# Role of Interpersonal Communication in Contraceptive Use Behaviour : Insights and Evidences from Bangladesh Demographic Health Survey, 2011


## Abstract

**Objectives:** This study tries to explore the role of exposure to mass media and interpersonal communication in predicting current use of contraception in Bangladesh.

**Materials & Methods:** Bivariate and Multivariate analyses were carried out on the Bangladesh Demographic Health Survey, 2011 data using SAS software to explore the association between communication and current use of contraception.

**Results:** After adjusting for related socio-economic and demographic factors, mass media does not seem to have any role in predicting contraceptive use behavior, while the findings show that interpersonal communication (Prevalence Ratio [PR]: 1.0984, 95% Confidence Interval [CI] 1.0801-1.1170) is a strong positive predictor of current contraceptive use.

**Conclusions:** It is a well-known fact that mass media performs only the knowledge function, while interpersonal communication performs an additional function of persuasion (Rogers, 1971). This analysis corroborates this statement that the role of interpersonal communication is quite important in predicting contraceptive use.



**Keywords**: Mass Media, Interpersonal Communication, Bangladesh, Family Planning, Current use of Contraception


## Introduction

One of the gravest problem, that many countries in the early stages of demographic transition are facing is the burgeoning population problem. To address this issue, National family planning programs, which began in the mid-20th century have evolved rapidly to meet the information and service needs of target groups. All these programs relied heavily upon communication as a means of promoting behaviour change. Communication is the process of exchanging information, usually via a common protocol. Communication can be interactive, transactive, intentional, or unintentional; it can also be verbal or non-verbal.

In view of the age-old traditional KAP gap between knowledge and use of contraception, efforts to make people aware, and persuade and promote use of contraception have been underway. World-wide communications campaigns have been shown to increase contraceptive use, but it remains unclear whether exposure to messages about contraception through multiple media sources has a greater impact than exposure through one medium. But a lot needs to be known about the comparative effectiveness of different kinds and channels of media, like whether, mass media has a greater impact or interpersonal communication has. So, a need was felt to study the comparative impact of both and to find out in which context it is so. Hence, this study tries to understand the differential impact of exposure to mass media and interpersonal communication on contraceptive use behavior in Bangladesh, which is known to have a successful family planning program.

**A socio-demographic profile of the country:** Bangladesh is administratively divided into 7 divisions and 64 districts. It ranks 8$^{th}$ in population among the all countries in the world at 149.7 million (census 2011). The Total Fertility Rate (TFR), which is 2.3 lifetime births per woman and the Crude Birth Rate (CBR) is 22.6 births per mid-year population, while the Crude Death Rate (CDR) is 6 deaths per 1000 mid-year population. The life expectancy at birth is 68 years in Bangladesh (UN Population Division, 2012). The Infant Mortality Rate (IMR) is 43 infant deaths per thousand live births and the Maternal Mortality Ratio (MMR) is 240 maternal deaths per lakh live births. The religious composition of the country is characterized by 98.6 per cent Muslims, 9.3 per cent Hindus and 0.2 per cent from other religions. Table 1, provides a brief demographic profile of the country.

**Tab1e 1 here**

**Family Planning Scenario in Bangladesh:** The family welfare programme was launched in Bangladesh (then East Pakistan) in the early 1950s through the voluntary efforts of social and medical workers. The government, recognizing the urgency of moderating population growth, adopted family planning as a government-sector program in 1965. In 1976, the government declared the rapid growth of the population as the country's number one problem and adopted a broad-based, multi-sectoral family planning program along with an official population policy (GOB, 1994:9). In the country, the current contraceptive use has increased substantially from 8 percent in 1975 to 61 percent in 2011 (BDHS, 2011). The Total Fertility Rate had a more than 60 per cent decline in 36 years from 6.3 births per woman (Bangladesh Fertility Survey, 1975) in 1975 to 2.3 in 2011. The success of the Bangladesh family planning program has drawn attention of professionals in the population and planning field. With regards to the use of any modern method, it has increased by 15.9 per cent from 36.2 to 52.1 per cent during the same period. The TFR has also declined from 3.4 births per woman to 2.3. By contraceptive method mix, it is found that among the spacing methods, oral pills and condoms have gained, while the use of intrauterine device (IUD) has declined. Among the terminal methods, female sterilization has declined, while male sterilization is stagnant.

**Tab1e 2 here**

**Literature Review**

There is a host of evidence regarding the influence of communication on contraceptive use behaviour. Some of these are reviewed as follows: Storey et al. (1999) in a study found increased health worker interpersonal interaction skills, improved quality of client-provider interactions, increased client self-efficacy in dealing with health workers, improved client attitudes toward health services and toward the practice of family planning, increased adoption of family

planning, and increased family planning service utilization, all attributable to radio communication. Westoff and Bankole (1999) in a study of mass media and reproductive behaviour in Pakistan, India and Bangladesh have shown that in Pakistan, 34 of the 59 multivariate results in both surveys demonstrate significant media effects. In India, 26 of 32 tests have shown significant effects and in Bangladesh, 39 out of 64 have shown significant results for the two surveys; 1992-93 and 1996-97 survey. A sample of 871 currently married urban Bangladeshi women was used to assess the impact of mass media family planning programmes on current contraceptive use. The analyses suggested that radio had been playing a significant role in spreading family planning messages among eligible clients; 38 percent of women with access to a radio had heard of family planning messages while the figures for TV and newspaper were 18.5 percent and 8.5 percent respectively. Education, number of living children and current contraceptive use were important predictors of exposure to any mass media family planning messages. There was a negative relationship between breast-feeding and the current use of contraception indicating a low need for contraception among women who were breast-feeding (Kabir and Islam, 2000). Sohail and Rossem (2002) have also shown that mass media exposure significantly increased the likelihood of that a man or a woman would discuss use of the female condom in the future in Tanzania. It has also been demonstrated by them that though peer educators and providers had a limited coverage, they had a stronger impact than mass media on individual's intention to use a female condom. The contacts with peer educators and providers can be considered as similar to interpersonal communicators, who can perform both the knowledge and persuasion function of development communication.

**Study Objectives**

The objectives of the study are:

- To study the relationship between different socio-demographic characteristics, mass media, interpersonal communication and contraceptive behaviour.
- To explore the comparative role of mass media like; exposure to family planning messages in newspaper, radio and television and interpersonal communication on contraceptive behaviour.

**Materials and Methods**

The 2011 Bangladesh Demographic and Health Survey (BDHS) is the sixth DHS undertaken in Bangladesh, following those implemented in 1993-94, 1996-97, 1999-2000, 2004, and 2007. The main objectives of the 2011 BDHS are to provide information to meet the monitoring and evaluation needs of health and family planning programs and provide program managers and policy makers involved in these programs with the information they need to plan and implement future interventions. The 2011 BDHS was conducted under the authority of the National Institute of Population Research and Training (NIPORT) of the Ministry of Health and Family Welfare. The survey was implemented by Mitra and Associates, a Bangladeshi research firm located in Dhaka. ICF International of Calverton, Maryland, USA, provided technical assistance to the project as part of its international Demographic and Health Surveys program (MEASURE DHS). Financial support was provided by the U.S. Agency for International Development (USAID). The weighted sample of 16,635 currently married women in the reproductive age of 15-49 years has been used in this paper. The data was analysed using SAS 9.1 software (SAS Institute, Inc., Cary, North Carolina). The p value of 0.05 was considered significant. In addition to the bivariate analysis, multivariate analysis was performed to control for the effects of other correlated factors, as results from bivariate analyses could be thoroughly misleading, for example, contraceptive use could be higher in urban areas not because the type of place of

residence has something to do with contraceptive use, but because urbanites are more educated and have a higher standard of living. So, in order to arrive at the true significance of each factor independently keeping all other at their mean values, it is necessary to control or nullify the effects of other factors. In this way, multivariate analyses helps to separate out the independent effect of a factor from the effects of other correlated factors or covariates. As the dependent variable is categorical and dichotomous in nature with two categories; non-use=0 and use=1, log binomial regression was carried out to explore the effect of communication on contraception. The log-binomial model is similar to logistic regression in assuming a binomial distribution of the outcome (Zhang and Yu, 1998).

**Results**

**Predictors used in the model:** Background level and individual level socio-demographic and socio-economic covariates, which are expected to influence the use of contraceptive behavior have been described here. The predictors used in the model are the place of residence, regions of the country, religion, age group, total children ever born, number of sons dead, number of daughters dead, education of the respondent and her spouse (husband), current work status of the respondent and her husband, household assets used in the construction of wealth quintile, exposure to mass media and interpersonal communication. The percentage distribution of the covariates or predictors has been described in Table 3. The sample is 74.20 percent rural. The sample comprises of 89.66 per cent muslims and 9.57 per cent hindus. A little more than a fourth of the women are illiterate (26.32 per cent), while a little less than a third (30.08 per cent) of their spouses are illiterate. About a third each, belong to each ten year age groups of 15-24 years, 25-34 years and 35-49 years. More than half of the respondents have two or more than two children. More than eight out of ten had their sons dead and about nine out of ten had their daughters dead.

A little more than one out of ten of the respondents were working currently, while more than nine out of ten of their spouse were reported to be working currently. A negligible per cent of respondents had exposure to family planning messages in the newspaper and radio, while about one fourth had watched family planning messages on the television.

**Table 3 here**

Table 4 provides cross tabulations of the different socio-demographic variables along with the communication variables with the dependent variable, namely the current use of contraception. Chi-square test was applied to test the significance of the association between the proportions. It was observed that the differentials of current use of contraception by most of the socio-demographic variables like; place of residence, seven regions in the country, religion, education of the husband, age of the respondent, total children ever born, sons and daughters dead, respondent's current working status and respondent's exposure to interpersonal communication. The variables, which were not significant were; education of the women respondent, wealth quintile and exposure to mass media like; newspaper, radio and television.

**Tab1e 4 here**

**Results of the Logistic Regression**

Table 5 shows the prevalence ratios from the multivariate log binomial model of logistic regression of the likelihood of current contraceptive use for mass media and interpersonal communication adjusting for probable socio-demographic and economic confounders. It was observed that exposure to interpersonal communication significantly predicts the likelihood of current use of contraception after adjusting for the socio-demographic and socioeconomic

covariates of place of residence (rural and urban), region, Respondent's and her Husband's education, wealth quintile, working status, total children ever born, number of sons and daughters dead.

**Tab1e 5 here**

**Conclusions**

This study shows that interpersonal communication is a significant predictor of current use of contraception. The persuasion function of communication may have a greater role to play here than merely the knowledge function. Knowledge provided by mass media channels may make people aware and initiate behaviour change, but only among those who are already motivated to accept the method. But the persuasion function may be more relevant in case of those who are not so motivated. From the policy and intervention point of view for the design of an effective communication strategy, both channels of media should be given adequate importance with greater emphasis on segmenting the target audience on the basis of their level of motivation. In case of those who are less motivated interpersonal media should be employed, while in case of relatively higher motivated ones, mass media can suffice. On one hand, interpersonal communication is more effective than mass media but on the other it has its own shortcomings of being too costly. In a developing country like Bangladesh, it may not be feasible and advisable to go for large scale interpersonal communication in the form of field workers, outreach workers, counselors, but nevertheless, it has to be considered as one of the significant components of any communication strategy. In such countries, where resource constraints create hindrance in the way of development, multi-sectoral, non-governmental and private-public-partnership could be considered as an option to bring in behaviour change.

## Contributors

MKR conceptualized and did all the analysis and manuscript writing. There is no other author.

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**Table 1 : Socio-Demographic Profile of Bangladesh**

| *Indicators* | *Value* |
|---|---|
| **Administrative Divisions** | 7 divisions and 64 districts |
| Population (Million), Census 2011 | 149.7 |
| Crude Birth Rate (CBR), births per 1000 mid-year population | 22.6 |
| Crude Death Rate (CDR), deaths per 1000 mid-year population | 6 |
| Annual Population Growth Rate (%) | 1.37 |
| Total Fertility Rate (TFR) (births per woman) | 2.3 |
| Infant Mortality Rate (IMR), infant deaths per thousand live births | 43 |
| Maternal Mortality Ratio (MMR) , maternal deaths per lakh live births | 240 |
| Total Life Expectancy at Birth (LEB) (years) | 68.42 |
| Contraceptive Prevalence Rate (CPR) (%) | 61.2 |
| ***Religious Composition*** | |
| Muslims (%) | 89.6 |
| Hindu (%) | 9.3 |
| Other religions (%) | 0.2 |
| Human Development Index Rank (*rank out of 186 countries (Low human development)* | 146th |

**Source:** *BDHS, 2011*
Population : http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/Census2011/Bangladesh_glance.pdf
CDR: http://esa.un.org/wpp/Excel-Data/mortality.htm

**Table 2 : Trends in Family Planning in Bangladesh : 1993-94 to 2011 (%)**

| *Particulars* | *1993-94* | *1996-97* | *1999-00* | *2004* | *2007** | *2011** | *Absolute Change in 2011 over 1993-94* |
|---|---|---|---|---|---|---|---|
| **Total Fertility Rate** | 3.4 | 3.3 | 3.3 | 3.0 | 2.7 | 2.3 | -1.1 |
| ***Current use of Contraception*** | | | | | | | |
| **Any Method** | 44.6 | 49.2 | 53.8 | 58.1 | 55.8 | 61.2 | 16.6 |
| **Any Modern Method** | 36.2 | 41.6 | 43.4 | 47.3 | 47.5 | 52.1 | 15.9 |
| Oral pills | 17.4 | 20.8 | 23.0 | 26.2 | 28.5 | 27.2 | 9.8 |
| IUD | 2.2 | 1.8 | 1.2 | 0.6 | 0.9 | 0.7 | -1.5 |
| Injectables | 4.5 | 6.2 | 7.2 | 9.7 | 7.0 | 11.2 | 6.7 |
| Condom | 3.0 | 3.9 | 4.3 | 4.2 | 4.5 | 5.5 | 2.5 |
| Female sterilization | 8.1 | 7.6 | 6.7 | 5.2 | 5.0 | 5.0 | -3.1 |
| Male sterilization | 1.1 | 1.1 | 0.5 | 0.6 | 0.7 | 1.1 | 0 |
| Implants | na | 0.1 | 0.5 | 0.8 | 0.7 | 1.1 | - |
| Any traditional method | 8.4 | 7.7 | 10.3 | 10.8 | 8.3 | 9.2 | 0.8 |

**refers to currently married women of 15-49 years of age*

*Source: Bangladesh Demographic & Health Surveys, 1993-94, 1996-97, 1999-00, 2004, 2007 and 2011*

**Table 3 : Socio-demographic-economic variables in Bangladesh, 2011**

| Predictors used in the model | Categories | % |
|---|---|---|
| **N** | | **16,335** |
| ***Background – Community Level covariates*** | | |
| **Place of residence** | Rural | 74.20 |
| | Urban | 25.80 |
| **Region** | Barisal | 5.72 |
| | Chittagong | 18.12 |
| | Dhaka | 32.07 |
| | Khulna | 12.00 |
| | Rajsahi | 15.19 |
| | Rangpur | 11.59 |
| | Sylhet | 5.31 |
| ***Background – Individual Level covariates*** | | |
| **Religion** | Followers of Non-Islam | 10.01 |
| | Followers of Islam | 89.99 |
| **Education of the Respondent** | Illiterate | 26.32 |
| | Literate | 73.68 |
| **Education of the Husband** | Illiterate | 30.08 |
| | Literate | 69.92 |
| ***Demographic covariates*** | | |
| **Age group** | 15-24 years | 31.99 |
| | 25-34 years | 34.83 |
| | 35-49 years | 33.18 |
| **Total children ever born** | Have 2 or less than 2 children | 55.71 |
| | Have more than 2 children | 44.29 |
| **Sons dead** | Son is dead | 88.51 |
| | Son is alive | 11.49 |
| **Daughters dead** | Daughter is dead | 89.57 |
| | Daughter is alive | 10.43 |
| ***Socio-economic covariates*** | | |
| **Respondent's Work Status** | Not working currently | 88.42 |
| | Working currently | 11.58 |
| **Husband's Work Status** | Not working currently | 3.86 |
| | Working currently | 96.14 |
| **Wealth Quintile** | Poorest | 17.88 |
| | Poorer | 19.64 |
| | Middle | 20.27 |
| | Richer | 20.78 |
| | Richest | 21.43 |
| **Communication Exposure** | | |
| ***Mass Media*** | | |
| **Newspaper** | No exposure to family planning messages in the Newspaper | 96.95 |
| | Exposure to family planning messages in the | 3.05 |

| | | |
|---|---|---|
| | Newspaper | |
| **Radio** | No exposure to family planning messages on Radio | 97.12 |
| | Exposure to family planning messages on Radio | 2.88 |
| **Television** | No exposure to family planning messages on TV | 75.16 |
| | Exposure to family planning messages on TV | 24.84 |
| ***Interpersonal Communication*** | Did not hear about family planning from Health Worker | 85.46 |
| | Heard about family planning from Health Worker | 14.54 |
| **Current use of contraception** | Non-use | 38.79 |
| | Use | 61.21 |

**Table 4 : Current use of contraception by Socio-demographic-economic variables in Bangladesh, 2011**

| Predictors used in the model | Definition of categories | Non-Users (%) | Users (%) |
|---|---|---|---|
| **N** | | **6,452** | **10,183** |
| ***Background – Community Level covariates*** | | | |
| **Place of residence** | 0 for Rural[Ref] | 39.74 | 60.26 |
| | 1 for Urban | 36.04 | 63.96** |
| **Region** | 0 for Barisal[Ref] | 35.34 | 64.66 |
| | 1 for Chittagong | 48.60 | 51.40 |
| | 2 for Dhaka | 39.05 | 60.95 |
| | 3 for Khulna | 33.27 | 66.73 |
| | 4 for Rajsahi | 32.66 | 67.34 |
| | 5 for Rangpur | 30.64 | 69.36 |
| | 6 for Sylhet | 55.23 | 44.77** |
| ***Background – Individual Level covariates*** | | | |
| **Religion** | 0 for Followers of Non-Islam[Ref] | 32.94 | 67.06 |
| | 1 for Followers of Islam | 39.44 | 60.56** |
| **Education of the Respondent** | 0 for Illiterate[Ref] | 38.60 | 61.40 |
| | 1 for Literate | 38.86 | 61.14 n.s. |
| **Education of the Husband** | 0 for Illiterate[Ref] | 36.17 | 63.83 |
| | 1 for Literate | 39.91 | 60.09** |
| ***Demographic covariates*** | | | |
| **Age group** | 0 for 15-24 years[Ref] | 46.02 | 53.98 |
| | 1 for 25-34 years | 32.06 | 67.94 |
| | 2 for 35-49 years | 38.88 | 61.12** |
| **Total children ever born** | 0 for Have 2 or less than 2 children[Ref] | 42.51 | 57.49 |
| | 1 for Have more than 2 children | 34.10 | 65.90** |
| **Sons dead** | 0 for son is dead[Ref] | 38.44 | 61.56 |
| | 1 for son is alive | 41.46 | 58.54* |
| **Daughters dead** | 0 for daughter is dead[Ref] | 38.42 | 61.58 |
| | 1 for daughter is alive | 41.94 | 58.06** |
| ***Socio-economic covariates*** | | | |
| **Respondent's Work Status** | 0 for not working currently[Ref] | 39.55 | 60.45 |
| | 1 for working currently | 32.94 | 67.06** |
| **Husband's Work Status** | 0 for not working currently[Ref] | 58.55 | 41.45 |
| | 1 for working currently | 37.99 | 62.01** |
| **Wealth Quintile** | 0 for Poorest[Ref] | 38.72 | 61.28 |
| | 1 for Poorer | 37.70 | 62.30 |
| | 2 for Middle | 38.46 | 61.54 |
| | 3 for Richer | 39.20 | 60.80 |
| | 4 for Richest | 38.23 | 61.77 n.s. |
| **Communication Exposure** | | | |
| *Mass Media* | | | |
| **Newspaper** | 0 for no exposure to family planning messages in the Newspaper[Ref] | 38.86 | 61.14 |

| | | | |
|---|---|---|---|
| | 1 for exposure to family planning messages in the Newspaper | 36.61 | 63.39 n.s. |
| **Radio** | 0 for no exposure to family planning messages on Radio[Ref] | 38.82 | 61.18 |
| | 1 for exposure to family planning messages on Radio | 37.62 | 62.38 n.s. |
| **Television** | 0 for no exposure to family planning messages on TV[Ref] | 39.13 | 60.87 |
| | 1 for exposure to family planning messages on TV | 37.75 | 62.25 n.s. |
| ***Interpersonal Communication*** | | | |
| | 0 for did not hear about family planning from Health Worker[Ref] | 41.45 | 58.55 |
| | 1 for heard about family planning from Health Worker | 23.15 | 76.85** |

*Chi-Square value significant at *: 5% level **: Significant at 1% level, n.s.: not significant*

**Table 5 : Prevalence Ratio from the Multivariate Log binomial regression model of current use of contraception in Bangladesh, 2011**
**Dependent variable : Current Contraceptive Use**

| Covariates | Prevalence Ratio (95% CI)*** | Prob>Chisq |
|---|---|---|
| **N** | **16,635** | |
| **Exposure to Communication** | | |
| ***Mass communication*** | | |
| No exposure to family planning messages in the Newspaper[Ref] | 1.0000 | |
| Exposure to family planning messages in the Newspaper | 1.0055 (0.9659-1.0468) | 0.7875 |
| No exposure to family planning messages on Radio[Ref] | 1.0000 | |
| Exposure to family planning messages on Radio | 1.0064 (0.9665-1.0480) | 0.7572 |
| No exposure to family planning messages on TV[Ref] | 1.0000 | |
| Exposure to family planning messages on TV | 1.0153 (0.9982-1.0328) | 0.0791 |
| | | |
| ***Interpersonal Communication*** | | |
| Did not hear about family planning from Health Worker[Ref] | 1.0000 | |
| Heard about family planning from Health Worker | 1.0984** (1.0801-1.1170) | <0.0001 |

*CI: Confidence Interval, *: Statistically Significant at 5% level **: Statistically Significant at 1% level. [ref] Refers to Reference Category. ***Adjusted for place of residence (rural and urban), region, Husband's and Respondent's education, wealth quintile, working status, total children ever born, number of sons and daughters dead.*