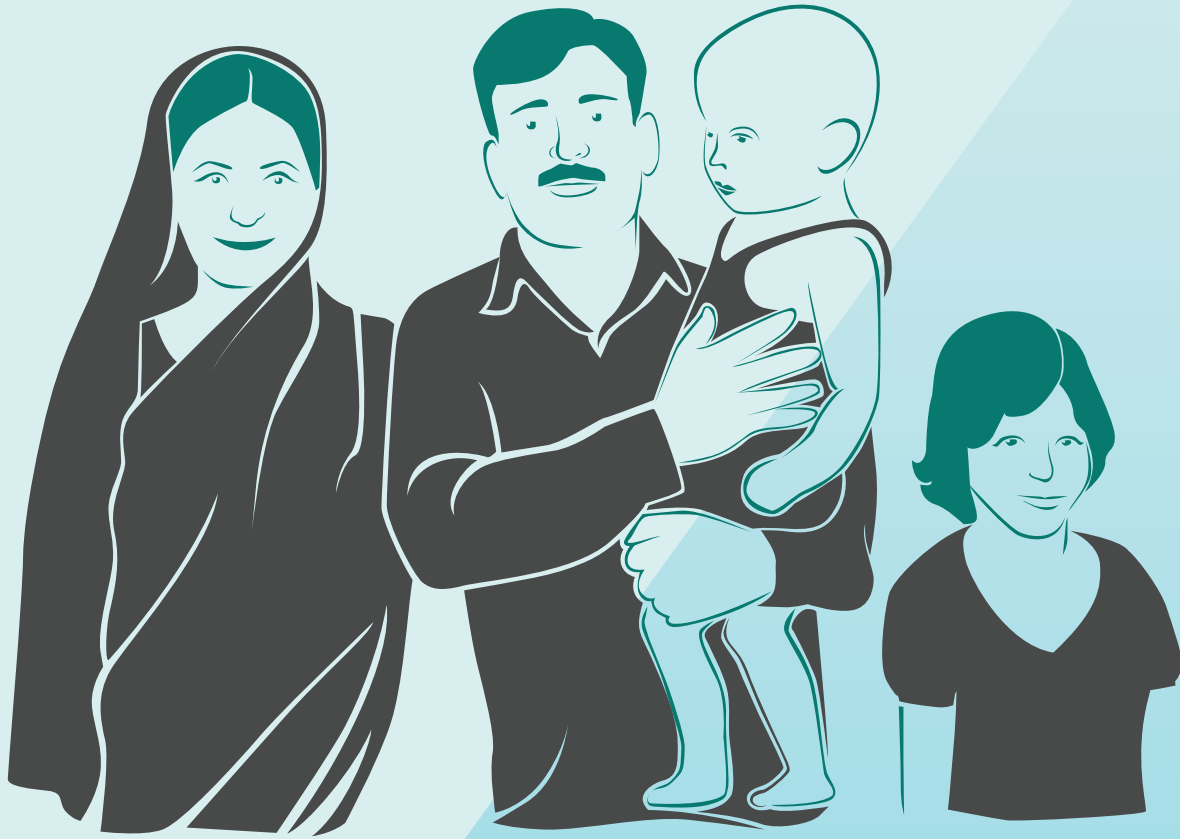


SEXUAL AND REPRODUCTIVE HEALTH FOR BANGLADESH

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Benefits and Costs of Sexual and Reproductive Health for Bangladesh



SMARTER SOLUTIONS FOR
BANGLADESH



Benefits and Costs of Sexual and Reproductive Health for Bangladesh

Bangladesh Priorities

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Introduction

A modest investment in family planning can save lives and dramatically improve maternal and child health. Findings from years of research in this regard support the notion that family planning is one of the most cost-effective health interventions. Consequently, family planning has recently been made a priority goal in the development community. Because of the important role it plays, family planning was set as one of the millennium development goals (MDG goal number 5) and the focus continues in the post-2015 development era, as a target under Goal 3 of the Global Goals.

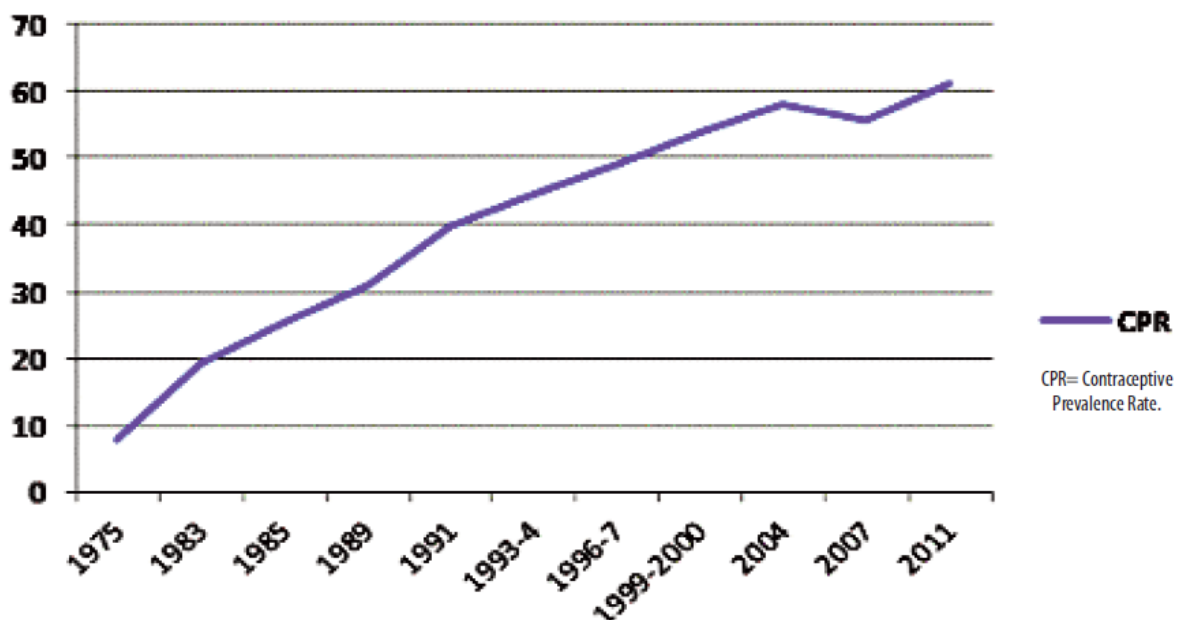
Beyond the feminist theories, women's right to sexual and reproductive health is one of the major concerns in development (Kohler and Berman, 2014; Sultana, 2012). A substantial population increase among Bangladeshi youth has significant implications for sexual and reproductive health in Bangladesh. More importantly, in order to benefit from longer but healthy life expectancies caused by economic development and an improvement in other related indicators, requires better and healthy adolescent lives. The household income and expenditure survey (HIES) of Bangladesh in 2010 reported that about 21 percent of Bangladesh's population are female and under the age of 19, with 26 percent of the population being female and at reproductive age (15-49). Therefore, the right to sexual and reproductive health should be an important issue for the sustainable development of Bangladesh and feature prominently for the Agenda on Population and Development. Among several factors of rights and practices of sexual and reproductive health are: having the power to terminate or keep one's pregnancy; access to information, such as knowledge about contraception and HIV, the channels through which they get such information, attendance in secondary education to acquire life skills and/or sexual education; access to services such as health care facilities at delivery, access to prenatal care; agency in sexual activity, sexual health and health care decisions such as the extent/likelihood women being able to marry at age 20 or older, their ability to protect themselves from pregnancy and sexually transmitted infectious diseases (STIs), and to have a say in their health care decisions if married.

Family planning is one of the most important interventions in sexual and reproductive health in Bangladesh. It plays an important role in controlling population and for achieving sustainable development goals. More importantly, the concern is raised as the family planning practice in Bangladesh is not the permanent method - rather temporary mixed methods are mostly used. Approximately 50 percent of demand for family planning are satisfied by modern contraceptive methods (USAID). This paper evaluates the cost-effectiveness of investing in sexual and reproductive health and provides a particular focus on family planning in Bangladesh.

The history of the goal of family planning in Bangladesh

The role played by non-governmental organizations (NGOs) has been vital in developing family planning (FP) services in Bangladesh. The history can be traced back to 1953 when the Family Planning Association of Bangladesh (FPAB) was founded (Barkat-e-Khuda and Barkat, 1991). Along with the NGOs, government policy has supported family planning before independence, such as “population control” which was made an official policy in the first Five-Year Plan of East Pakistan (1960-65) (Hyes and Jones, 2015). After independence, the Bangladesh government made it a top priority to control population growth. As a result, the first five-year plan of 1975-80 proposed a multi-sectoral and broad-based family planning program that encouraged NGOs and the private sector to complement the government’s actions. In order to improve maternal health, universal access to reproductive health by 2015 was added in 2006 as a target (Target # 5) to the millennium development goals. Even though the goal was set to improve maternal health, access to reproductive health and family planning can also have some overlap with other development goals such as the eradication of extreme poverty and hunger, achieving universal primary education, promoting gender equality and empowering women, and ensuring environmental sustainability (Canning and Schultz, 2012). The resulting impact on the trend of contraceptive prevalence rate in Bangladesh is shown in Figure 1.

Figure 1: Trend in contraceptive prevalence rate in Bangladesh (1975-2011) (BDHS)



Source: This figure has been adapted from Streatfield and Kamal (2013).

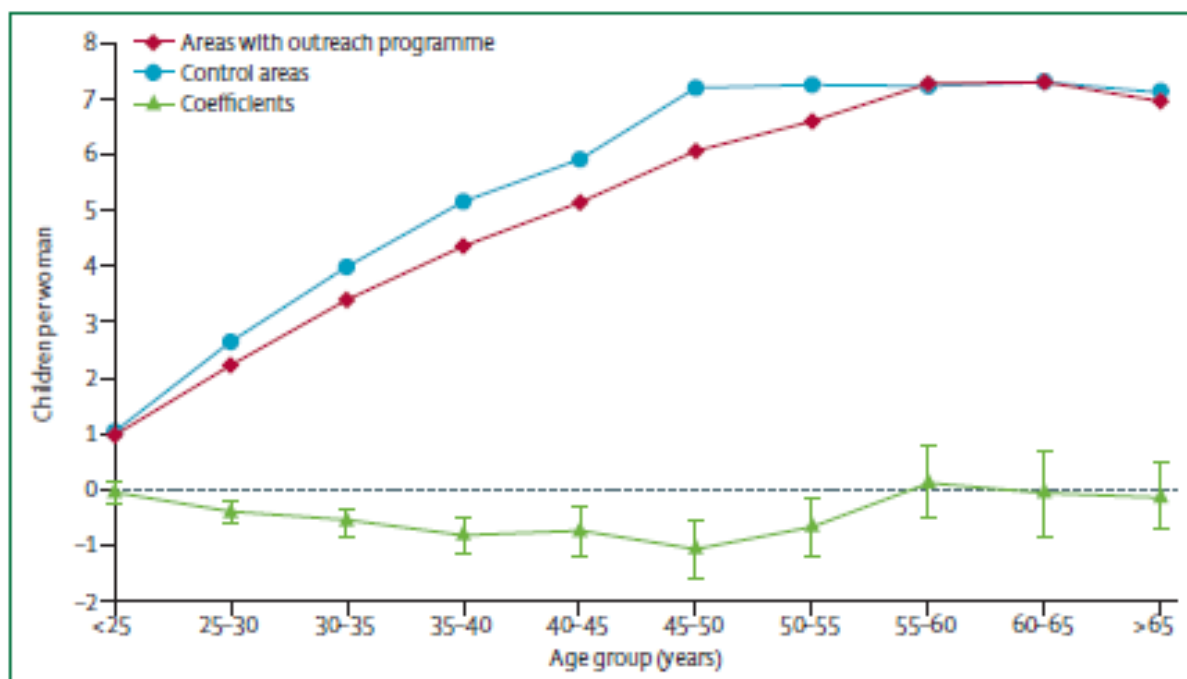
Advantage and disadvantages of family planning

Universal access to reproductive health services, including voluntary family planning, has several health, economic, and social benefits for families and communities. To be more concise, the advantages of family planning include but are not limited to:

1. Protecting the health of women and children. Family planning protects the health of women and children by reducing high risk pregnancies, reducing unsafe abortion, allowing sufficient time between pregnancies, and finally, reducing fertility (Figure 2).
2. Creating improved opportunities for women in education, employment, as well as full participation in society.
3. Securing reproductive rights as well as reducing the likelihood of sexually transmitted diseases such as HIV infections. In that process, it empowers individuals and couples to freely choose their family size.
4. Reducing poverty. It is not limited to the developed country phenomenon that family planning might have an impact on poverty, as Sonfield (2013) reported in the case of the USA, but could also be applicable in a developing country context.

Even though the family planning goal, due to its advantages, is set as one of MDG goals, it is not without drawbacks. As a means of promoting family planning, modern contraceptives like hormonal birth control have negative health effects for some women. Relatively more common but less serious side effects of hormonal birth control can and do occur for some women in the form of headache, weight gain, dizziness, and nausea etc. Less common but more serious side effects that might occur to some women are stroke, blood clots, and ectopic pregnancy. When setting the sustainable development goals (SDG), it is important to re-emphasize that family planning has been incorporated and focused on the part of sexual and reproductive health rights (SRH) goals. Even though family planning programs (FPP) have been successful over the last 3 decades in Bangladesh, it might not be the most appropriate time to stop government emphasis on the issue. The current contraceptive prevalence rate (CPR) in Bangladesh is 61% which is still better than many developing countries. The concern in the next stage, however, is not the CPR but the sustainability of family planning policies. Streatfield and Kamal (2013) report that the current mixed contraceptive method is heavily biased toward temporary methods which are questionable in sustaining efforts aimed at declining the trend in fertility.

Figure 2: Number of children ever born to married women in villages with and without family planning programs in Matlab, Bangladesh in 1996.



Source: The figure has been adapted from Canning and Schultz (2012).

It is, therefore, important to focus on the continuation of the family planning service provisions from the government and NGOs, coupled with an alternative and permanent contraceptive mixed method in order to maintain the declining fertility trend in Bangladesh. Incorporating family planning as a goal in the post-2015 development agenda is of great importance.

An economic perspective of the analysis

The literature estimating the impact of family planning focuses on various indicators including, but not limited to education gain, infant mortality rate, maternal mortality rate and fertility rate. There are several studies, which estimate the impact of family planning programs in Bangladesh. The economic impact of family planning in this study draws primarily on the findings in Joshi and Schultz (2007) and Saha and Soest (2012) using data from Matlab, Bangladesh. The former paper utilized the 1996 Matlab Health and Socioeconomic Survey and Census data collected in 1974, 1978, and 1982 to examine the effects of long-term investment in family planning and maternal and child health program. The latter paper examines the effect of contraceptive use and family planning on infant mortality in a dynamic model that accounts for birth spacing. The literature on economic consequences of family planning focuses on several issues including on body mass index of women, fertility decline (figure 2), infant mortality rate, accumulation of human capital, household wealth and assets and demographic

dividend. This memo, focuses on the gain on the human capital accumulation, infant mortality rate and maternal mortality.

Estimation techniques - Costs

There has been no study that estimates the economic gain of family planning to be generalizable at the macro level in Bangladesh. The literature on evidence-based interventions on family planning does not provide precise estimates of total cost in Bangladesh as well. Consequently, cost per intervened individual was collected from other sources referring to similar studies in similar settings. The costs were adjusted for inflation and time differentials using inflation rate and discounting rate respectively. In base analysis 3% discounting rate was applied and 5% and 10% discounting rates were used in order to check the sensitivity of the benefit-cost ratio (BCR). The costs are calculated for a cohort of women for whom family planning services are provided and for children born, whose family receives interventions for a year. A study conducted by the Health Economics Unit of the Ministry of Health and Family Welfare of Bangladesh report total as well as categorized cost per patient per month. The reported monthly cost per person is TK. 24.40 for family planning which includes traditional family planning services in order to control women's fertility. The study reports, furthermore, that the monthly cost per person is TK. 48.05 for all essential package services (EPS) of sexual and reproductive health (SRH) that includes family planning as well as maternal health, child health care, communicable disease control, limited curative care, support service, and miscellaneous. After inflation adjusting, the costs per year for family planning are TK 655 per year, and for the EPS, TK 1290 per year. We take the average of these costs as the cost of SRH services.

One of the benefits from SRH is a boost to female education of 0.41 years (see benefits section below). However, to realize this benefit the family of the girl (or society through taxes) must pay for the extra education and the girl must incur the opportunity cost of foregone wages. This is included as a part of the cost in the benefit-cost analysis adjusted for labor participation rate for women (58% as documented by ILO¹). Schurmann (2009) reports that the government stipend cost of a girl's secondary education, with inflationary adjusted to 2015, is 6116 TK.

Estimation techniques - Benefits

There are several benefits that can be attributed to the SRH service provision. Most of them, however, are very difficult to measure. As such, only three primary benefits to the provision of SRH have been considered:

¹ See <http://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS>

- 1. Reduction in infant mortality** - Saha and Soest (2012) find in the Matlab experiment that family planning service provision reduces infant mortality rate by 5.4 per 1000 live births. This is due to the fact that family planning increases the space between births, which is a risk factor in infant mortality.
- 2. Reduction in maternal mortality** - the maternal mortality rate in Bangladesh is 214 per 100,000 live births (World Bank). Fortney (1987), using Matlab data, shows that eliminating all births below 19 years and above 40 years would reduce maternal mortality by 34%. The finding is more important since girls' average age at first birth in Bangladesh is 18 years. Consequently, delaying birth by a year by using contraceptive might have an impact on maternal mortality rate which helps to avert 0.7276 maternal deaths per 1000 live births.
- 3. Education benefit:** Since the average age of girls at first birth is 18 in Bangladesh, every year of family planning service to delay pregnancy, results in 0.41 additional years of schooling (Joshi and Schultz, 2007). An extra year of schooling boosts girls' lifetime wages by 13.2% in Bangladesh (Asadullah, 2005).

For reductions in infant and maternal mortality, we estimate the avoided deaths from the intervention and convert them into disability adjusted life years (DALYS) to calculate the economic benefits of SRH. Averted DALYs were defined as the number of life years saved (difference between life expectancy and average age of death) in the target population. DALYs were multiplied with the value of one DALY - the GDP per capita (1,198 USD) in Bangladesh and benefits were discounted using 3% (base analysis), 5% and 10% discount rates.

For the education benefit, we calculate the additional wages that a woman entering the workforce at age 17 and retiring at 50 receives from the incremental years of education and again adjust for the labor participation rate for women.

Table 1 provides the result of the benefit-cost of additional family planning including breakdowns by category of benefit.

The results indicate that benefit accrued from the investment in sexual and reproductive health services is greater than associated costs. The measures remain in favor of investment on SRH regardless of the measures of cost of SRH provision considering both the lower bound, family planning only, as well as the essential service package provision under the SRH service, the upper bound of the cost.

Table 1: BCR of Sexual and reproductive health services per 1000 women (all figures in taka)

	Discount rate		
	3%	5%	10%
BENEFITS			
Infant mortality	15,139,669	10,029,242	5,170,697
Maternal mortality	1,839,673	1,289,927	693,042
Education	152,969,110	109,092,001	39,670,906
Total Benefits	169,948,452	120,411,170	45,534,645
COSTS			
Sexual Reproductive Health	972,500	972,500	972,500
Education Cost	1,453,434	1,453,434	1,453,434
Foregone Wages	35,106,547	35,106,547	35,106,547
Total Costs	37,532,481	37,532,481	37,532,481
BCRs			
Total Benefits / Total Costs	4.5	3.2	1.2

In particular, Table 1 indicates that the benefit-cost ratio (BCR) ranges in between 1.2 to 4.5. It is important to note that the benefits from extra education dominate the infant and maternal mortality benefits. Out of the women who receive SRH, each experience on average 0.41 years of education and for the 58% who participate in the labor force each will receive a lifetime earnings boost of 13.2%. This amounts to 109m taka per 1000 women (at the 5% level) or nearly 90% of the benefit.

At the same time, education dominates the cost side of the analysis - notably the magnitude of foregone wages.

It is important to note that the above-mentioned benefits are based on certain assumptions: different discount rates, maternal mortality rate of 214/100,000 live births and that contraceptive use averts 0.7276 maternal deaths per 1000 live births; SRH service averts 5.4 infant deaths per 1000, per capita income of \$1,198 USD, unchanging cost-structure of the SRH provision and education as reported in the study.

Conclusion

Before recommending any new policy, it is important to investigate the status and issues related to the reproductive and sexual health of women, adolescents in particular, and evaluate already existing relevant policies, and programs. This paper attempts to analyze the effect of potential investment in sexual and reproductive health (SRH) services that includes but is not limited to family planning. In this regard, estimating the cost benefit ratios of SRH service provision in Bangladesh, we find that the ratio ranges from 1.2 to 4.5 considering aggregate of infant mortality, maternal mortality, and educational

effect of family planning depending on the discount rates from 3 to 10 percent. The rationale for the investment in SRH not only because of this high BCR, but because it has been found that temporary mixed methods that are commonly used by couples in Bangladesh might not satisfy the fertility control requirement for a sustainable development goal in Bangladesh. Furthermore, the literature states that the investment in family planning is one of the most cost-effective investment, a continued investment in SRH in the post-2015 development agenda is expected which is reflected in the sustainable development goals (SDGs) in the post-2015 development agenda.

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