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# DETERMINANTS OF CONTRACEPTIVE METHOD-CHOICE IN RURAL BANGLADESH

MCH-FP Extension Project (Rural)  
Health and Population Extension Division

M. Mehrab Ali Khan  
Mizanur Rahman



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**International Centre for Diarrhoeal Disease Research, Bangladesh  
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1996

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## **ABSTRACT**

Using the national Contraceptive Prevalence Surveys (CPS) of 1983 and 1991 and a regional survey in 1990, a study of contraceptive method-choice was carried out in the MCH-FP Extension Project (Rural). Multinomial logit regressions were used for modelling the contraceptive method-choice where the programmatic, demographic, and sociocultural factors were included as the independent variables.

Contraceptive use was positively associated with home visitations of the female family planning field workers who distribute pills and condoms. The association was stronger for pills than for other methods. Injectable and IUD use was higher among the women who visited the fixed-site service centres than among those who did not visit the centres. Injectables and IUDs were more likely to be used by the relatively young mothers or those with fewer children, whereas the permanent and traditional methods were more common among the older mothers or those with more children. Pills, condoms, and traditional methods were used more by the educated women, whereas injectables and the permanent methods were used more by the uneducated women.

The national family planning programme can be more effective if it undertakes information dissemination activities on the availability of clinical methods at the fixed-site service centres and the proper use of pills and condoms. Improved management and quality of services at the fixed-site service centres will increase the use of services at these centres, thereby raising the acceptance of injectables and IUDs.



## **INTRODUCTION**

Bangladesh has experienced a dramatic decline in fertility unprecedented for its poor social and economic conditions. The total fertility rate (TFR) declined from about 7 per cent in the 1970s to around 3.5 per cent in 1993-1994 (1-2). The Bangladesh Family Planning Programme is recognized as a success story in the contemporary Third World (3). However, the country still has a high population growth rate and needs to reach replacement-level fertility as soon as possible. The national contraceptive prevalence rate (CPR) of about 45 per cent in 1993 should be raised to over 70 per cent to achieve replacement-level fertility.

The family planning programmes could enhance the efficacy of their services by broadening the contraceptive options offered to people in the rural areas. Since individual contraceptive preferences, beliefs, and needs vary within populations, service programmes should accommodate the widest possible range of method preferences among the potential contraceptive users (4). This does not necessarily mean that every family planning programme should have to provide all methods, but the overall programme efforts should be sufficient, so that the prospective users have reasonable, if not absolutely equal, access to a variety of methods (5).

While the programmatic and socioeconomic determinants of contraceptive use at the national and regional level have been studied in Bangladesh, very little is known about the determinants of contraceptive method-choice or method-mix. The objectives of this study are, therefore, to examine a) the programmatic, demographic, sociocultural, attitudinal, and regional determinants of contraceptive method-choice, and b) the shifts in contraceptive method-mix over the last decade.

Among the contracepting Bangladeshi couples, about two-fifths use pills, more than one-fourth use permanent methods, and about one-fifth use traditional methods. As the effectiveness of these methods vary substantially, a key goal of the family planning programme is an effective method-mix. An understanding of the determinants of method-choice is required for developing a more effective family planning programme strategy.

## **METHODS AND PROCEDURES**

### **Data Sets**

The study used data sets from both the national and regional surveys. The national Contraceptive Prevalence Surveys (CPS) of 1983 and 1991 samples, respectively, 10,305 and 12,347 married women of reproductive age (MWRA) (6-7). In our analysis, we included MWRA from rural areas only; 7,682 and 8,873 women, respectively, from CPSs of 1983 and 1991.

We also used the data set of a fertility survey conducted by the Maternal and Child Health and Family Planning (MCH-FP) Extension Project (Rural) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). The fertility survey was conducted in 1990 in the Project field sites among 5,839 MWRA. Women who were pregnant during the surveys were excluded from the analysis, since they were not exposed to any contraceptive method-choices.

### **Family Planning Programme**

Within the Bangladesh family planning (FP) programme, the MCH-FP services are delivered through a community-based distribution (CBD) approach. At the community level, services are delivered by the Family Welfare Assistants (FWA) at the door-step and by the Family Welfare Visitors (FWV) and Medical Assistants (MA) at the Family Welfare Centres (FWC) and Satellite Clinics (SC).

A female FWA is a grassroots-level worker who visits MWRA every two months to provide counselling on MCH-FP and deliver oral pills and condoms. MCH-FP services are also provided through FWV and trained

paramedics located at FWC. There is one FWC for about 4,000 MWRA and their family members, a total of about 25,000 people. Villagers can attend FWC three days a week to receive MCH-FP and primary health care services. FWV holds SCs (two SCs per week) at eight spots scattered in the catchment areas of FWC. MWRA can visit the SC spots and receive MCH-FP and primary health care services. Injectables, IUDs, and management of contraceptive side-effects are provided by FWVs at FWCs and SCs. FWAs refer clients to the service centres for these services.

FWAs and FWVs also motivate clients to obtain tubectomies and vasectomies which are provided at the Thana Health Complex (THC) located at the thana headquarters. A FWA usually accompanies a potential tubectomy or vasectomy client to THC. Cash is given to a client as a compensation for wages lost on the day of surgery as well as for transportation. A new cloth is given to a client prior to surgery probably with the expectation of preventing infections.

## **Variables**

The following five categories of factors that may affect contraceptive use and method-choice of MWRA were considered in the analysis: programmatic, demographic, sociocultural, attitudinal, and regional.

Among the programmatic factors, we included household visitation of FWAs, MWRA's attendance at SC, and MWRA's attendance at FWC. We included one variable that captures the extent of the knowledge a MWRA has about the contraceptive methods. This is an individual-level variable, but is strongly affected by the activities of the MCH-FP programme on information, education, and communication as well as by the activities of FWAs and FWVs.

Among the demographic and socioeconomic variables, we considered maternal age, number of living children, gender composition of living children, maternal education, and religion. We used attitudinal variables, "whether or not a married woman of reproductive age (MWRA) or her husband approve of FP," in the MCH-FP Extension Project data set. Table 1 gives a brief description of the independent variables or factors that may affect contraceptive use.

The variables that may capture regional variation are also shown in Table 1. We compared contraceptive behaviour between four divisions -- Chittagong, Dhaka, Khulna, and Rajshahi. For the MCH-FP Extension Project data, we compared contraceptive use between Abhoynagar and Sirajgonj, the two field sites of the Extension Project.

**Table 1. Mean characteristics of sample women**

| Factor   | National survey<br>(contraceptive<br>prevalence survey) |              | Regional<br>survey |
|--|---|--------------|--------------------|
|  | 1983  | 1991         | 1990               |
| <b>Programme:</b>  |   |              |                    |
| FWA visited woman's home in last 6 months (%)<br>(rc=Did not visit)      | 30  | 41           | 85                 |
| Woman ever visited Family Welfare Centre (FWC) (%)<br>(rc=Never visited) | a   | a            | 37                 |
| Woman ever visited Satellite Clinic (SC)(%)<br>(rc=Never visited)        | a   | a            | 12                 |
| Number of modern contraceptive<br>methods known by the woman             | 5   | 7            | a                  |
| <b>Demographic:</b>  |   |              |                    |
| Age of woman   | 28  | 28           | 30                 |
| Number of living children  | 4.7   | 3.0          | 2.9                |
| Number of living sons  | 1.6   | 1.5          | 1.5                |
| <b>Sociocultural:</b>  |   |              |                    |
| <i>Education of woman:</i>   |   |              |                    |
| primary  | 23  | 27           | 23                 |
| above primary<br>(rc=No education)                                       | 6   | 11           | 9                  |
| Muslim<br>(rc=Hindu)   | 88  | 88           | 87                 |
| <b>Attitudinal:</b>  |   |              |                    |
| Woman approves of FP<br>(rc=Does not approve of FP)                      | a   | a            | a                  |
| Husband approves of FP<br>(rc=Does not approve of FP)                    | a   | a            | a                  |
| <b>Region:</b>   |   |              |                    |
| <i>Division (rc=Chittagong):</i>   |   |              |                    |
| Dhaka  | 28  | 28           | b                  |
| Rajshahi   | 27  | b            |                    |
| Khulna   | 20  | 19           | b                  |
| <b>Sample size (n)</b>   | <b>6,859</b>  | <b>8,209</b> | <b>5,248</b>       |

<sup>a</sup> Data not available; <sup>b</sup> Data are from two particular areas; rc= Reference category

Contraceptive use and method-choice are the dependent variables. CPS of 1983 shows that about 20 per cent of MWRA used contraception, 3 per cent pills, 1 per cent injectables and IUDs, about 8 per cent had tubectomies or vasectomies, and 7 per cent used condoms and traditional methods (Fig. 1). CPS of 1991 shows that 40 per cent used contraceptives, about 15 per cent pills, 4 per cent injectables and IUDs, 10 per cent had tubectomies and vasectomies, and about 10 per cent used condoms and traditional methods.

### Data Analysis

The association between contraceptive use and various factors was modelled, using logistic regression. The contraceptive method-choice was modelled, using multinomial logit regression (8).

Categories of contraceptive methods, the dependent variable, in the multinomial logit regression were: (i) pills; (ii) injectables and IUDs; (iii) tubectomies and vasectomies (permanent methods); and (iv) other methods which include condoms, rhythm, withdrawal, abstinence, and indigenous/herbal methods of family planning. These categories apply to the CPS data analysis. For the MCH-FP Extension Project data, the categories were the same except that injectables and IUDs were separate categories. For the multinomial logit regression, the reference category of the dependent variable was the "non-user" of contraception. Table 1 shows the independent dummy variables and their reference categories as well as the means of the independent variables.

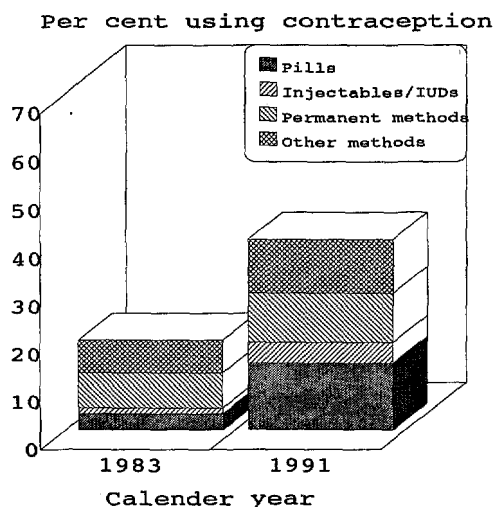
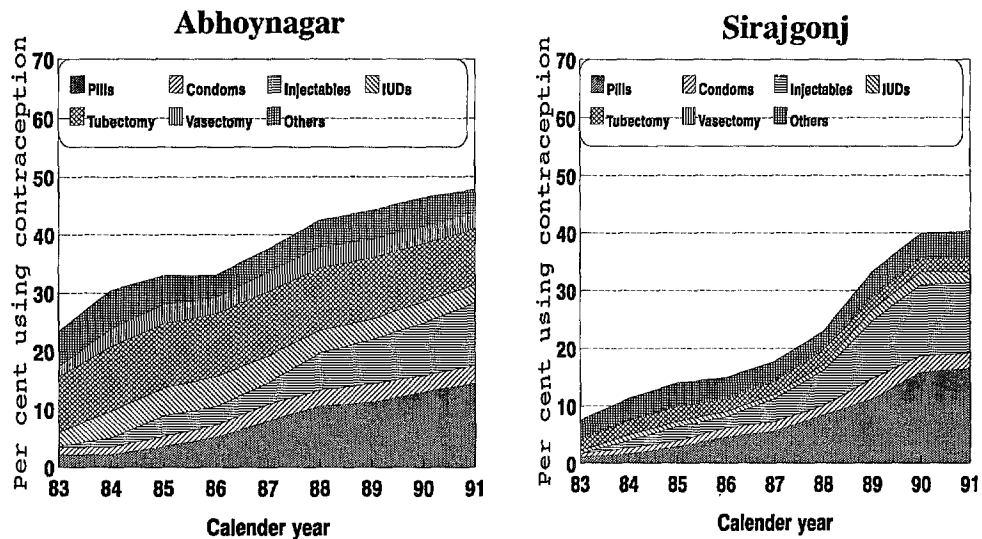


Fig. 1. Contraceptive method-mix according to national surveys, 1983 and 1991

## RESULTS

Fig. 1 and 2 show the contraceptive method-mix of the national and regional surveys respectively. Contraceptive use in Bangladesh had more than doubled by 1991 compared to 1983 (Fig.1). The increase was attributable to an increase in all methods but a marked increase in the use of pills. Most of the increase in contraceptive use in Abhoynagar and Sirajgonj was attributable to the increase in the use of pills and injectables. The use of other methods increased only slightly, while the use of some methods remained static. There are two points worth mentioning. The Extension Project in Abhoynagar and Sirajgonj introduced the door-step injectable contraceptive services by FWAs at the end of 1983. Injectables became quite popular among women (Fig. 2). In the rest of the country, injectables are provided by FWVs at FWCs and SCs. But tubectomies and vasectomies never gained importance in the MCH-FP programme in Sirajgonj (Fig. 2).



**Fig. 2. Trends in contraceptive method-mix during 1983-1991 in Abhoynagar and Sirajgonj**



## Logistic Regression Results

Table 2 presents logistic regression coefficients derived from the analysis of the national and regional data sets. A logistic regression coefficient can be exponentiated to translate it into an odds ratio, an approximation of relative risk (RR). For example, according to the 1991 CPS, the use of contraceptives by a woman was 1.76 [ $\exp(0.567)$ ] times if she was visited by a FWA compared to that of a woman who was not visited by a FWA in the last six months (Table 2). Similarly, in 1991, a Muslim woman's contraceptive use was 0.50 [ $\exp(-0.6870)$ ] times that of a non-Muslim.

All programmatic factors are positively associated with contraceptive use. The CPS results showed that contraceptive use was higher among MWRA who were visited by a FWA than among those who were not visited by such a worker, indicating that an increase in the coverage of FWA home visitation may increase contraceptive use. This association, however, should be interpreted with caution because it is also possible that the contraceptive users selectively receive more visits from FWAs than the non-users. The strength of association between FWA visits and contraceptive use more than doubled from 1983 to 1991. This indicates that the community-based distribution (CBD) programme has become more effective in the last decade. Women who visited FWC or SC were more likely to use contraception. Contraceptive use increases with the number of contraceptive methods a woman is aware of.

**Table 2. Logistic regression coefficients of programmatic, demographic, and sociocultural factors that are associated with the use of contraception**

| Factor  | Contraceptive prevalence survey |           | Regional survey |
|---|---------------------------------|-----------|-----------------|
|   | 1983                            | 1991      | 1990            |
| FWA visited woman's home in last 6 months                 | 0.247***                        | 0.567***  | 0.289**         |
| Woman ever visited FWC                                    | a                               | a         | 0.549***        |
| Woman ever visited SC                                     | a                               | a         | 0.239***        |
| Number of modern contraceptive methods known by the woman | 0.340***                        | 0.319***  | a               |
| Age of woman  | 0.189***                        | 0.225***  | 0.165***        |
| Age of woman squared                                      | -0.003***                       | -0.003*** | -0.003***       |
| Number of living children                                 | 0.327***                        | 0.413***  | 0.523***        |
| Number of living children squared                         | -0.029***                       | -0.042*** | -0.051***       |
| Number of living sons                                     | 0.346***                        | 0.351***  | 0.192***        |
| Number of living sons squared                             | -0.043**                        | -0.050*** | b               |
| <i>Education of woman:</i>                                |                                 |           |                 |
| primary   | -0.008                          | 0.052     | 0.226***        |
| above primary   | 0.570***                        | 0.555***  | 0.382***        |
| Muslim  | -0.682***                       | -0.422*** | -0.044          |
| Woman approves of FP                                      | a                               | a         | 1.663***        |
| Husband approves of FP                                    | a                               | a         | 1.547***        |
| <i>Division:</i>  |                                 |           |                 |
| Dhaka   | 0.478***                        | 0.633***  | c               |
| Khulna  | 0.423***                        | 0.813***  | c               |
| Rajshahi  | 0.682***                        | 1.059***  | c               |
| Abhoynagar  | c                               | c         | 0.255**         |
| Constant  | -6.988***                       | -7.737*** | -7.251***       |
| -2 Log-likelihood   | 6,348                           | 10,959    | 7,229           |

\*\* p < .01; \*\*\* p < .001; <sup>a</sup> Data not available; <sup>b</sup> Not included in the model; <sup>c</sup> Not applicable

Contraceptive use increased with maternal age but declined after 37.5 years in the national sample of 1991 and after 27.5 years in the Abhoynagar and Sirajgonj sample (Table 2 and 3). The contraceptive users in Abhoynagar and Sirajgonj were, on an average, 10 years younger than the users in the national sample. Contraceptive use was quite high among the younger women who used methods for spacing purposes in Abhoynagar and Sirajgonj. In Abhoynagar and Sirajgonj, there was a high use of injectables which were more common among the young women. There was a low prevalence of the permanent methods which were more common among the older women. The contraceptive method-mix made the age profiles of the two samples different. Contraceptive use increased with the number of living children but declined after 5 children, both in the national and regional samples. It also increased with the number of living sons, but declined after 3-4 sons, indicating that the parents have a preference for a certain gender composition of children of both sexes.

The educated or non-Muslim women had higher use of contraception than the uneducated or Muslim women. As expected, approval of FP by both wife and husband had a significant and positive influence on contraceptive use.

There was a strong regional variation in contraceptive use. In 1991, contraceptive use in Dhaka, Khulna, and Rajshahi divisions was, respectively, 1.88, 2.25 and 2.88 times that of Chittagong, respectively. Abhoynagar had 1.24 times higher contraceptive use than Sirajgonj.

Differentials of contraceptive use increased between 1983 and 1991 for FWA's visit, demographic variables, and across divisions. An increased regional variation over time reflects a more rapid increase in contraceptive use outside Chittagong Division.

## **Multinomial Logit Results**

Multinomial coefficients are presented in Table 3 and 4.

### **Programme Factors**

Use of all contraceptive methods was associated with FWA's home visitation, but the magnitude and direction were different, and the strength of association increased over time (Table 3). The association was stronger for pills, injectables, and IUDs than for other methods. It is encouraging to note that the use of traditional methods was also higher among the women who were visited by FWAs. This finding probably indicates that FWAs were able to motivate couples to use the contraceptive methods of any form, although FWAs do not record such methods in their record books. Higher use of traditional methods in the area of a FWA does not reflect her level of performance and, therefore, it is not likely that the FWA would encourage couples to use traditional methods. It may be possible that FWAs made frequent visits to the households of users of traditional methods with an expectation that they would be able to motivate women to use the modern methods. This might have led to a positive association between FWA home visitation and the use of the traditional methods.

The strong and negative association between the adoption of tubectomies and vasectomies and FWAs home visitation indicates that FWA's are less likely to visit a couple who has adopted a permanent method.

The stronger association between the use of IUDs and the permanent methods and attendance at FWC probably indicates that their adoption was either at FWC or the users were screened through the paramedics at FWC (Table 4). The significant positive association between the use of injectables and IUDs and SC probably indicates that the clients were either screened or provided with these methods at SC. The use of pills and permanent methods was not associated with attendance at SC (Table 4).

**Table 3. Multinomial logit regression coefficients of programmatic, demographic, and sociocultural factors that are associated with the use of contraception**

| Factor   | Pills     |           | Injectables/IUDs |           | Permanent methods |            | Others    |           |
|--|-----------|-----------|------------------|-----------|-------------------|------------|-----------|-----------|
|  | 1983      | 1991      | 1983             | 1991      | 1983              | 1991       | 1983      | 1991      |
| FWA visited woman's home<br>in last 6 months                 | 1.021***  | 1.527***  | 0.592**          | 1.045***  | 0.083             | -0.894***  | 0.238*    | 0.483***  |
| Number of modern contraceptive<br>methods known by the woman | 0.459***  | 0.264***  | 0.467***         | 0.348***  | 0.266***          | 0.406***   | 0.400***  | 0.319***  |
| Age of woman   | 0.058     | 0.178***  | 0.042            | 0.119+    | 0.438***          | 0.652***   | 0.106*    | 0.189***  |
| Age of woman squared   | -0.002    | -0.003*** | -0.001           | -0.003*   | -0.007***         | -0.009***  | -0.002*   | -0.003*** |
| Number of living children                                    | 0.472**   | 0.571***  | 1.119***         | 0.819***  | 0.572***          | 0.646***   | 0.306***  | 0.294***  |
| Number of living children squared                            | -0.045**  | -0.053*** | -0.150***        | -0.064*** | -0.071***         | -0.093***  | -0.015+   | -0.024*** |
| Number of living sons  | 0.262**   | 0.095*    | 0.225            | 0.110+    | 0.191***          | 0.181***   | -0.010    | 0.081*    |
| <i>Education of woman:</i>                                   |           |           |                  |           |                   |            |           |           |
| primary  | 0.469**   | 0.181*    | 0.688*           | -0.005    | -0.641***         | -0.430***  | 0.219+    | 0.371***  |
| above primary  | 1.239***  | 0.840***  | 0.991*           | -0.000    | -1.190***         | -0.864***  | 0.898***  | 1.016***  |
| Muslim   | -0.528*   | -0.055    | -0.813**         | -0.222    | -0.775***         | -0.783***  | -0.568*** | -0.534*** |
| <i>Division:</i>   |           |           |                  |           |                   |            |           |           |
| Dhaka  | 0.396+    | 0.428***  | 0.285            | 0.628***  | 0.716***          | 0.982***   | 0.354*    | 0.532***  |
| Khulna   | -0.627*   | 0.476***  | -0.010           | 1.313***  | 0.790***          | 1.089***   | 0.371*    | 0.718***  |
| Rajshahi   | 0.260     | 0.893***  | 0.785*           | 0.859***  | 0.937***          | 1.410***   | 0.585***  | 0.879***  |
| Constant   | -7.456*** | -7.967*** | -8.926***        | -8.801*** | -11.314***        | -16.741*** | -6.647*** | -8.159*** |

+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;

**Table 4. Multinomial logit regression coefficients of programmatic, demographic and sociocultural factors that are associated with the use of contraception in Abhoynagar and Sirajgonj**

| Factor                                    | Pills     | Injectables | IUDs      | Permanent methods | Others    |
|---|-----------|-------------|-----------|-------------------|-----------|
| FWA visited woman's home in last 6 months | 1.907***  | 1.583**     | 1.954*    | -1.229***         | 0.0525*** |
| Woman ever visited FWC                    | 0.395***  | 0.483***    | 1.736***  | 1.317***          | 0.135     |
| Woman ever visited SC                     | 0.076     | 0.465***    | 1.230***  | -0.094            | 0.046     |
| Age of woman                              | 0.186***  | 0.070*      | 0.161     | 0.728***          | 0.187**   |
| Age of woman squared                      | -0.003*** | -0.002***   | -0.004*   | -0.009***         | -0.003**  |
| Number of living children                 | 0.503***  | 0.737***    | 1.086***  | 0.045             | 0.531***  |
| Number of living children squared         | -0.047*** | -0.069***   | -0.115*** | -0.031*           | 0.044***  |
| Number of living sons                     | 0.235***  | 0.242***    | 0.178+    | 0.251***          | 0.134*    |
| <i>Education of woman:</i>                |           |             |           |                   |           |
| primary                                   | 0.447***  | 0.017       | 0.168     | -0.501**          | 0.700***  |
| above primary                             | 0.572***  | -0.741**    | 0.884**   | -0.741**          | 1.331***  |
| Muslim                                    | 0.063     | 0.231       | -0.462*   | -0.199            | 0.035     |
| Woman approves of FP                      | 1.944***  | 3.257***    | 17.507    | 0.914*            | 1.272***  |
| Husband approves of FP                    | 2.000***  | 1.229***    | 0.963**   | 2.567***          | 0.793***  |
| Abhoynagar                                | -0.038    | -0.019      | 0.216     | 1.871***          | 0.164     |
| Constant                                  | -8.627*** | -7.858***   | -25.353   | -20.657***        | -8.664*** |

+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

The use of other methods was not associated with attendance at FWC or SC. Knowledge of a number of different modern contraceptive methods was positively associated with the use of all contraceptive methods (Table 3). The degree of association declined over time, except for the permanent methods, indicating widespread knowledge of the modern contraceptive methods.

### **Demographic Factors**

We observed in the logistic regression analysis that there is an age pattern of contraceptive use, i.e. contraceptive use increased with age and number of living children and then declined. Multinomial logit coefficients indicate that the age pattern differed by methods. Injectables and IUDs were preferred by the relatively young or low-parity women, indicating that these women tended to adopt a more effective and long-acting method for spacing. In contrast and as expected, the permanent methods were preferred by the relatively older or high-parity women. The use of other methods (condoms and traditional methods) were preferred by relatively older women. The age effects on various methods were stronger in 1991 than in 1983 in the national sample (Table 3).

### **Socioeconomic and Cultural Factors**

The use of pills and other methods (condoms and traditional methods) increased with education among national samples in 1983 and 1991 and the regional sample in 1990 (Table 3 and 4), while the use of the permanent methods decreased with education among all samples. In Abhoynagar and Sirajgonj, the use of injectables decreased with education, while the use of IUDs increased with education (Table 4). According to the surveys conducted in 1990 and 1991, pills and other temporary methods (IUDs, condoms, and traditional methods) were preferred by the educated. While injectables and permanent methods were more common among the uneducated. The higher adoption of the permanent methods (tubectomy and vasectomy) by the relatively poor or uneducated is partially explained by the provision of incentives offered by the family planning programme (9).

The higher use of pills, condoms, and traditional methods by the educated than by the uneducated is probably related to differential side-effects (actual or feared) of methods. Condoms and traditional methods have no side-effects. The users of injectables, however, have frequent complaints, including spotting, bleeding, and amenorrhoea, while the users of pills have complaints, including headache, nausea, and weakness. It is possible that the educated women have a higher tolerance of the side-effects and discomforts associated with pills, condoms, and traditional methods than those of injectables.

There may also be provider-biases in the areas of counselling. FWAs and FWVs probably assume that pills and condoms can be more efficiently used by the educated than by the uneducated. They probably counsel the uneducated women to use injectables as a relatively long-acting method that does not require "user- skills". In contrast, the educated probably make their own decision on which method to use. Also, it is possible that the educated couples procure pills and condoms from sources other than FWAs; thus, FWAs may not have much influence on the method-choice of these clients.

Muslims had lower use of any methods in 1983, although the method-specific religious differentials were smaller in 1991. Hindus had a higher use of contraception than Muslims, but the use of pills and injectables was higher for Muslims than Hindus in the recent survey. The findings indicate that birth spacing might be more common among Muslims, whereas family limitation might be more common among Hindus.

Approval of family planning by women had a strong influence on contraceptive use for almost all methods in the regional sample. The results showed that both the wife and husband's approval of the use of contraceptives was important for the adoption of any method (Table 4). However, the wife's approval was more important for non-permanent than permanent methods, usually a tubectomy.



## **Regional Variation**

Table 4 shows that the higher contraceptive use in Abhoynagar than in Sirajgonj in 1990 was largely explained by the difference in the use of the permanent methods. Table 3 shows that, in 1983, the regional variation of the use of pills, injectables, and IUDs was not important. The use of the permanent and other methods was substantially higher in Dhaka, Khulna, and Rajshahi than in Chittagong in both in 1981 and 1993.

## CONCLUSIONS

We undertook a multivariate analysis of correlates of contraceptive method-choice in 1983, 1990, and 1991 among national and regional samples of women. We used multinomial logit models, an appropriate statistical technique, for contraceptive method-choice analysis.

We document programmatic, demographic, and sociocultural differentials of contraceptive method-choice. The use of pills, condoms, traditional methods, injectables, and IUDs was higher among the women who were visited by FWAs than among those who were not visited by FWAs in last six months. FWA home visitation was low among the users of permanent methods (tubectomy and vasectomy). The use of all methods, except traditional methods, was higher among the women who visited FWCs than among those who did not visit FWCs. The use of injectables and IUDs was higher among the women who visited SCs than among those who did not visit SCs. Injectables and IUDs were preferred by the young or low-parity women, while the permanent methods were preferred by the older or high-parity women. Relatively older women preferred condoms and traditional methods. Pills, condoms, and traditional methods were more common among the educated women while injectables and permanent methods were more common among the uneducated women. According to the recent surveys, the acceptance of permanent methods, condoms, and traditional methods was lower among Muslims than Hindus. The wife and husband's approval of FP use positively influenced the adoption of all methods; however, the wife's approval was more important for the temporary methods than for the permanent methods (usually tubectomy).

An understanding of how various factors considered in the study influence method-choice of rural Bangladeshi couples is not known from our study. Further qualitative studies should be undertaken to have a clear understanding of the differentials of method-choice. However, the following comments may be helpful for improving the national programme. The Bangladesh family planning programme has achieved a remarkable success

in recent years, even without emphasizing the delivery of the two permanent methods, tubectomy and vasectomy. Recent success is believed to be due to the strengthening of the CBD programme where FWAs distribute pills and condoms at the door-step. This belief is corroborated by our findings that the use of all methods, except the permanent methods, was higher among the women who were visited by FWAs. Increased contacts with FWAs at the community level can further raise contraceptive use, particularly pills and condoms, especially in the low-performing areas of Chittagong Division where the FWA contact rate is low.

The current CBD programme is expensive, requires huge management resources, and thus, is donor-dependent. Moreover, FWAs distribute only pills and condoms which have limited use-effectiveness (10). Currently, pills represent two-fifths of the methods used and condoms and traditional methods one-fifth. The method-mix and limited use-effectiveness of the most commonly used methods are likely to limit the programme's impact on fertility reduction. Family planning education through mass media, FP workers, and other media dissemination about the proper use of pills, condoms, and traditional methods can increase the use-effectiveness of these methods. Counselling about the limited effectiveness of traditional methods may lead to a shift from these methods to more effective modern methods.

Clinical methods (injectables, IUDs, tubectomies and vasectomies) are more commonly used by the uneducated or poor women than their educated or richer counterparts. These methods are more effective and are provided from the fixed-site service centres and, thus are more cost-effective. The FP programme can become more cost-effective and have a greater impact on fertility if the delivery of clinical methods receives priority in the national programme.

Injectables, can be both delivered at the door-step as well as at fixed-site service centres. Delivery of injectables from service centres would ensure better quality of care, would be less expensive, and would reduce the problems related to destruction of syringes.

Shifting the focus of the FP programme from non-clinical methods to clinical methods, with an assurance of quality of care and delivery from fixed-sites, would make the programme more effective and sustainable. However, it has been found that use of FWCs is low to moderate and that of SCs is very low (11-12). Delivery of contraceptives from the fixed-site centres would bring women out of their homes which would indirectly help women's mobility. Women's mobility out of home would expose them to the outside world, new ideas, various contraceptive options accessibility of child and maternal care, and other influences.

Management improvement, enhanced quality of care at FWCs and SCs, increased awareness of the availability of services at these centres and workers' motivation for higher use of these centres by villagers may increase the use of clinical methods of contraceptives. This will lead to a more effective method-mix of contraception in Bangladesh.

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## MCH-FP Extension Work at the Centre

An important lesson learned from the Matlab MCH-FP project is that a high CPR is attainable in a poor socioeconomic setting. The MCH-FP Extension Project (Rural) began in 1982 in two rural areas with funding from USAID to examine how elements of the Matlab programme could be transferred to Bangladesh's national family planning programme. In its first years, the Extension Project set out to replicate workplans, record-keeping and supervision, within the resource constraints of the government programme.

During 1986-89, the Centre helped the national programme to plan and implement recruitment and training, and ensure the integrity of the hiring process for an effective expansion of the work force of governmental Family Welfare Assistants. Other successful programme strategies scaled up or in the process of being scaled up to the national programme include doorstep delivery of injectable contraceptives, management action to improve quality of care, a management information system, and developing strategies to deal with problems encountered in collaborative work with local area family planning officials. In 1994, this project started family planning initiatives in Chittagong, the lowest performing division in the country.

In 1994, the Centre began an Urban MCH-FP Extension Project in Dhaka (based on its decade long experience in urban health) to provide a coordinated, cost-effective and replicable system of delivering MCH-FP services for Dhaka urban population. This important event marked an expansion of the Centre's capacity to test interventions in both urban and rural settings. The urban and rural extension projects have both generated a wealth of research data and published papers.

The Centre and USAID, in consultation with the government through the project's National Steering Committees, concluded an agreement for new rural and urban Extension Projects for the period 1993-97. Salient features include:

- To improve management, quality of care and sustainability of the MCH-FP programmes
- Field sites to use as "policy laboratories"
- Close collaboration with central and field level government officers
- Intensive data collection and analysis to assess the impact
- Technical assistance to GoB and NGO partners in the application of research findings to strengthen MCH-FP services.

## The Division

The reconstituted Health and Population Extension Division (HPED) has the primary mandate to conduct operations research to scale up the research findings, provide technical assistance to NGOs and GoB to strengthen the national health and family planning programme.

The Centre has a long history of accomplishments in applied research which focuses on the application of simple, effective, appropriate and accessible health and family planning technologies to improve the health and well-being of the underserved and population-in-need. There are several projects in the Division which specialize in operations research in health, family planning, environmental health and epidemic control measures which cuts across several Divisions and disciplines in the Centre. The MCH-FP Extension Project (Rural), of course, is the Centre's established operations research project but the recent addition of its urban counterpart - MCH-FP Extension Project (Urban), as well as Environmental Health and Epidemic Control Programmes have enriched the Division with a strong group of diverse expertise and disciplines to enlarge and consolidate its operations research activities. There are several distinctive characteristics of these endeavors in relation to health services and policy research. First, the public health research activities of these Projects focus on improving programme performances which has policy implications at the national level and lessons for international audience. Secondly, these Projects incorporate the full cycle of conducting applied programmatic and policy relevant research in actual GoB and NGO service delivery infrastructures; dissemination of research findings to the highest levels of policy makers as well as recipients of the services at the community level; application of research findings to improve programme performance through systematic provision of technical assistance; and scaling-up of applicable findings from pilot phase to the national programme at Thana, Ward, District and Zonal levels both in the urban and rural settings.

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