Hossain, Mian Bazle; Phillips, James F. : The Impact of Outreach on the Continuity of Contraceptive Use in Rural Bangladesh. Studies in Family Planning. March/April 1996. 27(2). p.98-106.

The Impact of Outreach on the Continuity of Contraceptive Use in Rural Bangladesh

Mian Bazle Hossain and James F. Phillips

In 1978, the Bangladesh family planning program launched a national program of outreach services that continues to the present. Young married women were hired and trained to visit women in their homes, offer contraceptive services, provide information, and support sustained use over time. This report uses data from two rural districts to assess the effect of the household visitation program on the continuity of contraceptive use. Results of a multivariate analysis show that household outreach has had a pronounced net effect on the continuity of contraceptive use throughout the study period and that the magnitude of this effect has increased with time. This finding suggests that sustained contraceptive use continues to benefit from home-based outreach even after a decade of service encounters. Policy implications of this finding are discussed. (STUDIES IN FAMILY PLANNNG 1996; 27,2:98-106)

Until recently, debate about the demographic role of the Bangladesh family planning program was focused on the question of whether program services could work in that setting, given the economic and social constraints on demand for services. This "first generation" question is being supplanted by "second generation" questions: With the growing evidence from experimental studies that the program can have an impact, and evidence from surveys that a demographic transition has begun, debate has shifted to the question of whether intensive program services are needed to sustain the pace of reproductive change over time. A key issue in the policy debate is the role of female outreach workers who have been recruited and trained to provide information about family planning and household services for resupply methods. Outreach has played an important role in fostering adoption of family planning in Bangladesh. Throughout the country, the custom of *purdah* restricts the mobility of women, preventing them from traveling for health services and family planning. Even in settings where purdah is not rigorously enforced, travel is difficult and expensive, and isolation of households and hamlets is the norm. Outreach services have, therefore, played an important role, particularly in areas of the country where prevalence is low and where outreach services lend support to family planning behaviour that is not forthcoming from traditional community and familial institutions.

What is controversial about outreach is the sheer cost and scale of this operation. As contraceptive use increases, the possibility exists that the outreach program has achieved its fundamental aim: Nearly every couple has been approached repeatedly about family planning; contraceptive adoption has become normal rather than exceptional behaviour. Fixed supply points at clinics, satellite clinics, and social marketing outlets exist at convenient locations throughout the country. In this context of ubiquitous availability, household contacts may do little more than substitute expensive outreach supply for less expensive static service supply. Although the demographic transition was launched with intensive services, such services may not be required to sustain reproductive innovation over time.

A perspective that has gained considerable currency is the notion that services affect reproductive behaviour by fostering the diffusion of new ideas about reproduction itself-that services not only fulfill demand, but also generate new demand [1]. In this view, outreach workers are agents of change who introduce new fertility regulation ideas and capabilities to rural couples. Reproductive innovation and ideational change fostered by outreach programs can generate demand for contraceptive supplies that would not otherwise arise [2]. Outreach is something that introduces innovation, but, according to this outlook, it is not a necessary mechanism for sustaining contraceptive behaviour over time.

The premise for the argument in support of continuing intensive outreach services is the notion of fragile demand for family planning in rural Bangladesh. In this view, family planning represents a risk to women involved with continuing social, psychological, and monetary costs that cannot be sustained by individuals. Outreach services lend a measure of support to contraceptive use that would not otherwise arise. If such is the case, outreach services will be necessary to sustain contraceptive behaviour even as contraceptive prevalence rises and use becomes the norm [3].

This report examines the fragile-demand hypothesis by testing the role of service outreach in sustaining contraceptive use. Longitudinal data have been compiled in two rural *thanas* [4] of Bangladesh by the Maternal and Child Health and Family Planning Project. The analysis below is based on the idea that the fragile demand and reproductive-change hypotheses are not mutually exclusive: The rigorous administration of outreach services may have a continuing role in supporting contraceptive use, but outreach may also have changed reproductive aspirations. The joint effects of this impact are unknown. Analyzing the changing role of outreach in sustaining contraceptive behaviour provides useful insights into the long-term strategic needs of the Bangladesh family planning program.

Background

Results of the 1991 Contraceptive Prevalence Survey (Mitra et al., 1992) show that virtually all Bangladeshi women have some knowledge of modem contraception, 49 percent had tried a method, and 40 percent were currently using a modem method at the time of the survey. Within two years, survey research showed that ever use exceeded 60 percent and current use was 45 percent. Thus, although the prevalence of contraceptive use is rapidly increasing, the growing gap between ever use and current use suggests that the high incidence of discontinuation is increasing as well. Research on the determinants of discontinuation show that most discontinuation arises from confusion about methods, unjustified health concerns, and misinformation about the true nature of risks and side effects [5]. Perceptions of side effects are compounded by women's isolation from health-care providers and others who could provide professional advice (Stewart et al., 1991) (Larson et al., 1991). Even if side effects were not a problem, women's autonomy in making health or reproductive decisions is often severely constrained by traditions enforcing modesty, by purdah, or by subordination of their decisions to the will of husbands, mothers-in-law, or kin whose advice on discontinuing contraception must be accepted without question [6]. Lack of understanding of contraceptive regimens also contributes to discontinuation (Seaton, 1985).

Contraceptive-continuation rates assessed in various Bangladesh studies vary markedly by method. Pill and condom-use rates are lower than corresponding rates for the IUD and injectables (Chowdhury et al., 1986; Akbar et al., 1991; Akhter and Ahmed, 1990, Akhter 1991, and 1992). In general, for Bangladesh, pill, IUD and DMPA continuation rates are somewhat lower than such rates observed elsewhere in the region. Condom rates are substantially lower in Bangladesh than rates estimated elsewhere [7].

Policies and strategies have been addressed to dropout prevention. A distinction is made between involuntary dropouts (who stop using their method because of supply shortages and remediable side effects) and voluntary dropouts (who are planning to have a child) (see Larson et al., 1991; Akhter and Ahmed, 1990) [8]. Although program strategies aim to reduce the involuntary dropout rate to as low a level as possible, survey responses suggest that involuntary decisions account for most discontinuation, and that program support could lead to substantial increases in prevalence if the barriers to continuity of contraception were removed (Akhter, 1987) (Rob et al., 1987).

To address the apparent need for program support for continuing contraception, the Government of Bangladesh instituted female-village-worker recruitment, training, and posting designed to improve the accessibility of contraception and

to provide support for family planning in villages throughout Bangladesh. This program, initially launched in 1978, established a cadre of 14,000 female workers, known as family welfare assistants (FWA), who are charged with the task of visiting women in their homes, explaining contraceptive methods, encouraging adoption, and supporting ongoing use with resupply, information, and referral services. With evidence that FWA outreach contributed to contraceptive use, their numbers have been increased to nearly 24,000 workers [9]. In this expanded program, each FWA covers an area corresponding to three to five villages and is expected to visit each household once in two months, serving, on average, 850 rural women.

Survey data suggest that this program has blanketed the country with information and services. Nearly all women have been contacted at least once by an FWA, and more than one-third have been contacted at home in the six months prior to survey interviews. Qualitative studies suggest that FWAs are the primary link between the Ministry of Health and Family Welfare program and rural women [10]. The responsibility of FWAs is to visit households, promote contraceptive use, supply contraceptive methods, and assist in side-effect management (provide counseling and client referral to family welfare centers for service) [11]. Although research has demonstrated that FWA contact with rural women increased the probability of contraceptive adoption and use in the initial years of this program, the long-term role of the FWA in sustaining use is unknown.

This report aims to determine whether the FWA program has an impact on continuity of use as its proponents have planned. Much of what is said about the need for follow-up is based on conjecture rather than on formal investigation. The report also aims to determine whether this role has been sustained. With the steady increase in prevalence rates over time, and with increasing evidence of social acceptance of and increased demand for contraception, the need for intensive household outreach may be diminished by the ideational changes that accompany demographic transition.

Methods and Procedures

The present analysis tests the null hypothesis that worker-client exchanges have no effect on continuation, and that the likelihood of discontinuation of a method will be lower in the case where the FWA provides better services to the client for dealing with side effects than in the case where such services are poor or are not provided. An additional hypothesis is included, that effects of outreach are time conditional: In the early phase of outreach, the introduction of family planning is associated with a greater impact from FWA visits than are similar visits conducted later in the program, even if statistical adjustments correct for

contraceptive-use history, client characteristics, and other factors that influence reproductive behaviour.

The Data

Data for this study are provided by the Maternal and Child Health-Family Planning (MCH-FP) Extension Project, a field research program of the International Centre for Diarrhoeal Disease Research, Bangladesh. Field sites of this project are located in the rural sub-districts of Sirajganj and Abhoynagar, in central and western Bangladesh, respectively. Since 1982, the MCH-FP Extension Project has been working in collaboration with the Ministry of Health and Family Welfare (MOHFW) in these two rural areas. Since its inception, the MCH-FP Extension Project has been maintaining a system of longitudinal surveillance known as the Sample Registration System (SRS) in these two rural field sites. To monitor the impact of its different interventions on contraceptive use, the SRS compiles data on contraceptive use, workers' contact with clients, workers' discussions with the clients, and their services to the clients. The project's trained female interviewers, who are independent of family planning services, collect data from rural women through interviews in a 90-day (one-round) cycle [12]. Until mid-1992, nearly 32 rounds (eight years) of longitudinal data on rural women's contraceptive use and programmatic variables (number of FWA visits, nature of discussion with the women, and type of service provided to the client while visiting) are incorporated in the analysis. In addition to the programmatic variables, the women's age and education, their religion, their desire for additional children, and their household area are used as explanatory variables in the analysis.

The Dependent Variable: Contraceptive Attrition

Table 1 presents data on the contraceptive attrition process analyzed below. Life-table continuation rates are reported by method first adopted, according to criteria of first-method- and all-method-use duration [13]. As the table shows, attrition among users is substantial in this study population. One-third of the users discontinue use within the first six months, one-half within a year, and three-fourths within three years. As the bottom panel shows, this attrition is offset somewhat by method switching, but overall discontinuation rates are high. The 36-month continuation rate is about 40 percent.

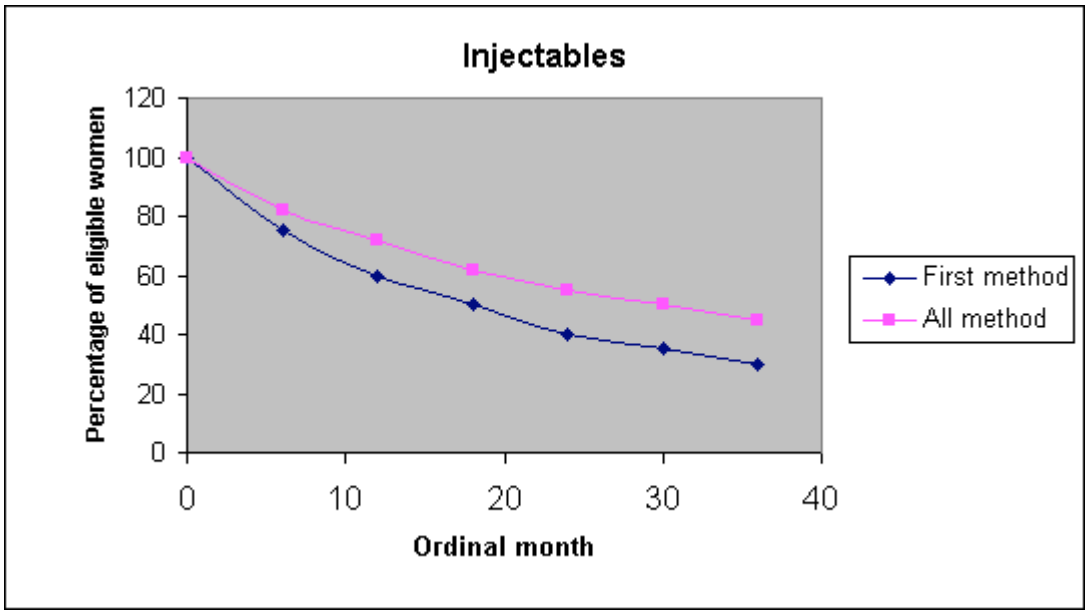
Table 1: Percentage of women continuing to use condoms, oral contraceptives, injectables, and the IUD, by ordinal month since method adoption, according to the first method they accepted, in two rural areas of Bangladesh, 1984-92 .

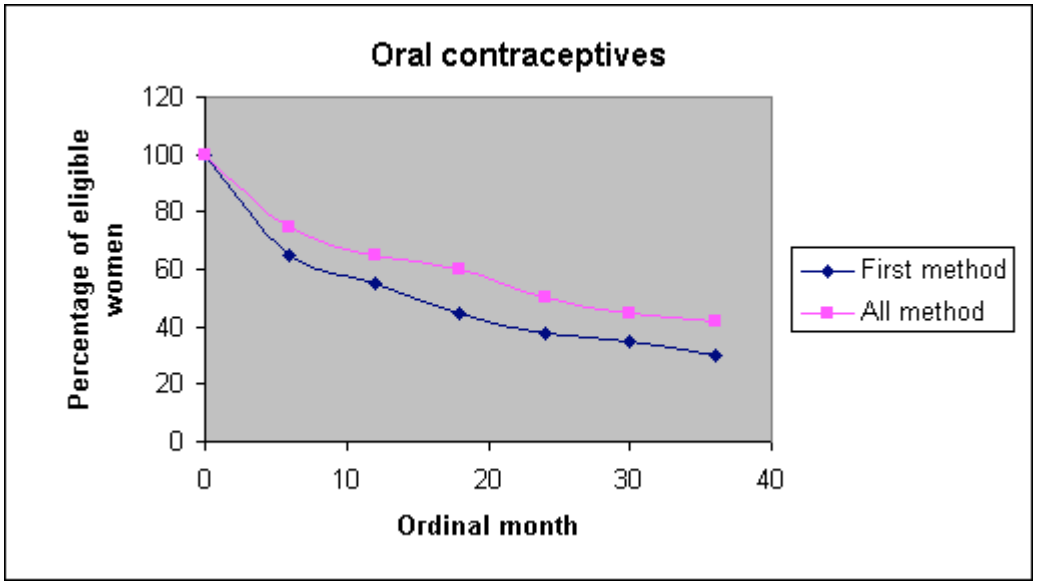
Ordinal month	First method accepted				All methods combined
	Condom	Oral contraceptives	Injectables	IUD	
Starting (N)	(383)	(1,233)	(968)	(236)	(2,820)
First-method continuation rates	44.8	65.7	73.5	84.5	67.2
6	29.3	53.1	58.9	70.1	53.4
12	21.2	44.6	48.2	57.9	43.9
18	--	36.5	39.4	50.8	36.2
24	--	30.0	31.8	40.0	29.4
30	--	24.8	26.6	--	24.2
36					
Median duration of use (months)	4.9	13.8	16.8	24.6	13.8
All-method continuation rates	62.4	74.9	81.8	91.3	77.0
6	50.6	64.9	70.4	84.4	66.6
12	41.0	56.9	60.9	76.8	57.9
18	37.9	48.7	53.5	70.0	50.8
24	34.7	43.0	46.7	66.2	45.3
30	30.9	38.5	41.9	58.6	40.5
36					
Median duration of use (months)	12.3	22.1	27.5	44.0	24.8

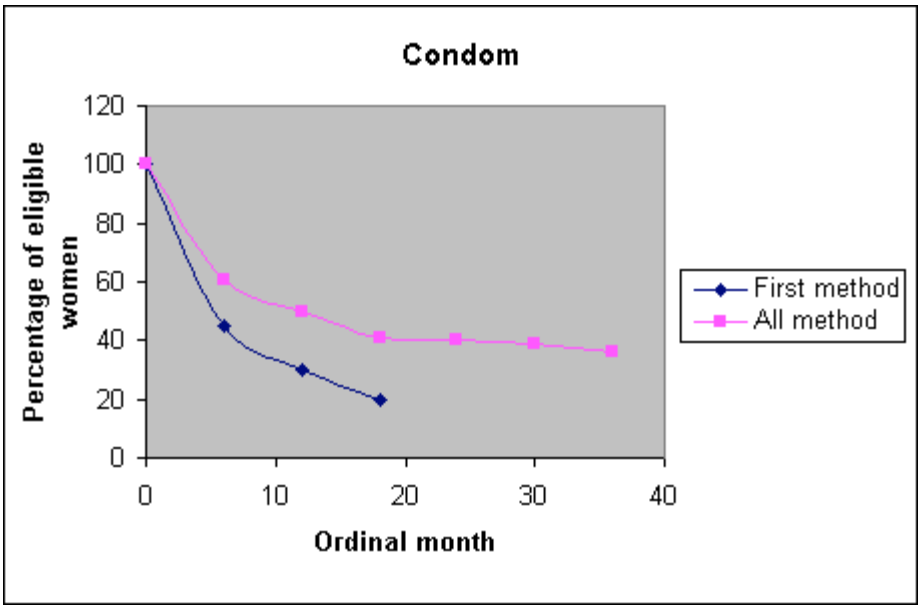
-- = Fewer than 30 cases entered the month indicated.

Table 1 also shows marked method differentials for continuation by the method first adopted, a relationship that is further illustrated in Figure 1. IUD adopters have substantially higher continuation rates than do other adopters; condom adopters have the lowest continuation rates. All-method continuation-rate differentials are similar to patterns observed for first-method rates. Attrition among adopters varies considerably by method, with differentials reflecting patterns that are observed elsewhere in Asia. Irrespective of the method adopted, however, substantial gains in the duration of use are achieved when women switch methods. This finding is illustrated, in Figure 1, by the large gap between all-method- and first-method-use-continuation curves.

Figure 1


Injectables
Percentage of eligible women
120
100
80
60
40
20
0
0
10
20
30
40
Ordinal month
First method
All method


Oral contraceptives
Percentage of eligible women
120
100
80
60
40
20
0
0
10
20
30
40
Ordinal month
First method
All method



The Covariates

Conventional hazard-regression procedures for studying the role of covariates in an attrition process are not appropriate for research on the effect of outreach. The diagram in Figure 2 (Figure 2 is missing) shows the role of covariates over two discrete time intervals. If background characteristics are the only covariates of interest, hazard models could be estimated that gauge their conditional effects as illustrated by pathway ***a*** in Figure 2: Motivation is a function of client characteristics, each exerting a net additive effect on continuing use. The objective of the analysis is to estimate the effect of ***b***, adjusting for the confounding effects of ***a***. Considered as a general attrition process, however, the ***b*** effect is also a consequence of continuation: Women contacted were women requiring resupply, women who were not contacted in previous rounds, or women known by FWAs to want services. Contraceptive-use patterns and visitation patterns of the past shape current visitation priorities and outreach behaviour (pathway ***c*** in Figure 2 [figure 2 is missing]). If ignored, this important source of endogeneity would inflate estimated effects of outreach spuriously. For the present analysis, the logical approach is to divide contraceptive-use histories into discrete time segments and to analyze continuity across these segments with appropriate adjustments for endogeneity that arise from selective outreach behaviour based on relevant events in the past. Workers know clients' recent method-use histories. Marshaling statistical adjustments based on client behaviour in the past permits correction for the selectivity of outreach encounters. That is, the longitudinal data of the Extension Project permit fairly precise estimation of the net effect of outreach encounters on decisions to continue or stop using a method over a specified time interval. Statistical models for this estimation are presented in the appendix.

The analysis aims to interpret the attrition process illustrated in Figure 2 (Figure 2 is missing) with covariates that are presented in Tables 2 and 3. Descriptive statistics in Table 2 report the crude contact rates at five points in the decade of observation of the study population. These rates refer to 90-day recall of one or more FWA visits to respondents' houses in the past three months. Visits that do not involve discussion or services are termed contacts in the analysis. As the data show, contact rates in project areas increased early in the project period as a result of interventions designed to improve field-management operations. In the period following 1986, the geographic density of FWAs was greatly increased by hiring additional workers. A pilot of this program in study areas was associated with a pronounced increase in contact rates in the period following the FWA expansion. As expected, the frequency of contacts increased markedly in the period following the expansion of the FWA workforce.

Table 2: Family welfare assistant contact rates and contraceptive prevalence rates (CPR), MCH-FP Extension Project and Contraceptive Prevalence Surveys (CPS), Bangladesh, 1984-92

Extension Project	**Year**				
	1984	**1986**	**1988**	**1990**	**1992**
Sirajganj	25.6	46.0	61.6	71.6	65.7
Contact rate (%)	9.2	15.3	20.4	39.6	40.3
CPR (%)	41.2	55.4	83.8	79.2	76.2
Abhoynagar	27.3	33.3	39.7	46.0	46.3
Contact rate (%)					
CPR (%)					
National CPS	**Year**				
	1983	**1986**	**1989**	**1991**	
Contact rate (6 months)(%)	30.0	27.0	25.0	36.0	
CPR (%)	19.0	25.0	31.0	39.9	

Table 3 presents statistics for characteristics of the study population. The average age of respondents is less than 30. Most are illiterate, and the mean duration of their schooling is only 1.6 years. The demand for family planning is apparently pronounced (47 percent want no more children) [14]. These characteristics are typical of data reported in national surveys of married women of reproductive age.

Table 3: Descriptive statistics for study population, MCH-FP Extension Project, Bangladesh, 1984-92

Variable	Mean/percent
Respondent's age	28.6
Years of schooling respondent completed	1.6
Size of respondent's dwelling space (square feet)	248.9
Want no more children [A]	(47.1)
Muslim [A]	(86.9)

[A] Percent of study population is given in parentheses.

Results

Estimates of the coefficients of Model (1) are presented in Table 4. Table 4 reports results of the two-stage generalized logit-regression analysis of the effect of client characteristics and FWA contact on continuity of use. The first-stage results show that sources of endogeneity illustrated by pathway ***c*** in Figure 2 (Figure 2 is missing) are highly significant. Workers clearly target their outreach according to their previous household visitation efforts and according to what they know about the client's use history in the immediate past. Stage-two results show that contact effects exert a strong net influence on continuity of use (posited as pathway ***b*** in Figure 2 [figure 2 is missing]) that is not explained by client motives and characteristics (pathway ***a***in Figure 2 [figure 2 is missing]). Client characteristics have significant, but relatively weak effects. The strongest effect is demonstrated by the odds ratios for wanting another child (.85), indicating that voluntary discontinuation for planning additional children increases the attrition process by 15 percent (not shown). Other client characteristics, such as education and religion, are weak, however. The odds associated with the contact effect are pronounced, suggesting that the 90-day odds of discontinuation are reduced. This finding supports the hypothesis that worker visits sustain contraceptive use beyond levels of practice that would arise in the absence of household outreach. Further regressions, not presented in Table 4, show that the effects of client characteristics are unchanged if contact is dropped from regressions. This result, and the strong estimated net effect of contact, shows that contact is an incremental effect that is independent of client motives or characteristics.

Table 4: Generalized logit-regression estimates of the relative risk of contraceptive discontinuation for worker contact, client characteristics, and contraceptive method used in two rural areas of Bangladesh, 1984-92

Stage of program	Early (1982-84)	Middle (1986-88)	Recent (1990-92)

Stage 1	-0.81***	-0.19***	-0.33***
Contant	3.09***	2.67***	4.24***
Prior round FWA visit	1.75***	2.25***	2.98***
Prior round contraceptive use	1.00	1.00	1.00
Nonusers, prior round (r)	1112.45***	1436.59***	3170.76***
Multivariate Wald statistics			
Stage 2	-2.91***	-2.27***	-1.92***
Constant	0.36	0.12***	0.12***
Predicted current round FWA visit	1.01	1.01	0.98*
Client characteristics	0.97	0.97	0.99
• Age	1.00**	1.00	1.00
• Education	1.11	1.24	1.15
• Dwelling unit area	1.00	1.00	1.00
• Muslim	0.57***	0.77*	0.88*
• Hindu and other (r)	1.00	1.00	1.00
• Want no more children	9.58***	10.92***	10.67***
• Want more children, up to God, unsure (r)	7.07***	6.89***	7.82***
	6.36***	4.89***	6.50***
Method used	1.00	1.00	1.00
• Condom	1125.48***	1664.00***	2726.79***
• Oral contraceptives	2,694	4,329	8,168
• Injectables			
• IUD (r)			
Multivariate Wald statistics			
Person-rounds of observation			

Table 4 also presents results segmenting the analysis by time period, thereby allowing assessment of whether contact effects diminish or increase with time. Early adopters are likely to be highly motivated, high-parity women who adopt a method in order to limit rather than space future childbearing and who sustain contraceptive use over time with a greater degree of commitment than do later adopters. This pattern of contraceptive behaviour has been noted in the Matlab project (Phillips et al., 1989) (Koenig et al., 1992). If the ambivalent adopters are growing as a proportion of all users, the involuntary discontinuation would also grow with time and the demographic significance of household visits would increase. Regression results in Table 4 are consistent with this perspective: Effects increase markedly from the early to middle period, and the middle to recent period. In the early period, reproductive preferences exert a pronounced effect: Discontinuation odds are 43 percent less among women wanting no more children than among women who want more. By the recent period, this role of preferences drops to insignificance, suggesting that motivation as a determinant of use diminishes if the role of contact is held constant. These findings suggest

that the importance of contact grows as the proportion of committed users diminishes.

That early adopter effects of preferences are so pronounced suggests that voluntary discontinuation plays an important role among early adopters, but a less important one among recent adopters. The relative importance of unplanned, involuntary discontinuation may be growing with time.

Discussion

The assumption that worker outreach addresses the dropout problem is used to justify large-scale investment in, workers' salaries. As costs of this program grow, the need to test this assumption has become critical to the Bangladesh government and to donors that have financed the outreach program.

Overall odds of discontinuation are reduced by 65 percent if women are contacted at home at least once in a 90-day period (not shown), indicating that the role of outreach is independent of client characteristics and thus represents a direct contribution of the program to contraceptive use. This effect arises even though both social marketing outlets and rural clinics are available throughout the study area. If household contact is reduced by changing the program to a more passive service approach, this finding suggests that the positive role of outreach would be lost; discontinuation rates would increase.

The main effects of worker visits grow with time, suggesting that the effect of outreach is undiminished as the demographic transition proceeds. This tentative conclusion was examined further by comparing results from an examination of the early period of the program with results that emerge from the most recent period. Findings imply that the effect of outreach changes and increases over time: When prevalence was low and users were limited to a few innovators, client characteristics sustained contraceptive use. As the user pool has increased, and adopters are more typical of women in general, sustained practice depends more on outreach, because users are more typically contraceptive experimenters who try methods as a temporary measure. Results suggest that household outreach substitutes for client motivation, providing an incentive for practicing contraception that would not otherwise arise. As time progresses, the effect of outreach in sustaining use gains in importance.

This analysis has been motivated by policies, often promulgated but rarely evaluated, that aim to sustain the continued practice of contraception by fostering direct encounters between program workers and contraceptive users. Fielding workers to follow up with clients has been a central strategy of programs for four decades. This activity is justified by the aim of sustaining user

satisfaction by minimizing misunderstanding of methods and maximizing convenient resupply. If decisions to terminate use are volitional, driven solely by personal choice, then client characteristics alone would explain variance in the attrition process. However, findings from this study support the view that involuntary discontinuation is a prominent factor driving contraceptive attrition. In the absence of active household outreach, many women will stop using contraceptives, not because they plan to do so, but because they depend upon the program for outreach support. Although sustained, demand-driven contraception may eventually become the norm, this analysis suggests that temporary contraception increases as prevalence grows, and that outreach is, therefore, more important to users now than it was in the past.

Policy deliberations on the merits of scaling back household service delivery should be pursued with great caution, because scaling back in the interest of fostering sustainability of the program may undermine the sustainability of contraceptive practice instead.

Appendix: A Two-stage Procedure for Estimating the Effect of Worker Visits on Contraceptive Continuation

The analysis for this study must address two distinct econometric problems. First, worker-client contact at time *t* is a covariate of contraceptive attrition that is also a consequence of past contraceptive use. Workers target outreach selectively for clients known to be in need of services. While some of the effect of outreach represents a real impact of contact on continuity, some is simply worker response to clients' demand for, contraceptive resupply services. Endogeneity arising from selective outreach must be addressed by the analysis. Second, statistical models that adjust for endogeneity must also use repeat-observation data. Workers target outreach on the basis of what they know about client contraceptive use in the immediate past and about the services they have provided to a client in the past. Repeat-observation analyses construct episodes of observation that have pronounced autoregressive error that must in turn, be addressed with generalized logit models to correct error terms for within-individual correlation.
A two-stage regression procedure for addressing these statistical issues is given by:

$$\text{Logit } W_{it} = a_i + b\, m_{it-1} + g\, W_{t-1} + e_{i1} + e_{it1}$$

Where

W_{it} = a discrete indicator at time *t* of outreach contact between workers and client *I* over the 90-day time interval *t*-1 to *t*,

W_{it-1} = the corresponding indicator of time *t*-1 contact in the previous round, *t*-2 to

t-1,

U_{it-1} = contraceptive use status, as assessed at time *t*-1;

and

a_i = is the stage-one intercept,

b = a parameter for the effect of use status on subsequent follow-up,

g = a parameter for the effect of previous follow-up priorities on current worker follow-up,

e_{i1} = a stage-one term for the within-individual *I* component of error, and

e_{it1} = a stage-one term for the time *t* between individual component of error;

and by estimating a second-stage regression given by:

$$\text{logit } C_{ijt} = a_2 + d\,W_i + \text{å}\, x_j X_{ij} + e_{i2} + e_{it2}$$

where

C_{ijt} = an indicator of continuity of use over the interval *t*-1 to *t* for individual *I* with

characteristic *j*.

W_i = the predicted probability of contact for individual *I* given parameters of stage 1,

X_{ij} = the *jth* characteristic of individual *I*;

and where

a_2 = a stage-two intercept,

d = a parameter for the net effect of worker contact,

x_j = the effect of the *jth* characteristic, and e_{i2}, e_{it2} are stage 2 within-and between-individual error terms, respectively.

Estimation procedures employ the repeated bootstrap method of Moulton and Zeger (1989).

Notes

1. See Rogers and Shoemaker (1971); Bulatao and Bos (1992); Simmons and Phillips (1986) (Simmons et al. (1988)). Diffusion theorists, in explaining the role of community-based distribution, emphasize workers as agents of change, introducing new ideas and catalysing new demand in providing convenient village-based services (see, for example, Rogers, 1973); (Freedman and Freedman, 1986) (Rijadi, 1988).

2. For a discussion of this theme in reference to Bangladesh, see Simmons and Phillips (1986).

3. This view is based on the influential interpretive framework proposed by Easterlin (see Easterlin and Crimmins, 1985). Family planning services achieve their effects by mitigating the social, psychological, and monetary costs of contraception. The support that programs provide is required, therefore, if the costs of contraception continue. Cleland et al. (1994) argue that outreach derives its impact from alleviating these costs.

4. The thana is a unit of local government, typically serving a population ranging from 200,000 to 300,000. Thana headquarters have a rural hospital, a police station, and the offices of elected government officials.

5. See Mabud and Akhter (1984); Akhter and Ahmed (1991); Obaidullah (1984).

6. Husbands' views are particularly important. Spousal opposition to use is a major determinant of discontinuation (Chowdhury and Harvey, 1994).

7. See Akbar et al. (1991); Larson, Islam, and Mitra (1991); Akhter and Ahmed (1991). Estimates based on the Demographic and Health Survey, using the calendar method, indicate that 72 percent of all condom users discontinue using the method within five years, versus 55 percent of injectable-method users, 45 percent of pill users, and 37 percent of IUD users (Mitra et al., 1994).

8. For example, male child mortality is associated with discontinuation (Johnson and Sufian, 1992). Son preference also affects continuity of use (Hollander, 1993).

9. Prevalence of contraceptive use was shown to be higher in the vicinity of FWA residences (Phillips et al., 1985). Moreover, FWA-client exchanges influence method adoption and choice (Phillips et al., 1989 and 1993).

10. See Simmons and Phillips (1986); Simmons et al. (1986); Simmons et al. (1988). Research in the controlled environment of the Matlab experiment suggests that the impact of outreach extends beyond the provision of contraception in that women's perceptions of their economic and social roles have changed in response to an extended period of outreach.

11. Research indicates that the quality of outreach services explains contraceptive continuation (Koenig et al., 1992).

12. The FWA-visitation rate in the project sites is higher than the national average: 76 percent of married women in Abhoynagar and 66 percent in Sirajganj per quarter by the middle of 1992. From the 1991 CPS (Mitra et al., 1992), FWA-visitation rates and the contraceptive prevalence rate for the country as a whole were 36 percent and 40 percent, respectively, in 1991.

13. In this, and all subsequent tables, continuation refers to the duration of use of any method of contraception from the time of first adoption. Termination corresponds to the onset of pregnancy or a 90-day round of non-use, whichever occurs first. Clients lost to observation are assumed to have used a method for half of the final round of observation. These assumptions accord with procedures proposed by Potter (1969).

14. This finding recurs in successive national surveys in Bangladesh (Mitra et al., 1994).

Acknowledgments

The MCH-FP Extension Project is a collaborative effort of the International Centre for Diarrhoeal Disease Research, Bangladesh, and the Ministry of Health and Family Welfare of the Government of Bangladesh that is funded by the United States Agency for International Development. Methodological work, computer software, and collaborative arrangements for this paper were funded by a grant to the Population Council by the University of North Carolina Evaluation Project. Generalized logit regression software for this paper was

written by David Leon, Associate, The Population Council, Bangkok. The authors wish to thank John G. Haaga for his contributions to the paper.

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