Discontinuation of Contraceptive Intrauterine Devices and Implants in Bangladesh

Intrauterine devices (IUDs) provide effective contraception for 10 years and implants for three. These two family planning (FP) methods are known as long-acting reversible contraceptives (LARCs), and both are highly effective. Unfortunately, low rates of use and high rates of discontinuation of these methods have negative implications for programs seeking to achieve effective contraception in Bangladesh. The Bangladesh FP program has long sought to increase the rates of acceptance and continuation of LARCs. Bangladesh's Directorate General of Family Planning (DGFP) is responsible for mobilizing the resources necessary to promote the use of IUDs and implants, including procurement and supply of devices, training of service providers, and provision of insertion fees and client compensation. These investments are most cost-effective when method acceptors continue to use LARCs throughout the effective life of the method.

This brief presents an analysis of longitudinal data on IUD and implant discontinuation conducted by Research for Decision Makers—an activity under the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)—and MEASURE Evaluation. Both are funded by the United States Agency for International Development (USAID). We obtained longitudinal data from the Matlab Health and Demographic Surveillance System (HDSS)[1] and compared the results of our analysis with those from the Bangladesh Demographic and Health Surveys (BDHS). The method discontinuation data collected by the BDHS (1994–2017) are nationally representative but suffer from small sample sizes. Exploring other reliable data sources, such as Matlab HDSS, can help generate evidence that will improve the rates of IUD and implant use.

Use Pattern of IUDs and Implants

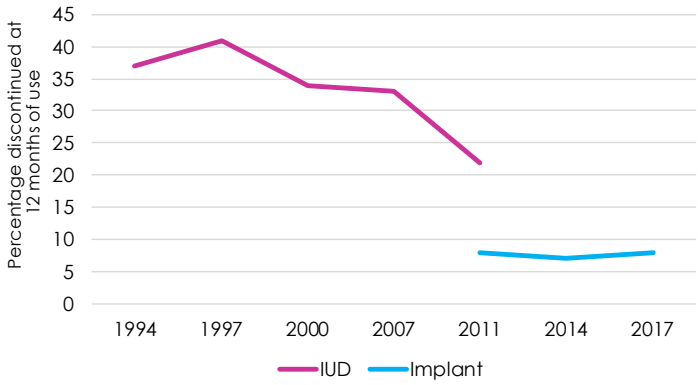
The contraceptive prevalence rate in Bangladesh was 62 percent in 2017–2018, and the modern-method use rate was 52 percent (NIPORT, Mitra and Associates, & ICF International, 2019). IUDs and implants were the two least-used methods, with use rates of 1 percent and 2 percent, respectively (NIPORT, et al., 2019). Use

A couple (and clients for family planning) in front of a Union Health and Family Welfare Center. Photo credit: Shafiqul Alam Kiron, Save the Children/USAID

of implants, which were introduced in the mid-1990s, increased very slowly to the 2014 level of 2 percent. IUDs were more accepted among women 30 years of age or older. Implants were comparatively more accepted among women 20–24 years of age.

Discontinuation Pattern of IUDs and Implants

Figure 1. Method discontinuation at 12 months, BDHS



Sources: Mitra, Ali, Islam, Cross, & Saha, 1994; Mitra, Al-Sabir, Cross, & Jamil, 1997; NIPORT, Mitra and Associates, and ORC Macro, 2001; NIPORT, et al., 2009; NIPORT, et al., 2013, NIPORT, et al., 2016, and NIPORT, et al., 2019. IUD data are not available for 2014 and 2017.

[1] The HDSS, created by icddr,b, is a large database of longitudinal demographic and health data representative of rural Bangladesh https://www.icddrb.org/research/platforms/field-sites/more-on-matlab

The BDHS data showed that the 12-month IUD discontinuation rate declined from nearly 40 percent in the 1990s to 22 percent in 2011 (Figure 1). The rate for implants was below 8 percent in early 2011 and 2014 (Figure 1). However, the accuracy of these rates was influenced by the small number of episodes of use, and in some years, rates were not computed, owing to an insufficient number of episodes. Side effects and health concerns were the most common reasons to discontinue use of IUDs (64%) and implants (53%) in Bangladesh (NIPORT, et al., 2013).

Matlab HDSS Data on Method Discontinuation

The HDSS collects information on the dates of method acceptance and discontinuation. We analyzed 2,306 cases of IUD discontinuation and 1,946 cases of implant discontinuation that occurred from 2004–2014.

Figure 2. Method discontinuation at 12 months, Matlab HDSS

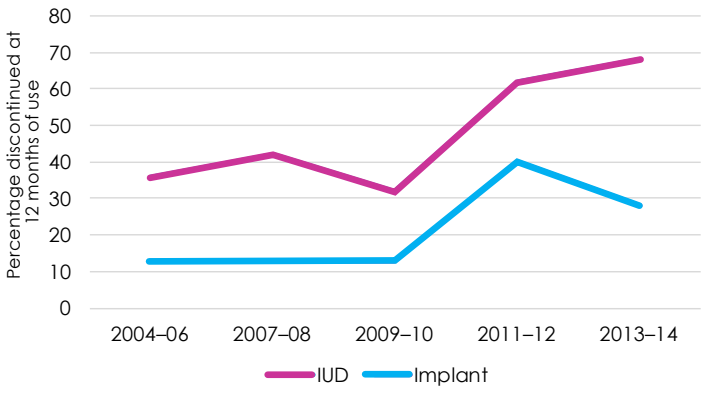


Figure 2 shows that 12-month IUD discontinuation was approximately 40 percent in the 2000s and increased to over 60 percent in the early 2010s. In initial years, the discontinuation rate of implants, at around 10 percent, was much lower than for IUDs, but it increased in recent years.

Multivariate analysis confirmed the increasing trends of discontinuation of IUDs and implants. The rate of IUD discontinuation was lower among older women, and also lower among more-educated women. Implant discontinuation was higher among more-educated women.

Method Switching

The Matlab HDSS data indicated that switching from one method to another was common from 2004–2014 (Table 1). For example, 42 percent of IUD users and 58 percent of implant users changed to "no use," but the rest switched to another modern method. Contraceptive users mostly switched to pills and injectables. A few (about 3%) switched to other LARCs or permanent methods (PMs).

Discussion

The 12-month discontinuation of FP methods was 30 percent in 2014, and it increased to over 40 percent by 2017–2018 (NIPORT, et al., 2016; NIPORT, et al., 2019). As part of Family Planning 2020,[2] DGFP committed to decrease the discontinuation rate to 20 percent by 2020. One way to achieve low discontinuation is to shift the contraceptive method mix toward a higher share of LARCs. Our findings show relatively high discontinuation of both IUDs and implants. Therefore, the FP program should focus both on increasing the use of IUDs and implants and decreasing the discontinuation rate of IUDs and implants, as well as short-acting methods such as pills and injectables.

IUD and implant discontinuation is common and increasing. The BDHS data show lower discontinuation rates for IUDs and implants than Matlab longitudinal data show; but even the BDHS rates are too high.

In contrast, Matlab rates are based on a reasonable sample size and are longitudinal in nature. Matlab data show a significant increase in discontinuation over time, and a large proportion of the method discontinuation is attributable to method switching. The data indicate that increased discontinuation is partially associated with frequent method switching. This switching is often from LARCs to short-acting methods, and (because switching from short-acting methods to LARCs/PMs is much less common) it leads to a less-effective contraceptive method mix.

Table 1. Percentage of FP users who switched to other methods or stopped using the FP method

	Percentage that switched methods or stopped using a method			
Switching to	Pills	Injectables	IUDs	Implants
Pills	--	26.1	24.7	18.3
Injectables	18.6	--	24.9	11.9
Condoms	5.1	3.4	5.3	6.7
IUDs	0.4	0.6	--	1.9
Implants	0.4	0.6	1.7	--
Permanent methods	0.7	1.1	1.6	2.9
No use	74.6	68.1	41.8	58.2
All	100.0	100.0	100.0	100.0
Stopped using	67,772	51,654	1,786	1,178
Total cases	83,580	64,245	2,292	1,939

Source: Matlab HDSS

[2] Family Planning 2020 is a global partnership to empower women and girls by investing in rights-based family planning.

High and early discontinuation of IUDs and implants wastes public investment for FP. As mentioned above, an IUD has an effective life of 10 years, and (for the two available brands) implants are effective for three years. In 2013–2014, only one in four IUD users (25%) and about one in two implant users (52%) continued use for 36 months. Both IUDs and implants are expensive, and the government makes huge investments in provider training and compensation fees for clients and providers. None of these investments are maximized when most clients discontinue use before the end of the life of the method.

Switching to less-effective hormonal methods—namely pills and injectables—is common and is increasing over time. The increase in discontinuation (and converse decline in continuation) over time is partially associated with the increased frequency of method switching. Matlab longitudinal data indicate the increase in switching from one method to another over time.

Recommendations

Enhance counseling for IUD and implant clients, both before and after initiation of use. Quality pre- and post-procedure counseling of clients is an effective intervention to increase method continuation (Koenig, Hossain, & Whittaker, 1997). Operations research by the USAID-funded Translating Research into Action project showed a significant improvement in IUD and implant continuation through phone-based counseling, proactive follow-up with method acceptors, and increased client-provider contact (icddr,b, 2016). Client follow-up with proper counseling is a recommended approach to reduce discontinuation of LARCs. The DGFP managers agreed in principle to introduce telephone follow-up with each LARC/PM acceptor by family welfare visitors (FWVs), and they are implementing the new follow-up protocol. A key message of counseling before and after IUD or implant provision should be that an acceptor may have some bleeding or minor lower back pain, but that those problems disappear in a week or two.

Prevent and manage side effects of IUDs and implants. Bleeding and lower back pain are common reasons for early IUD and implant discontinuation (Kabir, Alam, & Rahman, 2009; NIPORT, et al., 2016). The bleeding or pain begins immediately after insertion of an IUD or implant, mostly because of the physiological reaction to a foreign body. These conditions are self-limiting and usually disappear in a few weeks. Intake of nonsteroidal anti-inflammatory drugs (NSAIDs) for a week or so provides relief from bleeding or pain, and DGFP providers supply NSAIDs to the clients for five days (DGFP, 2017). An operations research project found that, unfortunately, insufficient quantities of NSAIDs were sometimes provided to clients, resulting in a breach of client management protocol and discontinuation (icddr,b, 2016).

Enhance skills of FWVs and similar paramedics, especially on interpersonal counseling (IPC). FWVs and paramedics (high school graduates with an 18-month training on FP and maternal and child health service delivery) are the main providers of IUDs. Poor and inconsistent IPC skills among paramedics contributes to clients' poor understanding of side effects and thus method discontinuation (Huda & Chowdhuri, 2014). Improving paramedics' IPC skills is essential for better management of side effects.

Engage doctors in providing IUDs. No increase in IUD use was observed following the training of FWVs and paramedics (Global Health Program Cycle Improvement Project, 2016; Rahman, et al., 2019). Doctors are the main providers of implants, and recently, they have been trained on IUD insertion. Doctors' fees for insertion of IUDs and implants also increased. Clients in Bangladesh who receive IUDs from doctors experience fewer discontinuations than do those who receive them from paramedics (M. Moinuddin, DGFP, personal communication, 2019). An initiative by Social Marketing Company (SMC) for private-sector doctors and obstetricians/gynecologists to provide IUDs shows lower discontinuation among their clients than among those who receive methods from FWVs/paramedics in the public sector (M. Rahman, SMC, Personal Communication, 2019). The IUD provider teams consist of a well-balanced combination of obstetricians/gynecologists, medical doctors, midwives, nurses, or paramedics in countries where IUD use is medium to high (Bühling, Zite, Lotke, & Black, 2014; Eren, Ramos, & Gray, 1983; Lassner, et al., 1995). However, in Bangladesh, as mentioned above, the principal provider of IUDs is the FWV. The IUD provider teams (composed of a combination of obstetricians/gynecologists, medical doctors, and FWVs and paramedics) may help to increase uptake of IUDs.

Engage the Directorate General of Health Services (DGHS) facilities and providers in providing IUDs and implants. A large pool of obstetricians/gynecologists, medical doctors, and midwives and nurses in DGHS provides health services in Bangladesh. Although they are skilled and widely available to provide LARCs

and PMs, they do not provide any of these methods, because it is thought that these services are provided by DGFP. However, a circular in early 2019, signed by the directors general of both DGHS and DGFP, instructed the provision of postpartum IUDs, implants, and permanent methods in public medical college hospitals, specialized hospitals, district hospitals, and upazila health complexes (DGFP, 2019a). The circular specifies guidelines and procedures, including the funds, logistics, and supplies needed for the provision of these services. Our observation, through implementation research in Natore District, indicates that actual implementation of this initiative requires a lot of work. An implementation research project can help in effective execution of this initiative to provide LARCs and PMs through DGHS.

Engage the private sector in providing IUDs and implants. Relatively wealthier women are reluctant to seek services related to IUDs, implants, or PMs from the public sector, where services are free and client compensation is given. They perceive these as "poor people's" methods associated with free services and compensation. It is highly likely that there would be fewer discontinuations of IUDs or implants if the devices were provided by obstetrician/gynecologist practitioners and medical doctors in the private sector. SMC and Ipas have undertaken this approach. A recent circular from DGFP, similar to the one for public-sector facilities and providers mentioned above, instructed private-sector hospitals and clinics to provide postpartum LARCs and PMs (2019b). The circular provided guidelines and procedures related to the funds, supplies, and logistics. About 1 million births take place annually in private facilities in Bangladesh, representing an opportunity to provide postpartum LARCs and PMs. But there are challenges in the implementation of this DGFP initiative. An implementation research project would be indispensable to the operationalization of this initiative.

A couple is being counseled on family planning methods. Photo credit: Shafiqul Alam Kiron, Save the Children/USAID

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