

Case 13

Reducing Fertility in Bangladesh

Geographic area: Bangladesh

Health condition: In the mid-1970s, a Bangladeshi woman had more than six children on average. In combination with poor nutrition and lack of access to quality health services, this high fertility rate jeopardized the health of both the woman and her children. Beyond the health impact, high fertility and rapid population growth represented a major constraint to the country's economic development and social progress.

Global importance of the health condition today: More than 150 million women in the developing world who would like to limit or space their pregnancies do not currently use a contraceptive method. So, for example, about 16 percent of married women in India have this "unmet need." In sub-Saharan Africa, where services are in relatively short supply, the unmet need is the greatest.

Intervention or program: The Bangladesh family planning program has depended on a large cadre of female outreach workers going door to door to provide information, motivate clients, and provide commodities; the program has used mass media to stimulate a change in attitudes about family size. The program both contributed to and benefited from improvements in women's status in Bangladesh during the past 30 years.

Cost and cost-effectiveness: The program is estimated to cost about \$100 million to \$150 million per year, with about one half to two thirds of the funding coming from external donors. Cost-effectiveness has been estimated at about \$13 to \$18 per birth averted, a standard measure for family planning programs.

Impact: As a result of the program, virtually all women in Bangladesh are aware of modern family planning methods. The current use of contraceptives among married women increased from 8 percent in the mid-1970s to about 60 percent in 2004, and fertility decreased from an average of more than six children per woman in 1975 to slightly more than three. Although social and economic improvements have played a major role in increasing demand for contraception, the provision of services and information has been shown to have had an independent effect on attitudes and behavior.

Whether or not couples can limit the number of children they have has profound consequences. For the couples, having the family size they want can mean the difference between economic security and a precarious existence. For a woman and her current and future offspring, the level and pattern of childbearing are central determinants of health status because with each pregnancy and delivery come health risks, particularly in the poorest countries. For societies at large, demographic

patterns, particularly fertility rates, are among the most important factors affecting long-term prospects for economic growth and social development.

Modern contraceptive methods make it relatively easy and safe for couples to limit the total number of children they bear and to time their pregnancies. Both permanent methods, including male and female sterilization, and temporary methods, such as hormonal methods (oral contraceptive pills, injectable hormones, and oth-

ers) and barrier methods (condoms and diaphragms), have advantages and drawbacks for individual couples. But all are reasonably effective at reducing the chances of unintended pregnancy, and they confer few health risks, particularly compared with the baseline hazards associated with pregnancy and childbirth.

Combined with changes in attitudes about the ideal family size, the availability of effective contraceptive methods through both public and private family planning services has changed the world. In the past 30 to 40 years, the average number of children borne by each woman (also known as the total fertility rate, or TFR) has declined steadily in the developing world, although with major differences in the rate of decrease across world regions. Between 1970 and 2000, the TFR in Latin America and the Caribbean decreased by half, from about 5 to 2.5 children per woman. In East Asia, the TFR declined from 5 to 2; and in South Asia, from 5.6 to 3.3.¹

Much of the decline in childbearing can be directly attributed to the use of contraception. About 30 years ago, less than one fifth of married women worldwide used contraception; now about 60 percent use either modern or traditional contraceptive methods. Contraceptive use varies widely by demographic group as well as by region—in many countries of sub-Saharan Africa, only about 10 to 20 percent of women use contraception, while in China upward of 80 percent do.² In general, contraceptive use is highest among well-educated women, those living in urban areas, and those in higher-income households. So, for example, only 16 percent of married women in Kenya with no education use contraception, compared to about 46 percent of married women with the highest level of education.²

Unmet Need

Despite the existence of a range of good family planning methods, not all women who are sexually active and who wish to limit childbearing or delay their next pregnancy use contraception. Surveys of women in developing countries indicate that a large share of women who want to limit childbearing—somewhere between 10 and 40 percent, depending on the country—do not use contraception.³ Researchers estimate that more than 123

million women in their reproductive years who would like to limit or space their pregnancies do not currently use a contraceptive method—a situation termed the “unmet need for contraception.”⁴ So, for example, about 16 percent of married women in India have this unmet need. In sub-Saharan Africa, where services are in relatively short supply, the unmet need is greatest. In Rwanda, some 36 percent of married women who wish to limit or space their pregnancies are not using contraception; in Malawi, it is 30 percent.⁵

For many of these women, the absence of an effective family planning program is the problem. An analysis of data from 13 countries found that many women with this unmet need lacked knowledge about contraceptive methods, had health concerns, or could not afford or did not have easy access to services.³

As a consequence of the unmet need for contraception, couples are having more children than they ideally would like, and the women and their babies are exposed to major health risks. In developing countries—and particularly the types of settings where the unmet need is the greatest—the risk of death and disability from pregnancy is high (see also Case 6). Importantly, the 20 million unsafe abortions that occur in the developing world annually result in 80,000 preventable deaths. It is estimated, in fact, that each year family planning could prevent fully one quarter of the more than 500,000 maternal deaths in developing countries. In addition, more than 7 million newborns die each year because of inadequate or inappropriate care in pregnancy and around the time of delivery.⁶

Unlikely Setting for Success?

Of all the possible settings for success in family planning, Bangladesh would not be the first place to come to mind. It is the ninth most populous country in the world, with a per capita income of about \$250 per year in the mid-1990s and close to 80 percent of the population living in poverty. Population density in Bangladesh is among the highest in the world, at more than 2,000 persons per square mile.⁷⁻⁹ The economy is primarily agricultural and faces increasing population pressure, with ever-increasing use of marginal lands; the per hectare agricultural yield is among the lowest in the world.¹⁰

Given low levels of education—more than half of all Bangladeshi women are illiterate—and cultural traditions among both Hindu and Muslim populations, which favor large families, high fertility would be expected. It is not surprising, then, that in the mid-1970s the average Bangladeshi woman was bearing about seven children during her lifetime, and the annual rate of population growth reached almost 2.5 percent.

A Program Motivated by Demographic Goals, Tempered by Experience

The history of successful family planning in Bangladesh started with resounding failure. In the early 1960s, when Bangladesh was an eastern province of Pakistan—the result of the 1947 partition of India—the Pakistani government instituted a heavy-handed family planning program that went against local needs and preferences. The coercive approaches used eventually led to a popular backlash, contributing to the 1968 collapse of the government. It was not until 1975, after a deadly famine and growing concerns about the demographic pressure on the country's natural resources and economic prospects,

that the now-independent Bangladesh embarked on a renewed family planning program. As it did so, leaders recalled the cautionary tale of how attempts to affect the most profound decisions in families and communities led to political conflict.

The main challenges facing the program at the start, in 1975, were low levels of knowledge about family planning, a prevailing belief that large families were best (typical of agrarian societies), low levels of women's status, and lack of access to family planning services among the predominantly rural population—particularly among women who had limited mobility. Each of these constraints was addressed through the program and through complementary public sector actions.

While the program evolved substantially over time with the application of operations research (see Box 13–1 on the Matlab population laboratory), in general it was characterized by four elements:

- The deployment of young, married women as outreach workers

Box 13–1

The Matlab Contribution

Throughout the evolution of the Bangladesh family planning program, planners and program implementers, as well as donors, have benefited from the existence of the Matlab Health Research Center, which has operated for more than 35 years as a site for large-scale operations research on health programs. The Matlab center has maintained decades worth of demographic surveillance data on all births and deaths for a rural population of more than 220,000 people in about 142 villages in Bangladesh. Within the Matlab villages, researchers have tested various approaches to delivery of reproductive, child, and other health services, using rigorous methods for field tests—and then been able to closely monitor the results through high-quality information systems. The knowledge generated through the Matlab evaluations has been instrumental in shaping both Bangladesh's health programs and maternal and child health programs throughout the developing world. In fact, much of what is known about the impact of family planning programs on behavior and health is derived from research at Matlab. Since the 1970s, Matlab has been the testing ground for a variety of new approaches to delivery of family planning services, many of which the national program later adopted. So, for example, Matlab researchers were able to compare the impact on contraceptive use of different combinations of outreach services and fixed sites for delivery of care, of vertical family planning services versus integrated maternal and child health care, and of limited contraceptive choices versus the provision of a broad range of methods available.

- The provision of as wide a range of methods as possible to meet a range of reproductive needs
- The establishment of family planning clinics in rural areas to provide clinical contraceptive services
- The provision of information, education, and communication activities

Young, married women were deployed as outreach workers and trained to conduct home visits with women, offering contraceptive services and information. The number of these outreach workers, referred to as family welfare assistants (FWAs), eventually reached about 25,000 in the public sector; another 12,000 field workers were from nongovernmental organizations (NGOs). An additional 4,500 male outreach workers also were recruited.

Each FWA was expected to cover an area corresponding to three to five villages, visiting each household once every two months. This way, each FWA could serve about 850 rural women.¹¹ The reach of the program was staggering: Virtually all Bangladeshi women were contacted at least once by an FWA, and more than one third were reached at home every six months. The FWAs were well-recognized village visitors and constituted the main link between the government program and rural women.

This type of outreach was seen as particularly important in the Bangladesh setting, where cultural practices (the tradition of *purdah*) restrict women's mobility. Even where *purdah* was not strictly enforced, geographic isolation and difficult transport limited women's ability to go to fixed sites for services (see Box 13–2).

Box 13–2

Debate About the Outreach Approach

One topic of ongoing debate in the Bangladesh family planning program is about the approach of using female outreach workers for door-to-door visits—an element of the program some view as essential and others as costlier, less useful, and leading to poorer social outcomes than other approaches.

An analysis in 1996 showed the impact of the work of female outreach workers to be large and growing. Researchers found that when contraceptive prevalence was relatively low, the main determinant of whether women continued using contraception was client motivation and, as the underlying cause of that, the clients' demographic characteristics (level of income, urban residence, level of education, and so forth). As the proportion of women trying contraception grew as a result of the government's major efforts to change attitudes and make services available, the main determinant of whether women sustained use of contraception was whether they had ongoing contact and support—that is, whether they were visited at home by a young woman from the family planning program. According to Hossain and Phillips,¹¹ “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.”

Not all observers have been impressed by the quality of services offered through the outreach workers, however, and suggest that the strategy may have run its course now that demand for contraception is higher. Janowitz and colleagues found that the home visits were very short—often shorter than five minutes—and that women did not tend to depend on the home visitors for information. “The vast majority of clients view the fieldworker program as a convenience and not as an important source of information.”¹² Still others have questioned the value of the door-to-door approach because of gender considerations: The approach “often fails to provide adequate information and support to contraceptive users and may actually reinforce women's isolation and powerlessness by accommodating existing gender norms.”¹³

Box 13–3

Use of Social Marketing Methods

The early messages of the family planning campaign—“a small family is a happy family”—were not hitting the mark, so market researchers were asked to look at the problem. They found that almost all Bangladeshi women were in favor of family planning but for cultural reasons could not use contraception if their husbands objected. It was the men’s attitudes, rather than the women’s, that were the obstacle. Recognizing this, a mass media campaign was designed with minidramas for radio, television, movies, and mobile vans to appeal to male audiences. Within one year, male attitudes showed a change, with a much larger share of men doing what they were urged to do in the media campaign: talk with their wives about contraceptive options.

Mass media also were used to solve a problem the program faced: harassment of the female outreach workers. In the program’s early days, before family planning was widely accepted, many outreach workers faced the threat of violence from irate villagers, primarily men. Thus, two of the country’s most renowned writers were asked to create a storyline that would show the value of the outreach workers’ efforts, in both urban and rural environments. A compelling soap opera heroine named Laila was created; in the drama, she eventually took a job as a family planning outreach worker. This gave an entertaining platform to convey messages both about family planning and about the importance of respecting the outreach workers.

The effect was swift and positive. In its first year, the program received 10,000 letters, many telling about how the program had changed husbands’ attitudes about the family planning program. The success of this use of media was so great, in fact, that it inspired similar initiatives in Kenya, Tanzania, Brazil, Mexico, India, and other countries.¹⁶

The second element of the program was the provision of as wide a range of methods as possible to meet a range of reproductive needs. With this “cafeteria approach,” the program offered a range of temporary methods as well as sterilization services for individuals with two living children, where the youngest child was at least 2 years old.¹⁴ To support the work of the outreach workers, family planning commodities were provided through a well-managed distribution system.

The third element of the program was the family planning clinics established in rural areas to provide clinical contraceptive services, to which outreach workers could refer clients who wished to use long-term or permanent methods such as sterilization. Eventually, about 4,000 government facilities and 200 nongovernment clinics were established. (Nongovernmental organizations cover something on the order of one fifth of family planning clients.)

In the early days of the program, most of the clinics were dedicated only to the provision of family planning services. More recently, efforts have been made to develop an integrated approach, where health workers provide both family planning and basic maternal and child health services, such as immunization services.

The fourth element was the information, education, and communication activities that were intended to change norms about family size and provide information about contraceptive options. In particular, state-of-the-art use of mass media proved to be effective (see Box 13–3).

Costs, Financing, Cost-Effectiveness—and the Search for a More Sustainable Model

With the goal of reducing the rate of population growth foremost in their minds, Bangladeshi policymakers at

the highest levels were willing to spend considerable sums on the family planning program—and donors were, too.

In 1995, the program cost some \$120 million to operate, and to meet increasing demands caused by population growth alone it was estimated that an additional \$10 million would be needed each year, reaching \$220 million by 2005.¹⁵

With most program financing coming from external donors, including the US Agency for International Development, the United Nations Development Program (UNDP), the World Bank, and other agencies—and the government now financing only about half of program costs—donors are encouraging the government to find ways to increase the program’s efficiency. Dependence on a large cadre of fieldworkers has long been recognized to be an expensive way to go. Thus, the government has considered alternative and potentially less costly approaches to provide family planning services. Through research, analysts determined that the most cost-effective strategy was the provision of an integrated package of health and family planning services from clinics, complemented with targeted outreach to hard-to-reach clients. The fixed site approach cost \$13 per birth averted (a standard measure of cost-effectiveness of family planning programs), compared with \$18 for the doorstep strategy.¹⁵ This information has contributed to reconsideration of the optimal (and most financially sustainable) strategy.

Major Program Impact, Facilitated by Social Change

Bangladesh’s family planning program demonstrated success in reaching its objectives of informing couples about contraceptive options, increasing the use of contraception, and decreasing fertility rates.

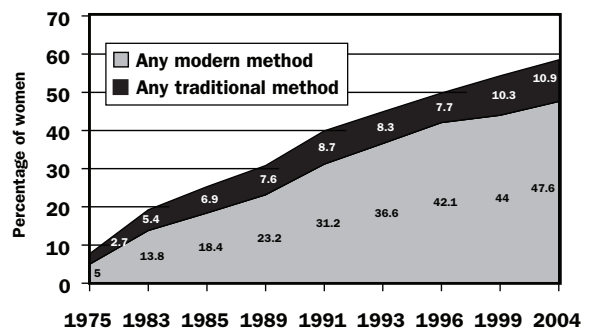
By 1991, when a contraceptive prevalence survey was conducted, almost all Bangladeshi women had some knowledge of modern contraception. Between 1975 and 1997, the proportion of married women who had ever used contraception increased fivefold, from about 14 percent to nearly 70 percent.¹⁷ The current use of contraception (also known as the contraceptive prevalence rate, or CPR) increased by more than six times,

from around 8 percent to 49 percent (see Figure 13–1). In relative terms, the use of modern methods increased and traditional methods decreased. With the wider availability of a range of methods, the use of sterilization and other long-acting methods declined, while the use of oral contraceptives and other temporary methods increased.⁹

The provision of a wide range of contraceptive methods was shown to be an important influence on the increase in overall use of contraceptives. The experience of the Matlab evaluation showed that when a full range of methods was made available, 80 percent of women continued using contraception for more than one year, while when only condoms and oral contraceptives were available, only 40 percent of women sustained use.

Most important, fertility declined—from 6.3 births per woman in the early 1970s to about three births per woman in 2004.¹⁸ The greatest decline in fertility rates was observed among women aged 35 years and older.¹⁷ With this change, Bangladesh became one of few poor countries to achieve major fertility declines without draconian measures, such as China’s one-child policy.

Figure 13-1
Trends in current use of family planning methods among currently married women aged 15-49 years in Bangladesh, 1975-2004.



Source: National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ORC Macro. *Bangladesh Demographic and Health Survey 2004*. Dhaka, Bangladesh, and Calverton, Maryland [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro; 2005.

Of course, the family planning program alone can take only partial credit for the increase in demand for and use of contraceptives. During the same 30-year period, life in Bangladesh was improving in many ways, particularly for women, and some of those changes directly affected the likelihood that couples would choose smaller families. Between 1973 and 1996, for example, primary school enrollment increased by 1.8 times for boys and almost tripled for girls. Enrollment in secondary school increased by about 2.5 times for boys and by more than five times for girls.¹⁹ Correspondingly, employment opportunities for women have increased, and traditional cultural practices have eroded somewhat in the face of global communication and mass media.

Although these factors are important in fostering greater contraceptive use, they do not overwhelm the independent effect of the availability of family planning services. Khuda et al used multiple regression analysis to disentangle the effects of changes in women's status and economic conditions from the independent effects of the family planning program.⁹ Their research found that six factors primarily account for the reproductive change in Bangladesh: communication between husbands and wives about family planning, desire for children, women's education, women's employment status, access to mass media, and the effects of the family planning program, including availability of contraceptives. In addition, it is likely that program efforts have influenced several of the other factors, including communication about family planning between husbands and wives.

Balancing Aims

The Bangladesh family planning program is far from perfect. Since about 1995, declines in fertility have slowed. Many observers have noted opportunities to increase the program's efficiency, to respond more effectively to women's needs, and to better link family planning and health. The question of the optimal outreach strategy remains unanswered.

One of the changes introduced into the program, the expansion to provide a broader set of reproductive health services, is clearly a positive development. Some data suggest that during the years when the focus was exclusively on the use of contraception, the death

rate during pregnancy and delivery increased slightly because of inattention to services such as antenatal care and skilled attendance at birth. However, the expansion in the mandate of the program brings with it difficulties and may be partially responsible for the plateauing of family planning uptake in recent years.

The current challenges, significant though they are, do not erase the fact that Bangladesh has done something few other countries at its level of social and economic development have been able to accomplish: It has complemented efforts to change attitudes about family size with the provision of family planning services to bring about a sustained and dramatic decrease in fertility. Although the original motivation for the program was to attain demographic aims, the government was able to learn the lessons of history and create a program that rejected coercive approaches and responded to couples' needs.

References

1. United Nations. *World Population Prospects 1950-2050: The 2002 Revision*. New York, NY: United Nations, Department of Economic and Social Affairs, Population Division; 2003.
2. United Nations Fund for Population Activities. *State of the World's Population*. New York, NY: United Nations Fund for Population Activities; 2002.
3. DaVanzo J, Adamson DM. Family planning in developing countries: an unfinished success story. Population Matters Issue Paper. RAND Corporation. Available at: <http://www.rand.org/publications/IP/IP176>. Accessed January 12, 2007.
4. Ross JA, Winfrey WL. Unmet need for contraception in the developing world and the former Soviet Union: an updated estimate. *Int Fam Plann Perspect*. 2002;28(3):138-143.
5. Levine R, Langer A, Birdsall N, Matheny G, Wright M, Bayer A. Contraception. In: Jamison DT, Breman JG, Measham AR, et al, eds. *Disease Control Priorities in Developing Countries*. 2nd ed. New York, NY: Oxford University Press; 2006:1075-1090.

6. Bayer A. Unmet need for contraception in the 21st century. Population Resource Center. Available at: <http://www.prcdc.org/summaries/unmetneed/unmetneed.html>. Accessed January 12, 2007.
7. Economic and Social Commission for Asia and the Pacific. *Population Data Sheet*. Bangkok, Thailand: United Nations; 1999.
8. United Nations Development Program. *Human Development Report 1994*. New York, NY: Oxford University Press; 1994.
9. Khuda B-e-, Roy NC, Rahman DM. Family planning and fertility in Bangladesh. *Asia-Pacific Popul J*. 2000;15(1):41–54.
10. Khuda B-e-, Helali J. Agriculture development in Bangladesh: a macro study on sustainability considerations. Dhaka, Bangladesh: University Research Corporation; 1991.
11. Hossain MB, Phillips JF. The impact of outreach on the continuity of contraceptive use in rural Bangladesh. *Studies in Fam Plann*. 1996;27(2):98–106.
12. Janowitz B, Holtman M, Johnson L, Trottier D. The importance of field workers in Bangladesh's family planning programme. *Asia-Pacific Popul J*. 1999;14(2):23–36.
13. Schuler SR, Hashemi SM, Jenkins AH. Bangladesh's family planning success story: a gender perspective. *Int Fam Plann Perspect*. 1995;21(4):132–137.
14. Rob U, Cernada G. Fertility and family planning in Bangladesh. *J Fam Plann*. 1992;38(4):53–64.
15. Routh S, Khuda B-e-. An economic appraisal of alternative strategies for the delivery of MCH-FP services in urban Dhaka, Bangladesh. *Int J Health Plann Manage*. 2000;15:115–132.
16. Manoff R. Getting your message out with social marketing. *Am J Trop Med Hyg*. 1997;57(3):260–265.
17. Mitra SN, Al-Sabir A, Cross AR, Jamil K. *Bangladesh Demographic and Health Survey 1996–1997*. Dhaka, Bangladesh: National Institute for Population Research and Training; 1997.
18. National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ORC Macro. *Bangladesh Demographic and Health Survey 2004*. Dhaka, Bangladesh, and Calverton, Maryland [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro; 2005.
19. Khuda B-e-, Mabud MA, Duza MB, et al. *Population Report of the Task Force on Bangladesh Development Strategies for the 1990s: Policies for Development*. Vol. 1. Dhaka, Bangladesh: University Press Ltd; 1991:117–139.