshahi	NA	-	NA	-	.745***	.259
Area of residence *(r: Rural)*						
Urban	NA	-	NA	-	-.037	.170
Husband's education *(r: Higher)*						
No Education	NA	-	NA	-	-1.309***	.348
Primary	NA	-	NA	-	-1.240***	.346
Secondary	NA	-	NA	-	-.910**	.356
Husband's access to TV *(r: No)*						
Yes	NA	-	NA	-	.260*	.156
Random effect variance	.078	.125	.043	.122	.000	.000

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01

† based on women responses; ‡ same as couple communication regarding FP

Lactational Amenorrhea is considered as non-use of FP. It is practiced by 0.1% of the respondents

SE = Standard Error; NA= not considered in the model; r = reference category

Table 4 Two level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on couple communication, Bangladesh, 1999-2000

Independent Variables	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Intercept	-2.913***	.334	-3.369***	.348	-3.231***	0.389
Husband approves of FP† *(r: No)*						
Yes	1.652***	.178	1.721***	.182	1.653***	0.183
Wife approves of FP† *(r: No)*						
Yes	1.041***	.346	.896**	.349	0.889***	0.352
Currently using FP *(r: No#)*						
Yes	.685***	.099	.729***	.105	0.684***	0.107
Age of husband *(r: 40 and above)*						
Less than 25	NA	-	.673**	.268	0.721***	0.270
25-39	NA	-	.478***	.131	0.499***	0.132
Age of wife† *(r: 35 and above)*						
Less than 20	NA	-	.649***	.214	0.704***	0.216
20-34	NA	-	.700***	.136	0.744***	0.138
Number of living children *(r: 5 and more)*						
0	NA	-	-.768***	.241	-0.959***	0.249
1-2	NA	-	-.254	.161	-0.397**	0.167
3-4	NA	-	-.278*	.147	-0.340**	0.149
Division *(r: Sylhet)*						
Barisal	NA	-	NA	-	0.426*	0.245
Chittagong	NA	-	NA	-	0.088	0.215
Dhaka	NA	-	NA	-	0.276	0.202
Khulna	NA	-	NA	-	0.121	0.213
Rajshahi	NA	-	NA	-	0.264	0.209
Type of Place of residence *(r: Rural)*						
Urban	NA	-	NA	-	-0.295**	0.118
Couple education‡ *(r: Both educated)*						
Both illiterate	NA	-	NA	-	-0.366***	0.140
Only husband educated	NA	-	NA	-	-0.418***	0.136
Only wife educated	NA	-	NA	-	-0.308*	0.170
Husband's access to newspaper *(r: No)*						
Yes	NA	-	NA	-	0.301**	0.125
Random effect variance	.163**	.064	.161**	.066	0.133**	0.064

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01.
† based on wives' responses; ‡ calculated from responses from husbands and wives
# Lactational Amenorrhea is considered as non-use of FP. It is only 0.1 percent of the respondents
SE = standard Error; NA= not considered in the model; r = reference category

Table 5 Two level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on current use# of FP by husbands, Bangladesh, 1999-2000

Independent variables	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Intercept	-.684***	.126	-.651	.158	-.928***	.281
Husband approves of FP† (*r: no*)						
Yes	1.196***	.137	1.231***	.141	1.089***	.143
Discuss FP with partner†‡ (*r: no*)						
Yes	.729***	.102	.762***	.106	.704***	.106
Marital duration (*r: 11 and above*)						
Less than 5	NA	-	-.288	.187	-.208	.187
5-10	NA	-	-.612***	.146	-.548***	.146
Number of children (*r: 5 and above*)						
0	NA	-	-1.227***	.258	-1.514***	.263
1-2	NA	-	.284*	.165	.050	.168
3-4	NA	-	.377**	.149	.274*	.150
Division (*r: Sylhet*)						
Barisal	NA	-	NA	-	.908***	.262
Chittagong	NA	-	NA	-	.431*	.224
Dhaka	NA	-	NA	-	.445**	.211
Khulna	NA	-	NA	-	1.049***	.228
Rajshahi	NA	-	NA	-	1.066***	.233
Area of residence (*r: rural*)						
Urban	NA	-	NA	-	.317**	.132
Husband's education (*r: higher*)						
No education	NA	-	NA	-	-.506***	.185
Primary	NA	-	NA	-	-.406**	.183
Secondary	NA	-	NA	-	-.247	.186
Husband's access to TV (*r: no*)						
Yes	NA	-	NA	-	.243**	.112
Random effect variance	.375***	.087	.407***	.093	.247***	.081

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01;
† based on wives' responses; ‡ same as couple communication regarding FP
# Lactational Amenorrhea is considered as non-use of FP. It is only 0.1 percent of the respondents
SE = standard Error; NA= not considered in the model; r = reference category

Table 6 Two level random intercept binary logistic regression estimates of the effect of different socio-economic and demographic characteristics on type of current FP method by husbands, Bangladesh, 1999-2000

Independent variables	Female method VS non-use		Male method VS non-use	
	β	SE	β	SE
Intercept	-2.579***	.510	-.231	.501
Husband approves of FP† (r: no)				
Yes	.986***	.175	1.000***	.244
Wife approves of FP† (r: no)				
Yes	1.169***	.344	-.494	.324
Discuss FP with partner†‡ (r: no)				
Yes	.785***	.118	.585***	.149
Age of husband (r: 40 and above)				
Less than 25	.743**	.338	.356	.398
25-39	-.003	.156	-.094	.205
Age of wife† (r: 35 and above)				
Less than 20	-.587**	.255	-.576*	.315
20-34	-.223	.163	-.442**	.210
Number of children (r: 5 and above)				
0	-2.300***	.327	-.572*	.346
1-2	-.047	.193	.083	.244
3-4	.299*	.172	.306	.220
Division (r: Sylhet)				
Barisal	1.087***	.294	.779**	.358
Chittagong	.644**	.250	-.009	.312
Dhaka	.486**	.238	.332	.288
Khulna	1.092***	.256	.894***	.304
Rajshahi	1.281***	.248	.577*	.307
Area of residence (r: rural)				
Urban	.189	.152	.216	.191
Husband's education (r: higher)				
No education	-.164	.267	-1.144***	.304
Primary	-.063	.260	-.896***	.293
Secondary	.005	.241	-.541**	.259
Wife's education† (r: higher)				
No education	-.008	.368	-.490	.399
Primary	-.263	.358	-.689**	.384
Secondary	.113	.323	-.468	.332
Wife's access to newspaper† (r: no)				
Yes	-.392*	.237	-.249	.264
Wife's access to TV† (r: no)				
Yes	.427***	.139	.148	.177
Random effect variance	.251***	.093	.426***	.142

Note: Level of Significance: *p<.10, ** p<.05, *** p<.01;

† based on wives' responses; ‡ same as couple communication regarding FP; SE = standard Error; r = reference category

Appendix

Table A1 Wives' responses on husbands FP approval by selected demographic and socio-economic characteristics of husbands, Bangladesh, 1999-2000 (%)

Background characteristics	N	Disapprove	Approve	Don't know
Husbands' age (p=.0001)				
15-19	16	0.0	81.3	18.7
20-24	110	3.6	87.3	9.1
25-29	295	9.2	87.8	3.0
30-34	366	9.6	87.2	3.2
35-39	457	13.1	84.2	2.7
40-44	363	9.6	85.4	5.0
45-49	304	9.9	85.9	4.2
50-54	195	13.3	84.1	2.6
55-59	141	19.1	70.9	10.0
Husbands' education (p=.0001)				
No education	740	13.6	79.6	6.8
Primary	666	14.1	82.0	3.9
Secondary	528	7.8	89.8	2.4
Higher	313	2.6	95.2	2.2
Area of residence (p=.008)				
Urban	689	8.6	88.4	3.0
Rural	1558	11.9	83.3	4.8
Division (p=.0001)				
Barisal	198	10.6	87.9	1.5
Chittagong	389	15.4	80.0	4.6
Dhaka	582	7.9	88.0	4.1
Khulna	403	7.9	87.6	4.5
Rajshahi	460	7.0	89.1	3.9
Sylhet	215	24.6	68.4	7.0
Husbands' religion* (p=.0001)				
Islam	1923	11.4	84.6	4.0
Hinduism	290	7.6	85.9	6.5
No. of living children (p=.0001)				
0	201	6.5	81.6	11.9
1	415	7.0	88.0	5.0
2	523	9.0	88.9	2.1
3	410	11.0	87.0	2.0
4	290	11.7	84.8	3.5
5	202	14.8	80.2	5.0
6+	206	22.3	71.8	5.9

...Contd...

Background characteristics	N	Disapprove	Approve	Don't know
Husbands' occupation (*p*=.001)				
Unemployed	77	7.8	87.0	5.2
Professional/Technical/Managerial	691	7.8	89.6	2.6
Agriculture self Employed	581	14.3	79.5	6.2
Agriculture Employee	159	13.2	81.1	5.7
Skilled Manual	283	9.2	86.6	4.2
Unskilled Manual	456	11.8	84.4	3.7
Currently using FP as reported by husbands (*p*=.0001)				
Yes	1463	5.9	91.7	2.4
No	784	20.1	72.1	7.8
Wife approves of FP† (*p*=.0001)				
Yes	2127	7.3	88.9	3.8
No	120	73.3	13.3	13.4
Discuss FP with partner†‡ (*p*=.0001)				
Yes	1114	3.8	95.7	0.5
No	1133	17.8	74.2	8.0
Husbands' access to Radio (*p*=.039)				
Yes	1168	9.8	86.6	3.5
No	1075	12.0	82.9	5.1
Husbands' access to TV (*p*=.0001)				
Yes	1252	7.5	89.1	3.4
No	994	15.1	79.6	5.3
Husbands' access to Newspaper (*p*=.0001)				
Yes	662	6.9	91.1	2.0
No	1583	12.5	82.3	5.2
Marital duration (years) (*p*=.0001)				
<5	391	5.4	87.7	6.9
5-10	473	9.9	87.5	2.5
11 and above	1383	12.7	83.2	4.1
Age difference between Spouses§ (Years) (*p*=.683)				
<3	144	10.4	86.1	3.5
3-7	730	9.6	85.9	4.5
8 and above	1373	11.6	84.2	4.2
Total (%)		10.9	84.9	4.2

* 1.5 % of the respondents are from other religion and are not shown in the table.

§ calculated from direct responses from husbands and wives regarding their ages.

† based on wives' responses; ‡ same as couple communication regarding FP

Note : Row sum to 100 %. Since there are 2 or 4 missing values none of the counts sum to 2249 across the categories of each variable. *p*-values are based on chi-square tests.

Table A2 Couple communication by demographic and socio-economic characteristics of husbands, wives and couples, Bangladesh, 1999-2000 (%)

Background Characteristics	N	Discussion of FP with partner		
		Never	Once or twice	More often
Husband's Age (*p*=.0001)				
15-19	16	43.8	56.3	0.0
20-24	110	42.7	48.2	9.1
25-29	295	43.4	46.4	10.2
30-34	366	44.8	43.7	11.5
35-39	458	42.1	49.8	8.1
40-44	363	50.4	41.3	8.3
45-49	304	57.2	35.5	7.2
50-54	195	66.7	29.7	3.6
55-59	141	75.9	22.0	2.1
Wife's age[†] (*p*=.0001)				
10-14	36	58.3	36.1	5.6
15-19	311	46.3	44.7	9.0
20-24	401	42.4	46.6	11.0
25-29	455	41.5	48.4	10.1
30-34	397	49.6	43.1	7.3
35-39	276	52.9	39.1	8.0
40-44	222	67.1	30.6	2.3
45-49	150	78.0	18.7	3.3
Division (*p*=.0001)				
Barisal	199	42.7	46.2	11.1
Chittagong	389	54.8	39.6	5.7
Dhaka	582	48.6	41.4	10.0
Khulna	403	49.1	42.9	7.9
Rajshahi	460	47.0	45.0	8.0
Sylhet	215	64.2	31.2	4.6
Area of residence (*p*=.207)				
Urban	689	50.8	39.8	9.4
Rural	1559	50.2	42.3	7.4
Husband's Education (*p*=.0001)				
No education	740	56.6	38.8	4.6
Primary	666	51.8	41.4	6.8
Secondary	529	45.6	44.4	10.0
Higher	313	40.9	43.5	15.7
Wife's education[†] (*p*=.0001)				
No education	951	58.4	37.6	4.0
Primary	641	48.8	43.4	7.8
Secondary	526	41.8	45.6	12.5
Higher	130	34.6	44.6	20.8
Couple education[§] (*p*=.0001)				
Both illiterate	510	58.8	37.3	3.9
Only husband educated	441	57.8	38.1	4.1
Only wife educated	230	51.7	42.2	6.1
Both educated	1067	43.0	44.9	12.1

…Contd….

Background Characteristics	N	Discussion of FP with partner		
		Never	**Once or twice**	**More often**
Religion[#] (*p*=.791)				
Islam	1924	50.2	41.8	8.0
Others	324	51.9	39.8	8.3
No. of living children (*p*=.0001)				
0	201	59.7	31.3	9.0
1	415	40.5	47.5	12.0
2	523	45.7	44.9	9.4
3	410	50.2	42.0	7.8
4	290	54.1	40.3	5.5
5	203	52.7	43.3	3.9
6+	206	66.0	30.1	3.9
Husband approves of FP[†] (*p*=.0001)				
Disapproves	244	82.8	15.6	1.6
Approves	1907	44.1	46.6	9.3
Don't know	96	93.8	6.3	0.0
Wife approves of FP[†] (*p*=.0001)				
Disapproves	120	90.0	10.0	0.0
Approves	2128	48.2	43.3	8.5
Joint approval of FP[†] (*p*=.0001)				
None approves	104	94.2	5.8	0.0
Either of the couple approves	253	80.6	17.8	1.6
Both approves	1891	43.9	46.7	9.4
Husband's Occupation (*p*=.356)				
Unemployed	77	54.5	39.0	6.5
Professional/Technical/Managerial	691	48.0	41.4	10.6
Agriculture self Employed	581	52.2	41.0	6.9
Agriculture Employee	159	50.3	42.8	6.9
Skilled Manual	283	49.1	42.4	8.5
Unskilled Manual	457	51.9	42.0	6.1
Currently using FP (*p*=.0001)				
Yes	1460	42.6	47.5	9.9
No	788	64.8	30.6	4.6
Marital Duration (years) (*p*=.0001)				
<5	391	43.0	45.3	11.8
5-10	473	43.8	45.2	11.0
11 and above	1384	54.8	39.2	6.0
Age Difference Between Spouses (Years)[§] (*p*=.590)				
<3	144	50.0	43.1	6.9
3-7	731	50.1	43.0	7.0
8 and above	1373	50.7	40.6	8.7

...contd...

Background Characteristics	N	Discussion of FP with partner		
		Never	**Once or twice**	**More often**
Husbands' Access to Newspaper (*p*=.0001)				
Yes	662	43.2	43.7	13.1
No	1586	53.4	40.7	5.9
Husbands' Access to TV (*p*=.0001)				
Yes	1252	46.7	42.8	10.5
No	996	55.0	40.0	5.0
Husbands' Access to Radio (*p*=.112)				
Yes	1168	48.3	43.4	8.3
No	1080	52.7	39.5	7.8
Total (%)		50.4	41.5	8.1

§ created from direct responses from husbands and wives
† based on direct responses from wives
# for 34 cases religion of husbands and wives are not the same
Note: Row sum to 100 %. Since there one or two missing values none of the counts sum to 2249 across the categories of each variables. *p* values are based on chi-square tests.

Table A3 Men's current use of contraceptives by demographic and socio-economic characteristics

Characteristics	N	Currently using	Not using[#]
Husband's age (p=.0001)			
15-19	16	68.8	31.2
20-24	110	59.1	40.9
25-29	295	55.3	44.7
30-34	366	61.2	38.8
35-39	457	68.6	31.4
40-44	363	69.1	30.9
45-49	304	75.0	25.0
50-54	195	68.7	31.3
55-59	141	48.9	51.1
Division (p=.0001)			
Barisal	198	70.4	29.6
Chittagong	389	60.7	39.3
Dhaka	582	61.3	38.7
Khulna	403	73.3	26.7
Rajshahi	460	72.4	27.6
Sylhet	215	45.6	54.4
Area of residence (p=.0001)			
Urban	689	70.4	29.6
Rural	1558	62.5	37.5
Husband's education (p=.0001)			
No education	740	58.4	41.6
Primary	666	62.9	37.1
Secondary	528	69.8	30.2
Higher	313	76.4	23.6
Husband's religion[*] (p=.294)			
Islam	1923	64.7	35.3
Hinduism	290	65.2	34.8
No. of living children (p=.0001)			
0	201	32.8	67.2
1	415	61.3	38.7
2	523	73.2	26.8
3	410	72.7	27.3
4	290	71.0	29.0
5	202	68.0	32.0
6+	206	55.3	44.7

Contd…

Characteristics	N	Currently using	Not using[#]
Husband's access to newspaper (*p*=.0001)			
No	662	62.0	38.0
Yes	1583	71.9	28.1
Husband's access to TV (*p*=.0001)			
No	1252	59.9	40.1
Yes	994	69.0	31.0
Husband's access to radio (*p*=.014)			
No	1168	62.3	37.7
Yes	1075	67.2	32.8
Marital duration (*p*=.0001)			
Less than 5	391	55.2	44.8
5-10	473	60.5	39.5
11 and above	1383	69.2	30.8
Husband approves of FP[†] (*p*=.0001)			
Yes	1907	70.2	29.8
No	342	35.4	64.6
Wife approves of FP[†] (*p*=.0001)			
Yes	2129	66.7	33.3
No	120	33.3	66.7
Discussion of FP with partner[†‡] (*p*=.0001)			
Yes	1115	75.2	24.8
No	1134	54.9	45.1
Husband's occupation (*p*=.001)			
Unemployed	77	62.3	37.7
Professional/technical	691	71.4	28.6
Agriculture self-employed	581	62.3	37.7
Agriculture employed	159	57.2	42.8
Skilled manual	283	63.6	36.4
Unskilled manual	456	62.4	37.6
Total	2249	65.0	35.0

including lactational amenorrhea
* 1.5% of the respondents are from other religions that are not presented in the table.
† based on wives' responses; ‡ same as couple communication regarding FP
Note: Row sum to 100 %. Since there are 2 or 4 missing values none of the counts sum to 2249 across the categories of each variable. *p*-values are based on chi-square tests.