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The Effect of Female Family Planning Workers on the Use of Modern Contraception in Bangladesh

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More attention should be paid to the quality of care offered by family welfare assistants instead of focusing on quantitative targets

Bangladesh has managed to achieve a steep decline in fertility in spite of its unremarkable socio-economic development in the past decade. The national family planning programme of Bangladesh has thus been termed a "success in a challenging environment" (Cleland and others, 1994). Several studies have documented this decline and demographers have commented that the third stage of the fertility transition has begun (Cleland and others, 1994; Amin and others, 1994; Mitra and others, 1994). Researchers have attributed the decline in the total fertility rate (TFR) to increased use of contraception, which in turn has been credited to a strong and successful family planning programme in the country.

From its inception in 1958 until 1976, however, the Bangladesh family planning programme was far from reaching the targets set in successive five-year development plans. The programme initially consisted of small-scale efforts by private voluntary organizations. In 1959, the Pakistani administration added seriousness to those efforts by consolidating them into an official government programme. As part of that programme, static family planning clinics were established in various locations. However, the clinics did not draw enough clients and only the urban elite participated in self-motivated family planning adoption. The National Impact Survey in 1968 found that only 5.5 per cent of couples were users of any contraceptive method. During the effort to gain national independence in 1971, the programme was disrupted by political instability. In 1976, it was re-established after the Government of Bangladesh identified population as the country's number one problem. Two years later, in 1978, emergency measures were taken to strengthen the family planning programme. One of these included the introduction of young, educated female workers at the grassroots level; another was the construction of health centres at the lowest administrative level. The health centres provided basic reproductive health services such as IUD insertion and injectable contraceptives. Sterilization cases were referred to the nearest health centre at the next higher administrative level. Further, grassroots-level workers, called family welfare assistants (FWAs), were recruited to motivate eligible women to use modern contraception, providing free contraceptive pills and condoms for those willing to use such methods. Each FWA was given responsibility for a geographical area covering a population of 4,000; each was expected to visit every eligible woman in that area at least once every three months (Koenig and others, 1992).

In the ensuing years, the use of contraception rose dramatically. For example, in 1975, a survey had found the contraceptive prevalence rate (CPR) to be only 7.7 per cent. In 1985/86, the Bangladesh Fertility Survey (BFS) documented a CPR of 25.3 per cent, a more than three-fold rise in use in only 10 years. The lion's share of the credit for improving the CPR has been attributed to the FWAs, whose door-to-door services were found to increase the probability of a woman being a user (Kamal, 1994; Kamal and Sloggett, 1993; Philips and others, 1989).

Bangladesh is predominantly a Muslim country and women are normally barred from activities outside their homes owing to the practice of purdah (seclusion, wearing of a veil). Thus, the doorstep services offered by the FWAs enabled the translation into practical implementation of the latent desires of women to limit their childbearing. In 1989, the CPR was measured at 31.4 per cent and in 1991, 39.9 per cent; moreover, a concurrent decline in total fertility occurred: from an average of seven births per woman in 1989 to approximately four in 1994 (Mitra and others, 1994).

By 1991, almost 13 years had passed since the introduction of FWAs, and the family planning programme was receiving profuse attention in both government and non-government circles. Attitudes and beliefs in Bangladesh have also undergone major changes regarding the practice of family planning. Caldwell (1992) remarked that legitimisation of use and diffusion of knowledge has prompted widespread family planning practice. In view of this success, it would be natural to expect that the role of the FWAs might take a back seat to newer approaches now that the family planning programme had gained natural momentum. But in 1991, the Government of Bangladesh and its various donors decided to increase the number of FWAs by another 10,000, indicating that the need for FWAs has actually increased rather than decreased. In seeking to justify the recruitment of the additional FWAs, this article aims to evaluate the role of FWA visits on the use of modern contraception, net of other socio-economic and demographic variables, using data from a survey held just prior to the introduction of the additional FWAs.

Methods and materials

This study uses data from the 1991 Contraceptive Prevalence Survey (CPS), a two-stage nationally representative survey and the sixth in a series of its kind (Mitra and others, 1992). The 1991 CPS consisted of 200 clusters, a total of 11,065 women, inclusive of those living in rural and urban areas of Bangladesh. As mentioned previously, the survey was conducted before the

introduction of the additional 10,000 FWAs. The CPS data contained information on the FWA visits to clients and this was analysed using multivariate analysis. The outcome variable was the current use of modern contraception by the female client (coded 1 if she was a user, 0 otherwise). The distribution of the dependant variable is presented in table 1. Because of its being a binary variable with a skewed distribution, logistic regression was used to assess the impact on contraceptive use of the FWA visits to the client, net of other factors.

Two models were constructed, one for acceptors of permanent methods (vasectomy for husbands and tubal ligation for the female clients), and the other for modern reversible methods (pills, condoms, IUDs and injectables). Other analyses have found different sets of predictors for these two categories; hence, there was a need for two models (Amin and others, 1995; Kamal, 1994). In the model on modern reversible methods, sterilization users were excluded and for the model on sterilization users, those using modern reversible methods were excluded. Pregnant women were classified as non-users. Users of traditional methods (abstinence, withdrawal and rhythm) were considered non-users in this analysis.

Variables used

The variables considered in this analysis were chosen on the basis of prior knowledge of determinants of contraceptive use and initial exploratory data analysis. Age of the women was not included because of its collinearity with number of living children; husband's education was excluded because of its collinearity with education of the woman. Many variables were available in the survey as indicators of socio-economic status, namely ownership of land, availability of electricity, and type of housing material used in construction, among other things. Apriori analysis using factor analysis (>3, or less than or equal to 3)) found that one cohesive group possessed certain household items (radio, clock, table, wardrobe, pitcher and bicycle, among others). These variables were then added to form a new variable indicating number of possessions. The next factor analysis found this variable to have the highest loading; hence, it was chosen as an indicator of socio-economic status. The variable "number of possessions" was recorded under two categories (>3 or <3) and used in the analysis as an independent variable.

Role of NGOs

Non-governmental organizations (NGOs) have been playing a leading role in increasing the use of modern contraception in Bangladesh. Two notable NGOs have received worldwide acclaim for their success in achieving fruitful results at the grassroots level in Bangladesh. One is the Grameen Bank. It offers loans to groups of rural couples, with no collateral being required. Its work has enabled a considerable number of people in rural areas to achieve self-sufficiency. Also, one study found that members of the Grameen Bank have a higher probability of use of contraception than non-members (Kamal and others, 1992). Another study found that being a member of any NGO raises the probability of use of contraception (Schuler and Hashemi, 1994).

The other NGO is the Bangladesh Rural Advancement Committee

(BRAC). It has also been successful in establishing income-generating activities in rural areas, and it has successfully encouraged measures to improve female literacy. It should be pointed out that neither of the aforementioned NGOs is family planning-based, although there are numerous NGOs in Bangladesh the main objective of which is to promote the use of modern methods. One such very successful NGO is Swanirvor Bangladesh. It recruits local female workers and distributes condoms and pills in rural areas of the country. In collaboration with the Government, it serves those areas where FWAs have a larger than normal population to serve. Another NGO, the Family Planning Association of Bangladesh (FPAB), is sponsored by the International Planned Parenthood Federation (IPPF) and has been in operation since 1953. It maintains 30 static clinics nationwide. It provides family planning services in the context of some other social programmes that women seek from FPAB (Cleland and others, 1994). The Association for Voluntary Surgical Contraception (AVSC), which has been providing services for almost 18 years, is responsible for 16 per cent of all sterilizations performed in Bangladesh between 1975 and 1990. In 1991, there were 200 NGOs employing 9,000 field-workers delivering family planning services throughout Bangladesh (Mitra and others, 1993). As mentioned previously, studies have found that being a member of, or having contact with, any NGO increases the probability of being an acceptor of sterilization (Kamal and others, 1996); such involvement with an NGO was thus considered as a differential of use. Frequency distributions of the variables included in this study for both models are presented in table 1.

Table 1: Distribution of selected variables for female respondents in the 1991 Bangladesh Contraceptive Prevalence Survey

Variables	Modern reversible methods		Sterilization acceptors	
	Frequency	Per cent	Frequency	Per cent
Current user	2,431	24.4	1,119	13.0
Non-user	7,515	75.6	7,515	87.0
Number of living children				
≤3	6,663	67.0	5,595	64.8
>3	3,283	33.0	3,039	35.2

Number of possessions				
≤3	5,221	52.5	4,985	57.7
>3	4,725	47.5	3,649	42.3
Region of residence				
Dhaka	2,973	29.9	2,553	29.6
Chittagong	2,618	26.3	2,355	27.3
Khulna	1,879	18.9	1,606	18.6
Rajshahi	2,476	24.9	2,120	24.6
Participation in NGO				
Not member	9,015	90.6	7,769	90.0
Member	931	9.4	865	10.0
Visited by FWA in previous three months				
Not visited	6,111	61.4	6,304	73.0
Visited	3,835	38.6	2,330	27.0
Type of residence				
Rural	7,386	74.3	6,658	77.1
Urban	2,560	25.7	1,976	22.9
Woman's education				
No school	5,545	55.8	5,269	61.0
Some school	4,401	44.2	3,365	39.0
N	9,946	100.0	8,634	100.0

Results

Modern reversible methods

Table 2 presents the results of a logistic regression analysis of the use of modern contraceptive methods on selected socio-economic and demographic factors. The use of a modern reversible method (coded 1 if a current user, 0 if otherwise) has a discrete distribution with binary outcome and cannot be regressed by ordinary linear regression. To achieve robustness, logistic regression was used because it is the appropriate technique statistically to model binary outcomes.

Table 2: Results of logistic regression analysis of modern reversible methods on selected socio-economic and demographic variables, 1991 Bangladesh Contraceptive Prevalence Survey

Variable	Odds ratio	Coefficient	Significance
Visited by FWA in previous three months			
Visited	7.99	2.08	<.001
Not visited *	1.00		
Number of living children			
>3	0.37	-.99	<.001
≤3 *	1.00		
Region of residence			
Chittagong	0.73	-.30	<.001
Khulna	1.16	.15	.029
Rajshahi	1.21	.19	.003
Dhaka *	1.00		
Type of residence			
Urban	1.84	.61	<.001
Rural *	1.00		
Number of possessions			

>3	5.32	1.67	<.001
≤3 *	1.00		
Interactions			
Urban residence * FWA	.32	-1.13	<.001

Notes: Reference group. Log likelihood -5262.61.

The results show that the visitation of an FWA in a rural area during the previous three months is the most significant determinant of contraceptive use in Bangladesh. Odds of use of any modern method increases almost eight-fold when a rural woman was visited by an FWA in the previous three months. From the interaction term, it can be calculated that the odds of use for an urban woman increases 2.6 times when she was visited by an FWA in the previous three months. This indicates that the effect of FWAs is more pronounced in rural than urban areas of the country.

All other variables vary in expected directions. Women with more than three children are less likely to be users, indicating that older women are less likely to be users of modern reversible methods. Urban women are more likely to be users and so are women from higher socio-economic backgrounds as indicated by the number of their possessions. Compared with women from Dhaka division, women from Rajshahi division are more likely to be users, whereas women from Chittagong division are less likely to be users. For those from Khulna division, there is no significant difference. Chittagong division is known to be more conservative in outlook than the others; also, its people are considered more religious than those in other divisions. Overall, it continues to have lower probability of use compared with Dhaka division. These results also match previous findings from the 1989 Bangladesh Fertility Survey (BFS) (Kamal and Sloggett, 1993; Rashid, 1993; Kamal, 1994). All other variables showed insignificant variation and were not included in this model.

Sterilization model

Table 3 presents the results of another logistic regression analysis of the acceptance of sterilization on selected socio-economic and demographic variables using the 1991 CPS. Results show that participation with any NGO is the most significant determinant of sterilization. Odds of acceptance of sterilization are doubled when women are involved with an NGO.

The effect of visits by an FWA during the previous three months differed according to administrative division. Table 3 shows that in Rajshahi division, when a woman was visited by an FWA in the previous three months, the odds of her accepting sterilization is reduced 0.29 times. Similarly in Khulna division, a visit by an FWA reduces the odds of acceptance of sterilization 0.16 times. The latter value was calculated as the odds of an FWA visit in Dhaka division multiplied by the odds of an FWA visit in Khulna division (1.06 x 0.15). Mitra and others (1992) remarked that in areas where FWA visitation is high, use of a modern reversible method is high but acceptance of sterilization declines. Previous studies have found that acceptance of sterilization was high in areas where there were no FWAs in the area. It has been hypothesized that women in such places may feel that the one-time permanent method, which does not require follow up or the purchase of contraceptive supplies, is the most convenient method to use. This may explain the reduced acceptance of sterilization where FWA visits were made in Khulna and Rajshahi divisions.

The divisional differentials are the same as those in the model for modern reversible methods. Women from Chittagong division have a lower probability of use compared with women from Dhaka division, whereas women from Rajshahi division have a higher probability of use, and women from Khulna division do not differ significantly. Women with more than four living children have a lower probability of use compared with women having fewer than four children. Based on the models in tables 2 and 3, it may be said that women having three or four children are most likely to be users of sterilization. Other studies have explained that older women (with more than four children) have not responded well to modern techniques; moreover, many of them are no longer sexually active (Kamal, 1996). Younger women (with three or fewer children) have adopted modern reversible methods (Kamal and others, 1996 and 1994). Hence, the results are in the expected direction. Urban/rural differentials, women's education and socio-economic status are not significant in this model.

Table 3: Results of logistic regression analysis of sterilization acceptors on selected socio-economic and demographic variables, 1991 Bangladesh Contraceptive Prevalence Survey

Variable	Odds ratio	Coefficient	Significance
Visited by FWA in previous three months			
Visited	1.06	.06	.869
Not visited *	1.00		
Number of living children			
>4	0.20	-1.60	<.001
≤4 *	1.00		
Region of residence			

Chittagong	0.42	-.87	<.001
Khulna	1.91	.65	.005
Rajshahi	1.80	.59	.007
Dhaka *	1.00		
Type of residence			
Urban	0.87	-.14	.129
Rural *	1.00		
Number of possessions			
>3	1.69	.52	.057
≤3 *	1.00		
Women's education			
Some school	1.06	.06	.821
No school *	1.00		
Participation with NGO			
Member	2.00	.69	.033
Not member *	1.00		
Interactions			
Chittagong.FWA	3.23	1.17	.114
Khulna.FWA	.15	-1.87	.008
Rajshahi.FWA	.27	-1.32	.053
Dhaka.FWA *	1.00		

Notes: * Reference group. Log likelihood -3252.65

In earlier models, these variables varied in the expected directions, with rural, uneducated and poor women having higher probability of use. As the variable "participation with any NGO" was introduced into the model, these variables became insignificant. This result was also found in a smaller study involving 3,000 rural Bangladeshi women (Kamal and others, 1996). It portrays the leading role played by AVSC in providing 16 per cent of all sterilizations performed in Bangladesh. It is possible that other NGOs also promote higher use of sterilization instead of modern reversible methods, for which no association has been found. This is an important finding and demonstrates the scope for further research to determine whether most NGOs (family planning based or non-family planning based) promote sterilization more than the use of modern reversible methods, or whether services by AVSC have an overriding effect on this population.

Discussion and conclusions

This article investigated the effect of FWAs on the contraceptive use of women in Bangladesh. It finds that in rural Bangladesh visits by an FWA increase the odds of contraceptive use almost eight-fold; such visits in urban parts of the country increase the odds of use less than 2.5 times for modern reversible methods. However, it is known that FWA visits have a circular relationship with contraceptive use, i.e. those women who are known users are visited by FWAs and those who are visited by FWAs are more likely to be users. Ignoring this effect, the huge increase in odds of use is a remarkable finding. It also explains the increased use of modern reversible methods in Bangladesh since 1975, especially the hormonal pill method (Mitra and others, 1994). For permanent methods, visits by FWAs have no significant effect on use other than the visits lowering the probability of a woman being a sterilization acceptor in Khulna and Rajshahi divisions.

Two explanations may be offered in this context. In Bangladesh, sterilization rates may have reached a peak and have started to decline slightly (Mitra and others, 1994). Those couples wishing to terminate childbearing may have already accepted sterilization. Successful NGOs may also have taken a leading role in motivating women to use sterilization, since the study finds that participation with an NGO doubles the odds of a woman being sterilized. In order words, the demand for sterilization may have been temporarily saturated. On the other hand, repeated and assured visits by FWAs may have encouraged women to be users of modern reversible methods instead of permanent methods, and that may be the explanation for low use in Khulna and Rajshahi divisions. A number of women (16 per cent), especially uneducated women and those living in rural areas, have expressed sterilization regret (Mitra, 1994). Acknowledging the diffusion effect of the influence on prior users, this may have caused future users to opt for modern reversible methods, which would be facilitated by the FWAs. The active role played by the FWA had already been lauded, so the addition of more FWAs to the national family planning programme in 1991 seems to have been justified by the positive results achieved to that time.

However, one recent study found that, although the contraceptive prevalence rate is increasing in Bangladesh, the contraceptive failure rate seems high, with 25 per cent of all pregnancies possibly resulting from contraceptive failure (Bairagi

and Rahman, 1996). This situation implies that increasing the number of FWAs and improving contraceptive prevalence rates alone may not be effective in bringing about further fertility declines. But high prevalence coupled with low failure rates together could enable the country to reach its fertility goals. In this regard, the role of FWAs should be shifted to provide greater follow up and more personalized supervision than is currently the case. In the near future, the Bangladesh family planning programme should pay more attention to the quality of care offered by the FWAs instead of focusing on quantitative targets, as has been agreed to by the Government in adopting the Programme of Action of the 1994 International Conference on Population and Development (ICPD).

A number of policy recommendations could be drawn from this study that are in line with the ICPD Programme of Action. Thus, the Government may wish to:

- Increase the efficacy of FWAs by training them at regular intervals, keeping them up-to-date on the methods available and informing them of measures in the management of side-effects.
- Expand the services provided by FWAs by training them in other aspects of female health care, thereby increasing their usefulness as well as the possibility of contact with as yet unreached potential clients.
- Strictly supervise the work of FWAs so that no eligible woman is excluded from contact with them as well as encourage the FWAs by providing them with benefits such as a residence for them in their catchment area.
- Allocate motorbikes to the FWAs so that all eligible women in their areas can be more easily contacted, with none being left out owing to poor communications.
- Target especially low prevalence areas and encourage the initiation of new branches of successful family-based NGOs, as well as investigate and supervise the performance of existing FWAs.

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