

Reproductive Change in Bangladesh: Evidence from Recent Data

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The removal of the social, psychic and economic costs of contraception coupled with efforts to 'crystallize' demand would hasten the fertility decline

In recent years, in the absence of a clear association between socio-economic development and the timing of fertility decline, several different causal mechanisms have been proposed to explain the initiation of fertility decline. These mechanisms include modern ideas and aspirations, cultural factors, women's rights, transportation and communication networks, modern systems of mass education, and the adoption and diffusion of contraception (Cleland and Wilson, 1987; van de Walle and Knodel, 1980; Caldwell, 1980 and 1982; Knodel and others, 1984; Freedman, 1979; Knodel, 1977). Although the predominant role of family planning programmes in the speedy adoption of fertility regulation has been noted in the literature, greater emphasis seems to be placed on the facilitating role played by some level of socio-economic development, a favourable status for women and to administrative pressure towards the rapid adoption of fertility regulation (United Nations, 1987; Freedman and others, 1981; Knodel and Debavalya, 1978; Zachariah and Newton, 1983; Banister, 1987; Hirschman and Guest, 1990). Thus, a number of recent articles have focused on the social, economic and institutional circumstances that can work as barriers against the speedy adoption of fertility regulation in an impoverished and predominantly agrarian society (Demeny, 1975, 1979; Arthur and McNicoll, 1978; Cain, 1982; Caldwell and others, 1984, 1980; Curtright and Hargens, 1984; Caldwell and Cladwell, 1987; Dyson and Moore, 1983; Duza, 1990). However, what is lacking in the literature is evidence about how a significant decline in fertility can be achieved in such a society.

Bangladesh is among the least developed of the third world countries; it is characterized by a continued low level of socio-economic development, low literacy and high infant mortality, low status of women and a predominantly agrarian economy. It is thus an unlikely society in which to expect any speedy adoption of fertility regulation and fertility change.

There has been an abundant literature on the adverse social and economic circumstances that impede a rapid decline in Bangladesh's fertility. Although authors differ in their points of emphasis, the common theme in the literature is that the high fertility in Bangladesh is one of the effects of interrelated social and economic institutions that are characterized by labour-intensive technology, low productivity, patriarchy, son preference, low female status, male dominance, the value of children for labour and security, and old-age insecurity (Cain, 1982; Demeny, 1975; Duza, 1990; Arthur and McNicoll, 1978; Caldwell and others, 1984). Other factors that have been mentioned as barriers to speedy adoption of fertility regulation in Bangladesh are early female age at marriage, high infant mortality, the inadequacy and inefficiency of the health and family planning services, and physical isolation of the bulk of the rural residents (Bangladesh, 1989; Demeny, 1979; BRAC, 1990). Based on the notion that high fertility is economically and socially rewarding under the prevailing social, economic and administrative conditions in Bangladesh, most observers have predicted a continuation of high fertility norms.

Using data from a series of national-level surveys, this article examines trends and differentials in fertility, contraceptive use and fertility preference in Bangladesh.

Data and methods

The present study is based on data from the following surveys: the 1969 National Impact Survey (NIS) of family planning, the 1975 and 1989 Bangladesh Fertility Surveys (BFS), and the 1983, 1985 and 1991 Contraceptive Prevalence Surveys (CPS). All these were nationally detailed questions on fertility, contraceptive use, socio-economic background, and family planning knowledge and attitudes. More detailed descriptions of these surveys may be found elsewhere (Hardee and Sirageldin, 1960; World Fertility Survey, 1979; Mitra and Kamal, 1986; Mitra and Associates, 1987, 1992; Huq and Cleland 1990).

Fertility data collected in all the surveys included the number of children ever born, the number of live births in the 12 months preceding the interview dates, and/or pregnancy history. From these data, age-specific current fertility rates, current pregnancy rates and mean number of children ever born were calculated for the present article. However, to check the reliability of these data sets, both the sex ratios by age of mothers and P/F ratios have been calculated (table 1); the P/F ratio relates to lifetime fertility: P refers to cumulated period fertility rates and F, fertility a year or more preceding the survey. Under conditions of constant fertility and using reliable data, the P/F ratio will be close to unity. Deviations from unity may reflect either data defects or a genuine change in fertility.

Table 1: Sex ratios of children ever born and P/F ratios of currently married women, Bangladesh,

1969-1991

Age group (years)	Sex ratio						P/F ratio ^{1/}					
	1969 NIS	1975 BFS	1983 CPS	1985 CPS	1989 BFS	1991 CPS	1969 NIS	1975 BFS	1983 CPS	1985 CPS	1989 BFS	1991 CPS
15-19	1.144	0.940	1.089	1.068	1.102	1.092	1.03	1.20	1.20	1.28	1.09	1.27
20-24	0.918	1.064	1.100	1.093	1.064	1.076	0.92	0.99	1.06	1.03	0.84	0.92
25-29	1.095	1.065	1.005	1.051	1.093	1.078	1.02	1.03	1.11	1.11	0.93	1.01
30-34	1.014	1.043	1.111	1.052	1.025	1.067	1.08	1.06	1.21	1.23	1.08	1.09
35-49	0.985	1.073	1.073	1.088	1.068	1.079	1.07	1.06	1.24	1.32	1.19	1.23
40-44	1.080	1.051	1.045	1.076	1.080	1.026	1.03	1.09	1.29	1.42	1.30	1.37
45-49	0.960	1.051	1.078	1.113	1.069	1.098	1.04	1.03	1.30	1.36	1.37	1.46
All	1.019	1.051	1.066	1.075	1.066	1.070						
Number of cases ^{2/}	3,088	5,772	10,971	9,434	10,276	11,097						

Notes:

1/ Based on one full-year rate preceding the date of survey.

2/ Unweighted number of cases.

NIS = National Impact Survey.

BFS = Bangladesh Fertility Survey.

CPS = Contraceptive Prevalence Survey.

Overall, sex ratios should be close to the expected value of 1.05. Table 1 shows that, although the sex ratio fluctuates somewhat, it is very close to the expected value of 1.05 in all the surveys, indicating that there were no major data errors in collecting the information on children ever born by sex. Prior to the 1983 survey, the P/F ratios by age provide no evidence of fertility decline except a slight deficit in recent births among the youngest age group of women in the 1960s and the mid-1970s. The pattern is different for the surveys since 1983, indicating an increase in ratios with age, which is, perhaps, due to the deficit of period fertility rates, emanating from recently increased contraceptive use. These results suggest that there had been a recent decline in fertility precipitated by older women of reproductive age.

Findings

Although the P/F ratios in table 1 strongly suggest that there has been a significant recent decline in fertility, it would be useful to verify this finding by other measures of fertility. This was done by employing a series of bivariate and multivariate analyses, focusing on trends and differentials in fertility and fertility-related variables. Given the uncertainties of past demographic estimations in Bangladesh (National Research Council, 1983; Sirageldin and others, 1975a), it is important that both multiple data sources and multiple techniques of data analysis be used.

Fertility trends

Table 2: Children ever born and current fertility of currently married women by age, Bangladesh, 1964-1991

Age group (years)	Average children ever born (CEB) and years						Births per 1,000 women and years						
	1969 (NIS) [*]	1975 (BFS) [*]	1983 (CPS) [*]	1985 (CPS) [*]	1989 (BFS) [*]	1991 (CPS) [*]	1964-1968 (NIS) ^{a/}	1971-1975 (BFS) ^{a/}	1983 (CPS)	1985 (CPS)	1986-1988 (BFS) ^{a/}	1988-1990 (CPS) ^{b/}	
15-19	0.9	0.8	0.9	0.8	0.7	0.8	258	168	256	256	311	208	
20-24	2.5	2.3	2.4	2.2	2.0	1.9	342	320	284	279	267	258	
25-29	4.3	4.2	4.0	3.7	3.4	3.4	303	316	246	214	216	217	
30-34	5.6	5.7	5.7	5.3	4.9	4.6	252	276	200	173	141	161	
35-39	6.4	6.7	6.8	6.7	6.1	5.8	159	219	124	129	86	101	
40-44	6.5	7.6	7.7	7.7	7.1	6.9	73	136	60	58	44	63	
45-49	6.6	7.3	7.8	7.7	7.8	7.7	20	49	8	27	6	22	
15-49 ^{b/}	4.3	4.3	4.3	4.1	3.8	3.7	TMFR	7.0	7.4	5.9	5.7	5.4	5.2

15-49 ^{c/}	3.7	3.6	3.8	3.5	3.0	3.2 TFR ^{a/}	6.4	6.3	5.0	4.8	4.1	4.1
Median age at marriage	13.3	13.0	n.a.	n.a.	14.0	14.0						
Percent currently pregnant	14.8	12.3	11.7	10.6	9.4	10.6						

Notes: a/ Average rates for five years or three years.
b/ Standardized by the age distribution of women in the 1991 CPS.
c/ Estimates after adjusting marital status by taking into account the currently unmarried women.
n.a. = not available; for other abbreviations, see [table 1](#).

[Table 2](#) presents trends in children ever born, total fertility rate, total marital fertility rate, age-specific marital fertility rate, pregnancy rate and median age of marriage. While there has been no major change in the traditional low age of marriage, there has been a sharp decline in marital fertility between the 1970s and late 1980s. The latter is evident in all measures of fertility in the table. Thus, the total marital fertility rate fell from an average of 7 births per woman in the 1960s to about 5.2 in the late 1980s -- a decline of about 26 per cent. Similarly, the average number of children ever born and the percentage of women pregnant declined from 4.3 and 13.3 per cent in 1969 to 3.7 and 10.6 per cent in 1991, respectively.

However, under-enumeration of births in 1969 by the NIS and famine-related disruptions in 1974 might have been the reasons for some lower estimations of total marital fertility in 1969 and 1975, respectively (National Research Council, 1981; World Fertility Survey, 1979). This lower estimation may have resulted in an under-estimate of the decline in total marital fertility between earlier periods prior to the 1980s and the most recent period. The former under-estimation, together with the latter possible famine-related temporary depression of period fertility during the mid-1970s vis-a-vis the lowered fertility during the most recent period, reinforces our conclusion that there has been a true decline recently in Bangladesh's fertility.

A comparison of age-specific fertility rates of the 1970s or the late 1960s with those of the late 1980s or early 1990s in [table 2](#) shows that most of the recent fertility decline in Bangladesh, as exemplified by age-specific current fertility rates and average number of children ever born, are mainly the product of a decrease in marital fertility among older women, with the exception of those above 45. This pattern is consistent with the likely first stage of fertility decline in Bangladesh in which most fertility controls may consist of a decision to stop child-bearing.

Fertility differentials

Table 3: Trends and differentials in children ever born and total marital fertility rates by selected characteristics of women, Bangladesh, 1964-1990

Selected characteristics of women	Children ever born			Total marital fertility rates ^{a/}		
	1969 ^{b/} (1)	1991 (2)	Percentage change (2)-(1)	1965-1968 (NIS) * (3)	1988-1990 (CPS) ** (4)	Percentage change (4)-(3)
Total	4.2	3.6	-14.3	7.0	5.2	-25.7
Women's education						
No education	4.3	4.0	-7.0	6.9	5.6	-18.8
Primary	4.4	3.5	-20.5	7.5	4.9	-34.7
Secondary and above	3.3	2.3	-30.3	7.1	3.6	-49.3
Residence						
Urban	4.5	3.5	-22.2	7.2	4.4	-38.9
Rural	4.1	3.6	-12.2	6.9	5.3	-23.2
Land-ownership						
Yes	4.1	3.7	-9.8	6.8	5.1	-25.0
No	4.2	3.6	-14.3	7.3	5.4	-26.0
Region						
Dhaka	4.1	3.6	-12.2	6.9	5.1	-26.1
Chittagong	4.3	3.8	-11.6	6.9	5.6	-18.8
Rajshahi	4.1	3.4	-17.1	7.1	5.1	-28.2
Khulna	4.0	3.6	-10.0	7.0	4.7	-32.9
Contraceptive use						

User	6.5	4.1	-36.9	8.1	5.2	-35.8
Non-user	3.1	3.3	+6.0	7.2	5.5	-23.6

Sources: * 1969 National Impact Survey.
 ** 1991 Contraceptive Prevalence Survey.

Notes: a/ Average rates for five years or three years.
 b/ Standardized by the age distribution of women in the 1991 CPS.

The data so far clearly demonstrate that there was a sharp decline in fertility between the mid-1970s and the late 1980s. Our next objective is to further decompose this decline by various factors, including socio-economic factors; this is done in [table 3](#). The mass of information generated by seven separate surveys and several measures of fertility and age at marriage (as in [table 2](#)), together with various variables in [table 3](#), make it difficult to include all the fertility measures by all the survey years. Consequently, in order to create a more parsimonious decomposition in [table 3](#), we confine our analysis to children ever born and total marital fertility rates for two separate periods spread over the last two decades. To avoid sampling variation, total marital fertility rates have been calculated by taking averages for several years.

The results of our analysis in the table show that all socio-economic groups, namely, landowners and the landless, the educated and uneducated, and rural and urban residents, participated in the recent decline in fertility. However, the magnitude of decline varies by the different groups (see table). Thus, in relative terms, between the 1960s and the late 1980s (or early 1990s), the decline in total marital fertility rates was slightly higher among urban residents than among rural residents, so much so that by the terminal year 1991, the relationship between urban residence and total marital fertility rate, which previously was positive, was reversed from the positive to the negative direction. Similarly, between the 1960s and the 1980s, the percentage decline in total marital fertility among educated women was much higher than the corresponding decline among those with no education, increasing the overall educational differences in total fertility in the terminal period of 1988-1990. On the other hand, Chittagong region had higher total fertility compared with other regions in both periods. This difference seems to have widened in the 1988-1990 period.

In the 1988-1990 period, the total marital fertility rate among contraceptive users was lower than that of non-users, the former by contrast with the earlier period of 1965-1968. While the higher fertility of users during the earlier period indicates either imperfect use of contraceptives or use of less effective methods by those who had higher natural fertility, their lower fertility in the recent period is consistent with our hypothesis that part of the decline in recent fertility is attributable to a recent increase in contraceptive use (Mitra and Associates, 1990, 1992).

Other possible reasons for the recent decline in fertility are an increasing breast-feeding on one hand, or an increase in malnutrition that would lower fecundity, on the other hand. Since reduced infant and child mortality reduces fertility by extending the period of lactation and therefore amenorrhoea, recent improvements in child survival (Kabir and others, 1992) may have contributed partly to the recent fertility decline. Similarly, recent increases in poverty in Bangladesh (Khan and Hossain, 1989) may have reduced fertility both by promoting contraceptive use and by increasing the incidence of malnutrition-induced sub-fecundity. The latter possibility may arise because nutritional differences can contribute to the difference in fertility via its relationship to age at menarche, menstruation, ovulation, conception and pregnancy outcomes.

In the absence of other relevant data, we have looked into regional differences in children ever born, pregnancy wastage, still-births and induced abortion among women not practising contraception, both during the time of the recent rise in contraceptive use as well as during the earlier period when there was a low level of contraceptive use. The data in [table 4](#) do not show any consistent pattern in the regional differences in these factors that could sufficiently explain the higher fertility in the Chittagong region as being a result of nutritional differences. Thus, the data in [table 4](#) show no significant regional difference in children ever born among the women not practising contraception, except for a slightly higher number of children ever born to women in the age groups 30-34 and 35-39 for the Chittagong region in the year 1991. On the other hand, although the incidence of induced abortion was slightly lower in Chittagong region, pregnancy wastage and the number of still-births were higher in Chittagong region as was pregnancy wastage in Khulna region.

Similar results were also found in our separate analysis of women not practising contraception, revealing that no major role was played by nutritional deficiencies in the explanation of regional differences in fertility, although some fertility-elevation effect of better nutrition in Chittagong region might have accentuated its fertility, making it higher than that of other regions.

The trends and differentials in the average number of children ever born, as shown in [table 3](#), also seem to mimic that of the recent decline in total marital fertility, although somewhat weakly, with the exception of differential by contraceptive use. The latter, by contrast, is positively related to children ever born with the exception of the period 1988-1990. The weak relationship between number of children ever born and its decline over time and contraceptive use may be a result of the lack of temporal alignment between children ever born and contraceptive use.

Since the decline in current fertility is a recent phenomenon, its reducing effect on cumulative fertility would be felt only after a time lag. On the other hand, the direct positive relationship between children ever born and contraceptive use may have stemmed from the fact that the attempts to regulate fertility were concentrated among couples near the end of their reproductive careers. This was more especially so in the pre-transitional stage of the 1960s than in the early transitional stage of the 1980s.

Our aggregate analysis so far indicates a sign of notable fertility decline. The recent rise in contraceptive use may have been a major factor in this decline. Other factors, such as women's education, urban residence, increased child survival leading to increased

birth intervals through prolongation of lactation or decreased fecundity from malnutrition especially among older women, may also have contributed partly to this decline.

Table 4: Children ever born, pregnancy wastage, still-births and induced abortion among women not practising contraception and currently married women by region, Bangladesh, 1975 and 1991

Age: group (years)	Region							
	Dhaka		Rajshahi		Chittagong		Khulna	
	1975 ^{1/}	1991 ^{2/}	1975	1991	1975	1991	1975	1991
15-19	0.8	0.7	0.9	0.7	0.9	0.7	0.7	0.6
20-24	2.3	1.7	2.5	1.8	2.3	1.8	2.1	1.7
25-29	4.3	3.3	4.1	3.3	4.3	3.4	3.8	3.4
30-34	5.8	4.6	5.7	4.3	5.7	5.0	5.7	4.6
35-39	6.4	5.9	6.8	5.6	6.7	6.2	6.5	5.8
40-44	7.6	7.2	7.2	6.8	7.3	6.7	7.5	7.6
45-49	7.2	7.9	7.4	7.5	7.3	7.2	7.2	8.3
Mean number of pregnancy wastage ^{3/}	0.33		0.31		0.37		0.38	
Mean number of still-births ^{3/}	0.32		0.33		0.35		0.27	
Mean number of induced abortions ^{3/}	0.01		0.04		0.02		0.04	

Notes: 1/ 1975 Bangladesh Fertility Survey.

2/ 1991 Contraceptive Prevalence Survey.

3/ The means are based on 1989 Bangladesh Fertility Survey data for currently married women.

Fertility preference and contraceptive use

Evidence from recent BFSs and CPSs also indicate that the recent decline in fertility in Bangladesh has been accompanied by a sharp increase in knowledge about and practice of contraception (Amin, 1992; Huq and Cleland, 1990). Table 5 presents data on the preferred family size, the desire for additional children and contraceptive use. Since the preferred number of children is not available from the 1991 CPS, we used as a substitute the next most recent data set available, namely, the 1989 BFS. Table 5 shows that the average preferred family size has declined over the years. Paralleling this decline in preferred family size has been a sharp increase in contraceptive use, which increased from about 4 per cent of currently married women in 1969 to 40 per cent in 1991. Similarly, the desire for no more children increased moderately from 46 per cent in 1969 to 58 per cent in 1991.

What is remarkable about the data in table 5 is that the decline in the preferred family size, desire for no more children and increased contraceptive use have occurred among all social groups, irrespective of socio-economic, residential and regional characteristics. In relative terms, the positive relationship between contraceptive use and education and urban residence was more pronounced in 1969 than in 1989. Over the years, the adoption of contraception by poor women was faster than among rich women. A similar pattern of increase in contraceptive use was also observed in the 1991 CPS data (Amin and others, 1993). At any particular time, contraceptive use increased with parity, which is an indication of contraceptive use for cessation of child-bearing. However, over the years, smaller family size preference seemed to have been gaining adherence in all socio-economic groups, including that of low-parity women. The latter trend indicates that, at least among younger women, fertility preference was declining, since their smaller actual family size could not have any upward effect on the preferred family size owing to rationalization of the children already born, which may occur among older women.

Table 5: Preferred family size and contraceptive use, by year of survey and by selected characteristics of women and their parity status, 1969-1991

Selected characteristics of women and parity	Measures and survey years					
	1969 *			1989 **		1991
	Mean preferred number of children ^{a/}	Percentage desiring no more children	Percentage currently using contraceptive	Mean preferred number of children	Percentage desiring no more children	Percentage currently using contraceptives
Total	4.3	46.0	3.8	3.2	58.0	40.0
0-3	4.2	17.0	1.9	2.8	33.0	34.0
≥ 3	4.7	72.0	6.5	3.9	89.0	48.0

Education							
No education							
0-3	4.3	18.0	1.6	2.9	33.0	29.0	
≥ 3	4.8	72.0	5.9	3.7	88.0	45.0	
Primary and above							
0-3	3.8	15.0	3.8	2.6	33.0	39.0	
≥ 3	4.2	72.0	11.1	3.7	90.0	53.0	
Area							
Urban							
0-3	4.0	18.0	5.3	2.5	40.0	44.0	
≥ 3	4.5	75.0	8.8	3.7	92.0	53.0	
Rural							
0-3	4.3	13.0	1.7	2.8	32.0	32.0	
≥ 3	4.7	66.0	6.4	3.9	68.0	46.0	
Land-ownership							
Yes							
0-3	4.3	17.0	1.7	2.8	32.0	34.0	
≥ 3	4.5	68.0	6.2	4.0	89.0	46.0	
No							
0-3	4.2	17.0	12.5	2.8	35.0	33.0	
≥ 3	4.5	78.0	7.2	3.8	89.0	49.0	
Region							
Dhaka							
0-3	4.2	16.0	3.8	3.2	33.0	35.0	
≥ 3	4.5	74.0	9.8	4.5	88.0	42.0	
Chittagong							
0-3	4.3	24.0	1.0	2.8	25.0	21.0	
≥ 3	4.9	75.0	4.6	3.9	84.0	34.0	
Rajshahi							
0-3	4.3	16.0	1.6	2.7	39.0	38.0	
≥ 3	4.8	76.0	4.7	3.7	92.0	57.0	
Khulna							
0-3	4.1	15.0	1.3	2.6	35.0	41.0	
≥ 3	4.5	69.0	8.7	3.7	93.0	52.0	

Sources: * = 1969 National Impact Survey.

** = Bangladesh Fertility Survey.

Note: a/ Standardized by number of living children, using the distribution of currently married women in the 1989 BFS.

Discussion

The recent increase in contraceptive use and reduced fertility in Bangladesh raise a broader question: What factors have contributed to increased contraceptive use and the decline in fertility? The answers seem to lie in a combination of factors such as rapid population growth, increasing poverty, a vigorously implemented national family planning programme, and the homogeneity of Bangladesh culture, which may have facilitated the country-wide spread of ideas related to fertility control. A discussion of these factors follows.

Firstly, the constraints imposed during the 1970s by deteriorating economic conditions, in which families began to face the pressure of a shrinking standard of living (Khan, 1977; Clay, 1977), continued to become worse throughout most of the 1980s, making Bangladesh poorer over time relative to the developing world as a whole (Khan and Hossain, 1989). As a result, a large proportion of the population, who are at the lower end of the income distribution scale, have a standard of living that appears to be substantially below what it was 10 or 20 years ago (Osmani, 1990; Khan, 1990). This situation has created conditions that are no longer favourable to the erstwhile high-fertility norms. Similarly, the recent extension of primary health care seems to have increased the level of child survival (Kabir and Amin, 1993), which, in turn, may have led to an extension of the average length of the interval between births and hence to a

reduction in the number of periods of breast-feeding that would have been cut short by the death of the child. Moreover, the deteriorating living standards, juxtaposed against the dislocations caused by the struggle for independence in the early 1970s and the series of national disasters thereafter, set the stage for a gradual destabilization of the traditional high fertility norm. In the 1970s, under population pressure from a general decline in mortality, support for the high fertility norm was already eroding (Sirageldin and others, 1975b). Over the ensuing years, other events, such as a major shift to non-agricultural occupations, a breakdown and reorganization of traditional patron-client relationships, monetization of the economy, and gradual penetration of remote areas by modern communications media and organizations, were intensified in the 1980s. Changes in aspirations, tastes and attitudes that are incompatible with high-fertility norms might have begun to take place during that decade.

Secondly, the combination of extremely high density, the momentum of population growth and the persistent economic deterioration of the 1970s left the Government with the unavoidable choice of addressing its population problems through the implementation of a massive, comprehensive, national-level family planning programme. Although the infrastructure, services and supplies provided under this programme have been beset with various problems (Bangladesh, 1989; BRAC, 1990; East Pakistan, 1970), the efforts undertaken by the Government have resulted in a massive increase during the 1980s in the awareness of and access to family planning information and services (Mitra and Associates, 1992; Huq and Cleland, 1990). These programme efforts and access to the programme may have been further reinforced and legitimized by integrated efforts in the areas of primary health care, family planning and rural poverty-alleviation programmes. The country-wide coverage of family planning and primary health care services through the opening of local-level family welfare centres, the employment of large numbers of female family planning workers, the expansion of integrated family planning and primary health care efforts through door-to-door outreach efforts, and female-conscientization efforts of various governmental and non-governmental organizations (NGOs)^{1/} may have encouraged people to adopt contraception in the late 1980s, precipitating a change in reproductive behaviour.

Our explanation of the recent decline in fertility and sudden increase in contraceptive use in terms of programme efforts and cultural contours is further corroborated by the regional difference in contraceptive use and fertility. We have found that women in the Chittagong region are lagging behind the rest of the country in terms of contraceptive use and lower fertility. This has happened despite the fact that the Chittagong region is characterized by conventional socio-economic indices, such as per capita GNP, number of white-collar jobs and non-agricultural occupations, that are higher than in other regions of the country. Such economic and occupational factors should have worked in favour of fertility regulation rather than impeding it.

We think that this anomaly can be explained in terms of cultural characteristics and programme efforts. Cultural factors include a strong religious influence in the Chittagong region that dates back to the earlier and more pervasive spread of Islam through the Port of Chittagong compared with the rest of the country. Similarly, survey data show that married women in the Chittagong region produced higher scores in terms of self-reported religiosity, husband's dominance in family decision-making and home confinement, and lower scores in terms of frequency of contact by family planning field-workers compared with their counterparts in the regions outside the Chittagong area (Mitra and Associates, 1987, 1990, 1992; Huq and Cleland, 1990).

These differences between the Chittagong region and other regions reinforce our view of the important role that cultural and social factors play in bringing about fertility changes. Hence, in explaining the recent changes in reproductive behaviour in Bangladesh, regional differences should be attributed to cultural differences rather than to socio-economic differences. At the same time, it should be noted that basic changes in the reproductive process have been fairly even throughout the country within a relatively short span of time. Consequently, the search for factors that would explain such a regional difference should not obscure the common elements that may have facilitated the speedy reproductive changes throughout Bangladesh: namely, deteriorating economic conditions; the existence of a national, comprehensive and large-scale family planning programme which has the strong commitment of the Government; and the recent expansion of an integrated health and family planning programme, especially efforts to base many such services at the village level so that they can be brought to the door-step of the people.

While the recent increases in contraceptive use and the significant decline in fertility attest to the fact that the national family planning programme has been able to overcome many of the psychic and resource costs of contraception, the demand for fertility regulation is still fragile in Bangladesh (Duza, 1990). This fragility in demand vis-a-vis the need for creating new demand and meeting a still larger unfulfilled potential demand for fertility regulation calls for not only qualitative modifications to existing programme strategies, but also for the implementation of some measures "beyond family planning".

Some suggestions for such a modification of the programme or new measures have emerged from the present study. Thus, although previous analyses of the present data sets show that there is a strong positive correlation between the visits of field workers to clients' homes and contraceptive use (Amin and others, 1993), the percentages of currently married women visited by family planning workers ranged from only 25 per cent to 36 per cent between 1983 and 1991 (Mitra and Kamal, 1986; Mitra and Associates, 1992). One obvious measure, therefore, should be for the programme to raise both the quality and quantity of the home visits. This becomes all the more necessary because of the continuation of the traditional practice of women going into seclusion within their home vis-a-vis female-centred, effective, modern contraceptives provided by the national family planning programme. The latter would require a considerable amount of counselling and reassurance to translate demand into appropriate adoption of contraceptive and its continued use. This, again, brings us to the need for improvement of the ratio of female workers in the total population, which currently is very low.^{2/}

Another social policy measure that could significantly increase the demand for contraceptive use is female education and female "conscientization", which could be achieved through measures such as bringing about the economic and social improvement of women through female education, and their better access to institutional credit and skill-training.

As is evident from the present study, although both primary education and above-primary education lead to increased contraceptive

use and reduced fertility, the pattern of these effects is much higher among women educated beyond the primary level compared with those educated only at the primary level and below. Similarly, other studies have shown that female empowerment programmes, particularly those promoting economic and social upliftment of poor rural women, enhance the prospects for contraceptive use and fertility decline (Kamal and Rahman, 1993; Amin, 1992).

The removal of the social, psychic and economic costs of contraception through improvements in the quality and coverage of family planning services, coupled with appropriate efforts to "crystallize" demand, would further accelerate the current reproductive changes that are taking place in Bangladesh, thus hastening its fertility transition, even in the face of pervasive poverty and economic stagnation.

Footnotes

1. Beginning in the late 1970s, there was a proliferation of NGO activities in the health and family planning sectors in Bangladesh. Many NGOs undertook special integrated programmes on health, family planning and income generation for low-income people (see Chowdhury and Huda, 1990; Chowdhury, 1990). There are about 7,000 NGOs currently working in Bangladesh; while impact of their programmes on contraception and fertility is not known precisely, some programme service data suggest that about 22 per cent of all birth control initiatives were originated by NGOs (USAID, 1991).

2. With the recent increase in field worker-to-population density in the Government's family planning programme, the current field-worker-to-population density is one worker per 800 women in the reproductive age group. Although this represents a 50 per cent increase over the previous field-worker-to-client density, it is still much lower than the optimum density found in a successful demonstration project (Phillips and others, 1988; Bangladesh, 1989).

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